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POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History

Vol. 11, No. 1 January 1986



Homo erectus

Human Origins, with Richard Leakey

Monday, February 10

6:00 and 8:30 p.m.

Main Auditorium

\$6.00 for Members, \$9.00 for non-members

At the age of six months, Richard Leakey went on his first expedition. He has been involved in the search for our human origins ever since.

Working along the shores of Lake Turkana in the African Rift Valley, he has discovered hundreds of fossils which have provided fascinating clues to our human past. Leakey's discoveries have included a 2 million year old skull of *Homo habilis* and a 1.6 million year old skeleton of *Homo erectus*, the most complete skeleton of an early human ancestor that has ever been found.

Leakey's discoveries have brought him both scientific acclaim and controversy.

Members are invited to join this world-renowned paleontologist when he pres-

ents a talk on human origins at a special Members' program. Using slides, Leakey will illustrate and describe his field work, and explain how his discoveries are helping to unravel the mysteries of human evolution. He will discuss his views on the evolution of humans from a four-legged, forest-dwelling creature, to a bipedal, large-brained species capable of using tools and communicating through speech. Leakey will also talk about the controversies concerning the location of different fossil species on the "evolutionary tree" and discuss scientists' current efforts to resolve these puzzles.

Leakey, along with his well-known parents, has been instrumental in transforming paleoanthropology into a so-

phisticated science of human origins. He has written numerous books, including *People of the Lake*, *Origins*, and *The Making of Mankind* (also the name of a BBC T.V. series that he hosted). Since 1974, he has been the Director and Chief Executive of the National Museums of Kenya.

Due to the tremendous expected popularity of this program, we have scheduled the lecture twice, at 6:00 p.m. and at 8:30 p.m. Early reservations are strongly advised. To register for *Human Origins with Richard Leakey*, please use the Members' Programs Coupon on page 3.

King

A program in honor of the late Dr. Martin Luther King, Jr. includes performances by the Riverside Church Inspirational Choir, The Bill Kennedy and Steam Jazz Ensemble and the Forces of Nature.

Page 9

Courses

The Department of Education offers a potpourri of courses, workshops, and local field trips that begin in late February. Highlights include *Navajo Weaving*, *Sex and Gender*, *Greek Civilization in Asia*, and *Weekend Whale Watch Off Cape Cod*.

Pages 6-8

Pacific Islands

Learn about the yam cult of Abelum, life in a Samoan village, and much more in our February Members' Tour of the Month.

Page 10

Tales and Tunes

Children will be delighted by a family program that features stories and songs from around the world, as well as hands-on workshops.

Page 2

In Praise of Hands

Three documentaries and three distinguished artisans celebrate the beautiful works that human hands create.

Page 3

Seasons In the Sky

Wednesday, January 8
7:00 and 9:00 p.m.
American Museum-Hayden Planetarium
\$6.00 for Members, \$9.00 for non-members

The December 11 baroque concert in the Planetarium sold out soon after it was publicized in the November *Rotunda*. But do not despair; we're repeating it again in January.

This celestial concert will feature a live performance of

Vivaldi's *The Four Seasons* and the second movement (largo) of Bach's Concerto No. 5 in F Major (BWV 1056). The music will be performed by a seven-piece ensemble from Music for Occasions, Inc.

As you enjoy the strains of

beautiful music, feast your eyes on changing constellations, whirling nebulae, a splendid sunset, and laser visuals on the dome of the sky theater.

To order tickets to Vivaldi's *Four Seasons*, please use the coupon on page 3.

Japanese Dance Suite: Imaginary Beings

Sunday, January 19
2:00 p.m. and 4:00 p.m.
Kaufmann Theater
Free



Kenn Duncan

The Saeko Ichinoe Dance Company returns to the Museum to perform a dance suite depicting imaginary creatures of Japanese folklore and mythology. One of the colorful and fantastic beasts the dancers will portray is the Kinn, who has the head of a dragon, the body of a stag, and the legs and hooves of a horse. The audience will also be introduced to the kappa, who has the body of a tortoise, limbs of a frog, and head of a monkey, and to the Baku, eater of bad dreams, whose name written on a pillow prevents nightmares.

Saeko Ichinoe, artistic director and award-winning choreographer, is a native of Japan. She works with her New York based, multi-ethnic company of skilled dancers to blend the traditions and art forms of Japan with American modern dance.

Seating for the program is on a first-come, first-served basis. For additional information, please call (212) 873-1300, ext. 559.



Kenn Duncan

Tales and Tunes

Sunday, January 26 at 10:30 a.m. and 2:30 p.m.
Kaufmann Theater
\$3.00 for Members, \$5.00 for non-members



Christine Campbell

When a couple discover that they cannot have children, they create a beautiful girl out of snow. She magically comes to life, and the enchanting Russian tale of the Snow Maiden begins.

The Snow Maiden will be joined by a Jamaican Banana Woman, Paul Bunyan, and a host of other characters, when the Story Concert Players present *Tales and Tunes from Around the World*.

The program features the varied talents of actress and singer Christine Campbell. She will be accompanied by the beautiful music of the Story Concert Players' chamber ensemble. The audience will also be invited to participate by clapping along with some of the selections, and providing special effects for the story of Paul Bunyan.

At the program's conclusion, the audience will have the opportunity to take part in a series of informal workshops. In a hands-on instruments workshop, children will handle different musical instruments, see how they are constructed, and learn about the different sounds they can make. A folk traditions dramatic arts workshop will involve children in the dramatic arts, oral traditions, and folk tales.

The Story Concert Players are under the direction of the prize-winning composer playwright Roselyn Winokur. Their imaginative multi-arts programs have been featured at Alice Tully Hall and the Brooklyn Academy of Music.

To register for *Tales and Tunes from Around the World*, please use the coupon on the opposite page.

ROTUNDA

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Pioneers the History Books Forgot

Thursday, January 30
7:00 p.m., Main Auditorium
Free for Members, \$5.00 for non-members



A woman could often earn a good living in a Western mining camp such as this one.

Women were an integral part of western expansion during the 1800's. At the heart of the wagon train family, they struggled to keep their children alive and their families together. Some women journeyed west half-heartedly, following the leads of their ambitious husbands. Others viewed the journey as an adventure to be undertaken with gusto. Women in the West were mothers, nurses, ox-drivers, cowgirls, and shrewd entrepreneurs. Many of them had amassed small fortunes by the time they reached the western shore. In their journals women recorded with precision the

births and deaths of children, the relations between pioneers and Native Americans, the outbreaks of cholera and the number of gravestones they passed along the way. Some women were accomplished painters whose works we have only recently begun to learn about.

Blacks too played important roles in the American West. They dug gold in California, branded cattle in Texas, and raced for land in Oklahoma. They were cowboys, homesteaders, outlaws, trappers and sheriffs. They founded towns, opened businesses, and built schools and churches. A fifth of

the entire U.S. Cavalry was black. These men were called "buffalo soldiers."

Why then is the American West almost always thought about, written about, and portrayed in terms of the white male?

Two distinguished speakers will give a slide show/lecture designed to explore and to explode popular myths of the West, and to further our knowledge of American history; the history we didn't read about in our textbooks.

Elizabeth Cunningham is the director and curator of the Anschutz collection, from which the current exhibition *Masterpieces of the American West* has been formed. Cunningham will discuss stereotypes of women in the West, including the "madonna of the prairie" and the "bad woman." She will also introduce the audience to several western women painters.

William Loren Katz is the author of more than twenty books on blacks and other minorities. He is curator of the *Black West Exhibit* at New York's Schomburg Center for Black Culture (through January 6). Katz has taught at N.Y.U. and U.C.L.A. and has been a Scholar-in-Residence at Teacher's College, Columbia University. Katz will discuss aspects of the black experience on America's frontiers, including black cowboys and Indians.

The American West. Pioneers the History Books Forgot is offered in conjunction with *Masterpieces of the American West*, in Gallery 3 until February 16. To register, please use the adjacent coupon.

In Praise of Hands

Celebrate the skill of human hands with three films and three distinguished artists. The mask at right is by sculptor Suzanne Benton. A weaver and a violin maker will also be present to speak with Members and share the process of their work. Films at 6:00 and 7:30 p.m. In the Kaufmann Theater. Artists in the Leonhardt People Center from 7:00 to 9:00 p.m. To register, please use the adjacent coupon.



January Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *January Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024.

Vivaldi's Four Seasons. Wednesday, January 8, 7:00 and 9:00 p.m. \$6.00 for Members, \$9.00 for non-members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-members' price. Please indicate a first and second choice of times, if possible.

_____ 7:00 p.m. _____ 9:00 p.m.

Number of tickets at \$6.00 each: _____ \$9.00 each: _____
Total amount enclosed for program: \$ _____

In Praise of Hands. Thursday, January 9, \$4.00 for Members, \$8.00 for non-members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price of \$4.00. Associates are entitled to one. All other tickets are \$8.00 each. Please indicate a first and second choice of times, if possible.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of tickets at \$4.00 each: _____ \$8.00 each: _____
Total amount enclosed for program: \$ _____

Tales and Tunes from Around the World. Sunday, January 26. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price of \$3.00. Associates are entitled to one. All other tickets are \$5.00 each. Please indicate a first and second choice of times, if possible.

_____ 10:30 a.m. _____ 2:30 p.m.

Number of tickets at \$3.00 each: _____ \$5.00 each: _____
Total amount enclosed for program: \$ _____

The American West: Pioneers The History Books Forgot. Thursday, January 30. Free for Members, \$5.00 for non-members. Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$5.00 each.

Number of free tickets: _____
Number of tickets at \$5.00 each: _____
Total amount enclosed for program: \$ _____

Human Origins, with Richard Leakey. Monday, February 10. \$6.00 for Members, \$9.00 for non-members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All other tickets are \$9.00. Please indicate a first and second time preference, if possible.

_____ 6:00 p.m. _____ 8:30 p.m.

Number of tickets at \$6.00 each: _____ \$9.00 each: _____
Total amount enclosed for program: \$ _____

The Call of the Loan. Saturday, February 22. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$3.00. Please indicate a first and second time preference, if possible.

_____ 11:00 a.m. _____ 1:00 p.m.

Number of free tickets: _____
Number of tickets at \$3.00 each: _____
Total amount enclosed for program: \$ _____

Notes From the Chiricahua Mountains

The Southwestern Research Station: Day One of a New Yorker's Journey

Flight #295 soars high above Arizona, then begins its descent. Cities and towns give way to brown earth and marbled patterns in shades of brown and creamy white. For a few minutes I am witness to an earth that, from the sky, looks uninhabited. This is the unadorned Earth, a planet no hand has touched or molded.

The lines of the dry riverbeds are darker than the surrounding earth. They form elongated veins and shadowy flames in the clay. For one magical moment I see, in the ground below, the branches of a giant prehistoric tree that has fallen. An occasional dark mountain rises up, but mostly this is flat, arid, land.

Nearing Tucson, the patterns of human habitation appear. Giant rectangles and circles interrupt the irregular textures and patterns of the land.

The spines of the mountains are dark, the clay is red, the sand orange. We are slowing down, descending, turning in toward the geometry of ordinary shapes — squares and circles that resemble moss, and chocolate candy.

Dots of vegetation appear. The desert's skin is, after all, not hairless. As we descend, the rectangles contain increasingly smaller rectangles, until individual buildings can be seen. Circles of deep blue and green turn out to be swimming pools.

It is 105 degrees Fahrenheit, the radio of my rented car informs me; just a normal, sunny, summer's day in this part of the country.

I am a native New Yorker, driving through Arizona for

the first time in my life, on my way to the Museum's Southwestern Research Station. Several articles and numerous photographs will emerge from this trip. Members who have seen the Southwestern Research Station mentioned time and time again in *Museum Notes* will finally get a clue to what it is.

Wade Sherbrooke, the Station's Assistant Resident Director, has already told me over the phone who I will meet at dinner. The Browns are there, studying altruism among Mexican Jays. Jan Randall is studying kangaroo rats in and out of their burrows. John Alcock is observing the sexual behavior of local dragonflies. There are several other people too, whose work sounds fascinating to me.

I relax in the driver's seat, and soon the city of Tucson is behind me. The sky is a clear, light blue. I feel a sense of intimacy with this earth, which changes in color from sawdust yellow to brick red to salmon. Boulders balanced atop boulders define the sky's shape, and the sky defines the shapes of the boulders.

About a hundred and fifty miles later, after driving through miles of the low, dry, mesquite-studded land that characterizes much of the Southwest, I turn onto the road that will lead me to the Chiricahua Mountains.

Creosote, mesquite, cacti and yucca stud the low-lying landscape to either side of U.S. 80 South, near the small, quiet town of Portal, Arizona. Cattle wander slowly across this dry land. Occasionally a grazing cow or bull stomps unwittingly upon a kangaroo rat's mound, destroying the work of generations.

Kamikaze jackrabbits and ground squirrels race across the road inches from the front wheels. Turkey vultures watch from fence posts, awaiting accidents. The jackrabbits sometimes pause for a moment, a few feet from the roadside, before disappearing. Sunlight shines pink through the thin skin of their long ears.

Portal is, in the view of a New Yorker, a charming "one horse town." Unlike many other small Arizona towns, however, Portal boasts a post office, a town library, and a general store which doubles as a service station. From here, it's just five miles to the Research Station.

It is early evening as I begin the ascent into the Chiricahua Mountains. A thin, scruffy coyote limps along the side of the road for a moment, then disappears in the scrub. Once the jaguar roamed in these parts, but none have been seen for several decades.

Being a gateway to several succeeding environments, Portal was aptly named. Less than a mile from town, cactus, agave, yucca, and mesquite give way to low shrubs, then trees, and the earth is wetter, richer. Only a few minutes' drive from desert flora I am surrounded by the sycamore, pine, cottonwood, black walnut and Arizona white oak of Cave Creek Canyon.

The altitude climbs steadily. It may be over 100 degrees Fahrenheit in Arizona's cities, but here and now it's cool and comfortable.

Jays scold loudly from nearby trees. There are rustlings among the leaves and branches.

This is cattle country, and cows graze even into the forest. A group of them eye me as I pass by slowly, admiring the calves.

Rising along the perimeters of the forest are tall salmon-colored latite cliffs. Names like "skull eyes" and "keyhole" tell the shapes nature has carved into them. The cliffs, mountains and rocks that now surround me have resulted from the powerful combined forces of volcanic activity, and erosion by wind, sand, water, and frost.

The Chiricahua Mountains run roughly north and south, forming a range about 40 miles long and 20 miles across. They rise from low, broad desert valleys to high peaks of close to 10,000 feet.

The great lure of these mountains lies in the variability and uniqueness of their flora, fauna, and geology. Sharp variations in elevation create wide ecological differences. With every additional 1,000 feet of altitude, the climate



Ruth Q. Lebowitz



Ruth Q. Lebowitz

and temperatures change as if one had travelled 300 miles north.

Some of the Chiricahuas' animals and plants are derived from the Sonoran Desert to the west and the Chihuahuan Desert to the east and south. Others are associated with the Great Basin areas of southern Utah and the Rocky Mountains of the western U.S.

Because the Mexican Sierra Madres extend up to the U.S. border, a great deal of Mexican fauna extends into the Chiricahuas. The Inca Dove, Coppery-tailed Trogon, and coatimundi are a few of the animals that exist nowhere in the U.S. except a small area of the Southwest.

Some animals, like the Apache fox squirrel, are members of Rocky Mountain populations that were stranded here as the climate slowly became warmer and drier, and the surrounding lands became deserts.

Nestled in the forest on the eastern slope of these mountains, at an altitude of 5,400 feet, lies the Station. After a long and tiring drive it is only minutes away.

My week in Arizona promises to be wonderful. But I am tired, hungry, and nervous about meeting new people. Who will invite a curious writer along to do field work? Why have I forgotten my binoculars? Have I brought enough film? Will everyone clam up when they find out I am here to write about them? What if publicity about this wonderful place brings more people to the area than it can handle?

I see the Station's parking lot to the left-hand side of the road, and pull in. I am expected for dinner. As I get out of the car and slam the door shut, a bright green liquid boils and bubbles out of the engine, forming a small pond on the ground by the front right wheel. If the car is "dead," at least I can think of far worse places to be marooned.

Barbara Roth, who helps run the station with her husband, Vincent, welcomes me and invites me to eat. There is a peacefulness and a quiet intelligence about her that seems to belong to these mountains, although she was born in Bavaria, Germany. She introduces me to a few of the people present.

At dinner the scientists and their assistants, the volunteers, the cook, the naturalists — everyone is relaxed and friendly. Station visitors eat together at several long tables both inside the large kitchen, and outside under the trees. I enjoy the meal, introduce myself to a number of people, and, through half-closed eyes and lazy ears, try to learn as much as I can about this place and its people.

Since I'm too exhausted to remember anyone's name or what they're doing here, my first priority is a good sleep. Tomorrow I will "connect" with one or more of the scientists to begin observing — and contributing to, if possible — their field work.

After dinner, Vincent Roth, the Station's Resident Director, returns from a hike he led for the volunteers — young people who come to the station each season to help with maintenance, cooking, or research in return for room and board. Although his calf is swollen from the long hike, and he is utterly exhausted, this small, wiry man gives the impression that after a brief nap he will be ready to climb another mountain. An ever-active administrator, arachnologist, father, and husband, Vince seems years younger than his age of 61.

Vince gives me a brief tour of the large, comfortable living room that adjoins the kitchen. It contains a small library with everything from biology and fiction to a book of one-act plays and bird puns written by visitors to the Station.

Near the point of exhaustion, I am escorted to my

quarters in one of the cabins across a small stream. On the way, I silently bid good night to several small *Sceloporus* lizards that dart among the rocks by the stream.

Although my cabin contains several bunk beds, the Station is not filled to capacity at this time of year, and I have the cabin all to myself. From the porch, I can see the outlines of nearby mountains, and hear the song of a cricket who moved in before I did.

If I am nocturnal and quiet during my stay at the Station, I may get to meet a coatimundi (a mischievous relative of the raccoon), a family of javelinas (collared peccaries), ring-tailed cats, and white-tailed deer. Not to mention skunks.

My bed looks comfortable enough, but I did not make my escape from the big city to sleep indoors. The night sky, with its clear constellations, beckons. I take my tarp, sleeping bag, wind-up alarm clock, and flashlight to the orchard behind the cabins, where I will spend the night.

Nancy, a young woman who co-produces a T.V. nature show, is a veteran of sleeping outdoors in the area. "If you wake up in the middle of the night," she says, "and hear something stomping or snorting close by, don't be afraid. It's just the deer. They sense your presence and want to know what you are. But they don't touch you."

As I near the dead tree next to which I've decided to sleep, I hear a rustle, and a large animal bounds away. There are unknown sounds all around me. "Creatures of the night," the old phrase from *Dracula* pops into my mind.

In my sleeping bag, I know something or someone is watching me from nearby, but I feign disinterest. Events of the day dance in and out of my mind. The stars, the boulders. An inner voice asks "How could such a rock be placed upon another? Is there an order to these stars?" Rhythm of the crickets. I am surrounded. How could anyone live here and not wonder about the animals, the boulders, the stars. They are all over, pulsating. Do crickets sing from the same spot every night? Do bats live in the caves in the mountains? Are there salamanders in the streams? Who walked once in these mountains, before time and civilization destroyed them? What is watching me?

I begin drifting off into sleep. Then come the loud snorts. Then comes the stomping. The deer, I remember, and my eyes stay closed. The deer

Next in this series: *Sex and the Single Insect*

Ruth Q. Leibowitz



A student who assists one of the Station's ornithologists listens to recorded bird calls.



The main house contains a kitchen, library, laundry room and — last, but certainly not least — a ping pang parlor.

The Southwestern Research Station is a non-profit research and educational facility owned and operated by the Museum. Much of the land on which it stands was purchased in 1955 with monies donated by David Rockefeller. An additional 36 acres were donated in 1977 by Frank Preston. Construction of the laboratory and residential facilities was made possible by gifts from the National Science Foundation as well as private individuals.

While the Station's facilities are intended primarily for the use of researchers, non-researchers are also welcome as space permits. Spectacular sightseeing and hiking are readily at hand, and the Station has a swimming pool. A communal dining room and an informal atmosphere make it easy to become acquainted with scientists and other visitors.

For an application form and fee schedule, write: Resident Director, Southwestern Research Station, Portal, Arizona 85632. Please enclose a self-addressed, stamped envelope, and a note as to whether your visit is intended for research or leisure purposes, when you would like to visit the Station, and the size of your party.

The Department of Education Presents the Spring

Afternoon and Evening Lecture Series

ARCHAEOLOGY AND THE BRITISH ISLES

Three Tuesday Evenings starting February 18
7:00-8:30 p.m.
Fee: \$20.00 (\$18.00 for Members)

Lecturer **Janice B. Klein** is a staff member of the University Museum of the University of Pennsylvania. She has conducted field work and excavated in Britain.

- Feb. 18 **PREHISTORIC BACKGROUND TO ROMAN BRITAIN.** This survey of the archaeology of Britain concentrates on the Bronze and Iron Ages. Topics include the coming of metallurgy and long distance trade, and the culture and society of the Celts. Archaeological sites to be discussed are Maiden Castle, Little Woodbury, and Hengistbury Head in Southern England.

- Feb. 24 **BRITANNIA: A ROMAN PROVINCE.** Coldchester, London, and Roman villas were the centers of the growth of urbanism under Roman rule. These areas, along with sites at Hinton St. Mary and Southern Dorchester, illustrate native cultural traditions, and life inside Roman-controlled areas.

- Mar. 4 **LATE ROMAN BRITAIN AND BEYOND.** The Anglo-Saxons and "The Dark Ages" coincided with the end of Roman rule. Excavations in Somerset County of South Cadbury, Cadbury-Congresburg, Sutton Hoo, and the Roman occupation fort of Wroxeter help to illuminate the cultural and social events which led to the formation of England.

ETHNIC COMMUNITIES IN NEW YORK

Five Monday evenings starting February 24
7:00-8:30 p.m.
Fee: \$30.00 (\$27.00 for Members)

To many people "adventure" means travel to distant lands with unusual ways of life. However, since New York City contains many "foreign" peoples, one may not have to travel very far to be adventurous. This slide-illustrated lecture series examines the drama of migration, the rise and fall of neighborhoods, little-known folk arts, and rituals that can be observed in the streets of New York. **Mary Strong** is an urban anthropologist affiliated with the City University Research Foundation.

- Feb. 24 **NEW YORK. THE LOWER EAST SIDE. MANHATTAN AND THE SOUTH BRONX.** The Hispanic Community — Chango, Loizaida, the coqui, gentrification, and bilingual education.

- Mar. 3 **CHINATOWN, MANHATTAN.** The Chinese — The Dragon, New Year, laundries, restaurants, Confucius, and gangs.

JACKSON HEIGHTS, QUEENS. East Indians — Festival of Lights, the sacred cow, newspaper stands, saris, and suits.

- Mar. 10 **WILLIAMSBURG, BROOKLYN.** The Orthodox Jews — The Chosen, keeping the sabbath, scholarship, dairy restaurants, and the ghetto.

ASTORIA, QUEENS. The Greeks — Gods and temples, the spirit of Zorba, opal, cafeterias, and return migration.

- Mar. 17 **HARLEM, MANHATTAN.** African Americans — The blues, Striver's Row, civil rights, caste, and class.

PROSPECT PARK, BROOKLYN. The West Indians — West Indies Day Parade, boat people, Erzulie, and Rastafari.

- Mar. 24 **LITTLE ITALY, MANHATTAN.** The Italians — San Gennaro, the godfather and the Black Hand, the importance of garlic.



The Acropolis Erechtheum

GEMS AND THE EARTH

Seven Tuesday evenings starting February 18
7:00-8:30 p.m.
Fee: \$45.00 (\$40.50 for Members)

Members of the Museum's Department of Mineral Sciences discuss gems, their origins, characteristics, history, aesthetic and scientific values. This is not a course in gem identification or recognition, but is intended to enhance gem appreciation and understanding.

These lectures are presented by **George E. Harlow**, Associate Curator, **Martin Prinz**, Chairman and Curator, **Demetrius Pohl**, Assistant Curator, and **Joseph Peters**, Senior Scientific Assistant, all from the Museum's Department of Mineral Sciences.

- Feb. 18 **WHAT IS A GEM?** An introduction to gemology, definitions of minerals and gems, terminology problems, misuse of gem terms, synthetic gems, gem recognition, appraisals, etc.

- Feb. 25 **DIAMONDS:** Exploration and the history of diamonds, properties, synthetics and famous stones.

- Mar. 4 **EMERALDS AND OTHER GEM BERYLS.**

- Mar. 11 **RUBIES, SAPPHIRES, AND SPINELS.**

- Mar. 18 **TOURMALINES AND GEM PEGMATITES:** Mainly on tourmalines from southern California and gem pegmatites of Afghanistan and other localities.

- Mar. 25 **OPALS AND A POTPOURRI OF COLORED STONES.**

- Apr. 1 **JADES:** Origin and characteristics of different kinds of jades, their history and carvings, and important geologic implications.

GREEK CIVILIZATION IN ASIA

Three Monday evenings beginning March 31
7:00 - 8:30 p.m.
Fee: \$20 (\$18 for Members)

The Greeks of the classical age were fascinated and mystified by the civilizations of the Near East. From the time of their first contacts with the cultures of Asia Minor and Mesopotamia, they were awed by the Near East's antiquity and grandeur. But the cultural gulf between Greek and "barbarian" had always seemed too immense to bridge — until the conquests of Alexander the Great. This Macedonian king led his armies as far as the borders of India, and in the wake of the Greeks' military sweep across Asia, the seeds of Greek culture were widely scattered.

The victories of Alexander changed forever the form and substance of Greek civilization. Not only did returning soldiers bring home new world views and glimpses of that distant world to the east, but the Greek polis, transposed into an Oriental setting, produced new

expressions of Hellenic culture in the realms of art and architecture, literature and philosophy. Greeks, removed from the constraints of home, dressed in Oriental garb and built Greek temples in which they worshipped foreign gods, while Asiatics studied Greek philosophy and wrote commentaries on Plato. This synthesis of cultures, the meeting of East and West, was to influence and unalterably change western civilization for the next 2,500 years.

Lecturer **Tamara M. Green** is Professor of Classical and Oriental Studies at Hunter College of the City University of New York. Her lectures are illustrated with color slides.

- Mar. 31 **The first contacts: The Hellenic ideal and the Greek cities of Asia Minor.**

- Apr. 7 **Asia after Alexander: The Near East.**

- Apr. 14 **Asia after Alexander: The Far East.**

ALASKA: GIANT OF THE NORTH

Four Monday afternoons starting February 24
2:30-4:00 p.m.

or
Four Monday evenings starting February 24
7:00-8:30 p.m.
Fee: \$25.00 (\$22.50 for Members)

Alaska is a place of wild beauty and vast distances. It is a land where bald eagles soar above misty rain forests, where wolves hunt caribou herds across the rolling tundra, and where enormous bears fish for salmon along clear-running waterways. It is a land of contrasts: of huge moose and tiny, delicate wildflowers; of smoking volcanoes and awesome glaciers; majestic mountain ranges and deep fjords; a land at once rugged and yet incredibly fragile.

While this slide-illustrated lecture series focuses upon the spectacular wilderness areas and their animal and plant inhabitants, it also includes aspects of Alaskan history and politics, the swiftly changing economy, and the lifestyles of its native peoples.

Kenneth A. Chambers, author of *A Country Lover's Guide to Wildlife*, is Lecturer in Zoology at the Museum and has led all of the Museum's Alaskan wildlife tours.

- Feb. 24 **SOUTH-EASTERN ALASKA:** Russian occupation; gold fever; Juneau and other coastal townships, and magnificent Glacier Bay.

- Mar. 3 **SOUTH-WESTERN ALASKA:** Bears and the Brooks River; Valley of Ten Thousand Smokes; cliff-nesting birds; the Pribilof Aleuts and the saga of the fur seals.

- Mar. 10 **SOUTH-CENTRAL ALASKA:** The renowned wildlife and plants of scenic Denali National Park; Anchorage, Fairbanks and the Alaska railroad.

- Mar. 17 **ARCTIC ALASKA:** Exploring in the eastern Brooks range and along the arctic coastal plain; Inuit people today.

WILD FLOWERS OF THE NORTH

Five Tuesday afternoons starting February 18
2:30-4:30 p.m.

or
Five Thursday evenings starting February 20
7:00-8:30 p.m.
Fee: \$30.00 (\$27.00 for Members)

From Alaska and the Pacific Northwest across to New England stretch wild areas of northern coniferous forests, wetlands, mountains, and tundra. Complex orchids, colorful lilies, dwarf arctic creepers, and ancient cushion plants, are among the greatest spectacles in the web of life there. This series of slide-illustrated lectures by **Helmut Schiller**, Lecturer in Botany at the Museum, will examine northern wild flowers and discuss identification and ecology.

1. FAMILIES OF NORTHERN WILD FLOWERS
2. NEW ENGLAND'S ARCTIC FLORA; ABOVE THE TIMBERLINE ON ISOLATED MOUNTAINTOPS
3. ARCTIC WILD FLOWERS IN ALASKA AND THE PACIFIC NORTHWEST
4. WILD FLOWERS OF NORTHERN WETLANDS, BOGS, MARSHES, AND SWAMPS
5. WILD FLOWERS OF NORTHERN CONIFEROUS FORESTS

ANTHROPOLOGY ON FILM

Four Thursday evenings starting Feb. 20
7:00-9:00 p.m.

Fee: \$25 (\$22.50 for Members)

Malcolm Arth, anthropologist and chairman of the Museum's annual Margaret Mead Film Festival, presents a selection of films that reveal facets of human behavior and cultures around the world. On one or two of the evenings, Dr. Arth will be joined by guest filmmakers.

- Feb. 20 **SOMETHING OF THE TIMES**. 1985. Director, Kim McKenzie. (40 mins.) Premiere of the latest work by a distinguished Australian filmmaker. Two elderly Aborigines and a white age mate recall their early days as hunters in what is now Kakadu National Park.
- Feb. 27 **WAITING FOR HARRY**. 1980. Director, Kim McKenzie. (57 mins.) This prize winning film focuses on mortuary rites for an Aboriginal man in Australia, but reveals more than rituals and family relationships.
- RED MATILDAS**. 1985. Directors, Sharon Connolly and Trevor Graham. (50 mins.) Three older Australian women bridge the oceans for us by sharing their experiences as young adults in the 1930's and senior adults today.
- THE STONE CARVERS**. 1984. Directors, Marjorie Hunt and Paul Wagner. (29 mins.) This film about Italian born stonecutters working on the cathedral in Washington D.C. won the 1985 Academy Award as Best Short Documentary.
- Mar. 6 **YIRI-FO**. 1985. Directors, Jean-Paul Colley and J. J. Piché. (25 mins.) Premiere of the most recent film based on anthropologist Jean-Paul Colley's fieldwork in Mali. It documents the naming ceremonial for a Minyanka child.
- THE DARK GLOW OF THE MOUNTAINS**. 1984. Director, Werner Herzog. (45 mins.) A famous mountaineer tries to explain his passion for climbing.
- Mar. 13 **TO BE ANNOUNCED**. To take advantage of new releases, this program and guest will not be selected until the series starts

ETHNOBOTANY OF NORTH AMERICAN INDIANS

Six Thursday evenings starting February 20
7:00-8:30 p.m.
Fee: \$35.00 (\$31.50 for Members)

E. Barrie Kavasch, author of *Native Harvests*, explores the diverse ways American Indians have made use of North American floral environments. Concentrating on the Eastern Woodland Indians, the series is richly

illustrated with color slides, ethnographic objects, and ethnobotanical specimens.

- Feb. 20 **EARLY GATHERING CULTURES** developed a broad, detailed knowledge of seasonal plant resources. Participants will explore the cycle of the seasons in the "edible wilds" of the Northeastern United States
- Feb. 27 **OBJECTS OF GREAT ARTISTRY** for daily or ritual use spring from within each environment. Their forms and significance also reflect the cultural setting and the importance of symbolism.
- Mar. 6 **A VISIT TO THE HALL OF EASTERN WOODLAND AND PLAINS INDIANS** to examine artifacts on display in their cultural settings and discern their ethnobotanical origins.
- Mar. 13 **FROM ROOT TO LEAF TIP**: Parts of an astonishing array of grasses and other herbs, mosses, fungi, shrubs and trees have been used by American Indians for food, medicines, containers, tools, dyes, weaving and ritual purposes.
- Mar. 20 **HERBALISM** spans centuries of development among diverse prehistoric and historic cultures. The native herbs and their traditional uses provided modern medicine with some of its pharmaceutical background
- Mar. 27 **THE IMPACT OF THE COLONIZING CULTURES** was felt through the introduction of new plant species. Alterations of plant habitats and environmental regions continue to have considerable consequences today.

ANIMAL DRAWING

Eight Tuesday evenings starting February 18
7:00-9:00 p.m.

Fee: \$80.00 (materials not included)
Limited to 25 persons

Join us as we sketch gazelles on the African plains, or draw timber wolves in the snowbound north.

Using exhibition halls after the Museum has closed to the public, students draw from realistic habitat scenes as well as mounted specimens. Stephen C. Quinn, Senior Principal Preparator-Artist in the Museum's Exhibition Department, will discuss drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant, from beginner to experienced artist

The following exhibition halls will serve as studios: The Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, Hall of Ocean Life

GEOLOGY OF NEW YORK CITY'S WATER SUPPLY

Six Thursday evenings starting February 20
7:00-8:30 p.m.
Fee: \$35 (\$31.50 for Members)

New York's water supply is the lifeblood of the city's infrastructure and contains over 6,000 miles of tunnels and pipes, making it the world's greatest underground river. Together with its variety of reservoirs, New York's water supply is also a world-class engineering work that has had 350 years of development. The series will explore the geological setting of the key features of the various systems and show how they are related to one another. One of the objectives of these slide-illustrated lectures is to present an integrated picture of the geology of the metropolitan New York area

Sidney S. Horenstein, Senior Scientific Assistant in the Museum's Department of Invertebrates, presents this series.

- Feb. 20 **HISTORY OF NEW YORK'S WATER SUPPLY**
- Feb. 27 **GEOLOGY OF METROPOLITAN NEW YORK**

- Mar. 6 **GEOLOGY OF THE CROTON SYSTEM**
- Mar. 13 **GEOLOGY OF THE CATSKILL SYSTEM**
- Mar. 20 **GEOLOGY OF THE DELAWARE SYSTEM**
- Mar. 27 **GEOLOGY OF POTENTIAL FUTURE SUPPLIES**

ISLAMIC ARTS AND SCIENCES

Five Tuesday afternoons starting February 18
2:30-4:00 p.m.

or
Five Thursday evenings starting February 20
7:00-8:30 p.m.
Fee: \$30.00 (\$27.00 for Members)

Paul J. Sanfacon, Lecturer in Anthropology at the Museum, will bring into focus aspects of Islamic arts and sciences which he touched upon briefly in his "The World of Islam" series. Illustrated with color slides of miniatures, illuminated manuscripts, and contemporary scenes, this series explores how Islamic civilization benefited from and added to Greek, Persian, Roman, Indian, and Chinese accomplishments. From Spain to East Asia, Muslim scholars, artists and craftsmen and their non-Muslim counterparts formed — at various times — a mutually beneficial university of ideas. This mixture made possible a vigorous cultural exchange marked by ingenious responses to both the natural and social environments.

1. **CALLIGRAPHY, ARABESQUE, AND OTHER DECORATIVE MOTIFS**: Ceramics, rugs, manuscripts, and other surfaces.
2. **PAINTING AND NARRATIVE**: Perspective and color theory; religious and economic conditions for Islamic art; illustrations for and literary devices in prose and poetry.
3. **ARCHITECTURE**: Public and private space (fortifications, mosques, markets, and homes).
4. **THEORETICAL AND APPLIED SCIENCES I**: Mathematics, astronomy and navigation; pharmacology and medicine
5. **THEORETICAL AND APPLIED SCIENCES II**: The management of scarce land and water resources (engineering and agronomy).

THE ART AND RELIGION OF NORTHWEST COAST INDIANS

Five Tuesday evenings, starting February 18
7:00-8:30 p.m.
Fee \$30.00 (\$27.00 for Members)

Five illustrated lectures emphasize the cultural events and social life of the peoples of the Northwest Coast, and the vital role of their traditional art in daily life. Films and slides drawn from various ethnographic collections, and a tour of the Museum's Hall of the Northwest Coast Indians, will be used to illuminate the series.

Lecturer **Robert S. Grumet** is an ethnologist and a Post-doctoral Fellow at the Newberry Library Center for the History of the American Indian. He is also a guest Curator at the Long Island Historical Society, and has written numerous articles on American Indian history, art and culture.

- Feb. 18 **Raven's World**, an introduction to Northwest Coast Cosmology
- Feb. 25 **Shamans and Dreams**; the basis of Northwest Coast religion
- Mar. 4 **Funerals and Potlatches**, religious life among the Tlingit and Haida.
- Mar. 11 **Secret Societies and Spirit Masks**, the Isimshian Noxnox
- Mar. 18 **Winter Ceremonials and Cannibal Dancers**; ceremonies of the Kwakiutl and Nootka

ANCESTORS REVISITED

Two Monday evenings: February 24 and March 3
7:00 p.m. to 8:30 p.m.
Fee: \$15.00 (\$13.50 for Members)

BIOLOGY AND HUMAN EVOLUTION. **Irvn DeVore**, Professor of Anthropology and Biology at Harvard, will discuss the role of biology in human evolution. Why are we the way we are? What are we in the first place? The scientific answers to these questions require understanding our own ecological adaptations in the present and the past. Dr. DeVore's lecture attempts to show the evolutionary process as it is affected by an intricate weaving of biological processes, natural environments and cultural adaptations.

HARD EVIDENCE: The Fossil Record of Human Ancestry. **Eric Delson**, Professor of Anthropology at Herbert H. Lehman College, and Research Associate in the Department of Vertebrate Paleontology at the American Museum of Natural History, presents a slide-illustrated lecture on the fossil history of the human lineage. His talk will trace the evolution of early human history from tool-less, scavenging *Australopithecus* through the first large-brained toolmaker *Homo habilis* and the continent-traveling hunter *Homo erectus*, to several early varieties of our own species, *Homo sapiens*.



The 25,000-year-old skull of a Cro-magnon.

NAVAJO WEAVING

Six Tuesday evenings starting February 18
7:00-9:30 p.m.
Fee: \$200.00 (includes cost of all materials)
Limited to 15 persons

Leading Navajo artist **D.Y. Begay** explores the designs and patterns of Navajo textiles, which have become internationally known and appreciated for their balance and style. Begay, who is from Chinle, Arizona, works with the art of rug weaving as it has been passed down to her through family tradition. Learning the customary elements of Navajo color and design, with step-by-step guidance in the construction of a traditional loom, straight through to the completion of a traditionally styled rug, will give the student a working knowledge of this art form. Instruction is supplemented with slides and textiles.

TRAVEL PHOTOGRAPHY WORKSHOP

Six Monday evenings starting February 24
7:00-9:00 p.m.
Fee: \$60.00
Limited to 22 persons

This course is designed for the traveler who wants to photographically record peoples and places, near and far. Topics include: What is travel photography?, the special problems of photographing while traveling; basics of camera technology and lighting; proper exposure; selection and use of equipment; and (most importantly), how to see photographically.

Willia Zaklin, a professional photographer with a background in anthropology, offers lectures, slides and class demonstrations of lighting and camera mechanics. Weekly assignments will be followed by class critiques.

SEX AND GENDER

Four Tuesday evenings starting February 18
7:00 - 8:30 p.m.
Fee: \$25.00 (\$22.50 for Members)

One of the riddles of our world is the evolution of sexual reproduction. This series examines what is known about reproduction, in light of the ways in which the riddle has been posed. The riddle is then rephrased to see if it is easier to solve. Lecturer **Ethel Tobach** is a Curator in the Department of Mammalogy.

- Feb. 18 Two By Two In The Universe: the Non-living and the Living Worlds
- Feb. 25 A Matter Of Life: Genetic Tangos and Other Dances
- Mar. 4 How Many Ways Do I Love Thee?
- Mar. 11 Women: Sex and Gender

FIELD TRIPS

Call (212) 873-7507 for field trip prices and itineraries.

WEEKEND FOR BIRD ENTHUSIASTS

May 10 and 11
Limited to 36 Adults

A two-day bus trip covering a wooded area near New York City, and daytime and evening visits to a lake and bog area in the Pine barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen. Kenneth A. Chambers, Lecturer in Zoology at the Museum, leads this field study tour.

WEEKEND WHALE WATCH OFF CAPE COD

May 2, 3, and 4
or
May 9, 10, and 11
Limited to 45 persons

A weekend of whale-watching off the rich feeding grounds of Stellwagon Bank, near Cape Cod, where several species of whales are commonly seen at close range. Our search for these magnificent creatures involves three 4-hour whale cruises from Provincetown. Marine biologists and two Museum staff members will accompany the group. Museum staff will include an instructor from the Museum's Department of Education and Stephen C. Quinn, a field ornithologist and Museum artist, who will assist in identifying the many species of coastal birds.

Other highlights of the weekend include optional nature walks along the dune and marsh areas of the Cape Cod National Seashore, exploring historic Provincetown, an evening marine mammal slide talk illustrating interesting sightings off the Bank, and a visit to the reconstructed whaling port of Mystic, Connecticut. Cost includes transportation, accommodations and meals.

WEEKEND IN GEOLOGY

May 24 and 25
Limited to 36 Adults

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the coastal plain of northern New Jersey. Along the coastal plain there are visits to Sandy Hook and the highlands of the Navesink. Collecting stops are made en route. The group is accommodated overnight near Parsippany. **George Harlow**, Associate Curator in the Department of Mineral Sciences at the Museum, leads this field study tour.

SATURDAY FIELD WALKS IN BOTANY

Six one-day walks starting April 19
10:00 a.m.
Fee: \$70.00
Limited to 30 adults

During the Spring blooming period, walks are taken to areas of botanical significance in New York City and vicinity to learn about wild plants, particularly the flowering forms. Identification and ecology of the plants are discussed informally. **Helmuth Schiller**, Lecturer in Botany at the Museum, leads the walk. Each walk will be between five and six hours in length, with a pause for lunch.

BIRDS OF THE WETLANDS: A DAY TRIP TO JAMAICA BAY

Saturday, May 17
or
Saturday, May 24
8:00 a.m. to 5:00 p.m.
Limited to 36 people
Fee \$35.00

An all-day excursion by bus to the marshlands and estuaries of Jamaica Bay Wildlife Refuge to observe the spring migration of marsh and water birds. Herons, egrets, waterfowl and shore birds are only a few of the diverse varieties of birds attracted to these rich wetlands. **Stephen C. Quinn**, naturalist and Museum artist, leads the trip.

Please note:

Advance Registration is suggested. Registration will be accepted on the opening night if the course is not filled. **No single lecture tickets are sold, and there are no refunds.** Children are not admitted to lectures or field walks.

For further information telephone (212) 873-7507.

Participating, Donor, and Contributing members may take the 10% discount shown on courses which do not have limited enrollment. Associate Members are not eligible for the discount.

LECTURE SERIES

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone number: _____

Membership category (if applicable): _____

| Course | Day | Hour |
|--------|-----|------|
| Course | Day | Hour |
| Course | Day | Hour |

Please enclose a stamped self-addressed envelope together with a check (or money order) payable to the American Museum of Natural History and mail to: Courses, Department of Education, American Museum of Natural History, 79th Street at Central Park West, New York, N.Y. 10024.

Paul Robeson: Man of Conscience

Thursday, January 9
8:00 p.m.
Main Auditorium
Free



Paul Robeson

The Museum, WNET/Thirteen, and Janus Films are proud to present a program honoring Paul Robeson, the gifted black actor.

The program will include the Academy Award winning documentary *Paul Robeson: Tribute to an Artist* (40 min.), by Saul J. Turell. This extraordinary film describes a man of many talents — actor, athlete, singer, scholar — whose career was unparalleled for an American black man of his time. Yet, even as he was being acclaimed all over the world, he was effectively banned from performing in the United States and forbidden to travel abroad because of his outspoken criticism of racial and social policies at home.

Paul Robeson, Jr. will introduce the film about his father, and entertain questions from the audience at the film's conclusion.

This program, produced by award-winning filmmaker Bill Miles, will be broadcast in February of 1986 on WNET/Thirteen.

Paul Robeson: Man of Conscience is open to all Museum visitors. There is a limit of two free tickets per person. To order tickets please send a self-addressed stamped envelope to Paul Robeson, Department of Education Community Programs, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024.

Black History Month

at the Leonhardt People Center

February is Black History Month. It will be celebrated at the Museum through music, dance, folktales, and lecture demonstrations that highlight the diversity of African cultures and the African diaspora. The following programs will take place in the Leonhardt People Center between the hours of 1:00 and 4:30 p.m.:

Saturday and Sunday, February 1 and 2

Food for the Gods. John Mason uses slides to illustrate foods that were brought from Africa to the New World and incorporated into American cuisine.

The Origin of Gospel Music. L.D. Frazier takes us on a musical journey, from spirituals to the influences of gospel on current music.

Slaves' Night Off. The Charles Moore Dance Company presents music and dances

that were performed at Sunday gatherings on plantations. The music is played on authentic instruments that were created by slaves.

The Leonhardt People Center programs are free with Museum admission.

Sunday, February 2 only. 2:00 and 4:00 p.m. in the Kaufmann Theatre. *Scott Joplin and Ragtime America.* Flautist Jan Rosemond and Ensemble will present the music of ragtime composer and musician Scott Joplin, and recreate the mood of the era with slides and costumes. Free tickets for both performances will be distributed on a first-come, first-served basis at the Kaufmann Theater ticket booth starting at noon on the day of the performance.

There is much more to follow. The February Rotunda will contain a complete listing of Black History Month activities.

A Gift of Music

Wednesday, January 15, 7:30 p.m., Main Auditorium, Free

"With this faith we will be able to transform the jangling discords of our nation into a beautiful symphony of brotherhood. With this faith we will be able to work together, to pray together, to struggle together, to go to jail together, to stand up for freedom together, knowing that we will be free one day."

Rev. Dr. Martin Luther King, Jr.

On April 4, 1968 an assassin in Memphis, Tennessee put an end to the life of one of the world's most important and highly esteemed human rights leaders. Now, almost two decades later, the birthday of Martin Luther King Jr. has become a nationally celebrated holiday.

To celebrate Martin Luther King Day and the memory of this great man's work, the Museum presents *A Gift of Music*. Three groups will perform at this special program.

The Riverside Church Inspirational Choir. This choir was founded in 1981 as an answer to the need for Afro-American music within the Riverside Church. Choir members participate on a regular basis in services of worship at Riverside Church, and provide special services in the interest of peace and disarmament.

The Bill Kennedy and Steam Jazz Ensemble. This group will perform a selection of music that was popular during the years of the civil rights movement. They will feature the music of Coleman Hawkins, Body and Soul, the Fifth Dimension, and Stevie Wonder.

The Forces of Nature. This company is a multi-faceted cultural organization that combines ethnic and modern dance, martial arts, music, and drama. The company explores concepts that extend from the shores of Africa to the shores of the Americas.

Free tickets will be distributed on a first-come, first-served basis at the Kaufmann Theater ticket booth starting at 4:00 p.m. on the day of the performance, with a maximum of two tickets per adult. For additional information, please call the Department of Education, at (212) 873-1300, ext. 514.



Happenings at the Hayden

Please note: The Hayden Planetarium will be closed on January 2.



Voyager II approaches Uranus in Hayden: The Golden Years.

Sky Shows

The Star of Christmas. January 1 is the last day to see this holiday sky show.

Halley's Comet: Once In a Lifetime and Hayden: The Golden Years return to the Hayden Planetarium from January 3 through March 3. *Halley's Comet* tells you everything you'd like to know about comets, including where and when to look for them. It has a new recorded narration by Leonard Nimoy. *Hayden: The Golden Years* highlights the past 50 years of astronomical discovery and peers into the future to ponder what the next five decades might bring. This show is narrated by Charlton Heston.

The double feature will be shown Monday through Friday at 1:30 and 3:30 p.m., Saturday at 11:00 a.m., and from 1:00 to 5:00 p.m. on the hour, and Sunday from 1:00 to 5:00 p.m. on the hour.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75

for adults and \$1.50 for children, and includes two floors of exhibitions. For non-member prices and Sky Show times, please call (212) 873-8828.

Wonderful Sky

The Muppets are back to take preschoolers on a journey to explore rainbows, sunsets, and distant stars. Between sessions of dialogue and song, Big Bird, Cookie Monster, Grover, and other favorite Sesame Street Muppet characters encourage children to participate. *Wonderful Sky* will take place on the first Saturday of every month through June 7. Reservations are strongly recommended. For reservations and information, please call (212) 873-5714.

Laser Shows

Through February 1. Laser visuals and rock music combine to create a unique and dazzling experience of sight and sound on Friday and Saturday evenings. An old-time favorite, *Laser Zeppelin*, has returned to the Planetarium.

7:00 p.m. *Heavy Laser.* Features a combination show of The Police, Van Halen, The Who, and Rush.

8:30 p.m. *Laser Floyd.* With the music of Pink Floyd.

10:30 p.m. *Laser Zeppelin.* With the music of Led Zeppelin.

Laser show admission for Participating, Donor and Contributing Members is \$4.00. Tickets can be purchased at the Planetarium box office on the night of the show. For additional information, please call (212) 724-8700.

School Programs

The Planetarium offers many programs for young children. For school information call (212) 873-5714.

It is always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Halley's Comet Tours

The Museum's Discovery Tours office is offering two travel programs to view Halley's Comet at the peak of visibility. They include a journey to Australia (April 5-19) and one

to Trinidad and Tobago (April 11-20).

In addition to viewing the comet during the evenings and mornings, participants will enjoy superb wildlife excursions.

For more information, please call (212) 873-1440 or write: *Discovery Tours*, at the Museum's address Outside New York State, call toll free (800) 462-TOUR

Members' Tour of the Month Pacific Peoples

Free and open only to Members

Journey to the Pacific Islands this winter in a Members' Highlights Tour of the Margaret Mead Hall of Pacific Peoples. The hall is a tribute to Mead's work, and many of the 1,488 artifacts on display were collected during this legendary anthropologist's research expeditions.

The tour will explore the six major cultural areas of the Pacific: Australia, Indonesia, the Philippines, Micronesia, Polynesia, and Melanesia. Members will learn about the yam cult of the men of Abelam

in New Guinea, life in a Samoan village, and the importance of coconuts and betel throughout the Pacific region. Members will view beautiful shadow puppets from Bali, fantastic masks from the Sepik River, a cast of a 12-foot-high head from Easter Island, and a magnificent feather cloak worn by Hawaiian royalty.

All tours will be led by volunteers from the Museum's Highlights Tours program. To register for a tour, please use the coupon below.



Carving from Easter Island.

Pacific Peoples. Free and open only to Members. Please indicate a first, second, and third time preference, if possible.

Wednesday, February 5 _____ 6:00 p.m. _____ 7:00 p.m.
Sunday, February 9 _____ 10:30 a.m. _____ 11:30 a.m.
Wednesday, February 19 _____ 6:00 p.m. _____ 7:00 p.m.
Saturday, February 22 _____ 10:30 a.m. _____ 11:30 a.m.
Wednesday, February 26 _____ 6:00 p.m. _____ 7:00 p.m.
Sunday, March 2 _____ 10:30 a.m. _____ 11:30 a.m.

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone number: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *Pacific Peoples*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024. Registration closes Friday, January 21.

Museum Notes

Special Exhibitions

Origami Holiday Tree. Adorned by thousands of folded dinosaurs, birds, insects, and other creatures, the 13th Annual Origami Holiday Tree is on view in the Roosevelt Rotunda through January 8.

Chinese Dinosaurs. Through January 6 in the Roosevelt Rotunda. Recreations of two spectacular Chinese dinosaurs. Mamenchisaurus is 72 feet long and has a neck measuring 33 feet — believed to be the longest neck of any animal that ever lived. Tsintaosaurus is a duck-billed dinosaur with a large solid horn on top of its skull.

Masterpieces of the American West: An Artistic Look at 150 Years of the Wild West. In Gallery 3 through February 16. More than 60 paintings that chronicle the exploration, development and growth of the American West. Georgia O'Keeffe, Jackson Pollock, Frederic Remington, George Catlin, and Helen Frankenthaler are among the artists whose works are represented. The paintings are from the Anschutz Collection. This month a Membership program in the Main Auditorium provides a fascinating context for the exhibition. Page 3.

Tiger Tiger Burning Bright. Through January 12 in the Naturemax Gallery. This exhibition includes 64 exquisite color photographs of Indian wildlife.

Vijayanagara: Where Kings and Gods Meet. Through January 26 in the Akeley Gallery. The temples, palaces, sumptuous pavilions, and other aspects of Vijayanagara, the greatest of all ruined cities in southern India, are featured in this exhibition, which includes photographs, drawings, and examples of Indian pottery.

Jewels of India. Through January 31. A succinct view of the rich natural history and cultural heritage of India, as reflected in the Library's rare book, photographic and general collections. The images and illustrations include insects with a vibrant, gem-like quality, a delicate Asian elephant by Curvier, original botanical drawings and vintage photographs of India. Library Entrance (closed weekends).

From the Museum's Attic. Through January 20. The Museum Library's memorabilia collection is like grandmother's attic — full of Museum mementos such as utensils and keepsakes from expeditions, family portraits and snapshots, diaries, and letters, paintings and furniture. This exhibit displays such items of Teddy Roosevelt, Roy Chapman Andrews, Lincoln Ellsworth, and American Museum founder Albert S. Bickmore. In the Library Gallery on the fourth floor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour, please ask at an Information Desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in company with Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends from 12:00 to 4:30 p.m. Recommended for ages five to ten. Children under age five are not admitted.

The Leonhardt People Center features ethnic programs of dance, music, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. For an overview of this month's People Center activities, please turn to the calendar on page 12.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — the drama of space unfolds, as Museum visitors join astronauts aboard the space shuttle in Naturemax's newest film *The Dream is Alive*.

In addition, Friday and Saturday double features include all-time Naturemax favorites *To Fly!* and *Living Planet*.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10% discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. in the basement. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For a visit of less than one week, write ahead for details: Southwestern Research Station, Portal, Arizona 85632, or call (602) 558-2396. For a visit of more than one week, apply to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300. For the first in a series of feature articles about the Station, please turn to pages 4 and 5.

Looking Ahead

During the month of February, Black History Month will be celebrated at the Museum each weekend. For information about events during the first week of February, please turn to page 9. A complete schedule of February Black History Month programs will be featured in the February Rotunda.

In mid-March, Museum visitors can view a new temporary exhibition featuring photographs of Gypsies in the Akeley Gallery.

A performance of classical Indian dance and a family film festival will be offered by the Department of Education in late February.

The Call of the Loon

Saturday, February 22
11:00 a.m. and 1:00 p.m.
Kaufmann Theater
Free and open only to Members



To the Cree Indians, the loon was known as the Spirit of the Northern Waters. The Ojibways called it the most handsome of birds. To the Chipewyans, the loon's call was an omen of death.

The spectacular call of the loon is unforgettable to those who have heard it. To human ears, this large, sleek bird of the north country seems to wail, yodel, hoot, mew, and laugh. But the loon's laughter does not mean the same thing as that of a human. Often it is the bird's response to a threat of danger to itself or its young. And often that threat is posed by humans.

The loon is a bird of the water. It visits the land only to breed and nest. Nests are constructed of mud, sticks, leaves, grasses, and other easily available materials. The female lays two large, speckled eggs that incubate for 28 days.

Under natural conditions, the loon will guard its nest. But when chronically or actively disturbed by powerboats, canoes, and fishermen, the bird will

sometimes flee, abandoning the eggs and leaving them exposed to predators.

Other dangers to the loon population are acid rain and other forms of water pollution. The loon feeds on fish and other life forms that live in northern lakes. When these life forms die, the loons go hungry. Many promising conservation efforts to help these birds survive in our northern lakes are currently underway, but the loon is still in danger.

Learn more about the reproductive behavior and the conservation of these unique and beautiful birds, and listen to recordings of their calls in a slide-illustrated program by Scott Sutcliffe of Cornell's Laboratory of Ornithology. Prior to his work at Cornell, Sutcliffe was the director of the Loon Preservation Committee of New Hampshire.

The Call of the Loon is geared for a family audience. To register, please use the January Members' Programs Coupon on page 3.

Middle Eastern Dance



Morocco performs Middle Eastern Dances in the Kaufmann Theater on Sunday, January 5 at 2:00 and 4:00 p.m. The performances are free. For additional information call (212) 873-1300, ext. 559.

Sun

January 1986

Mon

Tue

Wed

Thu

Fri

Sat

5 1:00 to 4:30 p.m. Cultures of the Middle East. Dances from the harem, with Khadija Al Nakhla. The World of Islam (slide talk), with Paul Sanlacon; a lecture demonstration on Middle Eastern music, with John Vartan. Leonhardt People Center. Free.

2:00 and 4:00 p.m. Middle Eastern Dance. Performance by Morocco. Kaufmann Theater. Free. Page 11.

12 1:00 to 4:30 p.m. Cultures of the Middle East. Solo dance of Armenian women, with Anahid Sofian; an introduction to Islamic culture with Virgil Bird; a history of veiled women with Khadija Al Nakhla. Leonhardt People Center. Free.

Last day to see *Tiger, Tiger, Burning Bright: An Indian Wildlife Portfolio*, in the Naturemax Gallery.

19 1:00 to 4:30 p.m. Cultures of the Middle East. Israel through dance, with members of Parparim; dance and the culture of Israel with Ruth Goodman; Israeli music with Matthew Lazar. Leonhardt People Center. Free.

2:00 and 4:00 p.m. Japanese Dance Suite: Imaginary Beings. Kaufmann Theater. Free. Page 2.

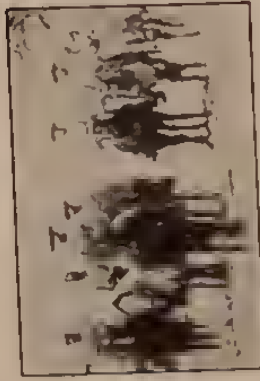
2:00 p.m. New York Paleontological Society, Room 426. Free.

26 10:30 a.m. and 2:30 p.m. *Tales and Tunes from Around the World.* Members' family program. Kaufmann Theater. Page 2.

1:00 to 4:30 p.m. Cultures of the Middle East. Kurdish music and dance, with Shadmani; Kurdish life signs: the fish and the lotus, with Mehrdad Izady; Kurdish family life, with Mostafa Khezry. Leonhardt People Center. Free.

Pioneers the History Books
Fargat. Jan. 30

6 Last day to see the Thirteenth Annual Onigami Holiday Tree and the two large dinosaurs in the Roosevelt Rotunda.



Pioneers the History Books
Fargat. Jan. 30

20 Last day to view *From the Museum's Attic* in the Library Gallery.

January 19, continued
2:00 p.m. New York Turtle and Tortoise Society, Room 129. Free.

Moon at Apogee. 8:00 p.m.

27

28 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

29

21 8:00 p.m. New York Entomological Society, Room 129. Free.

22 7:30 p.m. Lapidary and Gem Society. People Center. Free.

14 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

15 7:30 p.m. A Gift of Music. Tribute to Dr. Martin Luther King, Jr. Main Auditorium. Free. Page 9.

8 7:00 and 9:00 p.m. *Vivaldi's Four Seasons. Members' Concert* at the Hayden Planetarium. Page 2.

Moon at Perigee. 2:00 a.m.

9 6:00 p.m. and 7:30 p.m. *In Praise of Hands. Members' Program.* Kaufmann Theater and Leonhardt People Center. Page 3.

8:00 p.m. Paul Robeson: Man of Conscience. Kaufmann Theater. Free. Tickets are required. Page 9.

1 Last day to see *The Star of Christmas* at the Hayden Planetarium.

HAPPY NEW YEAR
The Museum is open today.

2 7:00 p.m. Systematics Discussion Group. Room 419. Free.

The Hayden Planetarium is closed today.

3 Halley's Comet: Once in a Lifetime and Hayden. The Golden Years return to the Hayden Planetarium. See "Happenings at the Hayden," page 10.

4 11:00 a.m. N.Y. Map Society. Room 129. Free.

1:00 to 4:30 p.m. Cultures of the Middle East. Middle Eastern Oriental dance, with Morocco; Slide talk on dances of North Africa, with Morocco; lecture demonstration about Middle Eastern music, with John Vartan. Leonhardt People Center. Free.

10 New Moon. 7:22 a.m.

11 1:00 to 4:30 p.m. Cultures of the Middle East. Solo dance of Armenian women, with Anahid Sofian; an introduction to Islamic culture (slide talk), with Virgil Bird; a history of veiled women (lecture/demonstration), with Khadija Al Nakhla. Leonhardt People Center. Free.

17 7:00 p.m. New York Microscopical Society. Room 419. Free.

18 1:00 to 4:30 p.m. Cultures of the Middle East. Dances from the harem, with Khadija Al Nakhla; a lecture/demonstration about Middle Eastern music, with John Vartan. Leonhardt People Center. Free.



Notes from the Moroccan Journals on Jan. 25. For more information, call (212) 873-1300, ext. 559.

25 1:00 to 4:30 p.m. Cultures of the Middle East. *Mevlana* — a Whirling Dervish Woman, with Cengiz Gonul; Kurdish life signs with Mehrdad Izady; Kurdish family life with Mostafa Khezry. Leonhardt People Center.

2:00 p.m. Notes from the Moroccan Journals. A prose-poem told and acted by Nancy du Plessis. Kaufmann Theater. Free.

Full Moon. 7:31 p.m.

31

30 7:00 p.m. Pioneers the History Books
Forgot. Members' Program. in conjunction with the Masterpieces of the American West exhibition. Main Auditorium, Free for Members, \$5.00 for non-members. Page 3.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance; and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 475,000 members, and numerous individual contributors.

American Museum of Natural History

ROOTS AND BRANCHES

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 2 February 1986



1984 Ken Howard

The Charles Moore Dance Company will perform *Slave's Night Off*, one of the many celebrations of African-American culture at the Museum this month.

Black History Month

**In the Leonhardt People Center
1:00-4:30 p.m.**

Free

In celebration of Black History Month the Department of Education will present many special programs this month. In addition to the activities listed below, the People Center will feature a mixed-media art exhibit of the Afro-Uruguayan culture by Julio Olivera and a photographic collage of African American themes by Jonathan Wosu. Short films will be highlighted each weekend.

All the African-American Programs listed on this page were made possible in part by the generosity of the family of Frederick H. Leonhardt, a gift from the Samuel and May Rudin Foundation, and a contribution by the Ostrovsky Piano and Organ Company, Inc. For additional information, please call (212) 873-1300, ext. 514.

February 1 and 2.

Food for the Gods. John Mason presents a slide-illustrated lecture on African foods that have been incorporated into

American Cuisine.

The Origin of Gospel Music. L.D. Frazier takes the audience on a musical journey, from spirituals to the influences of gospel on current music.

Slave's Night Off. The Charles Moore Dance Company presents songs, tunes, and dances that were performed at Sunday gatherings on plantations.

February 8 and 9.

African Presence in Trinidad and Tobago. Ronnie St. Andre explores different elements of African culture in Trinidad and Tobago.

The Pan African Drum and Dance Ensemble. Jumas Santos and his Company present rhythms, dances, and songs from Africa, Cuba, Haiti, and Brazil.

Saturday, February 8 only. *African Religious Retentions in the Caribbean.* Donna Richards discusses African-derived religious practices and beliefs in the Caribbean, focusing on their relationship to traditional African religions and philosophical beliefs.

Sunday, February 9 only. *Afro-*

Caribbean Healing Practices. Akyiaa and Mother Azula illustrate practical applications of traditional African healing.

February 15 and 16.

An African Craftsman. Mensa Dente demonstrates the carving of drums, stools, and tools that have been part of Akan life for centuries.

Renditions of Kente and the Afro-American Quilt. Mari Mom's demonstrates strip weaving on the Kente loom, and discusses traditional quilts.

The Calabash Dance Theater. Dances, songs, and rhythms inspired by the people of West Africa.

February 22 and 23.

N'Deppe: A Lebou Healing Ceremony. Keisha and Sandy Watson use slides, tape recordings and video tape to describe an African curing tradition.

African Musical Instruments and Their Cultural Context. Juma Santos uses slides and instruments to describe the playing techniques of African instruments, as well as their religious and recreational uses.

African American Folktales. Pam Patrick and Tiye Giraud tell tales of Br'er Rabbit, Anansi and other folk characters.

**In the Kaufmann Theater
2:00 and 4:00 p.m.**

Sunday, February 2.

Scott Joplin and Ragtime America. Flautist Jan Rosemond and Ensemble present the music of Scott Joplin and recreate the mood of the era with slides and costumes.

Sunday, February 23. *Salute to Blues and Ballads.* The Metropolitan All Stars perform the music of many black jazz greats including Duke Ellington, Count Basie, Charlie Parker, and others. Vocalist Jann Parker offers renditions of Billie Holiday, Dinah Washington, and other jazz vocalists.

Free tickets for the Kaufmann Theater performances will be distributed at the Kaufmann Theater ticket booth on a first-come-first-served basis, starting at 12:00 p.m. on the day of the performance.

The All New Dinosaur Revue

Saturday, March 15 and Sunday, March 16
11:00 a.m. and 1:30 p.m.
Kaufmann Theater
\$2.50 and open only to Members



Agathaumas (Monoclonius)

Members are invited to join naturalist-entertainer Michael Weilbacher for his *All New Dinosaur Revue*. Using songs and stories, music and movement, this participatory program will involve the entire audience.

Members will play the Dinosaur Game Show, take part in a Tyrannosaurus chorus, and travel in a time machine back to the dinosaur age. In one part of the program, a group of children will form a nest of eggs, then hatch into dinosaurs. In another part, parents will watch

their children transform themselves into dinosaurs, grow old, and become ossified Museum celebrities.

Participants will discover a wealth of new facts about dinosaurs. They will learn about one dinosaur that was no bigger than a robin, and another that was bigger than Tyrannosaurus rex. Weilbacher will provide information about many of the less well-known dinosaurs, including the first four dinosaurs that ever inhabited North America.

Michael Weilbacher is currently the dinosaur instructor at the Academy of Natural Sciences in Philadelphia. He has been creating innovative children's theater programs for the past eight years. Last year, he delighted Museum Members with his program *Circles and Starbursts*.

The program is geared for children ages four through eight — and their parents, of course. To register, please use the February Members' Programs Coupon on page 3.

New For Children: Dinosaur Birthday Parties

The Membership Office is pleased to announce that we will now be offering dinosaur birthday parties for children ages five to ten years old.

All parties will start with a tour of our spectacular Dinosaur Halls to see such favorites as Tyrannosaurus rex, Stegosaurus, the Dinosaur Mummy, and a nest of dinosaur eggs. The tour will also stop in the Hall of Amphibians and Reptiles to see some of the modern descendants of dinosaurs.

The party will continue in a special activities room, where children will be able not only to handle fossils, but to make

them! They may also create a dinoscape, an Origami birthday hat, play dinosaur bingo, or pin the tail on the dinosaur and listen to a special dinosaur tale.

Each party will conclude with refreshments and cake in one of the school lunchrooms.

The birthday parties will be led by one of the Museum's new birthday party coordinators. Each coordinator will consult with a parent or guardian to design the party to suit a particular child's needs and tastes. As the program expands, we hope to offer additional party themes.

The fee for each party is

\$175, plus \$10 per child. This fee includes all materials, decorations, a special favor bag, and ice cream and juice. It does not include the cake.

Parties will be held for a minimum of 10 children and a maximum of 20. They will be offered on weekends and some weekday afternoons.

For information and/or reservations, write: *Members' Birthday Parties*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please include a daytime telephone number, so that our staff can call you.

The Call Of The Loon

Saturday, February 22
11:00 a.m. and 1:00 p.m.
Kaufmann Theater
Free and open only to Members

During spring and early summer, northern American lakes resound with the unique vocal calls of the loon. Their spectacular vocabulary includes different sounds for locating one another, identifying territory, engaging in conversation, and responding to threats.

Loons are also aquatic artists of great skill and grace, swift and elegant when swimming and diving, yet awkward and vulnerable when on the ground or taking off and landing from a flight. For this reason the loon visits the land only for nesting

and breeding.

Learn more about the behavior of these unique and beautiful birds and conservation efforts on their behalf, and listen to recordings of their calls in a slide-illustrated program by Scott Sutcliffe of Cornell's Laboratory of Ornithology. Prior to his work at Cornell, Dr. Sutcliffe was the director of the Loon Preservation Committee of New Hampshire. The program is geared to a family audience.

To register, please use the February Members' Programs Coupon on page 3.



Courtesy Cornell Ornithology Laboratory

ROTUNDA

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Human Origins with Richard Leakey

Monday, February 10
6:00 p.m. and 8:30 p.m.
Main Auditorium
\$6.00 for Members, \$9.00 for non-members

Share in the excitement of Richard Leakey's many extraordinary archaeological discoveries, including that of the earliest and most complete specimens of *Homo erectus* known to date.

With humor and insight, Leakey will explain how his work helps unravel some of the mysteries of the origins of humans. He will also examine the controversies surrounding his discoveries and the many remaining gaps in our knowledge.

As a member of a well-known family of paleoanthropologists, Leakey has been involved in field work since childhood. He has been Director and Chief Executive of the National Museums of Kenya since 1974, and has written several books, including *People of the Lake*, *Origins*, and *The Making of Mankind*.

To register, please use the adjacent February Members' Programs Coupon.



Tales for a March Evening

Friday, March 7
7:30 p.m.
Kaufmann Theater
\$5.00 for Members, \$8.00 for non-members

In a delightful evening of tales, anecdotes, and reminiscences, Gioia Timpanelli will describe what it was like to grow up in Brooklyn during the 1940s, and the natural charms she found there.

Timpanelli will portray the shopkeepers and neighbors who inhabited her Jewish-Italian neighborhood, and the rhythm of their daily lives. She

will tell tales of toads and skunk cabbages, morning doves, and English sparrows, the mysteries of a vacant lot, and the delights of a family garden.

The program will also include several historical tales about the city, as well as a description of visits to one of her favorite haunts, Coney Island.

Gioia Timpanelli is a gifted storyteller, writer, and broad-

caster. She has presented programs in Ireland, Canada, and throughout the United States. She has also won two Emmy citations for her educational T.V. series *Stories From My House*, and is the author of the book *Tales from the Roof of the World: Four Tibetan Folktales*. To register, please use the adjacent February Members' Programs Coupon.

Chesapeake Bay

Tuesday, March 11
7:30 p.m.
Main Auditorium
Free and open only to Members

The grasses of Chesapeake Bay shelter molting crabs and serve as indicators of the quality of the water. Thus, the watermen of the area are dependent on them. But over the whole Chesapeake — near cities, in rural areas, on all the shores, and in the Bay itself — these grasses are dying. What is killing them?

Scientists from the University of Maryland and the Virginia Institute for Marine Sciences suspected chemical killers from herbicides, but they soon found another surprising answer to their question: The grasses are

actually being killed by too much life.

Next month, Members are invited to view a scientific detective story when we screen the film *Chesapeake: The Twilight Estuary*. This beautifully-filmed documentary tells two stories. One is that of the exciting processes as well as the rewards of scientific detective work. The other story is that of the actual tragic environmental consequences that have occurred in and around Chesapeake Bay, as a result of human beings tampering with a natural system.

This remarkable 39-minute film was conceived and written by Michael W. Fincham, and filmed by Murray Nelson, both of the University of Maryland. It was awarded the Cine Golden Eagle and the Best of Festival at the National Association of Environmental Education.

Michael Fincham will introduce his film, provide a general overview of the Chesapeake region, and answer questions from the audience.

To register for *Chesapeake: The Twilight Estuary*, please use the adjacent February Members' Programs Coupon.

February Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: February Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024

Human Origins with Richard Leakey. Monday, February 10. \$6.00 for Members, \$9.00 for non-members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All other tickets are \$9.00. Please indicate a first and second time preference, if possible.

_____ 6:00 p.m. _____ 8:30 p.m.

Number of tickets at \$6.00 each: _____ \$9.00 each: _____
Total amount enclosed for program: \$ _____

The Call of the Loon. Saturday, February 22. Free and open only to Members, Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$3.00. Please indicate a first and second time preference, if possible.

_____ 11:00 a.m. _____ 1:00 p.m.

Number of free tickets: _____
Number of tickets at \$3.00 each: _____ \$ _____
Total amount enclosed for program: \$ _____

Tales for a March Evening. Friday, March 7. 7:30 p.m. \$5.00 for Members, \$8.00 for non-members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All other tickets are \$8.00.

Number of tickets at \$5.00 each: _____ \$8.00 each: _____
Total amount enclosed for program: \$ _____

The All New Dinosaur Revue. \$2.50 and open only to Members, Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to two. All additional tickets are \$5.00. Please indicate a first, second, and third choice of times, if possible.

Saturday, March 15: _____ 11:00 a.m. _____ 1:30 p.m.
Sunday, March 16: _____ 11:00 a.m. _____ 1:30 p.m.

Number of tickets at \$2.50 each: _____ \$5.00 each: _____
Total amount enclosed for program: \$ _____

Chesapeake Bay. Tuesday, March 11. Free and open only to Members, Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$5.00.

Number of free tickets: _____
Number of tickets at \$5.00 each: _____ \$ _____
Total amount enclosed for program: \$ _____

Starborn. Thursday, March 27. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adults' tickets at \$2.75 each: _____
Number of children's tickets at \$1.50 each: _____ \$ _____
Total amount enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

Back to Evolution: An Interview with Anthropologist Robert Carneiro

When I entered Bob Carneiro's office to conduct the following interview, I found him stooped over his typewriter, creating text for the new *Native Peoples of South America* hall. "I'll be with you in a moment," he said, staring intently at the page in front of him, figuring out what to say about the Amazon.

Whenever I see him, whether in his office, the library, or passing in the hall or elevator, Carneiro always seems to be concentrating on something that is miles removed from his immediate surroundings, either physically or mentally — whether it be the rainforests of South America, how and why the world is the way it is this year, or theories of cultural evolution.

In 1953, Carneiro began his fieldwork in South America, working first with the Kuikuru Indians of central Brazil, and continuing with the Amahuaca Indians of eastern Peru and the Yanomamö of southern Venezuela. What he saw in the field taught him a great deal not only about the lifeways and beliefs of particular groups of people, but about human culture and the ways in which it changes.

Carneiro joined the Museum's staff in 1957, and has been a full curator in the Department of Anthropology since 1969. His work currently focuses on the theoretical aspects of anthropology — most importantly, the evolution of human societies.

I have attempted neither to present any made-to-order definition of what cultural evolution is, nor the history of thought concerning this branch of social anthropology. Any good anthropology textbook can provide this better than can a brief interview. Rather, my aim was to whet the reader's appetite by presenting one social scientist's approach to important issues which pertain to, but also transcend, the discipline of anthropology.

Now in his late 50's, Carneiro is a graceful man who at first seems a bit shy and reserved — until he begins to speak of something that interests him. Then his voice takes on a boyish exuberance, and ideas flow out of him in straight lines, zig-zags, circles, spirals, whirls, and other shapes and patterns that must be known only to higher mathematicians. Accordingly, a certain degree of editing was necessary to print the interview onto a two-dimensional medium. This editing was a team effort, and an enjoyable one at that.

— Ruth Q. Leibowitz,
Editor

RQL: Your papers show quite conclusively that measurable rates and patterns of cultural change exist. I wonder why anthropologists ever rejected cultural evolution.

RC: It's difficult to believe, isn't it? Anthropology is the only science that ever turned its back on evolution once having adopted it in the first place.

This was due largely to the influence of Franz Boas,¹ who taught his students that evolution did not really apply to social systems. He began by pointing out errors in various evolutionary schemes proposed by the nineteenth-century evolutionists, but he didn't stop there.

Boas could simply have rejected the sequences that didn't work, and searched for those that did. Instead, he rejected cultural evolution almost completely — throwing the baby out with the bath, so to speak.

RQL: What sorts of cultural sequences hadn't worked?

RC: One example is Lewis H. Morgan's² sequence of the evolution of the family. Morgan's developmental scale showed several stages of marriage, with primitive promiscuity at the bottom, several stages in between (including brother-sister marriage), and monogamy up at the top.

There is no evidence that complete promiscuity or brother-sister marriage ever existed. Morgan's model was a hypothetical one, based on inferences he made from kinship terminologies.

At that time, anthropologists knew less about kinship terms than they do now. Morgan's inferences were reasonable given the evidence available to him, but they happened to be wrong.

RQL: Couldn't ideas like his be interpreted as ethnocentric?



RC: Yes, and the Boasians used that point to deter anthropologists from believing in cultural evolution. They charged, for example, that cultural evolutionists put monogamy at the top because it was the Western form of marriage, and therefore had to be best. But cultural evolutionists like Herbert Spencer³ and Lewis Morgan never actually made those types of judgements. Neither of them thought we'd come to the end of evolution. There were bigger and better things to come.

Two major "camps" of anthropologists rejected or ignored cultural evolution. You had the Boasians in this country, and the functionalists in England. While the functionalists agreed with the Boasians in rejecting cultural evolution, they also found fault with certain Boasian ideas. The functionalists charged the Boasians with being simply interested in the details of tribal life, the distribution of trade items or ritualistic practices, for example, and narrow historical details. They felt that such a focus was narrow because it was not a systematic approach and therefore could not provide adequate understanding of how a society functioned. The functionalists turned to studying social systems as systems.

RQL: In the present only?

RC: Yes. They turned their backs on change and development. I like to think of the typical British functionalist as resembling a very gifted automobile mechanic who can tell you precisely how a Rolls Royce engine works, but not how it came to be.

Now, it's one thing to say "I'm not interested in the problems of change and development, so you work on it." But the functionalists went further than that. Most of them believed that developmental reconstructions were just conjectural. Since prior to recorded history nobody can ever know for sure what happened, they reasoned, we might as well not even approach the topic.

To use the same argument, biologists shouldn't talk about the origin of life because it's too speculative a topic — yet that's now one of the major areas of research in biology. You may not have direct evidence to support a theory, but you've got inferential evidence. In many cases you can conduct experiments, as on the constituent gases of the earth's early atmosphere.

Anthropologists try to reconstruct the past by using archaeology to its limits. Then we can use the comparative method to study differences among known contemporary and extinct societies to infer how society evolved from simple hunting and gathering groups to the early empires.

RQL: During your college years, what were you taught

about issues of cultural evolution?

RC: I didn't know these issues existed until I got interested in anthropology. When I first entered college (at the University of Michigan, Ann Arbor), I majored in political science. As a senior, I became disenchanted with political science, because it surely wasn't science and it wasn't even analytical — it was just descriptive.

Then, in my senior year, I took a couple of courses with Leslie White.⁴ He was an anthropologist who did a great deal to resuscitate the concept of cultural evolution. I learned that for the preceding fifty years no anthropologist had seriously worked along evolutionary lines.

It was quite zestful to be in anthropology in those days, especially at meetings, because it was Michigan students against the field. We used to have knock-down, drag-out arguments with graduate students from other universities, especially from Columbia, Northwestern, and Chicago. They were so convinced that there was no such thing as cultural evolution.

RQL: Was it classroom work or actual field work that finally made you an evolutionist?

RC: Classroom work, and just looking around. It takes no more than simple observation to convince you that culture has evolved. In fact, it takes a kind of perversity only the human animal is capable of to deny the existence of something that is so evident.

It's curious; White had been trained in the Boasian tradition, and he taught that brand of anti-evolutionary anthropology when he first began teaching at the University of Buffalo. But he found that those students who hadn't yet been brainwashed couldn't accept something so obviously and palpably wrong as anti-evolution. These students helped turn him into an evolutionist.

RQL: Can you choose an area of the world where you've done fieldwork to illustrate an aspect of cultural evolution?

RC: Let's take Amazonia, which is where I've done my fieldwork, and compare it to the coast of Peru. In Amazonia, I first began thinking about the problem of the origin and evolution of the state.

I define the state, by the way, as a centralized, territorial, political organization in which the government has the power to draft men for war or work, levy and collect taxes, and decree and enforce laws. If a society has those characteristics, it is a state.

I was taught in graduate school that tropical rainforest areas like Amazonia couldn't support "higher culture." Supposedly, you couldn't produce much surplus food or have enough leisure time in the rainforest environment.

Well, in my fieldwork with the Kuikuru in central Brazil, I found that the average man spent only three or four hours a day on subsistence. Yet these people produced a substantial seasonal surplus of manioc. Had there been a real incentive, they could have produced a great deal more.

Manioc was much more productive than maize, which was the principal crop of the Incas. Yet the Incas were a far more complex society. Here were the Kuikuru, with higher yielding crops and more leisure time than the Incas, and the ability to easily produce a food surplus. Yet, the Kuikuru lived in a small, autonomous village while the Incas had a huge empire. What I'd been taught wasn't squaring with the facts. I had to wonder why.

When I first went into the field, I had no particular interest in the evolution of the state. Then I was confronted by this little village in the middle of nowhere where things didn't work the way the textbooks said they did. When something isn't the way you've been taught it's supposed to be, then you say why the hell isn't it so? Where's the error? How can we rectify it? What do we have to introduce to account for things being the way they are?

What occurred to me was basically this: First of all, primitive societies, whether they be tiny bands, villages, or states, do not voluntarily relinquish their sovereignty. They all try to remain autonomous and independent. The only way you can overcome this tendency is through war or the threat of war. You may lament this fact, but that's the way it is.

Warfare occurred extensively in Amazonia. It was a

common feature of the Inca empire too. The empire grew through conquests, and its history is now very well known. The Incas started around Cuzco, probably as a small chiefdom. Because they were well organized, they were able to systematically defeat their neighbors. Ultimately, they conquered half a million square miles.

Since warfare was common to both the Amazon and the Andes regions, and both areas were highly productive, there had to be another reason for the enormous difference in social organization.

The key factor as I saw it, was environmental circumscription. The two environments were very different. In Amazonia you had extensive, virtually unbroken areas of arable land, so that you could cultivate any part of it. In Peru, things were very different. On the Peruvian coast you had a number of very narrow river valleys, with sheer desert between the rivers. The Andean highlands also contained narrow, circumscribed valleys. Some of them were larger than those by the coast, but they were still surrounded by high mountains.

As agriculture was adopted in Peru, the narrow coastal valleys were the first to be cultivated. As population increased, these people attempted to expand the area of arable land by using engineering techniques such as irrigation and terracing. Even with these techniques, the population faced a limited area of irrigable land. Land had become a scarce and valuable resource over which battles were fought.

No doubt there had been warfare previously, but it was over murder, wife-stealing, witchcraft — things like that. Now, however, warfare was redirected to the taking of land.

In Amazonia, warfare might end in the losers fleeing and settling elsewhere to be free of their stronger enemies. And the great amount of unoccupied land made it possible for them to flee. In the Andes, though, on the coast and in the highlands, warfare led not only to taking over the defeated enemies' land, but to taking over the people as well.

RQL: Because they had no place to go?

RC: Right. On the coast or in the highlands of Peru, people were so constricted by geographical boundaries and by limited resources that they had no place to go. They had to either be killed, or stay in one place and be subjugated. Contrast this with Amazonia, where a defeated group could flee almost anywhere.

Since there is always an extra margin of productivity that can be extracted from a subject population, no matter how hard they think they've worked before, the victors can always say "I want ten (or twenty, or thirty) percent of what you produce in tribute or taxation" — and the subjugated people can do it.

The first stage in creating a state after the initial takeover involves transcending the autonomous village level of organization by creating small chiefdoms with a paramount chief over a dozen or more villages. Chiefdoms now became the principal units of competition. Where previously villages fought one another, now chiefdoms fought.

As one chiefdom conquered another, the successful one became larger and larger, until finally it gained control over an entire valley. Concurrent with an increase in size and power, of course, was the development of the political mechanism required for coordinating, integrating, and regulating the conquered people. This is the mechanism we call the state.

RQL: As you were speaking I had some frightening thoughts about the modern world. When the American West was open, for instance, settlers who didn't want to live a certain lifestyle or be "subjugated" by any state could always go west. Many settlers did, at the expense of the Native Americans. And now the western frontier is closed. Taking this thought further, you can think of the world as a global social system. As population continues to mushroom, environmental destruction intensifies, and there are fewer places where any individual or group can go where they are not under another group's political control. This is a frightening thought.

RC: The trend has been toward increasing the size of political units and decreasing their number. I made an estimate once that the largest number of political units existed in the world about 3,000 years ago. I estimated that number at 600,000. And today we have about 180 nations in the world within whose confines everyone lives. It's true that a few indigenous villages within existing countries have remained more or less autonomous, but numerically they don't count for much. The process by which we've gone from 600,000 autonomous political units to 180 is one of conquest and amalgamation.

RQL: Have you ever tried to figure this out on a time scale?

RC: Yes.

RQL: And is there a steady rate of change?

RC: (Taking a published paper out of his files) This, with some admittedly sketchy data, shows the decline in the number of autonomous political units over time.

This graph⁵ (shown at right) can help us make the interesting prediction of when the entire world will be en-

compassed within one political unit. Not many people have tried this. Raoul Naroll⁶ and his students attempted this prediction, and they came up with a probability figure suggesting that by A.D. 2125 there is a 40 percent chance that the entire world will be a single state. Using a different method I predicted it to be about A.D. 2300.

But of course, unification into one state will not necessarily happen. We could easily blow ourselves up before that occurred. But if the world state is going to come, it is hard to see how else it would come, other than by the same means of conquest and amalgamation that have been the bases of political evolution so far.

Nations show no inclination whatever to voluntarily surrender their sovereignty. Just look at the United Nations. Whenever an issue involving the sovereignty of a particular country is brought up by another country, the first country will say "That's an internal affair," and will refuse to have it discussed. There's just no observable tendency on the part of the states of the United Nations to relax their autonomy and pull closer and closer together.

RQL: As you said, humans don't have a tendency to voluntarily relinquish autonomy.

RC: I think that the hope of having a world state brought about peacefully because people are pursuing their own enlightened self-interest has no basis in fact. This has not happened in the past. Obviously, nowadays with thermonuclear warfare, the results of a major war are much more likely to be regressive than progressive. If any nations at all emerge from such a war, they are more likely to emerge shattered than united.

We are faced with a dilemma: The only means by which we have evolved politically so far is now very likely to destroy us. We won't give up national sovereignties, but the existence of national sovereignties engenders competition that threatens our extinction.

RQL: How do you make peace between the Bob Carneiro who is a social scientist and must be objective in certain respects, and the Bob Carneiro who is a human being living in a given culture where various ethical codes and struggles between social classes exist? As a social scientist, you see people in terms of cultural development over thousands of years. Does this affect your sense of right and wrong, or of being able to make decisions and judgements about current issues?

RC: I see what you're getting at. Of course, you always have your own standards of what's right and wrong. You've internalized most of these standards long before you become a social scientist. Some are changed by your choice of professions. But one of the things that being a social scientist, specifically a cultural anthropologist, does is to make you see things in the long run — make you see that culture has changed enormously and will continue to do so.

If you're an anthropologist, you tend not to regard the status quo as something which is necessarily "right" and

must be preserved. Knowing that change is bound to come, you're more likely to welcome it. If the change is inevitable, sit back and enjoy it, so to speak. At least don't regard it as the end of the world. A thousand years ago, many feared the end of feudalism would be the end of the world. It wasn't.

It's hard to say, on a more personal level, exactly what comes uniquely out of anthropology. A liberal humanitarian tradition? No, so many non-anthropologists have that.

At times there's something of a conflict. For example, I've just finished writing a paper on the role of natural selection in cultural evolution.⁷ The Boasians didn't like to invoke natural selection. To them it sounded too much like the idea of nature, "red in tooth and claw." And they weren't ready to attribute to warfare any significant role in cultural evolution. So their personal feelings were at odds with, and prevented them from seeing, what their science should have been telling them.

RQL: A person may not support war, but no one can deny its existence.

RC: Let me read you a little footnote that I wrote here⁸. "If this is an unpalatable truth, it must be said that in cultural anthropology there are many unpalatable truths. Anyone interested only in palatable ones is likely to find some other field of science more congenial."

RQL: And is also likely to be a bad anthropologist.

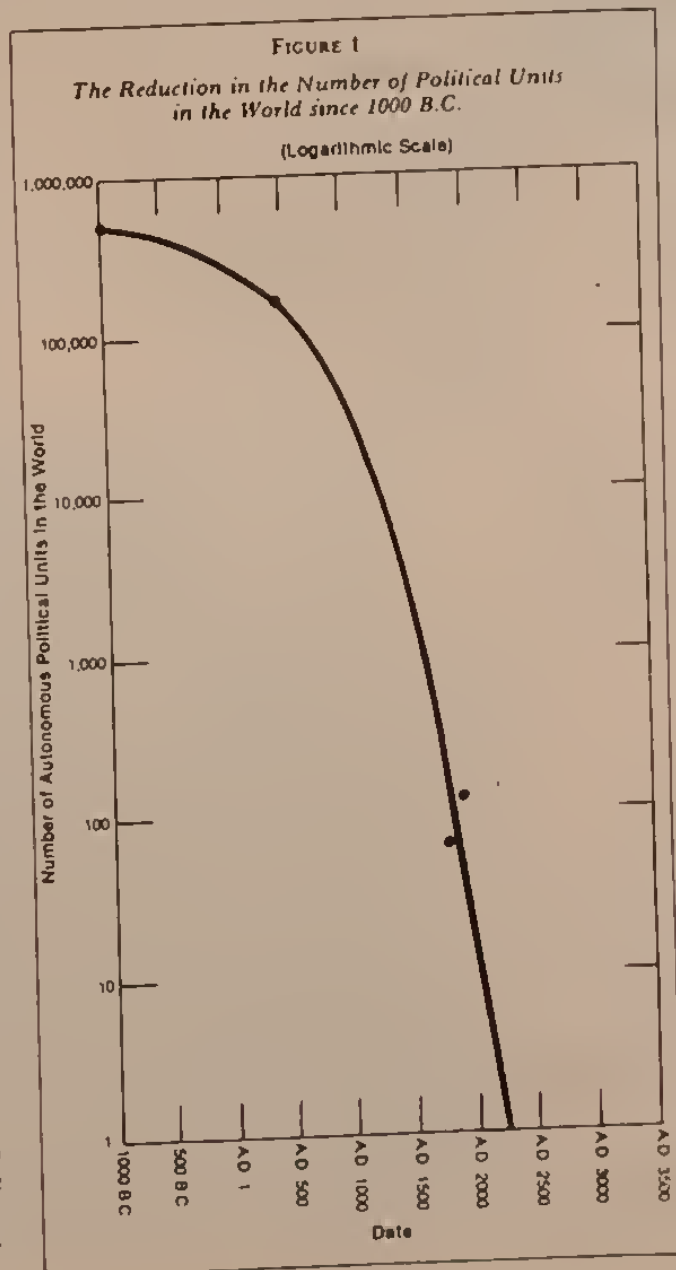
RC: Well, at times his moral philosophy might interfere with his understanding of cultural facts — although I think you can be a pretty good field anthropologist regardless of your general philosophy. Here, let me read you this to make it pertinent.

"Alexander Lesser who, of Boas's students was the most sympathetic to theories of cultural evolution said, 'We do not tolerate as scientific the use of such conceptions as struggle for existence, natural selection, and survival of the fittest as rationalizations of the existence of war, of slavery, of the inequities of an economic system or of imperialist exploitation of native peoples by the Europeans.'"

"And my reply is, 'True enough, but this is not the issue. Justification of a moral position is never the concern of science. The question is, Have the struggle for existence and the process of natural selection played a major role in the course of culture? And if they have, we must invoke them in explaining this development. Whatever personal feelings we may have towards the ruthlessness of the process is irrelevant. A chemist may deplore oxidation and a biologist may detest infection. But they cannot, on that score, exclude them from consideration in explaining the phenomena they study.'"

RQL: Well put.

RC: Well, I struggled over that passage in order to say it the way I wanted to say it.



Footnotes

1 Born in Germany, Franz Boas (1858-1942) became famous as an anthropologist and teacher in the United States. He was the primary founder of the school of relativistic anthropology that became dominant in the early twentieth century. Cultural relativism asserted strongly that "higher" and "lower" states of culture did not necessarily exist as an objective reality, but emerged from a subjective, ethnocentric viewpoint. Boas lived for many years in New York City, helping to build Columbia University's department of anthropology and serving as Curator of Anthropology at the American Museum of Natural History from 1896 through 1905. Perhaps one of his greatest humanistic contributions to the social sciences was his outspoken assertion that cultural difference is not the result of biological difference, and that each "race" has the same cultural potentials.

2 Lewis H. Morgan (1866-1945) was, at first, an attorney and politician. He later became an ethnologist largely due to his interest in Native Americans, whose political struggles against white oppression he championed. As an ethnologist, he is perhaps most well known for his studies of kinship systems and theories of social evolution. Spending time among the Seneca (Iroquois), he became fascinated by the fact that their ways of designating relatives were identical to those of the Ojibwa. He then went on to study and compare the kinship terms throughout the world, looking for indications of how these terms and their development reflected the social development of the societies that used them.

3 Herbert Spencer (1820-1903) was a British sociologist, economist, philosopher, writer, and teacher — one of the best-known thinkers of Victorian England. Fascinated by biological evolution prior to Darwin and Wallace, Spencer published the idea of biological evolution prior to Darwin and Wallace. Spencer's theory, however, did not originally encompass natural selection. Both before and after Darwin's *Origin of the Species* was published, Spencer saw and wrote of the many similarities between biological and social evolution. It was he who coined the phrase "survival of the fittest."

4 Leslie White (1900-1975) had restored cultural evolutionism to scientific "respectability" by the late 1950s or early 1960s, after rejecting it during his earlier professional years. White's initial interest and belief in cultural evolution was considered unorthodox and even heretical among anthropologists and in the university community of his time.

5 Taken from Carneiro, *Origins of the State: The Anthropology of Political Evolution*. Institute for the Study of Human Issues.

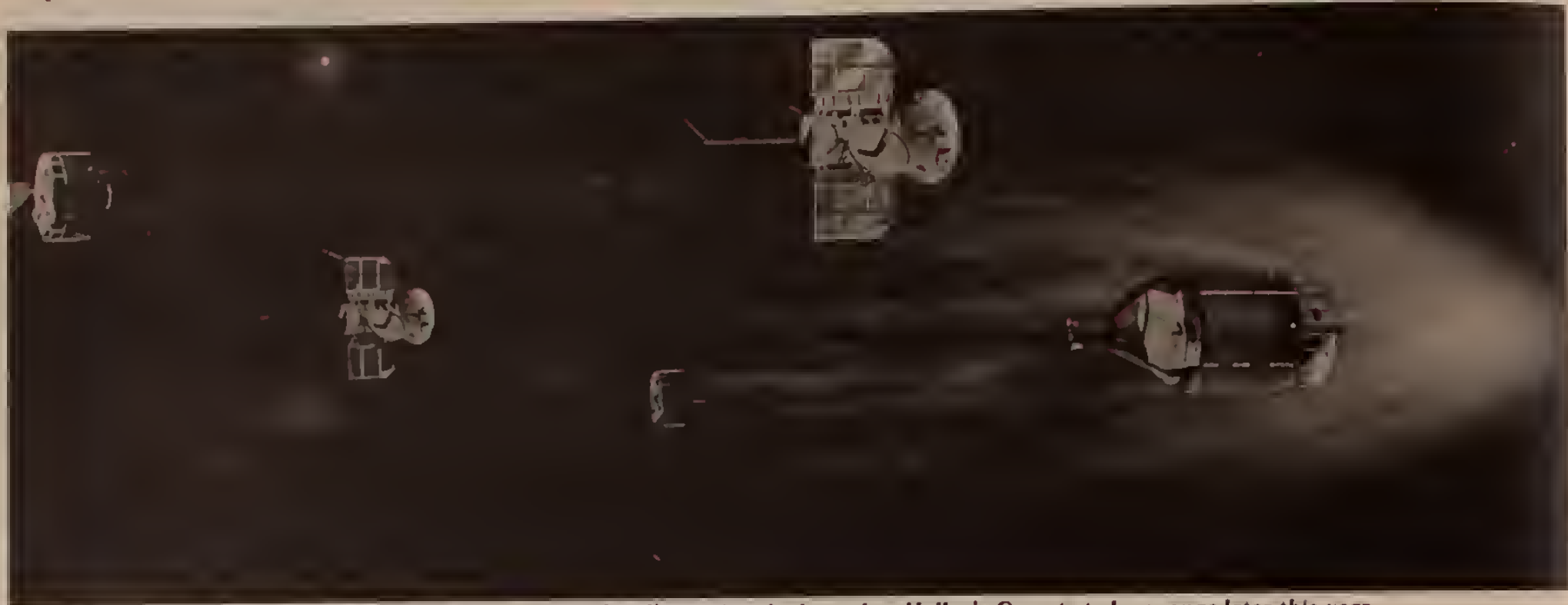
Philadelphia, Pa., 1978.

6 Raoul Naroll (1920-1985) was, for many years, the leading modern exponent of the comparative method of anthropology. *A Dictionary of the Social Sciences* (Free Press) contains a brief definition and historical overview of the cultural method. For a longer treatment, any major textbook on cultural anthropology can be consulted.

7 *The Role of Natural Selection in the Evolution of Culture*, to appear in a Festschrift for Elman R. Service.

8 Op. Cit. for Elman R. Service.

Happenings at the Hayden



These international unmanned spacecraft will examine the legendary Halley's Comet at close range later this year.

Sky Show Double Feature

Halley's Comet: Once In a Lifetime and *Hayden: The Golden Years*. Through March 3, *Halley's Comet* tells you everything you'd like to know about comets, including where and when to look for them. It contains a new recorded narration by Leonard Nimoy. *Hayden: The Golden Years* highlights the past 50 years of astronomical discovery and peers into the future to ponder what the next five decades

might bring. This show is narrated by Charlton Heston.

The double feature will be shown Monday through Friday at 1:30 and 3:30 p.m., Saturday at 11:00 a.m. and from 1:00 to 5:00 p.m. on the hour, and Sunday from 1:00 to 5:00 p.m. on the hour.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children, and includes two floors of exhibitions. For non-member

prices and Sky Show times, please call (212) 873-8828.

Coming in March: Starborn.

A Sky Show about the planet we live on. See the article below for news about this brand-new Sky Show, and a special Members' viewing.

Wonderful Sky

The Muppet take preschoolers on a journey to explore rainbows, sunsets, and distant stars. Images of Big Bird,

Cookie Monster, Grover, and other favorite Sesame Street Muppet characters encourage children to participate in a lively program of dialogue, song, and colorful images. *Wonderful Sky* will take place on the first Saturday of every month through June 7. Reservations are strongly recommended. For reservations and information, please call (212) 873-5714.

Halley's Hotline

A 24-hour-a-day recorded

message now informs callers how to view Halley's comet. Call (212) 769-3299.

School Programs

The Planetarium offers many programs for young children. For school information call (212) 873-5714.

It's always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Starborn Special Members' Viewing

Thursday, March 27
6:00 and 7:30 p.m.

American Museum-Hayden Planetarium
Open only to Participating, Donor,
and Contributing Members
\$2.75 for adults, \$1.50 for children

Starborn, the Planetarium's newest sky show, features the most extraordinary planet of all — our own planet Earth. With its vast oceans of liquid water, and its abundant life, Earth is unique among the planets we know.

Starborn takes the audience back five billion years to a time when the earth and sun were cosmic clouds. Then, through a spectacle of sight and sound, the audience travels through the eons to witness the evolution of our living planet, including the development of earth from a gaseous, to a liquid, to a partially solid state. Members will view torrential rains, volcanic activity, crustal movements, and other forces that have shaped our planet. The show also takes a look at the origin of life in the ocean, and the history of life on earth.

The new Sky Show concludes with a historical overview of how humans have viewed the heavens — from the first humans ever to wonder about the heavens to present-day scientists who are striving to unlock its mysteries.

This Members' viewing will include a brief update on Halley's comet. A Planetarium astronomer will be available throughout the evening to answer any questions you may have. Other staff members will set up special displays on the show's production.

Beverages can be purchased at a cash bar, and members can drink them under the planets of the Guggenheim Space Theater.

To register for this special Members' Opening, please use the Members' Programs Coupon on page 3.

Family Film Festival

Saturday, February 15
and Sunday, February 16
10:00 a.m. to 5:00 p.m.
Kaufmann Theater
Free

In cooperation with the Media Center for Children, the Museum will present the fourth Family Film Festival. Each program segment will include several films that make use of many different animation techniques. The films will explore the following themes:

10:00 a.m. *Histories: Actual and Mythical* will tell stories as diverse as life in a fishing village and the creation of life on earth.

11:00 a.m. *Transportation: Usual and Unusual* will take the audience everywhere from sailing in British Columbia to rock'n'rollin' on the New York City subway.

12:45 p.m. *Food: Facts and Fantasies* will offer a sampler of

life's staples with humor and reverence.

2:15 p.m. *Animals: Stories and Documentaries* will acquaint viewers with big game, beetles, and a child's pet.

3:45 p.m. *Folktales: From Near and Far* will include traditions from cultures as diverse as those of Africa, the United States, and the Andes.

The program is identical on each of the two days. Viewers may stay for all or part of the event.

Seating is on a first-come, first-served basis. For additional information, please call the Department of Education at (212) 873-1300, ext. 559.

Receiving A Good Education

The Department of Education's afternoon and evening lectures, workshops, and local field trips begin late this month.

Two new courses explore Greek civilization in Asia, and archaeology in the British Isles. Participants in other courses can uncover the secrets of gems, learn about the geology of our water supply, and explore the diverse cultures of New York City. Weekend whale watching, birds of Jamaica Bay, travel photography, animal drawing, and human ancestors are just a few of the many other available offerings.

A complete listing of courses was featured in the January *Rotunda*. A brochure can also be obtained by calling (212) 873-7507 or writing: Courses, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024.

Museum Notes

Special Exhibitions

Masterpieces of the American West: An Artistic Look at 150 Years of the Wild West. In Gallery 3 through February 16. More than 60 paintings that chronicle the exploration, development and growth of the American West. Georgia O'Keeffe, Jackson Pollock, Frederic Remington, George Catlin, and Helen Frankenthaler are among the artists whose works are represented. The paintings are from the Anschutz Collection. The exhibition is supported by a generous grant from Mobil.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour, please ask at an Information Desk for specific tour times, or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in company with Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends

from 12:00 to 4:30 p.m. Recommended for ages five to ten. Children under age five are not admitted.

The Leonhardt People Center features ethnic programs of dance, musical performances, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. This month the Black History Month is the focus of People Center programs. For a full listing, turn to page 1.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — the drama of space unfolds, as Museum visitors join astronauts aboard the space shuttle in Naturemax's newest film *The Dream is Alive*.

In addition, Friday and Saturday double features include the all-time Naturemax favorite *Living Planet*.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10% discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. in the basement. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write ahead for details to: The Resident Director, Southwestern Research Station, Portal, Arizona, 85632.

Looking Ahead

In mid-March, Museum visitors will be able to view a new temporary exhibition featuring photographs of Gypsies.

Dances of China and tales of the Bushmen will be coming up in March and April, respectively.

Your March Rotunda will contain details of these events.

Classical Dances of India

Wednesday, February 26
7:00 p.m. Main Auditorium
Free



Dancers Indrani and Sukyana have delighted audiences throughout the world. This month, they will perform four styles of Indian classical dance. Seating for the program is on a first-come, first-served basis. For additional information, please call the Department of Education at (212) 873-1300, ext. 559.

Hawaiian Folk Music

Sunday, February 16
2:00 and 4:00 p.m.
Linder Theater
Free

Clyde Sproat and Kann Haleamau are two Hawaiian paniolos — Hawaiian for "cowboys." Reared speaking and singing in Hawaiian, they have learned scores of old songs, some of which have long been forgotten in more developed parts of the islands.

This month, Sproat and Haleamau will present a program of traditional Hawaiian rural folk music. They will play the slack-key uke and guitar, and

introduce the audience to unique aspects of Hawaiian music. They will also tell the stories behind their songs.

Free tickets for the concert will be available in the Roosevelt Rotunda near the first floor Information Desk starting at noon on the day of the performance. For additional information on Hawaiian Folk Music, please call the Education Department at (212) 873-1300, ext. 559.



Gypsies: Photographs by Jan Yoors opens March 19 in the Akeley Gallery.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

1 Black History Month Programs. For details, please turn to page 1. **1:00 p.m.** N.Y. Map Society, Room 129. Free.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 475,000 members, and numerous individual contributors.



Dinosaurs. Page 2.

2 Black History Month Programs. For details, please turn to page 1.

3

Discover the grandeur of Alaska, with Museum scientists, the world's finest cruise vessel, and attractive prices. June 26 - July 6 or July 17-27. For additional information, call (800) 873-1440.

5 6:30 p.m. N.Y. Conservation Association. Linder Theater. Free.

7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

6 7:00 p.m. Systematics Discussion Group. Linder Theater. Free.



Indian Dance. Feb. 26.

8 Black History Month Programs. For details, please turn to page 1.

15 Black History Month Programs. For details, please turn to page 1. **10:00 a.m. to 5:00 p.m.** Family Film Festival. Kaufmann Theater. Free. Page 6.

13

12 Members of the Discovery Tour to Egypt board the deluxe vessel, Nile Star, and begin their 600 mile cruise up the Nile River.

11 8:00 p.m. Linnaean Society of N.Y. Kaufmann Theater. Free.

10 6:00 p.m. and 8:30 p.m. Human Origins. With Richard Leakey. Members' program. \$6.00 for Members. \$9.00 for non-members. Page 3.

The Museum Restaurant is open until 7:30 p.m.

16 Black History Month Programs. For details, please turn to page 1. Family Film Festival. Same as Feb. 15.

1:00 p.m. American Catechism Society. Room 319. Free.

2:00 and 4:00 p.m. Hawaiian Folk Music. Linder Theater. Free. Page 7.

2:00 p.m. N.Y. Paleontological Society. Room 426. Free.

—continued—

23 Black History Month Programs. For details, please turn to page 1.

20 Members of the Discovery Tour to Melanesia board the deluxe vessel Illiria and cruise from Port Moresby, capital of Papua, New Guinea, for a three-week voyage through islands of the southwest Pacific ending in Fiji.

19 Members of the Discovery Tour to Hawaii arrive on the island of Kona and begin their natural history exploration of the Hawaiian Islands.

18 8:00 p.m. N.Y. Entomological Society. Room 129. Free.

Feb. 16 Cont'd: **2:00 p.m.** N.Y. Turtle and Tortoise Society. Room 129. Free.

Last day to see the exhibition Masterpieces of the American West.

Moon at apogee, 5:00 p.m.

24 Full Moon at 10:02 a.m.

26 7:00 p.m. Classical Dances of India. Main Auditorium. Free. Page 7. **7:30 p.m.** Lapidary and Gem Society. People Center. Free.

27

28

22 Black History Month Programs. For details, please turn to page 1. **11:00 a.m. and 1:00 p.m.** Call of the Loon. Members' Family Program. Kaufmann Theater. Page 2.

21 7:00 p.m. N.Y. Microscopical Society. Room 419. Free.

February 1986 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 3 March 1986



The Twilight Estuary

Tuesday, March 11 7:30 p.m.
Main Auditorium Free and Open Only to Members

Since the age of 13, Denny Bradshaw has earned a living fishing for crabs and oysters on Smith Island. But every year there are fewer and fewer oysters and other animals to catch and sell. He and many other watermen of the Chesapeake Bay may now be experiencing the end of their way of life. What has gone wrong, and can it be corrected?

Chesapeake: The Twilight Estuary is the story of a fascinating and beautiful water system, its plants and animals, and the people who live on its shores. It is also a scientific detective drama in which a star role is played by underwater grasses.

The underwater grasses of Chesapeake Bay shelter molting crabs, and serve as indicators of Bay water

quality. When these grasses began to die, scientists knew there was something very wrong with the Chesapeake. The search for the killer was on.

The primary suspects were chemical agents, particularly the herbicides used by farmers throughout the watershed. But after much research, the herbicides proved to be only minor culprits.

Scientists then began to focus in on the one thing that was missing from the plants' environment, without which no plant can live — light. Light, it seemed, was fading from the estuary. And what was robbing the underwater grasses of light? Too much life, as it turned out. Too many algae, phytoplankton, and epiphyte organisms.

Next, the scientists strove to understand what factors had caused this over-

abundance of life, and sought to discover how to reverse the destruction that had begun, to help preserve the beauty and abundance of the Chesapeake area, as well as the livelihoods of Denny Bradshaw and others like him.

Chesapeake: The Twilight Estuary has won a national award from the Council on International Nontheatrical Events, a Cine Golden Eagle, and the Best of Festival Award from the North American Association of Environmental Education. Filmmaker Michael W. Fincham will introduce his 39-minute documentary, provide an overview of the ecology of the Chesapeake, and answer questions from the audience following the screening.

To order tickets for the program, please use the March Members' Programs Coupon on page 3.

For the Birds

Our Members-only Behind-the-Scenes Tour features the fascinating world of birds. Members will meet Museum ornithologists and learn about courtship behavior, honey hunting rituals, and other tantalizing topics of research.
Page 9

Courses

People of all ages and interests will find course offerings on a wide variety of subjects in *Classes for Young People* (page 6) and *Courses for Stargazers* (page 7).

Latin America

It's Latin America Month at the Museum. Three special performances and various weekend activities in the People Center will feature Latin American music, dance, art, and more.
Page 5

Starborn

The Planetarium's newest Sky Show pays tribute to the wonderful planet on which we live. A special Members' viewing includes displays on the Sky Show's production, and a chance to meet the people who made it happen.
Page 4

Voice and Hands

Back by popular demand, Vibrations/Productions in Deal Awareness returns to the Museum to present a new program for both hearing and hearing-impaired Museum-goers. *Paintings in the Air* features several of this talented troupe's favorite stories.
Page 8

Jews of Yemen: A Vanishing Culture

Thursday, April 17

7:30 p.m.

Main Auditorium

\$3.00 for Members, \$6.00 for non-members

In 525 A.D. the last Jewish king of Yemen died. Legend has it that he rode his horse into the sea. With his death, and with the rise of Islam, the Jews of Yemen lost their kingdom, power, and influence. They became a landless people without rights, forbidden to farm. Living in about one thousand villages throughout Yemen and in the capital of San'A, the only livelihood open to the Jews was craftmaking. And so the Jews of Yemen became the skilled artists of that land, forming an artisan class of silver and copper-smiths, weavers, woodworkers, and masons. When Yemenite Jews were allowed to emigrate to Israel between 1948 and 50, they took these skills with them.

This stunningly filmed documentary is an example of the art of "salvage ethnography" — preserving for posterity the life of a culture which may rapidly be fading. Much of the film fo-

cuses on Yemenite Jews of Israel today. Some, like an old woman of the countryside who still prepares *saluf* dough and a sharp paste called *hilbe*, and young boys who learn Aramaic and the special Yemenite pronunciation of Hebrew in school, retain clear aspects of their Yemenite heritage. Others, many of mixed marriages, can only wonder about the culture of their grandparents.

The film includes beautiful footage of traditional Jewish Yemenite wedding preparations, dances, food preparation, and social activities, holiday celebrations, costumes, and jewelry. It captures what may well be one of the most unique aspects of traditional Yemenite life — a division between men and women greater than that of any other known culture. In a sense, Yemenite men and women form two distinct subcultures. They sing songs of different lan-

guages and melodies, and celebrate important events in different rooms. Women do not dance in front of men. However, women may dance and sing together, emitting high, loud yodels, as they celebrate a wedding or sing a folksong.

Director/filmmaker Johanna Spector will introduce the film and answer questions from the audience at the film's conclusion. Her film *Jews of India* was shown at the Museum several years ago to a full auditorium, and was repeated by popular demand.

Spector has made several other excellent documentaries about Jewish life and history in different areas of the world. She is Professor Emerita of Musicology, as well as the founder and director of the Department of Ethnomusicology at the Jewish Theological Seminary of America (1962-1985).

To register, please use the coupon on page 3.



Yemenite Jewish men in prayer.

The All New Dinosaur Revue

Saturday, March 15 and Sunday, March 16

11:00 a.m. and 1:30 p.m.

Kaufmann Theater

\$2.50 and open only to Members

If you've ever wondered what it was like in the days of the dinosaurs, this is your opportunity to learn, in a special participatory program using songs, stories, and movement. Members of the audience will play the Dinosaur Game Show, take part in a Tyrannosaurus

chorus, and discover a wealth of facts about dinosaurs.

Michael Weilbacher, the creator and performer of the show, is a dinosaur instructor at the Academy of Natural Sciences in Philadelphia. Last year he delighted Museum audiences with another exciting nature pro-

gram entitled *Circles and Starbursts*.

The program is geared to children ages four through eight — and their parents, of course. To register for the *All New Dinosaur Revue*, please use the March Members' Programs Coupon on page 3.

The Song of Songs

Thursday, April 10 7:30 p.m.

Kaufmann Theater

\$6.00 for Members, \$10 for non-members



Diane Wolkstein

"O My love, feed me with raisin cakes;
sustain me with apples,
for I am faint with love.
Let his left hand lie under my head,
and his right arm caress me.
Young women of Jerusalem I beg you,
by the gazelles and does of the field,
do not arouse or stir love
until love is ready to wake."

© translation by Diane Wolkstein

The Song of Songs, ascribed to King Solomon, is both a sacred religious text and a cycle of love poems. It has been recited and revered for over 2,000 years.

Next month, storyteller Diane Wolkstein will rejuvenate these ancient, exquisite words of love, advice, mystery, and lamentation as she performs her own translation from the original Hebrew.

Musician Geoffrey Gordon will accompany the stories with an original score he wrote especially for the Song of Songs. He will play the harp, drum, bells, and tambourine — all musical instruments that were used in the ancient Near East.

Diane Wolkstein is a uniquely gifted storyteller. Since 1967, she has performed and lectured at universities, libraries, theaters, and festivals. She has authored twelve books on myth-

ology and has made eleven recordings. Wolkstein is one of the country's only storytellers to research and present ancient oral literature. Her grace and clear, resonant voice have captivated audiences both here and abroad.

Geoffrey Gordon has composed music for theater companies and dance groups, including full-length scores based on the mythologies of Sumer, Tibet, and other ancient cultures.

Always a captivating team, Wolkstein and Gordon delighted Museum audiences last year when they presented several sold-out performances of the Sumerian story of Inanna. This performance, too, is expected to fill up quickly, so Members are advised to register early. To order tickets, please use the March Members' Programs Coupon on page 3.

ROTUNDA

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Eagles and Owls

Sunday, April 13
11:00 a.m., 12:30 p.m. and 2:00 p.m.
Kaufmann Theater
Free and open only to Members

The eagle's great strength has made this powerful bird of prey a symbol of war and power since Babylonian times. Native to North America, the bald eagle was named the national bird of the United States in 1872. While the bald eagle is most often pictured with a white head, immature birds are almost entirely brown and may not attain their distinctive look until the age of seven.

Members will have a rare opportunity to see a live bald eagle up close when wildlife lecturer Bill Robinson presents the Family Members' Program *Eagles and Owls*. Along with a bald eagle, Robinson will bring an African Tawney Eagle, a Golden Eagle, a Barred Owl, and a Great Horned Owl. He will explain how each of the birds has adapted to its environment.

Among the topics Robinson will discuss are how an owl's vision and hearing make it ideally suited for nocturnal hunting, and why owls can rotate their heads 270 degrees. Robinson will also talk about the hunting techniques of various eagles, and show how an eagle puts its powerful beak and talons to best advantage. A highlight of the program will be a live flight demonstration by some of the eagles and owls.

The program will also look at the threats that pollution and loss of habitat have posed to the eagle's existence, and the current efforts to reintroduce them into certain regions. Robinson will provide some hints as to the best places to look for bald eagles in the New York area.

Bill Robinson is one of our



most popular lecturers. He and his animal friends have appeared at the Museum on numerous occasions. He lectures on wildlife education and conservation to groups throughout

the New York region, and has been actively involved in peregrine falcon recovery efforts. To register for the program, please use the adjacent March Members' Program coupon.

Tales for a March Evening

Friday, March 7
7:30 p.m.
Kaufmann Theater
\$5.00 for Members
\$8.00 for non-members

Toods and skunk cobbages, the mysteries of vocont lots, mourning doves and other charms of o Brooklyn that is no more ore among the topics of Glolo Timponelli's wonderful stories. For ticket availability, please coll (212) 873-1327.



March Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *March Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024.

The All New Dinosaur Revue. \$2.50 and open only to Members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to two. All additional tickets are \$5.00. Please indicate a first, second, and third choice of times, if possible.

Saturday, March 15: _____ 11:00 a.m. _____ 1:30 p.m.
Sunday, March 16: _____ 11:00 a.m. _____ 1:30 p.m.

Number of tickets at \$2.50 each: _____ \$5.00 each: _____
Total amount enclosed for program \$ _____

Chesapeake Bay: The Twilight Estuary. Tuesday, March 11. Free and open only to Members. Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$5.00.

Number of free tickets: _____
Number of tickets at \$5.00 each: _____
Total amount enclosed for program: \$ _____

Starborn. Thursday, March 27. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor and Contributing Members. Please indicate a first and second choice of times, if possible.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adults' tickets at \$2.75 each: _____
Number of children's tickets at \$1.50 each: _____
Total amount enclosed for program: \$ _____

The Song of Songs. Thursday, April 10. \$6.00 for Members, \$10.00 for non-members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All other tickets are \$10.00.

Number of tickets at \$6.00 each: _____ \$10.00 each: _____
Total amount enclosed for program: \$ _____

Eagles and Owls. Sunday, April 13. Free and open only to Members. Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$3.00.

_____ 11:00 a.m. _____ 12:30 p.m. _____ 2:00 p.m.

Number of free tickets: _____
Number of tickets at \$3.00 each: _____
Total amount enclosed for program: \$ _____

Jews of Yemen. Thursday, April 17. \$3.00 for Members, \$6.00 for non-members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All other tickets are \$6.00.

Number of tickets at \$3.00 each: _____ \$6.00 each: _____
Total amount enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.



Lowara Gypsy sisters, Belgium, 1938.



Gypsy girl in France, 1971.

Gypsies: Photographs by Jan Yoors.

Opens March 19
in the Akeley Gallery.

At the age of 12, Jan Yoors stopped off at a Gypsy camp on the outskirts of Antwerp. Tantalized by the people, the sounds, and the scents of the Gypsy camp, he stayed with the Gypsies overnight, becoming friendly with several boys his age. When camp broke, Yoors rode in a covered wagon with his new-found friends, traveling far from his home.

When Yoors returned to his family after six months spent on the road, their response to his adventures was not a typical one. "My father added he had hoped I would become an artist like himself, but if I preferred to become a full-fledged member of a band of nomads, he wanted the choice to be entirely mine. I kissed my father and my mother and shed tears, long and bravely held back."

For over ten years Yoors returned to live side by side with the Gypsies, who were called the Lowara, only periodically returning to his parents' home. After the untimely death of a close friend who had first invited him to live among the Lowara, Yoors was adopted by the boy's family, becoming even more intimately entwined in the lives of the people he had come to love. Over many years, Yoors learn-

ed Romani, the Gypsies' international language, and gained a knowledge of these unique people afforded to few outsiders.

Later, as World War II became an increasingly threatening and grim reality, Yoors worked actively in the resistance with the Lowara and other Gypsy groups. Many members of his adopted family, along with thousands of other Gypsies, were killed by the Nazis.

Throughout his travels, Yoors took photographs, often with a little box camera. Between fifty and sixty of these black and white photographs taken between 1934 and the early 1970s make up the Museum's newest temporary exhibition.

The photographs are thematically grouped to focus on various aspects of gypsy life, and include many beautiful portraits of individuals.

Who Are The Gypsies? This segment of the exhibition features Gypsy people from all areas of the globe. Gypsies migrated in several different waves from northwestern India to Europe via Persia beginning about the eleventh century. Since that time, they have lived in countries from Spain, to Tur-

key, Greece, and various areas of Eastern Europe, and have wandered the world from Chile to Siberia, and from Finland to South Africa and Australia.

Travel and Shelter. The nomadic Rom traditionally set up spring and summer camps wherever a caravan stopped for the night, but the enclosed wagon itself had to serve as shelter in the winter months. Gypsy wagons were adapted to local conditions, and their style changed over time and space. From the elaborate painted covered wagons of the 1930s, to the modern mobile homes of Gypsies today, these vehicles have physically defined nomadic Gypsy communities.

Other thematic groups included in the exhibition are *Patterns of Life and Occupations*.

All the photographs in Gypsies belong to the estate of Jan Yoors. The Museum is grateful to the Yoors family for their assistance in the preparation of this exhibition.

Gypsies, curated by Enid Schildkraut of the Museum's Department of Anthropology, will be in the Akeley Gallery from March 19 through July 9.

1. Printed by permission from Yoors' book *The Gypsies*.

Starborn Special Members' Viewing

Special viewing for Participating,
Contributing, and Donor Members
Thursday, March 27
6:00 and 7:30 p.m.
American Museum-Hayden Planetarium
\$2.75 for adults, and \$1.50 for children



The rising Earth, as seen from the Moon.

With its vast oceans of liquid water and its abundant forms of life, Earth is a unique and fascinating planet.

Starborn: Earth's Odyssey Through Space and Time, the Hayden Planetarium's newest sky show, pays tribute to our rotating, revolving, life-supporting home by taking

Members on a journey through time. First, Members travel five billion years into the past, to a time when the earth and sun were cosmic clouds. Then, the audience journeys through the eons to witness a planet in constant change.

Volcanic activity, torrential rains, crustal movements, and

many of the other forces that have shaped the face of our planet are explored, as well as the evolution of life forms in water and on land. The show concludes with a look at how people have viewed our planet and the heavens over several thousand years.

Members will receive a

behind-the-scenes view of how this spectacular sky show was created when Planetarium staff members speak on an informal basis and exhibit special displays on the show's production. A Planetarium astronomer will be available throughout the evening to answer questions pertaining to Halley's Comet.

Prior to the program, Members may help themselves to juice, coffee, tea, or Remy — compliments of Natural History and Remy Martin Amerique, Inc.

The program is expected to be quite popular, so early registration is advised. Please use the coupon on page 3.

Latin America Month

March is Latin America Month at the Museum. Every weekend this month, the Leonhardt People Center will feature special events devoted to the music, dance, visual art, film, and history of Latin America.

A free listing of People Center events can be obtained by writing *Latin America Month*, Department of Education, American Museum of Natural History, 79th Street at Central Park West, New York, New York 10024.

Drum and Spirit of Africa

Wednesday, March 26
7:30 p.m.
Main Auditorium
Free



Drumsong II takes place in the mythical village of Sara. As the story begins, more than a year has passed since the village chief and his tribesmen have disappeared after their trip to the regional market to sell their harvest. The women have stayed behind and, under the guidance of a priestess, have made offerings to their ancestral spirits for the safe return of their men. They must find their place in the circle of life.

This African folk choreodrama will be performed by The Drum and Spirit of Africa Society, an ensemble that specializes in preserving traditional African forms of music, dance, and folklore. The cast of talented performers will use the traditions

and instruments of the Wolof and Serere people of Senegambia to bring their story to life.

The Drum and Spirit of Africa Society is under the direction of founder Obara Wali Rahman, formerly musical director of the International Afrikan American Ballet. The group has performed at the Paul Robeson Theatre, Lincoln Center, the Brooklyn Academy of Music, and the La Mama Theater.

Drum and Spirit of Africa tickets are free, and may be obtained by mailing a self-addressed, stamped envelope to Community Programs, Department of Education, 79th Street at Central Park West, New York, NY 10024.

Roots of Brazil

Sunday, March 23
2:00 and 4:00 p.m.
Kaufmann Theater
Free

Members will enjoy the exciting sights and sounds of Afro-Brazilian dance and music presented by Roots of Brazil. This energetic and expressive company of dancers, musicians, and singers performs a lively and authentic program of rhythm and dance.

Roots of Brazil will feature candomble and samba, two colorful examples of percussion and dance in the African-derived tradition of Brazil and the Caribbean. Candomble is a religious ceremony with roots in

Nigeria. It includes African language and rhythms, some of which are played on drums called atabaques. Samba will be presented in two parts — an introduction to the varied percussion instruments used to play it, and the colorfully executed dance.

Ligia Barreto, the group's founder, has performed, choreographed, and taught Afro-Brazilian dance extensively in Brazil, Europe and the United States. Musical director Claudio Silva is noted both as a

solo performer and samba arranger. He has been acclaimed as one of the best percussionists in New York.

Roots of Brazil is presented by the Department of Education as part of this month's Latin American celebrations. Free tickets for both performances will be distributed March 23 after noon on a first-come, first-served basis at the Kaufmann Theater ticket booth. Seating is limited. For additional information, please call (212) 873-1300, ext. 514.



A scene from the Candomble.

Trio Musica Hispánica

Sunday, March 2
2:00 and 4:00 p.m.
Kaufmann Theater
Free

The music of twentieth-century Latin American composers will be featured this month when the Trio Musica Hispánica plays works that reflect many of the folk and popular traditions of Latin America. Included in the program will be works by Galindo, a Mexican

composer, and Lasafa, from Argentina.

Since its founding in 1985, the Trio Musica Hispánica, under the direction of Pablo Zinger, has performed in Merkin Hall, the Center for Inter-American Relations, and the Lincoln Center Outdoor Chamber Music

Festival. It is the only ensemble in the United States devoted to the performance of trios and sonatas by Spanish and Latin American composers.

Seating is on a first-come, first-served basis. The concert is sponsored by the Department of Education.

Classes for Young People



SUNDAY COURSES

Through the Eyes of a Child: Introducing the Museum.

For five and six year olds with one adult

Section A: Two Sundays, April 6 and 13,

10:15 a.m. to 11:45 a.m.

or

Section B: Sunday, April 20 and 27,

10:15 a.m. to 11:45 a.m.

\$25 (\$23 for Members)

The Museum is a treasure house of wonderful things. In this course, a Museum educator introduces your child to this exciting place. Rocks and minerals, plant and animal specimens, and beautiful objects help children to better perceive the world around them. Presented by Marjorie M. Ransom of the Museum's Education Department.

stand what has made this group of animals so numerous and successful. Taught by Dr. Betty Faber, entomologist.

Dinosaurs

For grades 3 and 4

Sunday, April 6 and 13

10:30 a.m. to 12:30 p.m.

For grades 5 and 6

Sunday, April 6 and 13

2:00 p.m. to 4:00 p.m.

\$15 (\$13.00 for Members)

Explore the world of dinosaurs by visiting the Museum's world-famous collection, and viewing films. Discover the foods dinosaurs ate, and the environments they lived in. Participants will create their own dinosaur dioramas. Presented by Alison Loerke of the Museum's Education Department.

Secrets of the Sea

For grades 5 and 6

April 26

The underwater world of sea animals: how they move, smell, taste, and protect themselves. Students study a variety of marine animals, learn about their diversity, behavior, and adaptations. Slides, films, and the Museum's Hall of Ocean Life are all used in this survey. Presented by Lisa Breslof of the Museum's Education Department.



Native American Lore and Legend

For grades 3, 4, and 5

April 5

To Native Americans, the land, plants, and animals of the natural world are gifts from the creator to be used and respected. Students will develop an understanding of American Indian traditions, beliefs, and values through stories, crafts, films, and a visit to the Museum's Indian Halls. Children will be encouraged to discuss the relevance of Indian legends to their own lives. Taught by Rob Bernstein, Instructor at the New York Botanical Garden.

Archaeology

For grades 5 and 6

April 12

Students participate in "excavating" a simulated ar-

chaeology site in the classroom. Combining this with other activities helps youngsters acquire an understanding of techniques and approaches archaeologists use. Taught by Anita Steinhart, lecturer and teacher of anthropology.

World of Reptiles

For grades 5 and 6

April 26

Touch a live snake. Watch a lizard feed. Learn whether a turtle can breathe under water. Students observe and discover the amazing adaptations and behaviors of these animals. Explore habitats, defense, and locomotion. Includes slides and a visit to the Museum's Hall of Reptiles and Amphibians. Presented by David Brody of the Museum's Entomology Department.

Animals in Danger

For grades 7 and 8

April 12

Which of earth's life forms will survive and which may disappear forever? Experience close encounters with some of the world's vanishing species. Listen to recordings of whale sounds. Learn about vanishing habitats through slides, films, discussion, and the Museum's exhibition halls. Presented by David Brody of the Museum's Entomology Department.

Please note that the discounts shown apply to Participating, Contributing, and Donor Members only.

To register for any of the above courses, please use the adjacent coupon. For additional information, please call (212) 873-7507.

Nature Activities for the Very Young

For grades 2 and 3

Four Sundays, April 6, 13, 20, and 27

Section A:

10:15 a.m. to 11:15 a.m.

or

Section B:

11:30 a.m. to 12:30 p.m.

\$20 (\$18 for Members)

Registrants participate in springtime nature activities, from growing seeds to learning about different kinds of leaves. They discover animals that are beginning to stir in the warming ground and those returning by air from the south. Using the Alexander M. White Natural Science Center, children explore the seasonal changes that occur in the surrounding city environment. Taught by Mary Croft, specialist in early childhood education.

SATURDAY WORKSHOPS

All Saturday sessions listed below run from 10:30 a.m. until 1:30 p.m. and are \$10 (\$9 for Members). Students should bring a bag lunch.



Animals Without Backbones

For grades 7, 8, and 9

Five Sundays, April 6, 13, 20, 27, and May 4

10:30 a.m. to noon

\$30 (\$28 for Members)

From water fleas to cockroaches to butterflies, students survey the fascinating world of invertebrates. How does a starfish eat, or an earthworm breathe? What is in a single drop of pond water? By performing simple behavioral experiments, students discover how these spineless animals have survived and adapted to many different environments. Using dissecting scopes as well as microscopes, students investigate invertebrates' internal and external anatomy to under-

Discovering the Microscopic World

For grades 6 and 7

April 19

An introduction to the use of the microscope. Discover the shape of a salt crystal. Compare different kinds of animal hair and look at plant cells. Students learn how to prepare their own slides and view living organisms under the microscope. Presented by Ismael Calderon of the Museum's Education Department.

At Home with Sharks and Fishes

Wednesday, March 19

7:30 p.m.

Main Auditorium

\$6.00 for Members,

\$7.00 for non-members



Eugenie Clark and Dee Scarr are two remarkable women who probably feel more at home underwater than they do on land. At a special program presented by the American Littoral Society, these two experts of the deep will speak of their underwater research and adventures.

Clark, one of the world's foremost shark experts, is a Professor of Zoology at the University of Maryland. She will discuss her research on the deep sea sharks of the Pacific, and her recent work with submersibles off the Bermuda coast. She will also show fascinating film footage of shark-diver interactions near the Baja coast.

Scarr has dived off the Netherland Antilles, in the Red Sea, and at most of the classic Pacific locales. Her dives have resulted in a series of extraordinary underwater photographs which have recently been published in her book *Touch the Sea*. In her presentation, Scarr will use her magnificent slides to take the audience on an underwater journey to view the plants and animals of tropical waters around the world.

At Home with Sharks and Fishes will also include a screening of Robin Lehman's beautiful film on life in cold water seas.

To order tickets, please send a check payable to the American Littoral Society with a note including your Membership category, a self-addressed, stamped envelope, and number of tickets requested to: *Sharks and Fishes*, American Littoral Society, Sandy Hook Highlands, New Jersey 07732. For further information, please call (201) 291-0055.

Classes for Young People.

I would like to register for the following course(s):

| Course Name and Section | Number of Registrants |
|-------------------------|-----------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Amount Enclosed: \$_____ (Discounts apply to Participating, Donor and Contributing Members only).

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime Phone: _____

Membership Category (if applicable): _____

Please mail this coupon along with a check or money order payable to the American Museum of Natural History and a self-addressed, stamped envelope to: **Courses for Young People**, Department of Education, American Museum of Natural History, 79th Street at Central Park West, New York, New York 10024.

Discover Alaska: Cruise from Anchorage to Vancouver

Dates: June 26 through July 6
or
July 17 through 27



Alaskan bull moose.

Last year, when Museum naturalist Kenneth Chambers accompanied the tenth annual *Discovery Tour* to Alaska, the animal above was only one of many species seen by tour participants. Others included a Grizzly bear sow and her three cubs, thousands of fur seals, swimming sea lions, more than 70 Dall sheep, four large red fox pups, a porpoise, and two humpback whales.

This year, Chambers and several other Museum experts will once again accompany participants in a journey to Alaska. Participants will cruise on the world's highest rated luxury cruise vessel, the *Five Plus Star M.V. Sagafjord*. Museum scientists will introduce you to magnificent wildlife, awesome

fjords, mountains, glaciers, and outstanding examples of Indian works of art.

Participants will also have the opportunity to join custom-designed optional shore excursions during the cruise, and a post-cruise excursion in Vancouver for the 1986 Expo.

The rates are attractive, starting at \$2,090 per person, double occupancy. Roundtrip airfare from New York to Anchorage and back from Vancouver is only \$300 per person.

For additional information about the *Discover Alaska* cruises, call the Museum's *Discovery Tours* office at (212) 873-1440 (in New York State) or (800) 462-TOUR (out of state).

The Melon Thief and Act Without Words

Saturday, March 8
Kaufmann Theater
2:00 p.m.
Free

The East and West meet this month when the Noho Theater Group performs *The Melon Thief*, a 15th century Japanese farce, and Samuel Beckett's *Act Without Words*. Both plays will be presented in kyogen style.

The Japanese kyogen is a comic interlude which verges on slapstick comedy. In *The Melon Thief*, kyogen Master Sennojo Shigeyama plays a scarecrow who tries to catch a pesky melon thief, who is played by his son Akira. This play will be performed in Japanese and features masks, mime, song, and dance.

Act Without Words is the Noho Theater Group's stylized adaptation of mimes and dance-plays by Beckett. Also

presented in kyogen style, this piece features two men in sacks who leapfrog down a narrow path, performing their daily tasks. Another mime illustrates Everyman tormented by faith.

The Noho Theater Group is presently on its third annual U.S. and Canadian tour. They have used traditional Noh theater techniques to perform pieces by playwrights as diverse as Yeats, Beckett, and Woody Allen

Seating for the program, which is sponsored by the Department of Education, is on a first-come, first-served basis. For additional information, please call (212) 873-1300, ext. 559.

Courses for Stargazers

Spring is a great time to rejuvenate your interest in the stars, to study the lore of the sky, and to learn the best methods of navigation and aviation. For additional information about any of the courses listed below, please call the Planetarium at (212) 873-1300, ext. 206.

Please note: The 10% discounts shown in this course listing are available only to Participating, Donor, and Contributing Members.

Introduction to Astronomy. A first course in astronomy, designed to introduce the many fascinating phenomena in the universe to persons with no math or physics background. Topics include the earth as a planet, the moon, the solar system and sun, the stars, the Milky Way, galaxies, quasars, and black holes in space. Eight Tuesdays beginning April 8, 6:30 to 8:40 p.m. \$70 (\$63 for Members).

Stars, Constellations and Legends. An introduction to the lore of the sky. Using the Zeiss Planetarium Projector, the course identifies the prominent stars, constellations and other objects in the sky, and explores myths and legends of many cultures. Five Tuesdays beginning April 8, 6:30 to 8:10 p.m. \$50 (\$45 for Members).

How To Use a Telescope. An introduction to choosing and using a small amateur telescope. No previous knowledge of astronomy is assumed. Eight Mondays beginning April 7, 6:30 to 8:40 p.m. \$70 (\$63 for Members).

Astrophotography. A comprehensive survey of techniques of photographing the heavens, both with and without a telescope. No previous knowledge of the subject is assumed. Seven Wednesdays beginning April 16, 6:30 to 8:40 p.m. \$65 (\$59.50 for Members).

Charting the Cosmos. How do astronomers map the universe? This course will explore some of the interesting and unusual aspects of the "geography" of the heavens. Starting with the fascinating lore pertaining to the earliest constellations and star names, the course will cover the ever more sophisticated techniques by which innumerable celestial objects have been pinpointed. Five Thursdays beginning April 10, 6:30 to 8:40 p.m. \$50 (\$45 for Members).

Survey of the Planets. Because of information supplied by spacecraft in the past several years, the planets have become

an especially exciting subject for scientific study. This course will introduce the planets both as parts of the entire structure of the solar system, and as the individual, unique bodies they are. Eight Thursdays beginning April 10, 6:30 to 8:40 p.m. \$70 (\$63 for Members).

Ground School for Private and Commercial Pilots. Introduction in preparation for the FAA written examination for a private or commercial license. This course will also help as a refresher for Biennial Flight Reviews, and will survey some of the practicalities of flight training and aircraft ownership. Fourteen sessions on Mondays and Wednesdays, beginning April 7, 6:30 to 8:40 p.m. \$175 (\$157.50 for Members).

Ground School for Instrument Pilots. Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks, and familiarizes VFR pilots with instrument techniques. Fourteen sessions on Mondays and Wednesdays, beginning April 7, 6:30 to 8:40 p.m. \$175 (\$157.50 for Members).

Navigation in Coastal Waters. An introduction to piloting and dead reckoning for

present and prospective owners of small boats. No prerequisites. Students are required to purchase an equipment kit. Eight Thursdays beginning April 24, 6:30 to 9:00 p.m. \$95 (\$85.50 for Members).

Introduction to Celestial Navigation. For those who have completed *Navigation in Coastal Waters*, or who have equivalent piloting experience. Covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Students are required to purchase course materials. Eight Tuesdays beginning April 8, 6:30 to 9:00 p.m. \$95 (\$85.50 for Members).

Advanced Celestial Navigation. Celestial navigation subject matter not covered in the introductory course, with additional practice problems for solution of the celestial line of position, latitude by meridian transit of the sun and other celestial bodies, latitude by observation of Polaris, and more. Purchase of textbook required. Prerequisite: *Introduction to Celestial Navigation*. Eight Mondays beginning April 7, 6:30 to 8:40 p.m. \$70 (\$63 for Members).

To register, please use the adjacent coupon. For additional information, call (212) 873-1300, ext. 206.

Courses for Stargazers. Please enroll me in the following course(s):

| Name of Course | Number of Students |
|----------------|--------------------|
| | |
| | |
| | |

Total Amount Enclosed: \$
Name:
Address:
City: State: Zip:
Daytime Phone:
Membership Category (if applicable):
Please mail this coupon along with your check or money order made out to American Museum-Hayden Planetarium to **Courses for Stargazers**, American Museum-Hayden Planetarium, 81st Street at Central Park West, New York, New York 10024
Pre-registration is strongly recommended, as class sizes are limited. Students may enroll up to the second night of a course.
If space permits, senior citizens may enroll in any of the Planetarium courses listed at 50% of the regular tuition fees. Such individuals must register in person with appropriate I.D. on the first evening of the class.

Paintings in the Air A Program for the Hearing Impaired

Wednesday, March 19
7:00 p.m.
Kaufmann Theater
Free



A Scene from "Midsummer Night's Dream."

Enjoy a literary adventure geared to the entire family with Vibrations/Productions in Deaf Awareness. Members of the troupe will present some of their favorite short stories in mime, sign, and voice. The performers use colorful visuals to dramatize their favorite stories, such as *How the Grinch Stole Christmas*, *What It's Like To Be Deaf*, and a number of Aesop's fables.

The troupe is back by popular demand, following a previous sold-out engagement. *Paintings in the Air*, their newest production, is presented by the Museum's Department of Education. Seating is on a first-come, first-served basis. There are no tickets and no reservations.

For additional information, please call (212) 873-7507.

Joy in Every Land

Wednesday, March 12
7:00 p.m.
Main Auditorium
Free

The ALLNATIONS Dance Company is one of America's most successful and most traveled dance troupes. Formed in 1963 at New York City's International House, the troupe is dedicated to using dance to foster international understanding. This month's program will

feature traditional dances from many lands around the world, including dances of Spain, India, Egypt, Mexico, Brazil, Russia, and the Philippines. Members of the ensemble will also celebrate the United States' contributions to the world community of dance by presenting

dance numbers from the "roaring twenties," as well as the forties and the eighties.

Seating for the program is on a first-come, first-served basis. For additional information, please call the Department of Education at (212) 873-1300, ext. 559.



Spring Wildlife Film Celebration

A spring vacation festival of natural history films for the entire family will be presented in the Kaufmann Theater from Monday, March 31 through Thursday, April 3. A list of films and topics is provided below. For additional information please call the Department of Education at (212) 873-1300, ext. 514.

Monday, March 31. Aviary Delights.

11:00 a.m. *Never Built to Fly*: The private life of the ostrich of Namibia.
11:35 a.m. *Penguins of the Antarctic*.
12:00 p.m. *Osprey*: The return of an osprey pair to the Scottish Highlands.
12:45 p.m. *Legacy for a Loon*.
1:10 p.m. *Never Built to Fly* (repeat).
1:45 p.m. *Penguins of the Antarctic* (repeat).

Tuesday, April 1. Wildlife Explorations.

11:00 a.m. *Year of the Wildebeest*.
11:35 a.m. *Secrets of an Alien World*: A close-up look at the world of insects.
12:45 p.m. *Denali Wilderness*: Daily life of the animals in Denali National Park.
1:20 p.m. *Cry of the Muriqui*: Documentation of the plight of the Muriqui of Brazil, one of the most endangered monkeys in the world.

Wednesday, April 2.

6:30 p.m. *The African Elephant*. Shot in the forest-grasslands of Tanzania, this film

by naturalist Simon Trevor explores the life cycle of the African Elephant. The complex interactions with members of its own and other species are illustrated.

Thursday, April 3. Animal Teachers.

11:00 a.m. *The Great Horseshoe Crab Field Trip*.
11:35 a.m. *The Lorax*: An animated tale by Dr. Seuss.
12:05 p.m. *The Beaver*.
12:30 p.m. *Egg-laying mammals*.
12:50 p.m. *Secrets of an Alien World* (repeat from April 1).
Saturday, April 5. Animal Teachers.
10:10 a.m. *The Great Horseshoe Crab Field Trip*.
10:45 p.m. *The Lorax*.
11:15 a.m. *The Beaver*.
11:35 a.m. *Egg-laying mammals*.
11:50 p.m. *Secrets of an Alien World*.

Animal Ecologies.

1:00 p.m. *Baobab*. Portrait of a tree that plays a part in the life cycles of many species.
1:35 p.m. *The Impossible Bird*. Is the ostrich the largest bird in the world?
2:05 p.m. *Animal Olympians*. A comparison of human Olympic sporting events to examples of wildlife feats.
3:05 p.m. *Mzima*. A look at the abundance of life in Kenya's Tsavo National Park.
3:40 p.m. *Flight of the Condor*. A condor's eye view of the landscape and wildlife of the Andes.

Members' Tour of the Month

The Akeley Hall of African Mammals

Free and open only to Members



Wild hunting dogs of Africa.

1986 marks the fiftieth anniversary of one of the Museum's most famous halls, the Akeley Hall of African Mammals. The hall was named after Carl Akeley, a museum sculptor and collector who revolutionized the art of taxidermy. The Akeley method created habitat groups of astounding realism which have been acclaimed throughout the museum world.

Members are invited to celebrate this fiftieth anniversary by joining Highlight Tour guides for a special Members' tour through the hall. The tour will combine a view of the life and art of Carl Akeley with a look at the magnificent creatures that inhabit the African landscape. Members will learn about Akeley's expeditions to Africa,

and the development of his exhibition techniques. Participants will even view Akeley's burial site, which can be seen in the background of the Gorilla Group exhibit.

The tour will also feature the natural history of some of Africa's most well-known mammals, including the elephant, lion, and giraffe — as well as some of the less familiar ones like the okapi, bongo, and scimitar horned oryx. Many of these mammals roamed in abundance 50 years ago, but are endangered today. Members will learn of the various threats confronting them.

All tours are led by expert volunteers from the Museum's Highlight Tours Program. To register, use coupon below.

Members' Tour of the Month. Free and open only to Members.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please indicate a first, second, and third preference of tours if possible:

| | | |
|---------------------|------------------|------------------|
| Saturday, April 5 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, April 9 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Sunday, April 13 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, April 15 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Saturday, April 19 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Saturday, April 26 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, April 30 | _____ 6:00 p.m. | _____ 7:00 p.m. |

Number of people: _____

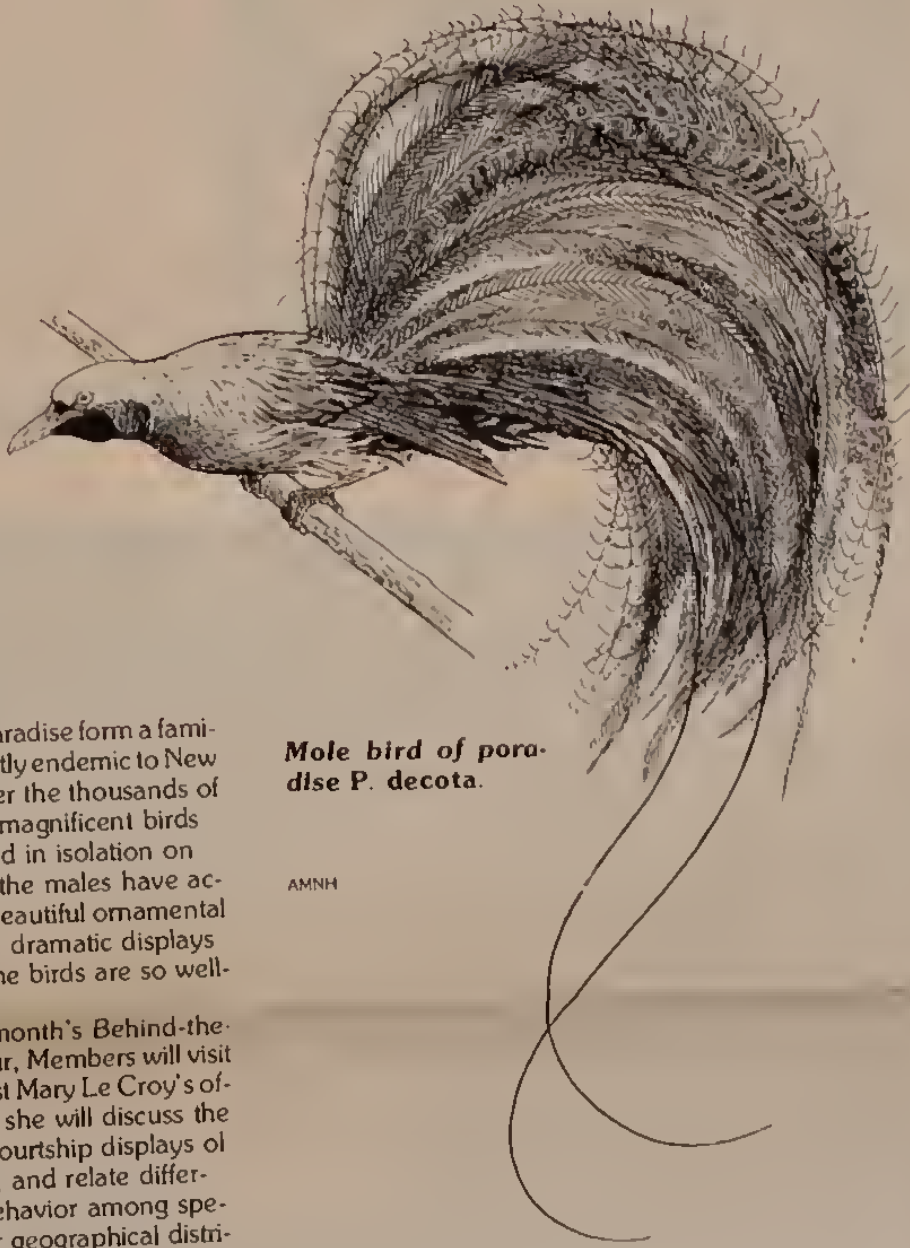
Please mail this coupon with a self-addressed, stamped envelope to: African Mammals, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. **Please note: Registration closes on March 24.**

Participating, Donor, and Contributing Members are invited to a special

Behind-the-Scenes Tour of the Department of Ornithology

Sunday, April 27, and
Tuesday, April 29

\$7.00 and open only to Participating, Donor, and Contributing Members



Mole bird of paradise *P. decota*.

Birds of Paradise form a family that is mostly endemic to New Guinea. Over the thousands of years these magnificent birds have evolved in isolation on that island, the males have acquired the beautiful ornamental plumes and dramatic displays for which the birds are so well-known.

In next month's Behind-the-Scenes Tour, Members will visit ornithologist Mary Le Croy's office, where she will discuss the elaborate courtship displays of these birds, and relate differences of behavior among species to their geographical distribution. Members will be able to view collection specimens of these fascinating birds.

Curator Lester Short is another participant in our April tour. Spending much of his year in the field in Africa, Short is one of the world's foremost experts on honeyguides, the dull-colored but fascinating relatives of barbets and woodpeckers. Honeyguides, which are nest parasites of other birds, eat wax. The birds received their name from the habits of one species that eats beeswax, and "guides" humans and certain mammals to beehives. When the mammal finishes opening the hive and taking the honey, the bird feeds on the exposed wax.

Short will discuss these unique birds' behavior, including their vocalizations, mating behavior, and honey-hunting rituals. Members will have the opportunity to see specimens from the collection and hear a recording of the honeyguide's song.

Le Croy and Short will be joined by several other ornithologists, who will share with Members their special areas of research.

This promises to be a very exciting tour, and early registration is recommended. To register, please use the adjacent coupon.

Behind-the-Scenes Tour of the Department of Ornithology. \$7.00 and open only to Participating, Donor, and Contributing Members.

Tours will leave at fifteen-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- _____ Sunday, April 27 between 10:30 a.m. and noon.
_____ Sunday, April 27 between 1:00 and 2:30 p.m.
_____ Tuesday, April 29 between 5:15 and 6:00 p.m.
_____ Tuesday, April 29 between 6:30 and 7:30 p.m.

Number of tickets at \$7.00 each: _____ \$ _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: BIRDS, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.

Happenings at the Hayden

Sky Show Double Feature

Halley's Comet: Once In a Lifetime and *Hayden: The Golden Years*. Through March 24. *Halley's Comet* tells you everything you'd like to know about comets, including where and when to look for them. It contains a new recorded narration by Leonard Nimoy. *Hayden: The Golden Years* highlights the past 50 years of astronomical discovery and peers into the future to ponder what the next live decades might bring. This show is nar-

rated by Charlton Heston.

The double feature will be shown Monday through Friday at 1:30 and 3:30 p.m., Saturday at 11:00 a.m. and from 1:00 to 5:00 p.m. on the hour, and Sunday from 1:00 to 5:00 p.m. on the hour.

Starborn: Earth's Odyssey Through Space and Time. Begins March 27. The Planetarium's newest Sky Show features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains, and oth-

er forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet. For additional information on this new show, please call (212) 873-8828. To read about a special Members-only preview, please turn to page 4.

Wonderful Sky

The Muppets take preschoolers on a journey to explore rainbows, sunsets, and distant stars. Images of Big Bird,

Cookie Monster, Grover, and other favorite Sesame Street Muppet characters encourage children to participate in a lively program of dialogue, song, and colorful images. *Wonderful Sky* will take place on the first Saturday of every month through June 7. Reservations are strongly recommended. For reservations and information, please call (212) 873-5714.

Halley's Hotline

A 24-hour-a-day recorded message now informs callers

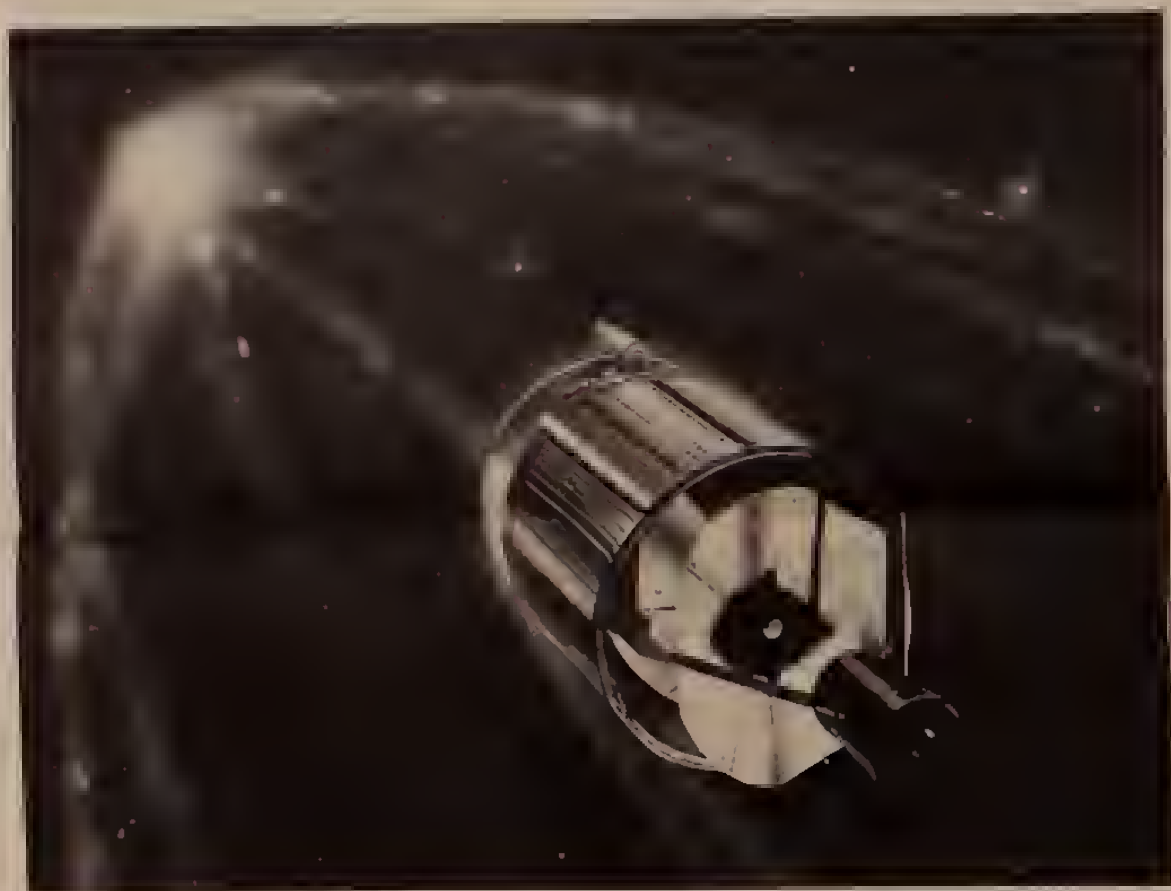
how to view Halley's comet. Call (212) 769-3299.

School Programs

The Planetarium offers many programs for young children. For school information call (212) 873-5714.

It's always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Notes from the Planetarium: Studying The Comet From Within



Bronn Sullivan/Hayden Planetarium

Giotto is scheduled to meet up with Halley's Comet this month.

The following Halley's update was written by Dr. William Gutsch, Chairman of the American Museum-Hayden Planetarium.

Back in September, an American spacecraft named the International Comet Explorer (ICE) became the first spacecraft to ever visit a comet when it flew past a comet named Giacobini-Zinner. The rendezvous helped confirm some old theories, including one which stated that the heart, or nucleus, of a comet is essentially a large, dirty snowball. Several unexpected discoveries also were made. One was the absence of a clear shock wave between the comet and the sun. Another was the surprisingly complex interaction between the solar wind and the comet's tail.

This encounter, however, merely set the stage for what will be a virtual cometary onslaught during the first few weeks in March, when a fleet of international spacecraft close in on the most famous comet of all — Halley's Comet.

In a cooperative effort of

great scope, the spacecraft's functions are designed to be complementary rather than redundant. As each probe takes its turn at a close encounter with Halley, the comet will be simultaneously monitored by the other spacecraft with different instruments and from varying distances.

Two Japanese probes named Sakigake and Suisei will fly by farthest from the comet — about 125,000 miles from the nucleus. They will study the composition of a large cloud of vaporized particles (called the coma) that surrounds the nucleus, and how it interacts with the comet's tail and the solar wind.

The first of two Russian spacecraft both code-named Vega is targeted to pass about 5,200 miles from the nucleus on its sunward side. If this probe is successful, its twin may fly even closer. These instrument-laden craft will determine the chemical makeup of the comet and send back photographs which can show objects as small as a football stadium.

Most daring of all will be the mission of Giotto, a spacecraft

designed and built by a team of European nations. Giotto is scheduled to penetrate to within 300 miles of the nucleus. Observations already indicate that gravel-sized pieces of material are continuously breaking off the comet nuclei, so it remains to be seen how close Giotto will get before being destroyed as it plunges toward Halley at over 40 miles per second. It is hoped that the probe will survive long enough to send back images of the nucleus. These images will show details down to less than 100 feet across.

The next few weeks will be a very exciting time for astronomers and other space scientists as we prepare to see a comet from within for the first time, and to increase our knowledge of comets a thousand-fold.

Viewers' Update

Halley's Comet has now rounded the sun and is heading back out into space. It will pass closest to Earth on April 11, and be faintly visible, very low in the pre-dawn sky, during mid March and early April.

Natural Curiosity

Erin Sawaya, age 8, of Brooklyn, New York, asks three questions. Mike Novacek, Chairman of the Department of Vertebrate Paleontology, responds.

Now that scientists aren't sure *Archeopteryx* ever existed, how can they prove birds descended from dinosaurs?

Scientists do think *Archeopteryx* existed, and this animal shows a combination of bird and dinosaur features. The construction of the animal's forelimbs is birdlike, while the construction of its hind limbs is reminiscent of small, carnivorous dinosaurs. *Archeopteryx* had feathers. We know this because the impressions of the animal's feathers have been preserved in rock.

If one-celled animals started everything, and everything grew bigger and bigger, why aren't we bigger than dinosaurs?

No one knows why we aren't bigger than dinosaurs. Perhaps those great beasts were more suitably adapted for large-sized

lifestyles than we are. The overall direction evolution has taken is toward greater complexity. It's good to keep in mind, however, that getting bigger is not the same thing as getting more complex. In the case of human beings, there may be no real advantage in becoming larger than we are. In fact, it could be a disadvantage, living as we do in a world with limited resources. Good question.

Why are dinosaurs bigger than today's reptiles?

Another good question, to which no-one knows the correct answer. Most scientists think the habitats of large-sized animals were taken over by mammals, yet neither these nor living reptiles are as big as dinosaurs were. It is a mystery.

Do you have a question about the past, present, or future of the natural world? Mail it to Ruth Q. Leibowitz, *Natural Curiosity*, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.



Archeopteryx fossil.

Dances of China

Sunday, April 6
2:00 p.m. and 4:00 p.m.
Kaufmann Theater
Free

Colorful costumes and Chinese music from different time periods will highlight a lecture/demonstration of traditional and contemporary Chinese dances next month, when *The Young Dancers* perform at the Museum. The group's repertoire includes Dance of the Red Silk, Maiden from Heaven,

and others. Members of the troupe will narrate in both English and Chinese, explaining the Chinese customs depicted in the dances.

The Young Dancers is a professional Chinese dance company on the East Coast. The group is under the artistic direction of Margaret Yuen. This per-

formance was made possible by grants from the Helena Rubinstein Foundation and Vincent Astor Foundation.

Seating for the program is on a first-come, first-served basis. For additional information, please call the Department of Education at (212) 873-1300, ext. 559.



Young Dancers of Chinatown.

Museum Notes



The Brazilian Princess is the world's largest cut gem, a topaz weighing more than 21,000 carats. It is now on display in the Roosevelt Memorial Hall.

New On Permanent Display

A new Korean case is now on permanent exhibition in the Hall of Asian Peoples. The case features a traditional Korean scholar's studio, a 15th century upper-class Korean home, and Korean furnishings such as furniture, sleeping mats, and hand-made mulberry paper.

Special Exhibitions

Gypsies: Photographs by Jan Yoors. Opens March 19 in the Akeley Gallery. Jan Yoors, an artist and tapestry designer, left his Belgian home at the age of 12 to periodically live side by side with Gypsies for many years. He was adopted by a gypsy family, learned Romani, the gypsy language, and gained a knowledge of these unique people afforded to few outsiders. The exhibition features black and white photographs taken by Yoors between 1934 and the early 1970's. The photographs portray various aspects of gypsy culture such as home life and transportation, and include many beautiful por-

traits of individuals. See page 4 for additional details.

Carl Ethan Akeley. 1864-1926: Renaissance Man. In the Library Gallery. This exhibition of books, artifacts, photographs, and tools celebrates the diverse and extraordinary accomplishments of Carl E. Akeley, taxidermist, inventor, naturalist, explorer, and prime force behind the Museum's Hall of African Mammals.

The Brazilian Princess is now on display in the Roosevelt Rotunda. At 21,327 carats (9½ pounds) it is the world's largest cut gem. This near-flawless light blue topaz was found in Brazil 25 years ago in the form of a 75-pound crystal. It is a gift to the Museum from an anonymous donor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour,

please ask at an Information Desk for specific tour times, or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in company with Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends from 12:00 to 4:30 p.m. Recommended for ages five to ten. Children under age five are not admitted.

The Leonhardt People Center features ethnic programs of dance, music, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. This month Latin America is the focus of People Center programs.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — Museum visitors enjoy a unique film experience.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10% discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. in the

basement. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write ahead for details to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.

Looking Ahead

Future issues of *Rotunda* will contain information on all of the following:

April is Caribbean Month in the Leonhardt People Center.

Get those mysterious objects you've been wondering about ready for a trip to the Museum on Discovery Day, Saturday, May 24, when Museum scientists will help you figure out what your objects are, where they come from, and how and why they came into existence.

Tales of the Bushmen will be told in the Linder Theater on May 9 and 10.

Wolves and Humans: Coexistence, Competition, and Conflict will open in Gallery 3 on June 11. This exhibition will explore the natural history of the wolf, changing relationships between wolves and humans through time, and the prominence of the wolf as a symbol in folklore, myth, legend, art, and religion.

Lost and Found Traditions: Native American Art 1965-1985 will open at the Museum in June. This exhibition will feature more than 400 objects of traditional art now being produced by Indians of the Northern Woodlands, Northern and Southern Plains, and Pacific Northwest Coast.

The widest array of original paleolithic artifacts ever assembled for study and display is now in its planning stages. The special exhibition, entitled **Dark Caves, Bright Visions**, is scheduled to open late this year.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

March 1986 American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

2 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
2:00 and 4:00 p.m. *Trio Musica Hispania* Kaufmann Theater. Free. Page 5

9 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
1:30 p.m. New York Shell Club. Room 419. Free.

16 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
11:00 a.m. and 1:30 p.m. *The All New Dinosaur Revue. Members' Family Program.* See March 15.
1:00 p.m. American Cetacean Society. Room 319. Free.
2:00 p.m. New York Paleontological Society. Room 426. Free.
2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free.

23 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
2:00 and 4:00 p.m. *Roots of Brazil.* Kaufmann Theater. Free. Page 5.

30 Latin America Month. Call (212) 873-1300 for program information.

31 11:00 a.m. to 1:45 p.m. Wildlife Film Celebration. Kaufmann Theater. Free. Page 8.



11 7:30 p.m. *Chesapeake: The Twilight Estuary. Members' Program.* Main Auditorium. Free and open only to Members. Page 1.

12 7:00 p.m. Joy in Every Land with the ALLNATIONS Dance Company. Main Auditorium. Free. Page 8.
7:00 p.m. New York Mineral Club. People Center. Free.

5 7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

6 7:00 p.m. Systematics Discussion Group. Room 419. Free.

7 7:30 p.m. *Tales for a March Evening. Members' Program.* Kaufmann Theater. \$5 for Members, \$8 for non-members. Page 3.

8 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
2:00 p.m. *The Melon Thief and Act Without Words. Two Kyogen Plays.* Kaufmann Theater. Free. Page 7.

15 Latin America Month. Call (212) 873-1300, ext. 514 for program information.
10:00 a.m. American Littoral Society. Room 426. Free.
11:00 a.m. and 1:30 p.m. *The All New Dinosaur Revue. Members' Family Program.* Kaufmann Theater. Open only to Members. Page 2.

18 8:00 p.m. New York Entomological Society. Room 129. Free.

19 7:00 p.m. *Paintings in the Air.* A program for the hearing impaired. Kaufmann Theater. Free. Page 8.
7:30 p.m. *At Home With Sharks and Fishes.* Page 8.
Gypsies; Photographs by Jan Yoo opens in the Akeley Gallery. Page 4.

20 6:00 and 7:30 p.m. *Starbom. Special Members' Viewing.* Open only to Members. Hayden Planetarium. Page 4.

Vernal Equinox at 5:03 p.m.

25 8:00 p.m. Linnaean Society of New York. Room 426. Free.

Full Moon at 10:02 p.m.

26 7:00 p.m. Lapidary and Gem Society. People Center. Free.

7:30 p.m. *Drum and Spirit of Africa* Main Auditorium. Free tickets available by mail. Page 5.

7:00 p.m. New York Microscopical Society. Room 419. Free.

Moon at Pengee at 9:00 a.m.

22 Latin America Month. Call (212) 873-1300, ext. 514 for program information.

Members of the Discovery Tour to Morocco arrive in Tangiers for a two-week exploration of this country's diverse cultures. Call (212) 873-1440 for Discovery Tours information.

29 Latin America Month. Call (212) 873-1300 for program information.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 4 April 1986



A flycatcher at its nest site in Peru.

Participating, Donor, and Contributing Members are invited to a
**Behind-the-Scenes Tour
of the Department of Ornithology**
Sunday, April 27, and Tuesday, April 29, \$7.00 and open only to Members

A bird that guides people and other mammals to honey, courtship displays, and ornithological fieldwork in Tierra del Fuego are just a few of the topics Members will learn about in this month's Behind-the-Scenes tour, when five Museum ornithologists invite you to learn about their areas of specialty, and to see specimens of the birds they study.

- **Lester Short**, Chairman of the Department of Ornithology, spends a great deal of his time each year in Africa, learning about a group of fascinating birds called honeyguides. Honeyguides are nest parasites of other birds. They received their name from the habits of one species that, in its search for beeswax to eat, "guides" other animals (including humans) to beehives. Short will discuss the mating behavior, vocalizations, and other fascinating activities of these birds.

- When **François Vuilleumier** went to cold and windy Cape Horn in search of observations and specimens that would enable him to understand more about the genus *Phrygilus*, he lost his favorite woolen ski hat, but gained a great deal of insight about the speciation and hybridization of birds. Vuilleumier will discuss what he has learned from species of this genus, also known as Sierra finches.

- Birds of Paradise are famous for their colorful feathers and courtship displays. Learn more about these and other aspects of these birds' behavior when **Mary LeCroy** relates the geographic distribution of these birds to the fascinating behavior patterns they have developed.

- **Wesley Lanyon** used to go out into the field with a tape recorder to cap-

ture the voice of the flycatcher. Now this phase of his work is over, and anatomy is Lanyon's primary focus. Why and when does a scientist decide to move from one way of studying a bird to another? These and other flycatcher questions will be answered, and Members will have the opportunity to listen to flycatcher songs.

- **Mary McKittrick** studies yet another aspect of the flycatcher — its hind limb muscles. Comparison of these muscles among birds of the same and different species is yielding information about behavior and speciation. McKittrick will share the reasons, methods, and hypotheses about her research with Members. She will also display several pickled flycatcher specimens, and skins.

To register for the Behind-the-Scenes Tour, please use coupon on page 7.

Shoestring Tales

Conquering John, Dee Dee the Devil's Daughter, and a young Pueblo Indian boy who visits his father the sun are among the folk characters from around the world that will come to life in this Family Members' Program.

Page 4

Sunset Cruises

See Staten Island's high coastal hills and the abundant bird life of Kill van Kull, or explore the natural history of our local fjord and learn about the origins of the Palisades by cruising on a summer evening.

Page 5

Caribbean Month

The world's most unique steel band, a Canadian performing company that highlights French and African roots and origins of Caribbean culture, and many other special programs celebrate Caribbean Month at the Museum.

Page 6

Meteoritic Members' Tour

Members will learn about the secrets that meteorites tell, and see moon rocks in our May Members' Tour of the Arthur Ross Hall of Meteorites.

Page 7

A Tribute to Duke

From the collection of Ernest Smith



Duke Ellington

On April 29, 1986, the U.S. Postal Service will issue a commemorative stamp in honor of the late Duke Ellington on his 87th birthday. As part of the Postal Service's performing arts series, the Museum joins the celebration with the following two programs.

Thursday, April 17, 7:00 p.m. Duke Ellington on Film. The unique sound of Duke Ellington's music and his charismatic presence are captured in a collection of films with original sound-tracks presented by jazz historian Ernest R. Smith. The collection spans Duke Ellington's career from his

first film in 1929 to his acceptance of the Presidential Freedom Medal at the White House in 1970. Viewers will enjoy seeing performances of well-known compositions like "Stormy Weather," and musicians like Billie Holliday and Earl "Snake Hips" Tucker.

In addition to being a producer, Smith is a film collector, archivist, author, and consultant on jazz history and the black dance tradition.

This free program is in the Kaufmann Theater. There are no tickets, and seating is on a first-come, first-served basis.

Sunday, April 20, 2:00 p.m.

and 4:00 p.m. **Music of Duke Ellington.** The Metropolitan All-Stars, joined by the Nanette Bearden Contemporary Dance Theatre perform the music of Duke Ellington. Vocalist Jann Parker, drummer Art Blakey, Jr., pianist Rahn Burton, bassist Bob Cunningham, and tenor saxophonist Patience Higgins form the group, which has toured the U.S., Africa, and Europe.

This program will take place in the Kaufmann Theater. Free tickets can be obtained on the day of the performance starting at 12:00 noon at the Kaufmann Theater ticket booth.

Course Cancellation News

In February, the Museum cancelled one of the scheduled Spring Lecture Series offerings, *Ethnic Communities in New York*. The series, which was to have been given Monday evenings, was scheduled to begin February 24 and end on March 24.

Those who had registered received the following notice explaining the cancellation:

"The Spring Education Lecture series entitled *Ethnic Communities in New York* has been cancelled. Portions of the language describing the program in Museum publications was found by us to be offensive

to some people. We have every confidence that this scholarly series would have been presented in a fair and sensitive manner. Unfortunately, the language does not describe the series fully and accurately. We feel it is better to cancel the series rather than offer it in a climate that risks offending.

"We sincerely regret the inconvenience that this cancellation will cause you. Your registration fee in full will be mailed to you within two weeks.

"Your interest in the Museum and your support of its education and membership programs are greatly appreciated."

Time for Origami

Six Wednesdays beginning April 30

Each year visitors to the Museum admire the wonderful Origami figures on the Origami Holiday Tree. Now you can learn to create some of the beautiful figures for which the tree is so famous, like strawberries, boats, stars, peacocks, and giraffes.

Alice Gray and Michael Shall, the Museum's volunteer origami specialists, will teach students how to turn ordinary pieces of paper into works of art in *Introduction to Origami*, a course for new Museum volunteers.

The course will run for six consecutive Wednesdays, from 6:30 to 8:30 p.m., beginning April 30. The course is free, and all necessary supplies are provided. In exchange for the instruction, however, volunteers are asked to put their new skills to work by donating at least twelve hours to Museum Origami projects such as the Holiday Tree.

For additional information about *Introduction to Origami* and other volunteer activities, call the Volunteer Office at (212) 873-1300, ext. 538.

ROTUNDA

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Jews of Yemen: A Vanishing Culture

Thursday, April 17

7:30 p.m.

Main Auditorium

\$3.00 for Members,

\$6.00 for non-members



Jewish Yemenite Woman.

"Today we see that our culture is disappearing . . . What bothers me especially is what of that culture could speak to my generation and what values should be retained. We would like some of this culture to remain with us."

— Modern Yemenite Jew

Beth Shearim, the most famous Jewish cemetery in the Near East during the Third Century C.E., contains a Yemenite catacomb.

This burial site is difficult to reach. Its entrance is overgrown, and the inscriptions in red pigment have been almost obliterated by time and weather. Those that can still be

read form the first historical evidence of an established Jewish community in Yemen.

For centuries the Jews of Yemen enjoyed freedom and prosperity. But when the last Jewish king committed suicide — according to legend he drove his horse into the sea — and as Islam became increasingly powerful, Yemenite Jews were stripped of their land, forbidden to farm, and confined within small areas of villages and of the capital of San'a. In the crowded ghetto of San'a, Yemenite Jews created a unique style of architecture known nowhere else in the Middle East. They did the only work allowed them — that of artisans — becoming the skilled silversmiths, copper-smiths, weavers, woodworkers and masons of Yemen.

Between 1948 and 50, when Yemenite Jews were allowed to emigrate to Israel, they did so in large numbers. Little is known about those that remained behind.

In *Jews of Yemen: A Vanishing Culture*, filmmaker Johanna Spector takes the viewer through the ages to modern Israel — and into the homes and ceremonial spaces of modern Jews of Yemenite descent.

Some of the people the film visits, like the young boys who go to school to learn Aramaic and the special Yemenite pronunciation of Hebrew, retain clear aspects of their Yemenite heritage. Others, many the chil-

dren of mixed marriages, wonder about their grandparents' culture.

The film includes beautiful footage of traditional Yemenite celebrations, ritual, dance, and music. Spector's camera enters the homes of several Yemenite families as they celebrate the Passover Seder in ways that are unique to Yemenite Jews.

Perhaps the most beautiful footage is of the pre-wedding ceremony of a young bride. She wears anklets against the evil eye, a headdress with pearls, a gold brocade coat, and vast amounts of beautiful jewelry including necklaces, earrings, and six bracelets worn in a prescribed order. All jewelry is magical, especially since its tinkling drives away evil spirits. The bride will celebrate in the company of women only — for women do not dance and sing in the company of men. Only at certain points of the prenuptial ceremony are her father, brothers, and uncles permitted to be present.

Johanna Spector, who is a music ethnologist as well as a filmmaker and director, will introduce her film and answer questions from the audience at the film's conclusion. Her film *Jews of India* was shown at the Museum several years ago, and was so popular it had to be repeated.

To register, please use the adjacent April Members' Programs Coupon.

April Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *April Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024.

Eagles and Owls. Sunday, April 13. Free and open only to Members. Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$3.00. Please indicate a first and second choice of time

_____ 11:00 a.m. _____ 12:30 p.m. _____ 2:00 p.m.

Number of free tickets: _____

Number of tickets at \$3.00 each: _____

Total amount enclosed for program: \$ _____

Jews of Yemen. Thursday, April 17. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$3.00 each. Associates are entitled to one. All other tickets are \$6.00 each

Number of tickets at \$3.00 each: _____ \$6.00 each: _____

Total amount enclosed for program: \$ _____

Shoestring Tales. Sunday, May 4. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price of \$2.50 each. Associates are entitled to two. All other tickets are \$5.00 each. Please indicate your time preference.

_____ 11:00 a.m. _____ 1:30 p.m.

Number of tickets at \$2.50 each: _____ \$5.00 each: _____

Total amount enclosed for program: \$ _____

Darwin's Ark. Thursday, May 8. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All other tickets are \$4.00 each.

Number of free tickets: _____

Number of tickets at \$4.00 each: _____

Total amount enclosed for program: \$ _____

Cameos of Ethnic Dance. Thursday, May 15. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price of \$4.00 each. Associates are entitled to one. All other tickets are \$7.00 each.

Number of tickets at \$4.00 each: _____ \$7.00 each: _____

Total amount enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

The Song of Songs

Thursday, April 10

7:30 p.m.

Kaufmann Theater

\$6.00 for Members,

\$10.00

for non-members



Join noted storyteller Diane Wolkstein and versatile musician Geoffrey Gordon when they perform the ancient words of love, advice, and lamentation contained in *The Song of Songs*, ascribed to King Solomon. For ticket availability, please call (212) 873-1327.

Darwin's Ark

Thursday, May 8

7:30 p.m.

Hall of Ocean Life

Free for Members

\$4.00 for non-members

Rudy Pozzatti



"For think: at last it is nothing to be a giant — the dream of an ending haunts tortoise and Toxodon, troubles the sleep of the woodchuck and the bear.

"Back home in his English garden, Darwin paused in his pacing, writing it down in italics in the book at the back of his mind:

"When a species has vanished from the face of the earth, the same form never reappears . . ."

When poet Phillip Appleman read Darwin's *Origin of the Species*, it changed the style and content of his poetry forever. He has been studying and writing about Darwin ever since.

Appleman's most recent poetry applies Darwinian ideas to the profound crises facing mankind today, in a manner that reaches both the intellect and the heart.

Early next month, Members are invited to join Appleman in the Hall of Ocean Life when he reads poems from *Darwin's Ark*. With titles like *Darwin on 14th Street*, *Black Footed Ferret Endangered*, and *Mr. Extinction*, *Meet Ms. Survival*,

these poems combine mystery and science, past and present, and modern life with the natural world.

Appleman is Distinguished Professor of English at Indiana University. He is the author of four volumes of poetry, two novels, and numerous nonfiction books. His award-winning poems have been published in both American and foreign periodicals.

To order tickets, please use the April Members' Programs Coupon on page 3.

* Reprinted by the author's permission from *Darwin's Ark*, Indiana University Press®, 1984 by Phillip Appleman.

Rudy Pozzatti



Shoestring Tales

Sunday, May 4, 11:00 and 1:30 p.m.

Kaufmann Theater

\$2.50 for Members, \$5.00 for non-members

When Conquering John visits the devil, he is asked to do a series of tasks. When the devil tries to fool him, Conquering John is rescued by Dee-Dee, the devil's daughter.

These and other folk characters from around the world will come to life in the Kaufmann Theater, when the Shoestring Players arrive to delight Members of all ages.

Rather than presenting those folktales already known by the audience, The Shoestring Players specialize in adapting little-known folktales that are imaginative, unfamiliar, and thought-provoking. In front of the audiences' eyes, the performers may become caves, castles, tunnels, mountains, faucets, rivers, fish, and birds, and people on their way to far-off places.

They do this all with very basic costumes, and no set. The troupe's philosophy is that when performers have something rich to offer, it captures the audience's imagination without props and gimmicks.

In addition to *Conquering John and the Devil's Daughter*, Shoestring Tales includes a Pueblo Indian tale about a young boy's journey to visit his father the sun, and a tale from Norway about a magic fiddle that makes everyone dance whenever it is played.

The Shoestring Players have performed at schools, hospitals, museums, and even a department store! They have been highly acclaimed throughout the country, and recently per-

formed as America's representative at the International Festival in Philadelphia.

To order tickets, please use the April Members' Programs Coupon on page 3.



The Shoestring Players.

Sex and the Brain

The 56th Annual James Arthur Lecture
Tuesday, April 22

6:00 p.m.

Kaufmann Theater

Free

The brain is an integral component of the reproductive system. It directs gonadal function, and is a target organ for the action of gonadal hormones. Therefore, it may not be surprising to realize that there are striking sex differences in brain function and structure.

What is surprising to many, however, is the fact that the mammalian brain appears to be inherently feminine, or at least bipotential. Brain features that are considered to be characteristic of the male sex are most likely imposed on the brain by

the action of testicular hormones during a critical phase of development.

What does "masculine" and "feminine" mean in relation to the mammalian brain's structure and function, and how much is really known about the role of sex and the development of the human brain?

When physiologist and anatomist Roger A. Gorski speaks on these topics, he will draw both from his own exciting research in neuroendocrinology, and from observations made by others in the field of mammalian

brain research.

Gorski is currently the Director of the Laboratory of Neuroendocrinology of the UCLA Brain Research Institute. One of his great loves is teaching. He has published 200 research articles and review chapters, and has received several national awards for research, training, and professional achievement.

Seating for the lecture is on a first-come, first-served basis, so Members are encouraged to arrive early.

Discover the Natural World

Bird Identification for the Amateur

Saturday, May 31

10:30 a.m. to

3:00 p.m.

\$40.00

Limited to 25 Adults

Learn the techniques of bird identification in this workshop designed for the novice birder. Cataloging and observation techniques are covered.

In the morning the class will see slides and specimens that represent the diversity of birds in the New York area. After a simple lunch, included in the registration fee, the class moves across the street to Central Park, where practical experi-

ence will be added to newly acquired knowledge.

Catherine Pessino, field ornithologist and former Assistant Chairperson of the Education Department, leads this workshop.

Discovering New York City's Rocky Coasts and Salt Marshes

Saturday, May 10

10:00 a.m. to

2:00 p.m.

\$30.00

Limited to 35 adults

This local field trip to Pelham Bay Park explores the ecology of marshland vegetation and

the animals that inhabit the rocky shores and sheltered inlets of the Bronx.

The trip is led by Dr. Arthur H. Hirshorn, who is a member of Lehman College's instructional staff and specializes in environmental education.

The trip will explore the effects of tides on the landscape and wildlife, adaptations of plants and animals. Lehman will also discuss the effects of the last ice age and of human technology on the landscape.

To register for either class please use the adjacent coupon

For additional information about *Bird Identification* or *Discovering New York City's Rocky Coasts*, please call (212) 873-1300, ext. 559.

Forest of Bliss

Wednesday, May 7, 7:00 p.m., Main Auditorium

\$6.00 for Members, \$7.00 for non-members

The famed religious center of Benares India, located on the Ganges River, is far from the Western world both in physical and spiritual distance.

In *Forest of Bliss*, the camera of leading ethnographical filmmaker Robert Gardner captures the cremation places of the Manikarnika Ghats — ceremonies that are performed not only to mark the passing of life, but the cyclical metamorphosis of generations, the wheel of death and rebirth. As the viewer looks on, the faith healer, the flow of the Ganges, marigolds billowing in the field, and other powerful visual images create a world that is shared and depicted rather than explained.

Robert Gardner is one of the world's leading ethnographic filmmakers. His earlier films have included *The Hunters*, *Rivers of Sand*, *Dead Birds*, and *Deep Hearts*. He is currently the Director of the Carpenter Cen-

ter for the Visual Arts at Harvard University.

Malcolm Arth, Chairman of the Margaret Mead Film Festival, will introduce the filmmaker, who will discuss his latest work and answer ques-

tions from the audience.

Tickets for the program, sponsored by the Department of Education, can be obtained by using the adjacent coupon.

For additional information, call (212) 873-1300, ext. 595.



Benares, India, in the mist.

Sunset Cruises Around New York

5:30 to 8:30 p.m.: \$18.00 for Members, \$20.00 for non-members

Nooks and Crannies of New York Bay. June 3.

On this unique 3-hour boat tour, participants will learn about a part of New York that most of us never see. This cruise will include unusual views of the Statue of Liberty and Ellis Island, up into historic Newark Bay. Participants will also be introduced to Staten Island's high coastal hills, and see the abundant bird life of Kill van Kull.

Bring a box supper along for this exploration of the geology,

history, and ecology of New York's back bay areas. Sidney Horenstein of the Museum's Department of Invertebrates will provide a running commentary.

Geology at Sunset: A Cruise Up the Hudson June 10

This three-hour twilight boat trip focuses on the natural history of our local fjord.

Learn about the origins of the Palisades, plant and animal environments, local histories, and

current environmental concerns, as Sidney S. Horenstein of the Museum's Department of Invertebrates provides a running commentary and answers your questions. Bring your own box supper.

Due to space limitations, participants are asked to register for one trip only. To register, please use the adjacent coupon. For additional information, please call the Department of Education at (212) 873-1300, ext. 559.

Education Department Programs Coupon

Ned Johnston



A Benares boatman in Forest of Bliss.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category (if applicable): _____

Forest of Bliss. Wednesday, May 7. \$6.00 for Members, \$7.00 for non-members.

Number of tickets at \$6.00 each: _____

Number of tickets at \$7.00 each: _____

Total amount enclosed for program: \$ _____

Rocky Coasts and Salt Marshes. Saturday, May 10. \$35.00. No Members' discount.

Bird Identification for the Amateur. Saturday, May 31. \$35.00. No Members' discount.

I would like _____ tickets at \$35.00 each for:

_____ Rocky Coasts

_____ Bird Identification

Total amount enclosed for programs: \$ _____

Sunset Cruises Around New York.

Nooks and Crannies. Tuesday, June 3. \$18.00 for Members, \$20.00 for non-members.

or

Waterways of New York. Tuesday, June 3. \$18.00 for Members, \$20.00 for non-members.

I would like _____ tickets at _____ each for:

_____ Nooks and Crannies

_____ Waterways of New York

Total amount enclosed for cruises: \$ _____

Please mail this coupon with a check made out to the American Museum of Natural History, and a self-addressed, stamped envelope to: Education Department Programs, American Museum of Natural History, 79th Street at Central Park West, New York, N.Y. 10024.

Caribbean Month at the Museum

April is Caribbean month at the Museum. Each weekend this month, the Leonhardt People Center will feature the music, traditions, and culture of this area of the world. In addition to the many exciting activities listed in the calendar on page 12, are the following performances and exhibitions.

The Canadian-Caribbean Performing Company of Montreal. On Thursday, April 24 at 7:30 p.m., this unique performing company will present dances and songs that reflect the African and French origins of Caribbean culture. This Montreal-based troupe has promoted Caribbean culture throughout Canada since 1978. This performance marks the premiere U.S. performance of these exciting percussionists, guitarists, singers, and dancers.

The program will take place in the Main Auditorium. Free tickets may be obtained by sending a self-addressed, stamped envelope to: *Coribbean Potpourri*, Department of Education/Community Programs, American Museum of Natural History, Central Park West at 79th St., New York, N.Y. 10024.

Rhythms of Steel. See the article on this page for details of a unique family group of steel drum musicians.

For additional Caribbean Month program information, please call the Department of Education at (212) 873-1300, ext. 514.

Caribbean Month programming has been made possible in part by the generosity of the family of Frederick H. Leonhardt, and a gift from the Samuel and May Rudin Foundation.

Temporary Exhibitions.

Two exhibitions are on view in the People Center, which is open Saturdays and Sundays from 1:00 to 4:30 p.m.

Yanomamo Ritual Symbols is a mixed-media art exhibit and slide presentation by Gipsy Alcala that focuses on the magical-religious world of the Yanomamo, an indigenous tribe of the Venezuelan Amazon.

Images of My People, a photographic exhibit and slide presentation by Luis Delgado, features the Inca culture that still endures in Cuzco and other areas of Peru.

Rhythms on Steel

Thursday, April 10
7:30 p.m.
Main Auditorium
Free

All forms and tempos of music from religious hymns and Handel's "Hallelujah Chorus" to calypso rhythms and pop songs, will resound in the Main Auditorium when one of the most unique musical ensembles in the world performs *Rhythms on Steel*.

The orchestra, which is the only one of its kind, is composed of twelve family members who play specially designed steel drums. The group's thirty-six metal percussion instruments have been built, hammered, and tempered by Herman "Rock" Johnston, the group's founder. They produce a variety of sounds that are rem-

iniscent of woodwinds, horns, heavy bass, percussion, strings, and flutes of a large symphony orchestra.

The Johnston Orchestra is dedicated to having steel band music recognized as a true art form. The group has delighted many Museum audiences and has appeared at Lincoln Center and at the Tanglewood Festival.

Free tickets can be obtained by sending a self-addressed, stamped envelope to: Department of Education/Community Programs, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. For information, call (212) 873-1327, ext. 514.

Harlem is Heaven

Saturday, May 3
2:00 and 4:00 p.m.
Kaufmann Theater
Free



The Cotton Club.



"Goin' To Town" at the Cotton Club.

In the 1930's and 40's Harlem's Apollo Theater was the place to go. People dressed in the latest styles to see the nation's most famous big bands, like Count Basie's and Duke Ellington's. Blues singers Billie Holiday and Ella Fitzgerald drew raves not only from Harlem, but from an entire nation.

Other New York clubs too, like the Cotton Club, gained international musical fame. People from all walks of life met on 125th Street, and participated in an exciting and often uproarious jazz renaissance.

These clubs helped make the era of black vaudeville a time of

exciting historical occurrences and musical development.

Next month, the Black Patti Foundation brings back those exciting days of an era that is gone but by no means forgotten, with *Harlem is Heaven*. The program will include historical information about Harlem clubs in the twenties and thirties, focusing on the chorus girls of Harlem, like Marion Cole, Harriet Brown, Baby Sanchez (Sammy Davis Jr.'s mother!), Juanita Bosseau, and others. Marion Cole and Harriet Brown will appear in person to dance. The audience will also be treated to vintage slides and

film clips of these chorus girls and other uptown performers.

The Black Patti Foundation is a New York based organization whose primary goal is to retrieve information and recreate scenes from the black vaudeville era. The Foundation presents *Harlem is Heaven* in conjunction with the Museum's Department of Education.

Free tickets will be distributed at the Kaufmann Theater ticket booth on a first-come, first-served basis, beginning at noon on the day of the performance. For additional information, call (212) 873-1300, ext. 514.

Eagles and Owls

Sunday, April 13

11:00 a.m., 12:30 p.m., and 2:00 p.m.

Kaufmann Theater

Free and open only to Members

As a result of eating pesticide-contaminated fish, the bald eagle is no longer a familiar sight along the rivers and coasts of North America. Members will learn about the natural history and conservation of this beloved national bird when a bald eagle makes a rare personal appearance at the Museum in wildlife lecturer Bill Robinson's latest Family Members' Program on Eagles and Owls. Other featured guests will include an African Tawney Eagle, a Golden Eagle, a Barred Owl, and a Great Horned Owl.

A particular highlight of the program will be live flight demonstrations by some of the birds. In addition, Robinson will discuss how each of his birds have adapted to their specific environment and describe their styles of hunting.

Robinson has been a favorite lecturer at the Museum for several years. He is a naturalist and conservationist who is actively involved in peregrine falcon recovery projects.

To register for Eagles and Owls, please use the April Members' Programs Coupon on page 3.



AMNH



AMNH

Behind-the-Scenes Coupon

Behind-the-Scenes Tour of the Department of Ornithology. \$7.00 and open only to Participating, Donor, and Contributing Members.

Tours will leave at fifteen-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Sunday, April 27 between 10:30 a.m. and noon.
 _____ Sunday, April 27 between 1:00 and 2:30 p.m.
 _____ Tuesday, April 29 between 5:15 and 6:00 p.m.
 _____ Tuesday, April 29 between 6:30 and 7:30 p.m.

Number of tickets at \$7.00 each: _____

Amount enclosed for program: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to **BIRDS**, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.

Members' Tour of the Month

The Arthur Ross Hall of Meteorites

Meteorites hold the secret of the origin of the solar system, the relationship between the planets, and the history of the earth. Together with the moon rocks, they are the focus of this month's special Members' Tour of the Arthur Ross Hall of Meteorites.

Volunteer tour guides will point out the different types of meteorites, and describe how they are formed. Members will hear the story of how Ahnighito, the largest meteorite in captivity, and two other famous meteorites were recovered by Robert E. Peary and brought to the Museum. Tour guides will also discuss our moon rocks, which are on permanent loan from NASA.

All tours are led by volunteers of the Museum's Highlights tour program. To register for a tour, please use the adjacent coupon.

Members' Tour of the Hall of Meteorites. Free and open only to Members. Please indicate a first, second, and third choice of date and time, if possible.

| | | |
|-------------------|------------------|------------------|
| Sunday, May 4 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, May 7 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Saturday, May 10 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, May 13 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Saturday, May 16 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Sunday, May 17 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, May 20 | _____ 6:00 p.m. | _____ 7:00 p.m. |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone number: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to Meteorites, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024. **Registration closes April 25.**

Notes from the Chiricahua Mountains Part II: Sex and the Single Insect



John Alcock awaits the first mating of the morning.

"Where the dickens are the females this morning?" exclaims John Alcock, who has expected to witness a mating by now.

Alcock and I have awakened at 5:00 a.m. in order to reach the stream by 6:00 or so. I'm one of those people who likes to wake up early in the afternoon and go to sleep early in the morning, so this had better be good.

By 7:24 a.m. the *Palltothemis lineatipes* males have appeared along the sides of the peaceful mountain stream to set up their territories. Their bodies bright red-orange, their wings a blur, they hover along the sides of the stream, above the choicest oviposition sites — those that are shallow, relatively still, and have gravelly bottoms.

Black V, one of the marked dragonflies, is there. So is the Big Pine male, named for his tendency to guard a particular pool opposite a tall pine tree. They and the others spread out, one male to every three or four meters of stream. A very aggressive and successful male might be able to guard one site during the entire morning, but such will not be the case for most of them.

There are always more males than choice spots, and by 8:00 a.m. or so the competition has become intense. Alcock has a checklist of interactions that occur between competing males. These include "the straight chase," the "ascending flight," the "circle," "meet and turn," and "back and forth." I am to help him record how many of each interaction occurs at our neck of the stream, under what conditions the interactions occur, and at what time.

After twenty or so "meet and turns," one "straight chase," and two "ascending flights," there is still no trace of a female anywhere. Where are the females, anyway? They probably perch in the hillside vegetation at night, but this is not known for sure. Very little is known about this dragonfly species.

Alcock and I sit down on the lawn chairs he's brought along, and talk. He is one of a dozen or so scientists I've met during a recent trip to the Museum's Southwestern Research Station, located in Arizona's Chiricahua Mountains. Like all the scientists here in early June, his main focus is animal behavior.

Other topics being studied at the research station include helping behavior among Mexican jays, territorial behavior among kangaroo rats, and time and energy budgeting among yellow-eyed juncos. Two of the scientists — Alcock and Jerram Brown — are authors of ethological textbooks.

While the others are out in the field striving to better understand the birds and the mammals, Alcock speaks with pride and good humor about his fascination with insects. He's studied the mating systems of bees, wasps, beetles, flies, "you name it. I'm particularly interested in insects that mate on hilltops, like paper wasps."

In graduate school, Alcock's primary focus changed from birds to insects because "their lives are more bizarre and different from the lives of vertebrates, so there's much more to discover. You never know what to expect when you start watching a bug."

The sexual behavior of *Palltothemis lineatipes* is unusual among dragonflies. Like many other dragonflies, they mate in the air after the male has captured the fe-



A Southern Arizona mountain stream where *Palltothemis lineatipes* males and females meet.

male in flight and assumed the tandem position, the male grasping the female behind her head with his abdominal claspers. While the females of many other dragonfly species lay their eggs while still in tandem, the female *Palltothemis lineatipes* is let go by the male before her

eggs emerge. She then dips her abdomen gently, gracefully, into the oviposition site he has procured for her, depositing the eggs as her mate "guards" her by hovering close by.

"There is one chance in four that the female won't ovi-

posit in the male's area. The female can and does successfully flee from the male if she so chooses. But the advantage to her, is that if she likes the oviposition site she can deposit her eggs there without harassment from other males."

Why does the male risk letting her go when she may leave him for another mate and another territory? And what does he gain from watching over her when he might just as well use that time to pursue and mate with another female? From a sociobiological viewpoint, the female benefits from having a good site where she can oviposit without interference, so that her offspring (and thus her genes) will continue into the next generation. The male gains many descendants by fertilizing as many eggs as possible. The puzzle for the behaviorist is to understand how the tactics of males and females promote these evolutionary goals.

In the very same stream are the males of another species of dragonfly. These males are large and blue. They cruise long distances up and down the stream, a strategy completely different from that of *Palltothemis lineatipes*. What is the significance of this difference?

These are the sorts of questions Alcock puzzles over. Before arriving at the answers, however, a great deal of observational work needs to be done.

At the Research Station's dinner table, questions such as these will be good-naturedly discussed and debated by the scientists and their assistants. Some of them have come out to this part of the country for the first time. Others spend several months of each year following up on long-term research projects.

This is Alcock's second summer at the Research Station. "It's a great thing that the Museum helps support the Southwestern Research Station, because of the tremendous number of people who benefit directly from it. If you're a scientist, one of the nicest things is the interchange with other scientists. And if you're a student, being here offers hands-on research experience."

Scientists are not the only visitors to the Station. Tour groups, itinerant artists and performers, amateur naturalists, and vacationers looking for a beautiful place to relax return again and again.

Alcock meanders upstream to check again on the who's who of the male congregation. There are still no females in sight.

Two males are facing one another about five feet apart. The tension between them is palpable as they move slowly together, parallel to the side of the stream, maintaining the same distance for several seconds.

It is growing hotter. The sun shines on their honey-colored wings. They part abruptly, and fly away so swiftly that it is difficult to see where either of them go.

We visit Black V again, who continues to guard his gravelly-bottomed oviposition site. For the past two days White Double O, another marked male, has taken over Black V's position in the late morning. Alcock is curious to see if this will happen again.

To mark a dragonfly, Alcock catches it and uses a Pentel paint pen to draw small patterns on the upper right wing. To me, the patterns are difficult to discern. But to Alcock they are familiar and identifiable.

"I feel intense interest in their lives," says Alcock. "As soon as you mark one and can recognize it as an individual, it becomes quite an emotional experience. Now that I've marked him [Black V], I know a lot about him and look forward to seeing him every day."

"Although most people find it harder to relate to insects than to birds and mammals, that's their problem. Insects are every bit as interesting."

"Do you extrapolate from insect to human behavior?" I ask.

"In a certain sense yes, in a certain sense no. By doing this type of work I can demonstrate the utility of using an evolutionary approach to analyze behavior. Similar types of logic can be applied to the study of human beings. But to say a damselfly is territorial and humans may be territorial and that therefore they're territorial for the same reasons is incorrect and outmoded as a method of looking at human behavior."

I am just about to give up on ever seeing a female when Alcock lets out what sounds like a battle cry.

"Look! The first mating! Over there at site T4!" We rush to the scene to watch.

The liaison doesn't work out. The male guarding the spot gets involved in a chase with a neighboring male. The female rejects the area, and flies away.

This first would-be mating has taken place without our ever seeing where the female came from. One moment, no females were present. The next, an attempted mating has occurred. Slenderer than the males, the females are slate blue, with off-white spots.

Chases and other acts of aggression between males are now happening all along the stream. To me, all this activity seems much ado about nothing, a tremendous waste of time and energy, since most of the time there are no females present anyway. I wonder why such behavior ever evolved.

"According to evolutionary theories, whatever hap-



The Chiricahua Mountains rise above the Station.

pens to be the best reproductive tactic for the individual will usually win out," Alcock says. "In this species, the highly aggressive territorial male is the one who fertilizes the most females. He's gotta be tough to deal with all the competition — and he is." In some cases the males of this species are so aggressive Alcock has seen a lone male strike at a pair in tandem, trying to knock them apart. With other dragonfly species, he has observed males being struck and drowned by other males.

What about the females? "They only come down to the stream to mate and lay eggs. They can store sperm, and may not need to mate again for a long time." Females too may occasionally use aggressive tactics. A female may sneak into a spot where another female is being guarded, confusing the guarding male and laying eggs fertilized from a previous union with another male. She is thus making use of the male's oviposition site without making use of his sperm, "cheating," so to speak.

Although scientists are not supposed to "personify" animals, as a layperson I have the luxury to entertain certain thoughts. I decide that if I had to be a member of this species of dragonfly but had a choice as to what sex, I would without doubt be a female. When you are female, no one forces you to approach the stream to mate — when you are ready, you just go on down. The males hang around by the stream, fighting one another as they secure you a wonderful place to lay eggs. You can accept



I wave to a lone cow.

or reject both the male and the spot. And no one bothers you as you lay your eggs. What a life!

My attention returns to the fate of Black V. A few minutes before 9:00 a.m., after he has lazily sunned himself on a rock for some time, an intruder arrives. The two insects go on a straight chase, then do a back-and-forth across the stream so fast that their two forms become indistinguishable. This is a serious challenge. The chase lasts several minutes. By 9:00 the intruder, who has two white dots on his wing, has dethroned Black V. White Double O has triumphed again.

By 9:10 a.m. there are nine males down at our neck of the stream. "They're essentially all down," says Alcock. "And it's already getting plenty hot."

The dragonflies seem to have a preference for a certain temperature range. On a very hot day, will have left the stream by noon, while on a cooler day, they may stay until 4:00 p.m.

By 11:00 many matings and several territorial takeovers have taken place. The frequency of matings rises and falls as the afternoon progresses, until there is little activity. Ready for a swim and a good meal back at the Station, I leave Alcock to the dragonflies, cross a dry stream bed, and set off on the short trail that will lead me to the road. Alcock will remain until the last mating of the afternoon takes place.

Lizards dart across the path and beneath leaves as I pass. I am hiking on part of the Basin Trail, which leads to the Little Dam, Ash Spring, and the Snowshed Trail, all part of the Coronado National Forest. Near the roadside, a wooden sign announces "Green Forests Offer More."

I wave to a lone cow on my way to the Station, just minutes down the road. As I drive, I think about what I have learned.

For me, the most exciting part of the day's experience has been not the information I have helped gather, or even the particular species I have observed. It has been the process of learning to observe.

The day before my morning spent with Alcock, I had passed similar Chiricahua mountain streams where I had seen males of this particular dragonfly species. My attention was drawn to them, because I thought they were beautiful. But even though I had stooped upon a rock several times to watch them, I had not noticed any patterns in their behavior — because I had not been looking. Nor had I known that the insects I was watching represented only one sex of the species.

Now, after watching for just a few hours, the wealth and patterns of interactions I had observed were fascinating to me — and I knew there was so much more I had still not seen. Already I was formulating scores of questions. How exactly had this mating behavior evolved? Did close relatives of this species behave similarly? Why or why not? To what extent are the behavioral patterns I witnessed genetically predetermined, and to what extent might they change if the environment changed? What did the females do and where did they stay most of the day? What role is played by the bright coloration of the males? Who are the dragonflies' major predators?

When one is not looking for patterns, a creature is just a creature. Fascinating and beautiful to watch, perhaps, but not so clearly part of a larger system. When one really sits down to observe and to record, one simple activity — like a dragonfly hovering over a rock — takes on a context, a relatedness to environment, evolutionary history, and other living things. Questions arise that are always more numerous than the answers they elicit.

Yesterday, *Palltothemis lineatipes* were just dragonflies I saw in passing. Now, like Alcock, I feel an intense interest in their lives.

John Alcock has researched the reproductive behavior of a wide variety of insects, including hilltopping tarantula hawk wasps, solitary bees, the nymphalid butterfly *Chlosyne californica*, and the damselfly *Hetaerina vulnerata*. Currently a professor at the University of Arizona in Tempe, Alcock has written several books, including *Animal Behavior, An Evolutionary Approach*, and *Sonoran Desert Spring*.

— Ruth Q. Lebowitz

The Southwestern Research Station is a non-profit research and educational institution owned and operated by the Museum. The land on which it stands was purchased in 1955 with monies donated by David R. Construction of the laboratory. The Station's residential facilities were made possible by gifts from the National Science Foundation and private individuals.

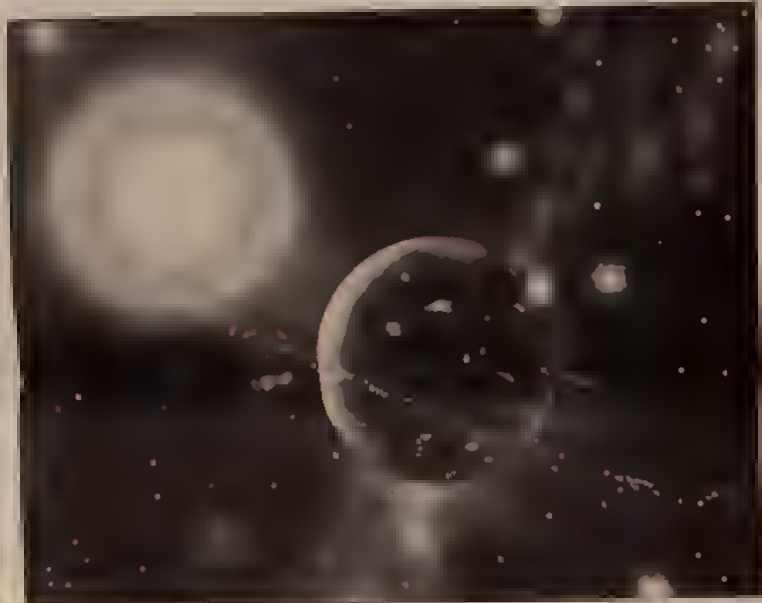
An informal atmosphere prevails at the Station, where researchers and vacationers dine together at picnic tables outside or in an indoor diningroom. Among the many attractions of the Station are its swimming pool, library, and the many hiking trails in the area. Researchers are invited to take advantage of the Station's lab space and scientific equipment, which should be reserved prior to each visit.

For a fee schedule and brochure, write: The Resident Director, The Southwestern Research Station, Portal, Arizona, 85632.

Happenings at the Hayden

Please note: The American Museum-Hayden Planetarium will be closed on April 28 and 29.

Brian Sullivan/Hayden Planetarium



Our young planet Earth.

Sky Show Double Feature

Halley's Comet. Once in a Lifetime and *Starborn: Earth's Odyssey Through Time and Space* can be seen together through April 27.

Halley's Comet tells you everything you'd like to know about comets, including where and when to look for them. It contains a new recorded narration by Leonard Nimoy.

Starborn features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet.

The double feature will be shown Monday through Friday at 1:30 and 3:30 p.m., Saturday 11:00 a.m. and from 1:00 to 5:00 p.m. on the hour, and Sunday from 1:00 to 5:00 p.m. on the hour.

For additional Sky Show information call (212) 873-8828.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children, and includes two floors of exhibitions. For non-member prices and Sky Show times, please call (212) 873-8828.

Wonderful Sky

The Muppets take preschoolers on a journey to explore rainbows, sunsets, and distant stars. Images of Big Bird, Cookie Monster, Grover, and other favorite Sesame Street Muppet characters encourage children to participate in a lively program of dialogue, song, and colorful images. *Wonderful Sky* will take place the first Saturday of every month through June 7. April 5th is sold out. Reservations are strongly recommended. For reservations and information, please call (212) 873-5714.

Halley's Hotline

A 24-hour-a-day recorded message informs callers how to view Halley's comet. Call (212) 769-3299.

School Programs

The Planetarium offers many programs for young children. For school information, call (212) 873-5714.

It's always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Dances of the Nations

Thursday, May 15
7:30 p.m.
Main Auditorium
\$4.00 for Members
\$7.00 for non-members

Matteo and his EthnoAmerican Dance Theater will celebrate America's dance heritage in his newest program *Dancing America: Cameos of Ethnic Dance*. The program will include selections ranging from a Native American Hoop Dance to dances from India, Japan, and Moonish Spain. The roots of modern American choreography will be explored with a suite of dances of Isadora Duncan, and an ode to Ruth St. Denis.

Matteo is renowned for his ability to blend the performance styles of East and West. In *Lord of the Dance* and two gesture songs, he will illustrate Indian mudras (hand gestures) by performing them to American contemporary music.

No program created by Matteo is complete without the clicking of castanets, and this program will include a premiere castanet quintet set to Viennese waltzes, a rag by Scott Joplin, and a minuet for Zils.

Matteo is one of our most popular performers. In an engaging and charming style, he has brought ethnic dance to thousands of people around the world. Matteo never forgets that people dance not only to create serious art forms, but also to have fun. This combination of reverence and delight inspires the dancers who work with him, as well as the audience.

To register for *Dancing America*, please use coupon on page 3.



Spanish Dance in honor of Isadora Duncan.



Okame to Gombel, from Japan.



Native American Hoop Dance.



Classical dance of south India.

Museum Notes



Walrus in the Hall of Ocean Life, where Philip Appleman will read poetry next month (page 4).

New For Young Members

Dinosaur Birthday Parties at the Museum. Weekend Dinosaur birthday parties designed for children ages 5 through 10 are now available to Members of the Museum. For a flyer containing detailed information, please call the Membership Office at (212) 873-1327.

Special Exhibitions

Gypsies: Photographs by Jan Yoors. Through July 9 in the Akeley Gallery. Jan Yoors, an artist and tapestry designer, left his Belgian home at the age of 12 to periodically live side by side with Gypsies for many years. He was adopted by a Gypsy family, learned Romani, the Gypsy language, and gained a knowledge of these unique people afforded to few outsiders. The exhibition fea-

tures black and white photographs taken by Yoors between 1934 and the early 1970's. The photographs portray various aspects of Gypsy culture such as home life and transportation, and include many beautiful portraits of individuals.

Carl Ethan Akeley, 1864-1926: Renaissance Man. In the Library Gallery. This exhibition of books, artifacts, photographs, and tools celebrates the diverse and extraordinary accomplishments of Carl E. Akeley, taxidermist, inventor, naturalist, explorer, and prime force behind the Museum's Hall of African Mammals.

The Brazilian Princess is now on display in the Roosevelt Rotunda. At 21,327 carats (9½ pounds) it is the world's largest cut gem. This near-flawless light blue topaz was found in Brazil 25 years ago in the form of a 75-pound crystal. It is a gift to the Museum from an anonymous donor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour, please ask at an Information Desk for specific tour times, or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in company with Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends from 12:00 to 4:30 p.m. Recommended for ages five to ten. Children younger than five will not be admitted.

The Leonhardt People Center features ethnic dance, musical performances, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. This month the Caribbean is the focus of People Center programs. For information on this month's activities, see page 6 and the calendar on page 12.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — Museum visitors join astronauts aboard the space shuttle in Naturemax's newest film *The Dream Is Alive*.

In addition, Friday and Saturday double features include *The Dream Is Alive* and *Living Planet*.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Cen-

tral Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10% discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. in the basement. Rate is \$50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write ahead for details to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.

Looking Ahead

Future issues of *Rotunda* will contain information on all of the following:

- May is **Japan Month** in the Leonhardt People Center.
- **Versions of the Traditional: Bushman Stories.**

Friday May 5, 6:00 to 8:30 p.m. in the Linder Theater. Marjorie Shostak, the author of *Nisa*, speaks on the traditions and lives of the Bushmen. A short series of films supplements the lecture.

Saturday, May 10, 1:00 to 3:00 p.m. in the Linder Theater. Melissa Heckler presents a program of Bushman storytelling. Films of traditional Bushman life will precede and follow the stories.

For additional information about *Versions of the Traditional* please call (212) 873-1300, ext. 559.

• **Discovery Day.** Get those mysterious objects you've been wondering about ready for a trip to the Museum on Saturday, June 14, when Museum scientists will help you figure out

what your objects are, where they come from, and how and why they came into existence.

• **Wolves and Humans: Coexistence, Competition, and Conflict** will open in Gallery 3 on June 11. This exhibition will explore the natural history of the wolf, changing relationships between wolves and humans through time, and the prominence of the wolf as a symbol in folklore, myth, legend, art, and religion.

• **Lost and Found Traditions: Native American Art 1965-1985** will open at the Museum in June. This exhibition will feature more than 400 objects of traditional art now being produced by Indians of the Northern Woodlands, Northern and Southern Plains, and Pacific Northwest Coast.

• **Dark Caves, Bright Visions.** The widest array of original paleolithic artifacts ever assembled for study and display is now in its planning stages. The special exhibition, entitled *Dark Caves, Bright Visions*, is scheduled to open late this year



Wolves and Humans: Coexistence, Competition, and Conflict opens on June 11.

Sun

Mon

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Thu

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The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance; and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

6 1:00 and 4:00 p.m. Diggers. Documentary about 100,000 black men from the West Indies who built the Panama Canal. Linder Theater. Free.
1:00-4:30 p.m. Caribbean Month. Leonhardt People Center. Free.
 Same as April 5.
2:00 and 4:00 p.m. Dances of Chi-na. Kaufmann Theater. Free. (212) 873-1300, ext. 559 for additional information.

13 11:00 a.m., 12:30 p.m., and 2:00 p.m. Eagles and Owls. Members' Program. Kaufmann Theater. Free and open only to Members. Page 7.
1:00 and 4:30 p.m. Caribbean Month. Leonhardt People Center. Free. Same as April 12.

Moon at apogee, 7:00 a.m.

20 1:00 to 4:30 p.m. Caribbean Month. Leonhardt People Center. Free. Same as April 19.
1:00 p.m. American Cetacean Society. Room 319. Free.
2:00 and 4:00 p.m. Music of Duke Ellington. Kaufmann Theater. Free tickets on day of performance. Page 2.
2:00 p.m. New York Paleontological Society. Room 426. Free.

27 Behind-the-Scenes Tour of Ornithology. Page 1.
1:00 to 4:30 p.m. Caribbean Month. Caribbean Potpourri and Orisha Oshun in Africa and the New World (see April 26); and Folktales of Trinidad. Leonhardt People Center. Free.
2:00 p.m. Musica. This 60-minute film documents the development of Latin American (Salsa) music in the U.S. Kaufmann Theater. Free.

7 Courses For Startgazers begin. For registration information, call the Hayden Planetarium at (212) 873-1300, ext. 206.

Participants in Discovery Tour from Singapore to Athens cruise through the Strait of Malacca. For Discovery Tour information call (212) 873-1440.

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8 7:30 p.m. Darwin's Ark. Members' Program. Hall of Ocean Life. Free for Members, \$4.00 for non-members. Page 4.
8:00 p.m. Linnaean Society. Kaufmann Theater. Free.

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15 8:00 p.m. New York Entomological Society. Room 129. Free.

10 7:30 p.m. The Song of Sings. Members' Program. Kaufmann Theater. \$6.00 for Members, \$10.00 for non-members. Page 3

9 7:00 p.m. New York Mineral Club. People Center. Free.
7:30 p.m. Rhythms of Steel. Main Auditorium. Free. Page 6.

17 7:00 p.m. Duke Ellington on Film. Kaufmann Theater. Free. Page 2.

7:30 p.m. Jews of Yemen: A Vanishing Culture. Members' Program. Main Auditorium. \$3.00 for Members, \$6.00 for non-members. Page 3.

18 7:00 p.m. New York Microscopical Society. Room 419. Free

19 1:00 to 4:30 p.m. Caribbean Month. Children of Dahomey, an illustration of the African diaspora with rhythms, dances, and songs of the Caribbean. Brazil, and Africa. Go Native! an introduction to Afro-Caribbean culture through dance and music. and Merengue: Dominican Music of Social Commentary. Leonhardt People Center. Free.

25 Moon at perigee, 1.00 p.m.

24 7:30 p.m. The West-Can Performing Company. Dances and songs that celebrate African and Spanish origins of Caribbean culture. Main Auditorium. Free

Full Moon at 7:46 a.m.

23 7:00 p.m. Lapidary and Gem Society. People Center. Free.
8:00 p.m. Met Grotto; National Speleological Society. Room 129. Free.

22 7:00 a.m.-9:00 a.m. Bird Walk with Stephen Quinn. Meet Northeast corner of 77th St. at C.P.W. \$4.00. Call (212) 873-7507 for information.

6:00 p.m. Sex and the Brain. Kaufmann Theater. Free. Page 4.
8:00 p.m. Linnaean Society. Linder Theater. Free.

28

April 27, Continued:
3:15 p.m. Bitter Cone. Award winning documentary that offers an in-depth look at Haitian society of the past and present. Kaufmann Theater. Free.

27 Behind-the-Scenes Tour of Ornithology. Page 1.

1:00 to 4:30 p.m. Caribbean Month. Caribbean Potpourri and Orisha Oshun in Africa and the New World (see April 26); and Folktales of Trinidad. Leonhardt People Center.

2:00 p.m. Musica. This 60-minute film documents the development of Latin American (Salsa) music in the U.S. Kaufmann Theater. Free.

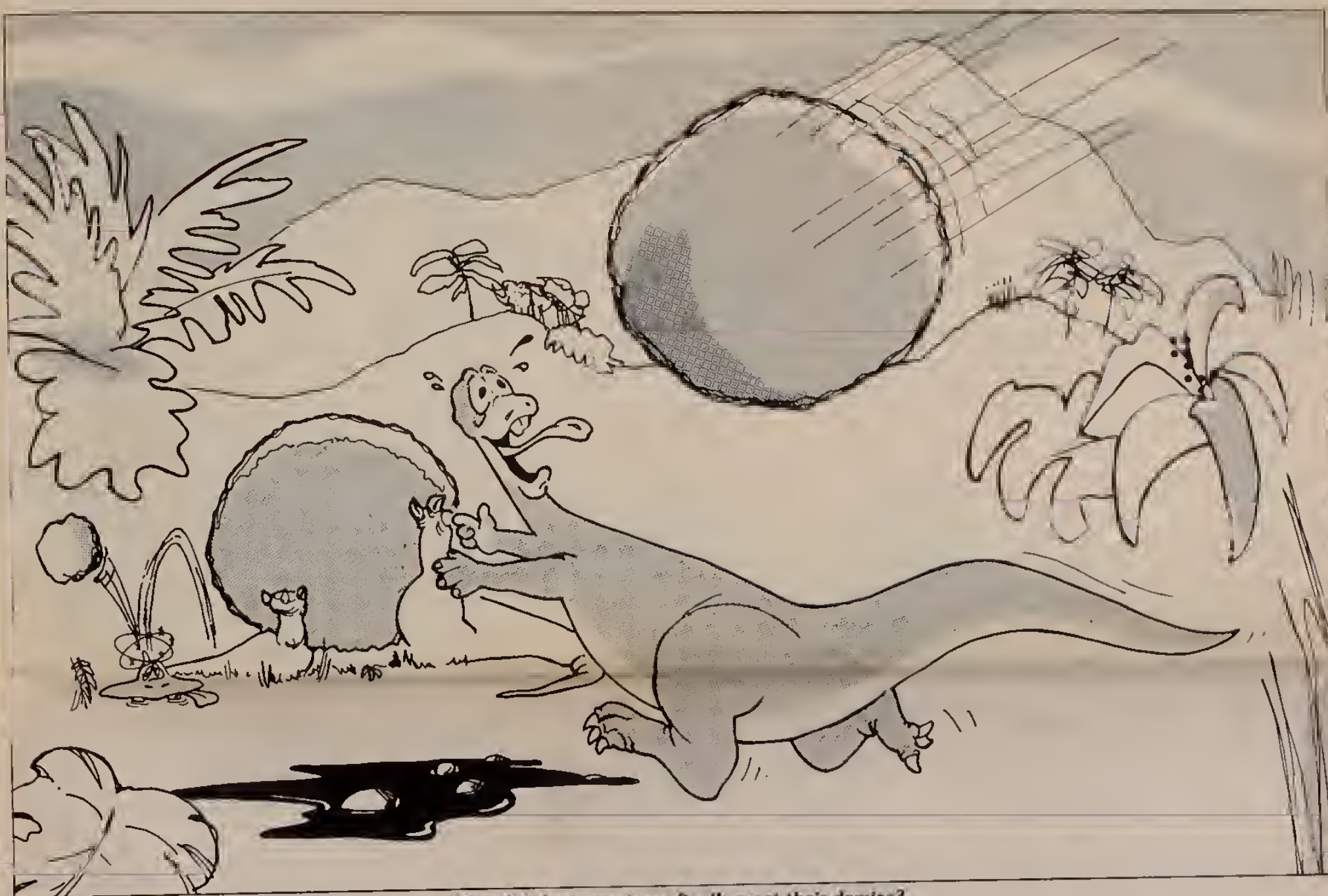


Bird of Paradise. Behind-the-Scenes Tour. Page 1.

April 1986 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 5 May 1986



How did these creatures finally meet their demise?

Specialists Predict: The World Will End on May 22!

**Bones of Contention:
The Extinction Problem
Thursday, May 22
7:30 p.m.
Main Auditorium
Free and open only to Members**

Did this headline capture your attention? Actually, no one knows when the world will end. But giving a specific time makes the topic commercially newsworthy and leads to an exciting headline.

Malcolm McKenna, of the Museum's Department of Vertebrate Paleontology, believes that, unfortunately, the dissemination of scientific ideas often follows the pattern shown above. Those ideas that lead to sensationalist theories get covered in the news, while those that are more moderate, or more complex, are

not as often heard.

Take, for instance, the idea that asteroids falling to the earth and breaking into dust that blackened the skies led to the extinction of the dinosaurs. There's plenty of evidence in support of this theory, and it has received much press coverage. But according to McKenna, there is as much evidence against this theory as there is pro.

And what about the old theory that the rise of mammals led to the demise of the dinosaurs — mammals eating dino-

saur eggs, and so forth? The truth is, says McKenna, that mammals and dinosaurs co-existed for millions of years.

In this program, geared to debunk some of the popular theories of extinction and inspire the audience to question the validity of certain conclusions, McKenna will provide an overview of what is thought and what is known today about the extinction of different vertebrates, particularly the dinosaurs. Drawing from his own paleontological fieldwork on several continents, McKenna

will elucidate the contributions of fieldwork to our present body of knowledge, and discuss how and why some of the major disagreements have arisen among physicists, astronomers, and field scientists.

Bones of Contention: The Extinction Problem will take place in the Main Auditorium at 7:30 p.m. on May 22. The program is free and open only to members. To register, please use the May Members' Programs Coupon on page 3.

Sunset Cruises Around New York

5:30 to 8:30 p.m.
\$18.00 for Members
\$20.00 for non-members

Both trips sold
out from April issue

Join Sidney Horenstein of the Museum's Department of Invertebrates on two exciting sunset cruises next month, when he discusses the geology, history, and ecology of several exciting areas around New York.

On June 3, participants will learn about a part of New York

that most of us never see in Nooks and Crannies of New York Bay. Participants will experience unusual views of the Statue of Liberty and Ellis Island, as well as historic New York Bay, and be introduced to Staten Island's high coastal hills.

On June 10, the natural history of our local fjord will be the

focus of *Geology at Sunset: A Cruise up the Hudson*. Participants will learn about the origins of the Palisades, plant and animal environments, and more.

For both cruises, participants are asked to bring their own box supper. For additional information and a registration form, please call (212) 873-7507.

Corrections. We apologize for several bloopers contained in the April **Education Department Programs Coupon**. Please note the following corrections: *Geology at Sunset* — The correct date for this excursion is June 10. *Rocky Coasts and Salt Marshes* — The correct price is \$30.00. *Bird Identification for the Amateur* — The correct price is \$40.00. For additional information about these programs, please call (212) 873-7507.



Shoestring Tales

Sunday, May 4
11:00 a.m. and 1:30 p.m.
Kaufmann Theater
\$2.50 for Members
\$5.00 for non-members



Join the talented and highly acclaimed Shoestring Players as they introduce the entire family to Conquering John, Dee Dee the Devil's daughter, a magic fiddle, and much more. For ticket availability, call (212) 873-1327.

Versions of the Traditional

**The Legacy of the Bushman:
Special Programs Honoring the Traditions and
Thoughts of the San**

The following programs in honor of the San Bushmen have been made possible, in part, by a grant to the Touchstone Center by the New York State Council on the Arts. They are presented by the Touchstone Center and the Museum's Department of Education.

Friday, May 9, 7:00 p.m. in the Linder Theater. **Are the Gods Really Crazy? The True Story of the Kalahari San.** Marjorie Shostak will examine the true dignity and balance of !Kung San hunter-gatherer life through slides and excerpts from her book *Nisa: The Life and Words of a !Kung*

Woman. Shostak lived with the !Kung San of northwestern Botswana in Southern Africa for two and a half years. She is presently a Research Associate at Emory University.

Saturday, May 10, 1:00 p.m. in the Linder Theater. **The Stories in the Wind: Tales, Myths, and Legends of the Bushman.** Melissa Heckler will tell stories that center on the rich folklore of the Bushman. Heckler is storyteller in residence at the Chappaqua Library. Most recently, she told African stories at the Metropolitan Museum of Art and at the National Everychild Conference in New

York.

Saturday, May 10, 3:00 p.m. in the Linder Theater. Three films by the noted film-maker John Marshall will be shown: *Bitter Melons* (30 min.), which features the music, dance, and daily lives of a small band of Gwi San, will be followed by *The Wasp Nest* (20 min.), and *The Melon Tossing Game* (15 min.).

All of the programs are free, and seating is on a first-come, first-served basis. For additional information on any of the programs, please call (212) 873-1300, ext. 559.

ROTUNDA

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Dancing America

Thursday, May 15
Main Auditorium
\$4.00 for Members
\$7.00 for non-members

Celebrate America's ethnicity as Matteo and his company of 14 dancers present traditional dances from around the world that have been preserved through the generations, as well as innovative fusions that inevitably occur through acculturation when East meets West. This exciting potpourri of dance styles and forms will include a trio of Egyptian *zils* (finger cymbals) played to the music of Haydn, and an Andalusian dance to the Viennese music of Lanner's "Die Romantiker," arranged for a castanet orchestra. In *Lord of the Dance* and two gesture songs, Matteo will utilize Indian hand gestures, called *mudras*, to contemporary American music. Dances from Japan, India, and Moorish Spain, as well as a Native American hoop dance will contribute to the program's diversity.

Matteo is a skilled performer and teacher who has brought ethnic dance to thousands of people around the world. He is one of the Museum's most popular performers. To register, please use the adjacent May Members' Programs Coupon.

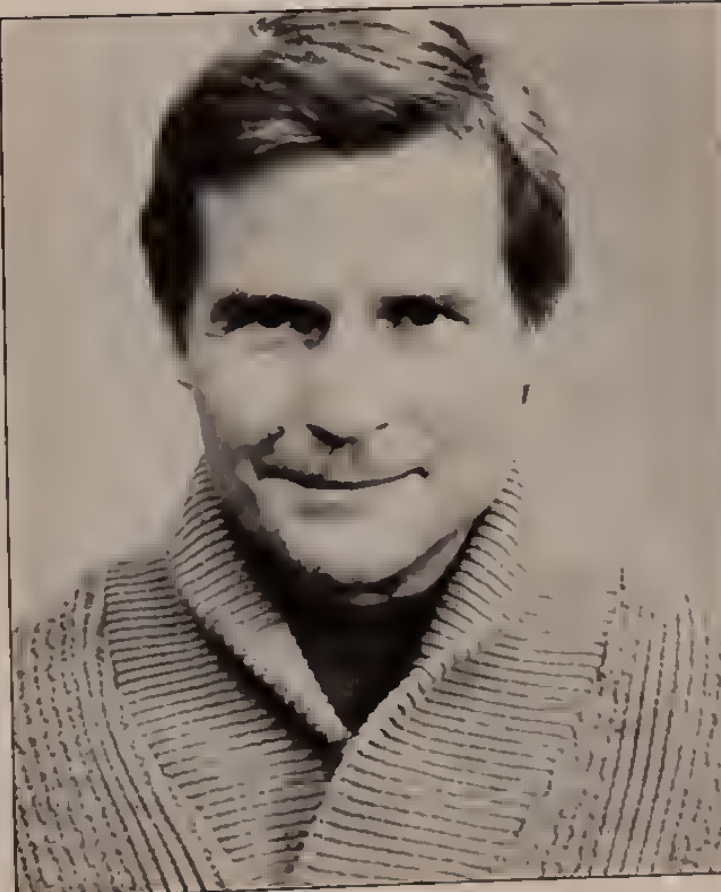


Matteo's "Lord of the Dance."

© 1986 Susan Cook

Darwin's Ark

Thursday, May 8
7:30 p.m.
Hall of Ocean Life
Free for Members
\$4.00 for non-members



© 1980 Thomas Vector

Poet Philip Appleman will combine the wonders of natural history with the beauty of words when he reads from his latest book of poems in the Hall of Ocean Life. Call (212) 873-1327 for ticket availability.

May Members' Programs Coupon



Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime Phone: _____
Membership category: _____
Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *May Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024.

Cameos of Ethnic Dance. Thursday, May 15. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price of \$4.00 each. Associates are entitled to one. All other tickets are \$7.00 each.

Number of tickets at \$4.00 each: _____ \$7.00 each: _____
Total amount enclosed for program: \$ _____

Bones of Contention: The Extinction Problem. Thursday, May 22. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets are \$4.00 each.

Number of free tickets: _____
Number of tickets at \$4.00 each: _____
Total amount enclosed for program: \$ _____

Wolves and Humans, Members' Viewing. Tuesday, June 17. Free, and open only to Participating, Donor, and Contributing Members of the Museum. Please indicate a first and second preference of times.

_____ 6:30 p.m.
_____ 7:00 p.m.
_____ 8:00 p.m.
Number of people: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

South Africa On Film



Neighborhood near Johannesburg.

South Africa is a land of 29 million people, of whom only the 4½ million whites can vote, travel freely, buy or sell land, and live or work where they choose. Opposition to the apartheid system, both at home and abroad, continues to grow. As the violence of suppression increases, so does the resistance.

The Museum has gathered films and speakers to illustrate the development of Afrikaner nationalism, the origins of apartheid, the rise of black trade unionism, and the birth of the African National Congress, as well as lives of significant leaders. Guest speakers include individuals active in the resistance to the white government.

Seating for the programs, sponsored by the Education Department, is on a first-come, first-served basis. For additional information about any of the following programs, call (212) 873-1300, ext. 514.

Thursday, May 8 7:00 p.m. Main Auditorium Free

The White Laager (50 min.) is a revealing study of the history of Afrikaner nationalism and the development of the concept of apartheid. The film explains how the image of the laager — wagons drawn up in a defensive circle — underlies the psychology and the evolution of the white supremacist system in South Africa. It covers the imposition of apartheid in 1948 and describes the Afrikaner's repression of all opposition to apartheid by whites and blacks.

Generations of Resistance (30 min.) provides the definitive history of black resistance to white rule in South Africa, from Bombata's rebellion in 1906 through the founding of the Black National Congress, dispossession of African lands, the imposition of pass laws, the Women's Campaign of the 1950's, the student uprising in Soweto in 1976, the Black Consciousness movement and the period through Stephen Biko's death. Excellent archival footage is used, along with many perceptive interviews with participants in the resistance campaigns.

The guest speaker will be Dumisani Kumalo, South African journalist and lecturer for the American Committee for Africa.

Saturday, May 10 2:00 p.m. Kaufmann Theater Free

Adapt or Die (48 min.) is an accurate description of the rise of the black trade union movement in South Africa. Made by ABC News and featured on 20/20, the film includes interviews with union leaders who have been detained and tortured. Also featured is the story of Neil Aggett, a white leader of a black trade union who, the government has claimed, committed suicide in his cell after four months of solitary confinement.

Portrait of Nelson Mandela (14 min.) tells the story of one of the most important leaders of the African National Congress. A lawyer and longtime proponent of non-violent action, Mandela became one of the founders of the "Spear of the Nation," the military wing of the ANC, after exhausting all means of peaceful protest. Imprisoned since 1964, he remains the pre-eminent symbol of resistance to white rule in South Africa. The film includes interviews with his daughter, Zana, his wife, Winnie, and the only known interview with Mandela himself.

David Lewis, director of a black South African trade union, will be the guest speaker.

Saturday, May 10 4:00 p.m. Kaufmann Theater Free

South Africa Belongs to Us (35 min.), shot secretly with the help of two black women journalists, is an intimate portrait of live typical women. The filmmakers gained access to places such as the huge sex-segregated barracks where women workers live separated from their families for years at a time, providing an in-depth look at the singular economic and emotional burden borne by black women in South Africa.

Nelson and Winnie Mandela (58 min.) focuses on the emergence of Winnie Mandela as a prominent and unique leader in the struggle against apartheid in South Africa today. This new release traces her development from young welfare worker to wife of political activist Nelson Mandela to an advocate against apartheid.

The guest speaker will be a member of the African National Congress.

African-Derived Religions In the New World

Despite the history of slavery and the imposition of the Christian religion and culture upon the Africans brought to the New World, a system of beliefs and rituals acquired in Africa has reappeared as the basis for religious expression, particularly among Caribbean blacks. And interestingly, common threads of African religions are exhibited in distant countries with different colonial histories, such as the Yoruba-based Santería and the Voodoo from Dahomey.

Through this six-part program of film, lecture, dance and music, the Museum's Department of Education presents the development of African-derived religions in the New World. For additional information, please call (212) 873-1300, ext. 514.

Legacy of the Spirits Wednesday, May 14 7:00 p.m. Kaufmann Theater Free

This film, produced by Karen Kramer, is an informative documentary about the religion of Vodou ("voodoo"). It traces the religion from Africa to Haiti to New York, and explains the meaning of the rituals, the pantheon of spirits, sacred drawings, the Catholic influence, and persecution. The film, shot entirely in New York, combines music, ceremonies, information, and colorful objects, to show the beauty behind what has been one of the world's most misunderstood religions.

Seating for this program is on a first-come, first-served basis.

Voodoo in Haiti Sunday, May 18 2:00 and 4:00 p.m. Kaufmann Theater Free

Dancers, drummers, musicians, and singers will perform on stage to demonstrate the practice of the Voodoo religion and the role of music and dance in the ceremony and ritual. Loa, or spirits, will be described through their attributes as symbolized in dance and music.

Free tickets are available on the day of the program, starting at noon, at the Kaufmann Theater ticket booth.

Voices of the Gods Wednesday, May 28 7:00 p.m. Kaufmann Theater Free

This one-hour documentary describes the Akan and Yoruba, two ancient West African religions practiced in the Americas today, depicting the religions as sources of strength and power for their worshippers. The film features an Akan graduation ceremony in which, after three years of training, a group of ten African Americans become priests and priestesses in a tradition that spans thousands of years. Also featured are scenes of an Egungun — an ancestral communion ceremony that takes place in the Yoruba village of Oyotunji in Sheldon, South Carolina. Oyotunji is the only traditional African village in the U.S. today.

Seating for this program is on a first-come, first-served basis.

Dinizulu and His African Dancers, Drummers, and Singers Saturday, May 31 2:00 and 4:00 p.m. Kaufmann Theater Free

This highly acclaimed company has been performing around the world for nearly 25 years under the direction of its founder, Nana Dinizulu. The program will feature traditional dance, drumming, and singing performed during Akan religious ceremonies and celebrations. Nana Dinizulu will narrate the program, giving the historical and cultural perspective that makes his company a vital force in the preservation of African traditions in the U.S.

Free tickets are available on the day of the program, starting at noon, at the Kaufmann Theater ticket booth.

Candomble and Santería Thursday, June 5, 7:00 p.m. Kaufmann Theater Free

The similarities and differences between the Santería and Candomble religions will be discussed in a lecture program including films, slides, and music. Further details will be available in the June issue of *Rotunda*, and can also be obtained by calling (212) 873-1300, ext. 514.

Patakin Saturday, June 7 2:00 and 4:00 p.m. Kaufmann Theater Free

This exciting group of dancers, singers and drummers presents a program of authentic music and dances from Santería, the Yoruba-derived religion of Cuba. In the Americas, the Yoruba worship of spirits — called orisha — combined with the Catholic reverence for saints to produce a unique religion that enabled the black slaves to continue their ritual and festivals while appearing to adopt the ways of their masters.

The program will also present songs and dances from the Abakua ritual. Abakua is a secret all-male society originating in Africa, whose purpose in Cuba was not only to preserve their cultural heritage, but also to help the community of freed slaves buy the freedom of others. The religious aspects of the ritual, such as the use of the Christian crucifix, were used to protect the members of the society from intrusion by the authorities.

Free tickets are available on the day of the program starting at noon at the Kaufmann Theater ticket booth.

For additional information on any of the programs mentioned above, please call (212) 873-1300, ext. 514.



Dinizulu and his African Dancers, Drummers, and Singers.

Wolves and Humans:

Coexistence, Competition, and Conflict
Exhibition opens June 11 in Gallery 3
Members' Viewing on Tuesday, June 17
6:30-9:30 p.m.

"Men and wolves often occupy the same ecological niche as hunters of the large herd animals, and so compete with one another, competition being intensified when these same herd animals are domesticated and thus become the helpless prey of either species."

— J.P. Scott



Wolves and humans. We have coexisted for hundreds of thousands of years. And everywhere that we have lived together, humans have shared myths, legends, and beliefs about these animals that are so like, yet so unlike us.

In ancient Egypt, a wolf-like creature presided over the world of the dead. In Norse mythology, wolves were the cherished companions of the god Odin. Often the wolf was seen as both a negative and positive presence in the world of people. In the ancient and medieval world, for instance, the wolf symbolized nurturance and the life-force, as well as vice, heresy, and the devil. In the tales best known to us in modern times, the wolf is portrayed as a cunning animal in Aesop's fables, and an evil, destructive one in stories like *Little Red Riding Hood*.

What is the wolf's true nature? How do wolves live in the wild? Do the ways in which humans see wolves reflect how the animal really behaves, or our own fears and projections?

Questions and folk tales such as the ones above will be explored in the unique traveling exhibition *Wolves and Hu-*

mans: Coexistence, Competition and Conflict, which will investigate with expertise, innovation, and intensity both the folklore and biology of an animal that has affected us so much through the ages.

The exhibition explores many tales and popular beliefs about wolves, from ancient myths of the Old World to the very special place of the wolf in Native American spiritual life. It also samples current attitudes of American farmers, hunters, ranchers, and conservationists toward the animal. Graphic images of Native American wolf costumes and totems, reproductions of woodcuts, drawings, and paintings from prehistoric times to the 1970's, wolf masks, and two "flip books" that include wolf myths and legends are among the exhibition's many other cultural tributes to the wolf.

In the sections of the exhibition that feature the wolf's biology and behavior, visitors will be able to watch a beautiful videotape about pack behavior, listen to the sounds of a young wolf pup inside its den, give in to self-expression inside a howling booth, play a computer wolf-prey game, and see a pack of 12

taxidermically-prepared wolves around a white-tailed deer they have just killed. The exhibition also includes depictions of the wolf's relation to other canids such as foxes and domesticated dogs, comparisons of wolf and human hunting behavior, and illustrations of the wolf's relation to other animals in its ecological niche.

Wolves and Humans explores not only the past and the present, but probes into the future of wolves, and of wolf-human relations. After experiencing the exhibition, the viewer will have a greater awareness of the importance of these issues, and a better sense of the answer to a question that forms the title of one section of the exhibition — "What is a wolf?"

Wolves and Humans was produced by the Science Museum of Minnesota. Major support for the exhibition was made possible by grants from the National Endowment for the Humanities.

Members are invited to a special viewing of the exhibition that will include films, special displays, family activities, and a cash bar. To register, please use the coupon on page 3.

Lost and Found Traditions: Native American Art 1965-1985

Opens Friday, June 6 in Gallery 1

More than 350 works by Native American artists will comprise the first comprehensive exhibition stressing the survival of Native American art forms into the present.

Textiles, pottery, baskets, jewelry and carvings are among the art forms included in the exhibition, as well as works that employ beads, feathers, quills, hides, furs, birchbark, bone, metal and other materials. Several of the most engaging objects are an elaborate pair of quilled and beaded moccasins, a large Pima tray basket woven in a beetle design, and a lavishly decorated war shirt.

The exhibition's most commanding piece is a 35-foot high totem pole from the Nishga branch of the Tsimshian peoples of British Columbia. The pole was lent to the exhibition in exchange for a contribution toward the dedicatory potlatch ceremony in its honor, scheduled to take place when the ex-

hibition has completed its tour across the country. Made of red cedar, the pole contains carvings of an eagle, a killer whale, a man holding a salmon, a wolf, a grizzly bear, and a beaver.

The works on display were selected because, although created in modern times, they are based on continuing cultural traditions. They were all obtained directly from the American Indian community.

Lost and Found was organized by the American Federation of Arts under the curatorial direction of noted scholar Ralph T. Coe. It is supported by grants from the American Can Company Foundation, with partial funding from the National Endowment for the Arts, and additional support provided by the Sacred Circles Fund.

After its sojourn here at the Museum, *Lost and Found Traditions* will visit six other museums across the country.

Happenings at the Hayden

New Sky Show Double Feature

Voyager: Voyage to the Outer Planets. Through November. Since 1977, two tiny robot space craft both named *Voyager* have taken incredible journeys of discovery, visiting Jupiter, Saturn, and most recently Uranus. This new sky show reveals the details and images these space craft have sent back across 2 billion kilometers.

Starborn: Earth's Odyssey Through Time and Space. Through November. This Sky Show features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains, and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet.

For additional Sky Show information call (212) 873-8828.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children, and includes two floors of exhibitions. For non-member prices and Sky Show times, please call (212) 873-8828.

Wonderful Sky

The Muppets take preschoolers on a journey to explore rainbows, sunsets, and distant stars. Images of Big Bird, Cookie Monster, Grover, and other favorite Sesame Street Muppet characters encourage

children to participate in a lively program of dialogue, song, and colorful images. June 7 at noon only. Reservations are required. For reservations and information, please call (212) 873-5714.

Laser Shows

Laser visuals and rock music combine to create a unique and dazzling experience of sight and sound on Friday and Saturday evenings.

7:00, 8:30 and 10:30 p.m.

Laser Beatles

Laser show admission for Participating, Contributing, and Donor Members is \$5.00. Tickets can be purchased at the Planetarium box office on the night of the show. For additional information, please call (212) 724-8700.

Halley's Hotline

A 24-hour-a-day recorded message informs callers how to view Halley's comet. Call (212) 769-3299.

School Programs

The Planetarium offers many programs for young children. For information, please call (212) 873-5714.

It's always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Horace Stunkard: Portrait of a Scientist

This photograph of Horace Stunkard appeared in a 1940 issue of the Journal of Parasitology.

Away from the crowds and spectacle of the Museum's public areas — and accessible only with a special elevator key — is the scholarly calm of the fifth floor.

Here, among the research laboratories and offices, the high-ceilinged corridors are lined with oversized lockers. Their labels, many in Latin, describe a stored wealth of important artifacts and natural specimens including ceramics, fossils, and human skeletons.

Behind the dark, polished-wood doors are other Museum treasures, some of them nearly as unfamiliar to the general public. These are the scientists who have solved mysteries, influenced academic and popular thinking, and contributed both time and knowledge to the Museum's exhibition halls.

In the Department of Invertebrates section, Horace Wesley Stunkard answers a knock at his laboratory door. A tall, spare figure, his long legs exaggerated by a white lab coat and the stripes of his dark-blue trousers, he is impeccably shaven and manicured, with his wavy white hair close-cut.

Only slightly stooped at age 96, Stunkard moves past file cabinets, desk, sink, microscopes, bottles, beakers and bookshelves. He gazes out of the wide window that looks over Central Park and across to the Fifth Avenue skyline.

"Don't I have a gorgeous view?" he remarks fondly, his tone suggesting the perennial amazement of a lamboy-turned-New Yorker.

Under his open lab coat, on a chain across his buttoned-up vest, hang the keys of Phi Beta Kappa and Sigma Xi. He got the former in 1912, as a Coe College senior in Iowa. He got the other in 1914 when, as a graduate student at the University of Illinois, he first published research in his specialty: the biology, life history and ecology of parasitic flatworms. These include trematodes (flukes) and cestodes (tapeworms).

Since then Stunkard has published some 300 research papers on animal parasites and parasitic diseases, many of which have had great economic impact. Once inclined to a physician's career, he was urged by a science professor to follow his aptitude for research, and to "study about diseases instead of treating them."

In his role as researcher, he has made outstanding contributions to human and animal health, individual as well as public. In fact, for just one of his accomplishments — identifying the cause of "swimmers' itch" — he might well be handed a vote of thanks, every day of any summer, by devotees of the Northeast's beaches.

In 1951 he brought off a classic bit of detective work: He found the explanation for the skin blisters called swimmers' itch, which had been closing New England's ocean beaches, and identified the blood-fluke larvae that were the cause.

"I told the public health people to go pick up snails on the beach and examine them," Dr. Stunkard reminisced. "They found the larvae of flukes that spend their mature stage in the blood vessels of birds. Their eggs come out in bird droppings and hatch in the water. The larvae burrow into snails' livers and reproduce by the thousands."

"Eventually, if the fluke can't find a bird, it will burrow into any other warm-blooded creature it can find. When they got rid of the snails chemically, the swimmers no longer had a problem."

In 1937 Stunkard's research had a great economic impact when he discovered how mites were spreading tapeworms that threatened ruin for sheep and cattle ranchers and even silver-fox farmers.

"By the late 1920s, this epidemic was being worked on last and furiously in laboratories all over the world," Dr. Stunkard explained. "It was killing the lambs, especially — they were dying of the tapeworm infestation. It occurred to me that the tapeworms were of the same family that infest rabbits."

Stunkard decided that experiments could be best controlled using rabbits and sterile cages. Later on, he also "worked it out with sheep, cattle, monkeys and humans."

The vertebrates, Stunkard already knew, could not be



infected directly by tapeworm eggs — "There had to be an intermediate host, something unknown that was eating those eggs," he said.

"I didn't know the answer but I knew something about how to find it."

During the search "N.Y.U. was bringing in ants from all over the world and feeding them tapeworm eggs." Later the focus of attention shifted from ants to mites.

"In 1935 and '36 I had my wife and two children collecting mites in Bronx parks," recalled Dr. Stunkard, who is a longtime resident of the Fieldston section of Riverdale. "We all collected mites. They live in the roots of grass. When the grass is dewy, they come up the stalks to feed."

"You take white paper and shake mites out of the grass roots. You pick them up with a camel's hair brush, put them in a dish with vegetation and keep them moist. Eventually you feed them tapeworm eggs."

But it also took two mite-hunting trips to Europe (one on a Guggenheim Fellowship) before Dr. Stunkard confirmed his "intermediate host" theory in 1937: Tapeworm eggs (dropped by infested animals) are eaten by oribatid mites. The ciliated larvae "develop to stages that are infective for vertebrates." When the mites climb the wet grass, grazing animals eat them, and the tapeworms spread.

The remedy, Stunkard said, turned out to be simple and non-chemical. "The mites that carry the infection have only a one-year life cycle. If you keep the sheep or cattle off the pasture for a year, the mites will all be dead. Put clean animals back on the pasture, and they will stay clean."

"I worked 10 years on the research but I saved the sheep industry all over the world," Stunkard said.

Much of what he has learned about parasitic diseases in animals has helped control them in humans. "At least twenty kinds of tapeworm have been identified in human beings. Human epidemics of liver fluke used to be fairly common. Now we take better care of what we eat and drink; the dangers to humans are mostly chemical. But doctors sometimes send me patients' specimens to be examined for parasites."

Stunkard recently celebrated his ninety-sixth birthday at his summer home in Woods Hole, Massachusetts. Since 1919, he has done research at the Woods Hole Marine Biological Laboratory.

He is the Museum's oldest active staff member. "I was welcomed by Dr. Henry Fairfield Osborn in 1921," he recalls, referring to the Museum's 25-year president. Stunkard is the "dean" of American parasitologists, one of the world's foremost — and the only one on the Museum's staff.

He is also the only Museum staff member who was a flier in World War I, before the Army Air Corps existed. Enlisting in the Signal Corps, he became one of six Americans assigned to fly with France's Spad 21 Squadron.

"I like to hear him talk, particularly about World War I flying," says Niles Eldridge, Chairman of the Department of Invertebrates. "but also about how he cracked some of his research cases. He's very engaging — a good raconteur."

"In my mind, he's the grand old man of science — a magnificent teacher," says Harold Feinberg, the Department's Senior Scientific Assistant. "We also enjoy an occasional hot political argument. And as a former track star, he keeps his interest in athletics, including baseball. I'm sure he's going to outlast us all."

A research associate for 64 years, Stunkard has been funded through the Museum by the National Science Foundation. He finished his latest three-year research program in 1983.

"I got my last grant when I was 90 — it expired when I was 93," he says cheerfully. "I didn't have the face to ask them to renew it."

Even after all these years, Stunkard insists that he's "only touched the surface" of his specialty, which involves a basic mystery: How did once-hardworking creatures, at some stage in evolution, begin to live the "soft life" at the expense of other creatures? "Parasites," he says, "afflict every group of animals I know."

Stunkard was first appointed a Museum research associate in 1921, early in his 40 years of teaching biology at New York University. After 29 years as head of the N.Y.U. department, he retired at 65 in 1954. Two years later he began fulltime work at the Museum.

"I needed a new base and the Museum said 'Come here and we'll give you your own laboratory,'" he recalls.

Peering into his ranks of file drawers through horn-rimmed glasses, Stunkard zeroes in almost instantly on a given scientific reprint, or the street address of one of the

"thousands of people with whom I exchange reprints all over the world." Among these are many of his former graduate students from N.Y.U.'s Biology Department.

"We turned out 54 Ph.D.s while I was chairman. Twelve or more of them now head biology departments at American universities," Stunkard announces proudly.

His professional record is also rich with gold medals, honorary degrees, and presidencies of scientific societies, as well as a series of sabbaticals spent at Universities in Europe — Cambridge, Paris, and Hamburg among them.

Stunkard's wife of 48 years, Frances, died in 1968. Living with him now is his widowed daughter, Eunice Stunkard Lathan, a Wellesley graduate who recently retired as headmistress of the Barnard School in Manhattan. His son, Dr. Albert J. Stunkard, is chief of Psychiatry at the University of Pennsylvania Medical School.

"His children are real achievers. They wouldn't dare be anything else," Dr. Feinberg says with a chuckle. "The man can be quite a taskmaster."

Due to failing eyesight, Stunkard "sold the Buick a year ago." Until 1982, he drove into the city daily. Now he uses a neighborhood car pool to spend six hours or more at the Museum, three days a week. He returns home loaded with scientific reading matter.

Since 1926, Stunkard has been a Member of the Corporation at the Woods Hole Marine Biological Laboratory (owned and operated by 800 college teachers). This summer, he insists, he "did nothing — nothing but swimming."

Concerning his work at the Museum Stunkard says he is "just loafing. No more running experiments personally. I'm not going to bust myself to do another research program."

"If he isn't," says Niles Eldridge, the department chairman, "he just stopped. Let's wait and see."

— Laurie Johnston



Modern Biological Theories of Aging

On June 3 through June 6, outstanding leaders in aging and biomedical research will present a major symposium at Mount Sinai Medical Center (daytime sessions) and at the Museum (evening sessions).

The daytime sessions, for students and professionals whose work touches upon the biology of aging, will include sessions on free radical damage, error catastrophe, DNA damage and repair, developmentally programmed aging, and the evolution of lifespan and organ systems as pacemakers of aging. Among the speakers are Caleb Finch, Leonard Hayflick, and George Martin, Irwin Fridovich, and David Gershon.

The public lectures will take place on June 3, 4, and 5 at 8:00 p.m. in the Museum's Main Auditorium. Sherwood Washburn, Edward Schneider, and W. Ted Brown will speak.

The fee for the daytime sessions, which includes luncheon, is \$200.00 (\$25.00 for students with i.d.). The public evening lectures at the Museum are free. For additional information, please call the Mount Sinai School of Medicine at (212) 650-6737.

Museum Notes

Special Exhibitions and Highlights

Gypsies: Photographs by Jan Yoors. Through July 27 in the Akeley Gallery. Jan Yoors, an artist and tapestry designer, left his Belgian home at the age of 12 and periodically lived side by side with Gypsies until the age of 22. He was adopted by a Gypsy family, learned Romani, the Gypsy language, and gained a knowledge of these unique people afforded to few outsiders. This exhibition features black and white photographs taken by Yoors between 1934 and the early 1970's. The photographs portray various aspects of Gypsy culture such as home life and transportation, and include many beautiful portraits of individuals.

Carl Ethan Akeley, 1864-1926: Renaissance Man. In the Library Gallery. This exhibition of books, artifacts, photographs, and tools celebrates the diverse and extraordinary accomplishments of Carl E. Akeley, taxidermist, inventor, naturalist, explorer, and prime force behind the Museum's Hall of African Mammals.

The Brazilian Princess is now on display in the Roosevelt Rotunda. At 21,327 carats (9½ pounds) it is the world's largest cut gem. This near-flawless light blue topaz was found in Brazil 25 years ago in the form of a 75-pound crystal. It is a gift to the Museum from an anonymous donor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour, please ask at an Information Desk for specific tour times, or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends from 12:00 to 4:30 p.m., the Discovery Room is recommended for children ages five through ten. Children younger than five will not be admitted.

Dinosaur Birthday Parties are now available for young Members. Parties are designed for children ages 5 through 10. For information, please call the Membership Office at (212) 873-1327.

The Leonhardt People

Center features ethnic dance, musical performances, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. This month Japan is the focus of People Center programs. Activities are listed in the calendar on page 8.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — Museum visitors join astronauts aboard the space shuttle in Naturemax's newest film *The Dream Is Alive*.

In addition, Friday and Saturday double features include *The Dream Is Alive* and *Living Planet*.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a ten percent discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write ahead for details to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

May 1986
American Museum
of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

3 1:00 p.m. N.Y. Map Society, Room 125. Free.
1:00 to 4:00 p.m. Japan Month. Japanese Beyond the Postcard; Koto: Traditional Japanese Music; Performance to be announced. Leonhardt People Center. Free.
2:00 and 4:00 p.m. Harlem is Heaven. See April Rotunda or call (212) 873-1300, ext. S14 for information.

2 7:00 p.m. N.Y. Microscopical Society. Room 419. Free
1 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
7:00 p.m. Systematics Discussion Group. Room 419. Free.

1 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
7:00 p.m. Darwin's Ark. Members' Program. Hall of Ocean Life. Page 3.

4 11:00 a.m. and 1:30 p.m. Shoestring Tales. Members' Family Program. \$2.50 for Members, \$5.00 for non-members. Kaufmann Theater. Page 2.
1:00 to 4:30 p.m. Japan Month. Japanese Beyond the Postcard; Koto: Traditional Japanese Music; Japanese Gardens and Fountains; Performance to be announced. Leonhardt People Center. Free.

10 10:00 a.m. to 2:00 p.m. New York City's Rocky Coasts and Salt Marshes. Sold out.
1:00 p.m. Versions of the Traditional. Page 2.
1:00 to 4:30 p.m. Japan Month. Same as May 11.
2:00 p.m. and 4:00 p.m. South African Film and Lecture Series. Kaufmann Theater. Free. Page 4.
3:00 p.m. Versions of the Traditional. Page 2.

9 7:00 p.m. Versions of the Traditional. Linder Theater. Free. Page 2.
8 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
7:00 p.m. South African Film and Lecture Series. Main Auditorium. Free. Page 4.
7:30 p.m. Darwin's Ark. Members' Program. Hall of Ocean Life. Page 3.

7 7:00 p.m. Forest of Bliss. A new film by Robert Gardner. Main Auditorium. For ticket information, call (212) 873-7507.
7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free

6 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
13 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
8:00 p.m. Linnaean Society of N.Y. Kaufmann Theater. Free.

12 1:00 to 4:30 p.m. Japan Month. Barefoot Kyogen: A Short Satirical Japanese Comedy; Shaku-hachi: Flute Music of Japan; Japanese Ceramic Arts; Japanese Folk Tales; Japanese Toys and Games. Leonhardt People Center. Free.
1:30 p.m. N.Y. Shell Club. Room 419. Free.

17 1:00 to 4:30 p.m. Japan Month. Barefoot Kyogen: A Short Satirical Japanese Comedy; Japanese Influence on Western Art; Japanese Folk Tales; Japanese Ceramic arts. Leonhardt People Center. Free.



A Bonaf

15 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
7:30 p.m. Dancing America. Members' Program. Main Auditorium. Page 3

14 7:00 p.m. Legacy of the Spirits. Kaufmann Theater. Free. Page 4.
7:00 p.m. N.Y. Mineral Club. People Center. Free.
Members of the Discovery Tour to Israel and Jordan arrive in Jerusalem and begin their exploration of superb archaeological sites. Discovery Tours: (212) 873-1440.

20 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
8:00 p.m. N.Y. Entomological Society. Room 129. Free.

18 1:00 to 4:30 p.m. Japan Month. Barefoot Kyogen: A Short Satirical Japanese Comedy; Japanese Ceramic Arts; Japanese Folk Tales. Leonhardt People Center. Free.
2:00 p.m. N.Y. Paleontological Society. Room 426. Free.
2:00 and 4:00 p.m. Voodoo in Haiti. Kaufmann Theater. Free. Page 4.

25 1:00 to 4:30 p.m. Japan Month. Japanese Folk Dance, Traditions in Japanese Music; Ikebana: Japanese Floral Arrangement. Leonhardt People Center. Free.

24 1:00 to 4:30 p.m. Japan Month. Japanese Folk Dance: Traditions in Japanese Music; Ikebana: Japanese Floral Arrangement. Leonhardt People Center. Free.



22 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
7:30 p.m. Bones of Contention. Free and open only to Members. Main Auditorium. Page 1.

21 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
8:00 p.m. N.Y. Entomological Society. Room 129. Free.

27 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
8:00 p.m. Linnaean Society of N.Y. Kaufmann Theater. Free.

19 1:00 to 4:30 p.m. Japan Month. Barefoot Kyogen: A Short Satirical Japanese Comedy; Japanese Ceramic Arts; Japanese Folk Tales. Leonhardt People Center. Free.
2:00 p.m. N.Y. Paleontological Society. Room 426. Free.
2:00 and 4:00 p.m. Voodoo in Haiti. Kaufmann Theater. Free. Page 4.

26 1:00 to 4:30 p.m. Japan Month. Japanese Folk Dance, Traditions in Japanese Music; Ikebana: Japanese Floral Arrangement. Leonhardt People Center. Free.

Dancing America, May 15.

31 10:30 a.m. to 3:00 p.m. Bird ID for the Beginner. Call (212) 873-7507 for ticket availability.
1:00 to 4:30 p.m. Japan Month. Japanese Classical Dance; Japanese Influence on Western Art; Shaku-hachi: Flute Music of Japan. Leonhardt People Center. Free.
2:00 and 4:00 p.m. Dinizulu and his African Dancers, Drummers, and Singers. Kaufmann Theater. Free. Page 4.

30 9:00 to 11:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
Please note: On Sunday, June 1, Japan Month continues from 1:00 to 4:30 in the Leonhardt People Center with Japanese Classical Dance, Japanese Influence on Western Art, and more. Same as May 31.

28 7:00 p.m. Lapidary and Gem Society. People Center. Free.
7:00 p.m. Voices of the Gods. Kaufmann Theater. Free. Page 4.
8:00 p.m. Met Grotto; National Speleological Society. Room 129. Free.

27 7:00 to 9:00 a.m. Bird Walk with Steve Quinn. Meet at northeast corner of 77th St. and Central Park West. \$4.00. Call (212) 873-7507 for additional information.
8:00 p.m. Linnaean Society of N.Y. Kaufmann Theater. Free.

26 1:00 to 4:30 p.m. Japan Month. Japanese Folk Dance, Traditions in Japanese Music; Ikebana: Japanese Floral Arrangement. Leonhardt People Center. Free.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 6 June 1986



Stephen J. Krauman/DRK PHOTO

Summer of Wolves

Several exciting programs complement the opening of *Wolves and Humans: Coexistence, Competition, and Conflict*. The exhibition is described on this page. This month's programs include a special Members' viewing, a Highlights Tour, and the film *Never Cry Wolf*.

Page 5

Lost and Found Native American Art

The first comprehensive exhibition stressing the survival of Native American art forms into the present opens this month in Gallery 1. All of the beautiful artwork in this exhibition was created by Native Americans.

Page 7

Wolves and Humans: Coexistence, Competition and Conflict

Exhibition opens Wednesday, June 11 in Gallery 3
Special Members' Viewing Tuesday, June 17 (See page 5)

Wolves and humans have coexisted for hundreds of thousands of years. Both of us prey on other animals. Both are intelligent, social mammals who learn at an early age how to behave towards members of our own group and towards strangers. Both can sustain longlasting relationships with one sexual partner. Both know extreme tenderness, playfulness, and cooperation on one hand, yet both are highly efficient killers. Perhaps because of our many similarities, people's images of the wolf throughout the centuries have often been extreme in both a positive and negative sense.

In a great deal of Native American lore and legend the wolf was, and still is, held in high esteem as a powerful, wise, and helpful animal. In one Northwest Coast culture, initiates of a secret society were "stolen away" by wolves (expressed by people in wolf masks) to learn great knowledge. In Roman legend, Romulus and Remus, who were thrown as infants into the Tiber to drown, were saved and suckled by a she-wolf. These positive images can be contrasted with the legend of the bloodthirsty and lusty werewolf, the cruel wolf of *The Three Little Pigs*, and the wolf as a medieval symbol of the devil, heretics, and vices.

What are wolves really like? Viewers of the exhibition *Wolves and Humans*:

Coexistence, Competition, and Conflict will come close to knowing the answer. This innovative exhibition explores a fascinating animal from many different angles, including myth, folklore, biology, and current events.

Graphic images of Native American wolf costumes and totems, wolf masks, "flip books" containing wolf stories, a werewolf booth, and images of five common themes of the wolf in art are among the exhibition's many cultural tributes to the wolf. In addition to Old and New World wolf lore, the exhibition also explores the actual historical relationship between wolves and people in various areas of the world. It includes taped interviews with American farmers, ranchers, and environmentalists about their attitudes toward this "controversial" animal.

Many aspects of wolf social behavior and biology are depicted, including pack and reproductive behavior, and the wolf's differences from and similarities to other canids such as dogs and foxes. Viewers can listen to the sounds of a

young wolf pup inside its den as it grows up, play a computer wolf-prey game, and learn about the development of wolves and humans as hunters in a tundra environment. A section that deals with the complexity and meaning of wolf vocalizations includes a tape of the "squeaks" of a mother wolf as she approaches her den, and the answering "moans" of her six pups. In another section, twelve taxidermically-prepared wolves surround a recent kill.

And finally, the exhibition explores the future of the wolf, and of human-wolf relations. Will we be willing to share the world with the wolf, or will this wonderful animal — so like, yet so unlike us — be pushed to the verge of extinction like so many other animals before it? The answer to the question, and the responsibility for the outcome, is in our hands.

Wolves and Humans was produced by the Science Museum of Minnesota. Major support for the exhibition was made possible by grants from the National Endowment for the Humanities.

Several Museum programs and a special Members' viewing will take place in conjunction with this unique exhibition, which will remain at the Museum through Monday, September 1. For information about these programs, please turn to page 5.

Africa and the Americas

Two June programs celebrate the influence of African religious beliefs on present-day Latin American culture. Candomble, Santería, Orisha worship, and the Abakua ritual will be explored in *Patakin and Orishas and Egungun*.

Page 4

Black Indians

The story of Black Indians begins with the first European landings in the Americas, and covers an area extending from New England to Brazil. Join lecturer and author William Loren Katz in a fascinating program that explores the relationships between Native Americans and Africans.

Page 6

The Great White Whale: Moby Dick

Tuesday, June 10
1:00 p.m.
Kaufmann Theater
Free



John Huston's classic 1956 film **Moby Dick**, starring Gregory Peck and Richard Basehart, is the story of Captain Ahab's obsession to conquer the great white whale. Dr. Steve Cumbaa from the National Museum of Natural History in Ottawa will introduce the film and discuss facts and fables surrounding whales and whaling. Seating is on a first-come, first-served basis. For additional information, call the Department of Education at (212) 873-1300, ext. 559.

Members' Letter:

An Editor's Farewell

I will miss the noble gorilla on the third floor that I used to pass every day on the way to my office. I will miss the Native American chants that filtered into the Membership Office, the words of the Dakota kit fox society: "I am a fox. I am supposed to die. If there is anything difficult, if there is anything dangerous, that is mine to do."

As of the beginning of April, I have left the Museum ranks to pursue a freelance career. And while I am editing this issue, and will probably work on at least part of the next, I no longer enter this giant, fascinating institution every day with a Museum

ID that contains my photograph. Now when I come to the Museum to work, I carry a bland yellow contractor's pass. I do much of my work at home, by the window near the boughs of an ash maple.

I've enjoyed my years at the Museum — not only editing the *Rotunda*, but also creating some of the programs at which I met many of you. Who knows, we may yet meet again.

Best Wishes,

Ruth Q. Leibowitz

(ex)-Editor, *Rotunda*

Identification Day

Saturday, June 14
1:00 to 5:00 p.m.
Dana Education Wing
Free

Is it animal, vegetable, or mineral? Is it old, or is it new? Where did it come from? What is it?

Bring your treasures to the Museum and ask a team of scientists from the departments of Anthropology, Mammalogy, Entomology, Herpetology, Invertebrates, and Mineral Sciences to identify them. Any object is welcome — rocks, bones, shells, insects, or artifacts. The Museum's staff members will do their best to analyze, discuss, and give information on the history and classification of all ob-

jects presented, and may even be able to compare them to specimens from the Museum's collections.

Collectors and explorers from age 3 to 103 will welcome this opportunity to name their prized objects and learn more about them. **No appraisals can be given, nor will the Museum identify gemstones.**

For additional information, please call the Education Department at (212) 873-1300, ext. 559.

ROTUNDA

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Voyage to the Outer Planets

Thursday, July 31

7:30 p.m.

Main Auditorium

\$3.00 and open only to Members

Since their launch in 1977, two tiny spacecraft named Voyager 1 and 2 have been engaged in the greatest voyages of discovery in human history. They visited Jupiter in 1979 and Saturn in 1980 and 81. And, most recently, Voyager 2 continued on to Uranus in January of 1986.

In a special slide-show program by William Gutsch, Chairman of the Hayden Planetarium, Members will take part in some of the Voyagers' journeys to the outer solar system, journeys that have effectively rewritten the book on many of the planets and their satellites.

Prior to the voyage of the spacecrafts, no one knew that Jupiter was encircled by a ring. The Voyagers' cameras traced weather patterns on the planet's atmosphere in greater detail than ever before, and explored Jupiter's satellites, revealing detail that telescopes on earth could never have uncovered.

The Voyagers' cameras split the three or four rings of Saturn that are seen from earth into thousands of ringlets, and added new rings and new satellites to Saturn's entourage. Titan, Saturn's largest satellite, was revealed to have an atmosphere denser than earth's, and scientists

are now speculating that orange hydrocarbon "snows" and lakes of liquid nitrogen may exist on this little world.

Gutsch, who covered the flight of Voyager to Saturn and Uranus for ABC, will show some of the best images and computer animations from the Voyager missions. We'll also look ahead to August, 1989, when Voyager 2 is scheduled to reach Neptune, completing its planetary mission.

To register for *Voyage to the Outer Planets*, please use the adjacent June Members' Programs Coupon.

The Earth is Our First Teacher

Thursday, June 26

7:30 p.m.

Kaufmann Theater

\$5.00 for members, \$8.00 for non-members

Born in the Puget Sound Region of the Salish Indian people, creation myths and stories of the Northwest Coast mountains, forests, and salt water reveal the sacredness of the world in ancient times, and in the present.

Because storyteller Rebecca Chamberlain-Fenwick grew up in the Puget Salish tribal area, she encountered Native American culture at an early age. For her, and for the people who hear them spoken, the stories of the Salish people contain not only humor and philosophical wisdom, but information and energy for healing, solving real-life problems, and making practical choices.

Since 1980, Chamberlain-Fenwick has been apprenticed to Vi Hilbert, a Lushootseed (Puget Salish) elder who has been translating and telling the stories of her people for twenty years. Named Taqwseblu by her ancestors, Hilbert's first language was Lushootseed, and today she is one of only fifty elders who still speak the traditional language. Forbidden to speak Lushootseed at the Indian boarding school she went to as a child, the force and beauty of her language returned to her later as an adult, and she set out to preserve a beautiful cultural tradition.

In one of their first New York engagements, Chamberlain-Fenwick and Hilbert will tell Salish stories together, in both English and Lushootseed. As they enter into the world of stories, Members will meet characters like Coyote, Basket Ogress, Star Child, and other Salish tricksters, heroes, ancestors, and other mythical beings.

Some stories, like "The Sun's



Storyteller Rebecca Chamberlain-Fenwick.

Myth," stress the dangers that can result when humans take it upon themselves to use the powers of the natural world. In "The Sun's Myth," a chief carries the power of the sun in an axe and robe marked with the sun's image. But as he walks among his tribes he finds the axe and his hands covered with blood, and all his people dead. Other stories, such as "South Wind Is Stopped by Net," stress the hope and guidance that

sometimes appear after long suffering. In this story, an old woman visitor guides people through a storm, getting them to laugh and sing, and to catch waves in a net, until the sun comes out and they find all kinds of food.

Since tickets to this unique program are expected to sell out quickly, Members are strongly advised to register early, using the adjacent June Members' Programs Coupon.

June Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category (if applicable): _____

Total amount enclosed: \$ _____

Please make check (if applicable) payable to the American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *June Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Wolves and Humans: Members' Viewing. Tuesday, June 17. Free and open only to Members. Please indicate a first and second preference of times, if possible.

_____ 6:30 p.m.

_____ 7:00 p.m.

_____ 8:00 p.m.

Number of people: _____

The Earth is Our First Teacher. Thursday, June 26 \$5.00 for Members, \$8.00 for non-members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' Price. Associates are entitled to one. Additional tickets are \$8.00 each.

Number of tickets at \$5.00 each: _____

Number of tickets at \$8.00 each: _____

Total amount enclosed for program: \$ _____

Voyage to the Outer Planets. Thursday, July 31. \$3.00 and open only to Members. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are \$5.00.

Number of tickets at \$3.00 each: _____

Number of tickets at \$5.00 each: _____

Total amount enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

Members' Tour of the Month. Wolves and Humans.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first and second choice of times.

Wednesday, July 9 _____ 6:00 p.m. _____ 7:00 p.m.

Wednesday, July 16 _____ 6:00 p.m. _____ 7:00 p.m.

Wednesday, July 23 _____ 6:00 p.m. _____ 7:00 p.m.

Wednesday, July 30 _____ 6:00 p.m. _____ 7:00 p.m.

Wednesday, August 6 _____ 6:00 p.m. _____ 7:00 p.m.

Number of people: _____

Please mail with a self-addressed, stamped envelope to: *Wolves and Humans Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024. **Please note: registration closes on July 1.**

Aesthetic Power: Taste and Soul in Africa

Wednesday, June 25
7:00 p.m.
Kaufmann Theater
Free

Highlighting objects on display in the Museum's *Man in Africa* Hall, and at the Center for African Art (the Monzino collection), art historian Rosalind Jefferies will discuss continuities and cross-cultural distinctions in aesthetics. In this unique slide/lecture program, creative works of the Yoruba, Ashanti, Nubian, Congo people, and other cultural groups will be highlighted to illustrate the highly intellectual and abstract proc-

ess of translating ideas, concepts, and values into physical form.

Jefferies will help clarify hidden principles and aims of the black world through a focused vision of coded systems, signs, symbols and semiotics as seen in works of African art. She will also focus on human attitudes and gestures, cosmologies, composition sculptures that mix anthropomorphic and zoomorphic characteristics, and formal

and informal language. Her presentation will attempt to differentiate between soul and spirit, and between good and evil.

Rosalind Jefferies is the Education Curator at the Center for African Art.

Seating for the lecture is on a first-come, first-served basis. For additional information, please call the Education Department at (212) 873-1300, ext. 514.



A reliquary guardian made of wood and nails.

Patakin: Afro-Cuban Religious Music and Dance

Saturday, June 7
2:00 and 4:00 p.m.
Kaufmann Theater
Free

This month an exciting group of dancers, singers, and drummers presents the music and dance of two important African-derived Cuban religions.

Fiesta Yoruba praises in song and dance the "Orishas" or deities that govern people and nature. These deities are "disguised" as Christian saints in the Yoruba-derived religion of Santería. By combining African and European traditions into one religion, Santería enabled black slaves in Cuba to continue their rituals and festivals while appearing to adopt the ways of their masters.

The program will also present

songs and dances from the Abakua ritual. Abakua is a secret all-male society originating in Africa. Its purpose in Cuba was not only to preserve the African cultural heritage, but also to help the community of freed slaves buy freedom for others.

Free tickets for the program will be distributed in the Kaufmann Theater ticket booth on a first-come, first-served basis, starting at noon on the day of the performance. For additional information, please call the Department of Education at (212) 873-1300, ext. 514.

Orishas and Egungun: Reflection of New World Yoruba Arts

Thursday, June 5
7:00 p.m.
Kaufmann Theater
Free

Two fascinating speakers will use slides and films to examine Candomble of Brazil, as well as the influence of Orisha worship on the art of the New World.

Cynthia Turner, a Yoruba priestess and first of the discussants, will use slides of traditional and contemporary works created by African, African-American and Caribbean artists to discuss some of the major Orishas (Yoruba deities) and their representation in Nigerian and New World art.

Researcher and anthropologist Morton Marks will use sections of two films (*Egungun* and *Master Abdias and Cloth-from-the-Coast*) to illustrate important aspects of West African religious beliefs and material culture that are maintained to this day in Bahia.

In *Egungun*, male priests of a Yoruba ancestor cult, dressed in elaborate costumes, masquerade as the male ancestors (Egungun) who dance in the Egungun temples on certain occasions. *Master Abdias* focuses on Abdias do Sacramento Nobre, a master weaver of Bahia who produces the cloth worn by female members of Candomble, the Yoruba religion of Bahia. The film explores the relationship between the colors and patterns of the cloth, and the deities that are honored.

Seating for the program is on a first-come, first-served basis. For additional information, please call the Department of Education at (212) 873-1300, ext 514.

Summer of the Wolves

Participating, Donor, and Contributing Members are invited to a Special Exhibition Viewing (for all ages) of

Wolves and Humans: Coexistence, Competition, and Conflict

Tuesday, June 17 from 6:30 to 9:30 p.m.

The Exhibition: *Wolves and Humans: Coexistence, Competition and Conflict*. This fascinating exhibition explores both the natural history of wolves, and their historical and mythical relationships with humans. For more information on the exhibition, please turn to

page 1.

Special Activities: Have a howling good time with a host of special events at the Members' Viewing. The film *The Wolf and the Whittail*, which portrays the relationship between wolves and whittail deer, will be shown in the

Kaufmann Theater throughout the evening. Members will have the opportunity to make Origami foxes and barking dogs with volunteer Origami specialist Michael Shall. Children can draw wolves on a wolfscape or become official wolf trekkers in a predator and prey game. Sci-

entists from the Museum will be on hand with special displays, and the Defenders of Wildlife will have a booth to discuss the latest conservation efforts on behalf of the wolf.

Refreshments: The American Museum Restaurant will be open until 8:00 p.m. Members

can also purchase wine, beer, and soda, and enjoy their drinks at candle-lit tables by the Great Canoe, as the voices of wolves echo through the hall.

To register for the Members' Viewing, please use the June Members' Programs Coupon on page 3.

Never Cry Wolf: A True Story

Saturday, June 21

2:00 p.m.

Kaufmann Theater

Free

In conjunction with the opening of the exhibition *Wolves and Humans: Coexistence, Competition and Conflict*, the Department of Education presents **Never Cry Wolf: A True Story** (105 min.). This exciting and visually spectacular wilderness film is directed by Carroll Ballard and stars Charles Martin Smith. It is a true account of biologist Farley Mowat's incredible study of the arctic wolf. During the course of his fieldwork, the young scientist learns as much about himself as he does about the wolves and their effect on caribou herds. Seating is on a first-come, first-served basis. For additional information, please call (212) 873-1300, ext. 559. A Department of Education Program.



Members' Tour of the Month:

Wolves and Humans

Take a special Members' Tour of Wolves and Humans this summer with one of the volunteer guides from the Museum's Highlights Tours program. The tour will provide an in-depth look at the major themes of the exhibit: the biology and behavior of wolves, the historical relationships between wolves and humans, wolf leg-

end and lore, and present day conservation and research efforts. Members will gain a greater understanding of this loved and hated animal so fast disappearing from our land.

Please see the article on page 1 for more details about the exhibition. To register for a tour, please use the coupon on page 3.



Michael Edgerly/DK PHOTO

Looking Ahead

The July/August *Rotunda* will carry news of a major wolf program to take place on August 21. In *Wolves of Many Dimen-*

sions scientist L. David Mech and folklorist Ellen Stekert will honor the wolf in the natural and supernatural worlds.

Happenings at the Hayden

Sky Show Double Feature

Voyager: Voyage to the Outer Planets. Through November. Since 1977, two tiny robot space craft both named Voyager have taken incredible journeys of discovery, visiting Jupiter, Saturn, and most recently, Uranus. This new sky show reveals the details and images these space craft have sent back across 1.2 billion miles.

Starbom: Earth's Odyssey Through Time and Space. This Sky Show features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains, and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution

of our living planet.

For additional Sky Show information call (212) 873-8828.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children, and includes two floors of exhibitions. For non-member prices and Sky Show times, please call (212) 873-8828.

Laser Shows

Laser visuals and rock music combine to create a unique and dazzling experience of sight and sound on Friday and Saturday evenings.

7:00, 8:30 and 10:30 p.m.

Laser Beatles.

Laser show admission for

Participating, Donor, and Contributing Members is \$5.00. Tickets can be purchased at the Planetarium box office on the night of the show. For additional information, please call (212) 724-8700.

School Programs

Many exciting programs for young children are offered throughout the school year. For June information, please call (212) 873-5714.

It's always a good idea to call before coming, since prices and show times are subject to change without notice. For general Planetarium information call (212) 873-8828.

Black Indians: A Hidden Heritage

Wednesday, June 18

7:00 p.m.

Main Auditorium

Free

The story of Black Indians begins with the first European landings in the Americas, covering an area extending from New England to Brazil. Indian villages became the first refuges for escaping African slaves and in their common struggle against European settlers, blacks and Indians often joined forces.

Black Indians fought a long and bloody battle for freedom. Red and black Seminoles in Florida fought off units of the U.S. Army for forty years, and never really surrendered. Black Indian women ruled several

outlaw settlements in the Americas.

The ways in which Native Americans and Africans lived and worked together is told in *Black Indians*, a slide-illustrated lecture by William Loren Katz, author of *Black Indians: A Hidden Heritage* and 20 other books on Black Americans and other U.S. minorities.

Seating for the program is on a first-come, first-served basis, and Members are advised to arrive early. For additional information, please call (212) 873-1300, ext. 514.



From the collection of William Loren Katz

A detailed Voyager 2 picture of Ariel, a satellite of Uranus.

Lost and Found Traditions: Native American Art 1965-1985

June 6 through September 7
in Gallery 1

More than 350 works by Native American artists are included in the first comprehensive exhibition stressing the survival of Native American art forms into the present. Textiles, pottery, baskets, jewelry, and carvings are among the many art forms featured in this unique exhibition. Lost and Found Traditions was organized by the American Federation of Arts with the support of grants from the American Can Company Foundation, with partial funding from the N.E.A. and additional support provided by the Sacred Circles Fund.



A painted frontlet made from wood and abalone shell, created by Kwakiutl artist Richard Hunt of British Columbia.



A "parcuplined" spherical basket, woven from black ash splints by Ojibwa artist Edith Bande of Michigan.

Museum Notes

Special Exhibitions and Highlights

Gypsies: Photographs by Jan Yoors. Through July 27 in the Akeley Gallery. Jan Yoors, an artist and tapestry designer, left his Belgian home at the age of 12 and periodically lived side by side with Gypsies until the age of 22. He was adopted by a Gypsy family, learned Romani, the Gypsy language, and gained a knowledge of these unique people afforded to few outsiders. This exhibition features black and white photographs taken by Yoors between 1934 and the early 1970's. The photographs portray various aspects of Gypsy culture such as home life and transportation, and include many beautiful portraits of individuals.

Last and Found Traditions: Native American Art 1965-1985. June 6 through September 7 in Gallery 1. More than 350 works by Native American artists form the first comprehensive exhibition stressing the survival of Native American art forms. Textiles, pottery, baskets, jewelry, and carvings are among the art forms included in the exhibition, as well as works that employ beads, feathers, quills, hides, furs, birchbark, bone, and other materials.

Wolves and Humans: Coexistence, Competition and Conflict. June 11 through September 1 in Gallery 3. Few animals have exerted such a powerful influence on the human imagination as the wolf. This temporary exhibition, organized by the Science Museum of Minnesota, will explore the folklore, mythology, and natural history of this fascinating animal. Please turn to page 1 for details on the exhibition, and page 5 for news of related programs.

Carl Ethan Akeley, 1864-1926: Renaissance Man. In the Library Gallery. This exhibition of books, artifacts, photographs, and tools celebrates the diverse and extraordinary accomplishments of Carl E. Akeley, taxidermist, inventor, naturalist, explorer, and prime force behind the Museum's Hall of African Mammals.

The Brazilian Princess is now on display in the Roosevelt Rotunda. At 21,327 carats (9½ pounds) it is the world's largest cut gem. This near-flawless light blue topaz was found in Brazil 25 years ago in the form of a 75-pound crystal. It is a gift to the Museum from an anonymous donor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. They leave regularly from the first-floor Information Desk. If you wish to join a free tour, please ask at an Information Desk for specific tour times, or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor Information Desk. Open weekends from 12:00 to 4:30 p.m., the Discovery Room is recommended for children ages five through ten. Children younger than five will not be admitted.

The Leinhardt People Center features ethnic dance, musical performances, films, lectures and workshops. Weekends from 1:00 to 4:30 p.m. This month the People Center explores varied aspects of Native American cultures. The calendar on page 8 contains further details.

Naturemax Information

On New York's largest movie screen — four stories tall and sixty feet wide — Museum visitors join astronauts aboard the space shuttle in Naturemax's newest film *The Dream Is Alive*.

In addition, Friday and Saturday double features include *The Dream Is Alive* and *Living Planet*.

The box office is located in the 77th Street lobby near the Great Canoe. Call (212)

496-0900 for the current schedule and other information. Members receive a 50% discount at all times, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.00 for cars and \$8.00 for buses. Parking will be free after 5:30 p.m. for programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch, Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a ten percent discount. The restaurant is located in the basement near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write ahead for details to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

7 11:00 a.m. N.Y. Map Society, Room 129. Free.
1:00 to 4:30 p.m. Native American Month. Same as June 8.
2:00 and 4:00 p.m. Patakin. Kaufmann Theater. Free. Page 4.

Lost and Found Traditions: Native American Art 1965-1985 opens in Gallery 1. Page 7.
Moon at apogee, 9:00 p.m.

5 7:00 p.m. Orishas and Egungun. Kaufmann Theater. Free. Page 4.
8:00 p.m. Modern Biological Theories of Aging. See June 3.

4 8:00 p.m. Modern Biological Theories of Aging. See June 3.

3 5:30 to 8:30 p.m. Nooks and Crannies of New York Bay cruise. SOLD OUT.
8:00 p.m. Modern Biological Theories of Aging. Free public lecture. Main Auditorium. Call (212) 650-6737 for additional information.

2 1:00 to 4:30 p.m. Continuation of May Japan Month programs. Japanese Classical Dance; Japanese Influence on Western Art; Shakuhachi: Flute Music of Japan. Leonhardt People Center. Free.

8 1:00 to 4:30 p.m. Native American Month. Feather and the Circle, a Native-American dramatization of the feather and circle motif with the Coyote Players; Clowns and Coyotes, slide talk about the sacred roles of clowns and tricksters; Bison Hunting of the Plains Indians, a slide show presentation. Leonhardt People Center. Free.
1:30 p.m. N.Y. Shell Club. Room 419. Free.

15 1:00 to 4:30 p.m. Native American Month. Leonhardt People Center. Free. Same as June 14.
1:00 p.m. American Cetacean Society. Room 319. Free.

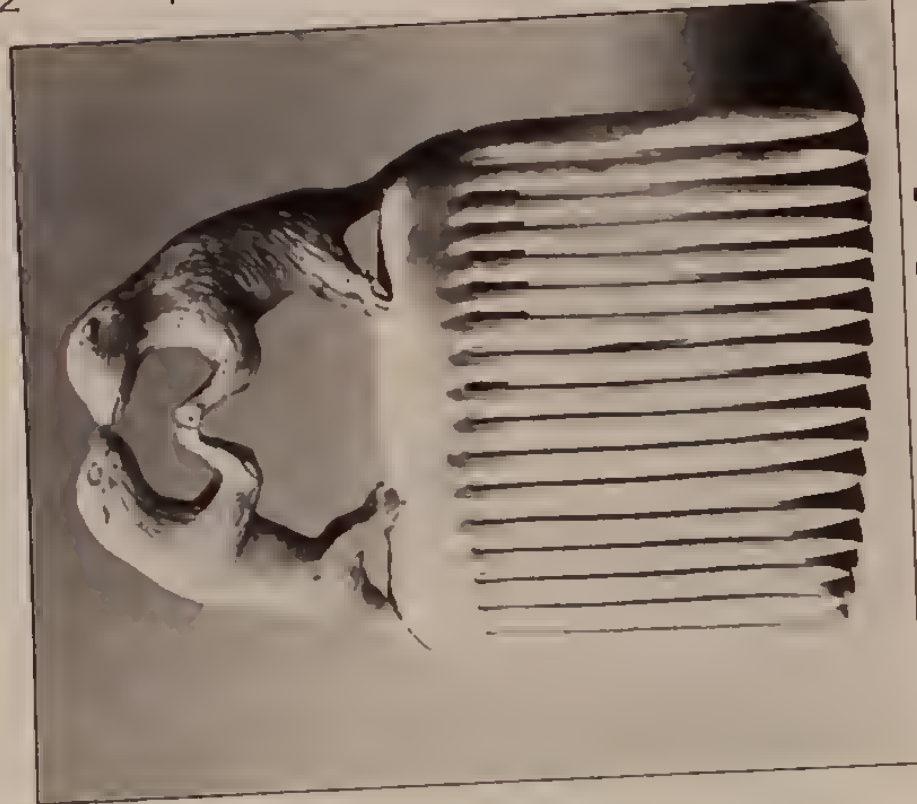
22 1:00 to 4:30 p.m. Native American Month. Feather and the Circle, dramatization of the feather and circle motif among Native Americans, with the Coyote Players; Woodlands Beadwork, demonstration of beading techniques in jewelry making; Clowns and Coyotes, slide talk about the sacred roles of clowns and tricksters. Leonhardt People Center. Free.

29 1:00 to 4:30 p.m. Native American Month. Leonhardt People Center. Free. Same as June 28.

14 1:00 to 4:30 p.m. Native American Month. The Little Rabbit Dancers, dances of traditional Plains and other Native American styles; Pueblo Pottery, a slide talk; Native American Art of Weaving, a slide talk. Leonhardt People Center. Free.

1:00 to 5:00 p.m. Identification Day. Dana Education Wing, first floor. Free. Page 2.

21 2:00 p.m. Adventure Among the Wolves. Kaufmann Theater. Free. Page 5.
1:00 to 4:30 p.m. Native American Month. Same as June 22.
SUMMER SOLSTICE — 11:30 p.m.
Full Moon at 10:42 p.m.
Moon at perigee, 8 a.m.



Native American art. Page 7.

27 Members of the Discovery Tour to Alaska arrive at Glacier Bay and begin their wildlife tour. Discovery Tours: (212) 873-1440.

26 7:30 p.m. The Earth Is Our First Teacher. Members' Program. Kaufmann Theater. \$5.00 for Members, \$8 for non-members. Page 3.

Members of the Discover Alaska Cruise arrive in Anchorage and begin a ten-day voyage to Vancouver. Discovery Tours: (212) 873-1440.

25 7:00 p.m. Aesthetic Power: Taste and Soul in Africa. Kaufmann Theater. Free. Page 4.

7:00 p.m. Lapidary and Gem Society. People Center. Free.
8:00 p.m. Met Grotto; Nat'l Speleological Society. Room 129. Free.



Native American art. Page 7.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

June 1986 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 7 July/August 1986



Zooming past Uranus, Voyager speeds toward Neptune.

Voyage to the Outer Planets

Thursday, July 31
7:30 p.m.

Main Auditorium
\$3.00 and open only to Members

In the late summer of 1977 two tiny spacecraft, Voyagers 1 and 2, were launched into space. They were bound for multimillion-mile odysseys, taking advantage of a rare alignment of planets that had not occurred since Jefferson was president of the United States.

Voyager 1 reached Jupiter in 1979 and was 77,000 miles from Saturn by November 12, 1980. In the following week, Voyager 1 found out more about Saturn than had been learned in all of recorded history. En route to the planet, the spacecraft discovered, among other things, that Jupiter is encircled by a ring and that Saturn's rings are actually composed of hundreds of tiny ringlets.

When Voyager 2 reached Uranus —

even farther out in our solar system — in January 1986, it found ten previously unknown satellites circling the planet. Camera images obtained by the spacecraft revealed that one of these satellites, Miranda, has the most varied terrain of any known moon.

Join William Gutsch, chairman of the Hayden Planetarium, for a close look at these and other exciting discoveries in *Voyage to the Outer Planets*. Using some of the striking images and computer animations returned by the Voyagers across incredible distances of space, Gutsch, an astronomer who covered the missions for ABC Television, will trace the spacecrafts' paths.

While Members sit comfortably in the

Auditorium learning about recent voyages, Voyager 2 will be continuing its journey through space. It is scheduled to reach Neptune in August 1989. Gutsch will cover some of the details of this journey and speculate on important discoveries of the future.

A question and answer period will follow the program. To register for *Voyage to the Outer Planets*, please use the Summer Members' Programs Coupon on page 3.

The Voyagers' incredible journeys of discovery are also featured in the Planetarium's Sky Show *Voyager: Voyage to the Outer Planets*. See *Happenings at the Hayden*, page 2, for further details about this show.

Wolves

Explore the behavior, biology, lore, and mythology of wolves with scientist L. David Mech and folklorist Ellen Stekert. This special Members' program complements the exhibition *Wolves and Humans: Coexistence, Competition, and Conflict*, now on display in Gallery 3.

Page 3

Sunset Tours

An indefatigable scientist and explorer introduces Members to the geology, geography and history of Manhattan Island. Members will learn about fossils in the walls of a famous church, the origins of the Hudson River, and more.

Page 3

Healing our Children

What are the primary problems facing today's youth, and how can we make things better for our children and our world? A prominent author and expert in the field of human intelligence shares what he has learned from modern research in psychology, yoga philosophy, and Siddha meditation.

Page 7

Rats Under Surveillance

The third in a series of articles about the Museum's Southwestern Research Station features scientist Jan Randall and the bannertail kangaroo rats of the Arizona desert.

Pages 4 and 5

New at Naturemax

Explore the beauty and wonder of flight in *On The Wing*, the Museum's newest IMAX/OMNIMAX film. From prehistoric reptiles and birds to a medieval attempt at human-powered flight, and today's technological achievements, *On the Wing* explores the dynamic relationship between natural and mechanical flight. For further information, please call the Naturemax Office at (212) 496-0900.

Extend Your Vision of the World.

Margaret Mead Film Festival

10th Anniversary Year

The preeminent showcase of
anthropological films

Sun. - Thurs., Sept. 14 - 18

63 Documentary Films /
32 Premieres
Screenings begin 6:30 p.m.

General Admission:
\$3.00 per evening for members
\$4.00 per evening for non-members

The complete printed program
will appear in the September
issue of *Rotunda*.

For additional information,
phone (212) 873-1070

Happenings at the Hayden

Sky Show Double Feature

Voyager: Voyage to the Outer Planets. Through November. Since 1977, two tiny robot spacecraft, both named *Voyager*, have made incredible journeys of discovery, visiting Jupiter, Saturn, and most recently Uranus. This new Sky Show presents the details of the discoveries and some of the images the spacecraft have sent back to Earth.

Storborn: Earth's Odyssey Through Time and Space. This Sky Show features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains, and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet.

For additional Sky Show information call (212) 873-8828.

Sky Show admission for Participating, Contributing, and Donor Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices and Sky Show times, please call (212) 873-8828.

Wonderful Sky

By popular demand, the Planetarium has scheduled two extra performances of *Won-*

derful Sky, a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the faces of the moon, sunrise and sunset, and other aspects of the sky. New show times are Saturday, July 12, and Saturday, August 2, at 10:00 a.m. and noon. Reservations are strongly recommended. For reservations and additional information, please call (212) 873-S714.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. *Loser Beotles* takes place at 7:30, 9:00, and 10:30 p.m.

Summer Camp Programs

Exciting programs for young children are offered throughout the summer. For July and August information, please call (212) 873-S714.

It's always a good idea to call before visiting the Planetarium, since prices and show times are subject to change without notice. For general Planetarium information, call (212) 873-8828.

ROTUNDA

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Sunset Tours

Wednesdays, August 6 and 13
6:00 and 7:30 p.m.
\$6.00 and open only to Members

Join Sidney Horenstein, senior scientific assistant in the Department of Invertebrates and indefatigable explorer of the urban landscape, as he leads Members on his annual *Sunset Tours of New York City*. This summer's tours will feature Madison Square Park and Manhattan's Upper West Side from Columbus Circle to Riverside Park.

Madison Square Park. Wednesday, August 6. Explores the history, geography, and geology of this charming park located at Twenty-third Street and Broadway. Horenstein will explain how the geography of the area has changed since 1830, when it consisted of a marsh, a lake, and a deep gully that emptied

into the East River.

Members will learn about the history of the original Madison Square Garden and the renowned Flatiron Building. Horenstein will point out the limestones, granites, and marbles that were brought from all over the United States to construct the buildings surrounding the park. The tour will also look at the park's statues, the starting point of the original Boston Post Road, the location of a New York water supply tunnel, and the site where the Statue of Liberty's torch rested before it was put in place.

Columbus Circle to Riverside Park. Wednesday, August 13. This tour includes a look at the beautiful stones of Lincoln Center, which range

from magnificent Italian travertine to rocks similar to those found on the moon.

One of the tour's highlights will be a visit to the Church of Saint Paul the Apostle, built with stones from the Croton aqueduct. Horenstein will point out million-year-old fossils in the church's walls. Members will also view remnants of San Juan Hill and discover the location of the original Manhattan shoreline. The tour concludes at Riverside Park, which provides the perfect vantage point to learn about the origins of the Hudson River and the Palisades.

Both tours are about an hour and a half long. To register, please use the adjacent Members' Programs Coupon.

Wolves of Many Dimensions

Thursday, August 21
7:30 p.m.
Main Auditorium
\$3.00 for Members, \$5.00 for non-Members



The wolf is a warm and nurturing creature, noble, and brave. The wolf is a fierce killer. The wolf is a timid, gentle animal. The wolf is the devil's friend. The wolf is a lonely, solitary animal, howling in the night. The wolf is a pack animal, stalking innocent prey. Hail the wolf, for it is a powerful, helping deity. Beware the bloodthirsty wolf when you walk through the forest at night.

Thoughts and beliefs about the wolf include the above and many more — all equally extreme, all equally conflicting. What sort of animal is the wolf — really? And how have some cultures managed to malign the very same animal that others hold in high esteem?

In *Wolves of Many Dimensions*, two wolf specialists (humans, that is, who know a great deal about wolves) will explore the natural and supernatural

world of these fascinating canids.

Scientist and author L. David Mech is one of the country's foremost experts on wolf biology and behavior. Currently a wildlife research biologist with the Fish and Wildlife Service, Mech has observed wolves in the wild for many years, and has raised two wolf pups named Thunder and Lightning. During twenty years of research, he has never had a bad experience with a wolf, either wild or tame. In a slide show presentation, Mech will speak about what current research teaches us about wolf biology, pack behavior, hunting techniques, and social ecology. He will also address the issue of wolf-human relations in the United States.

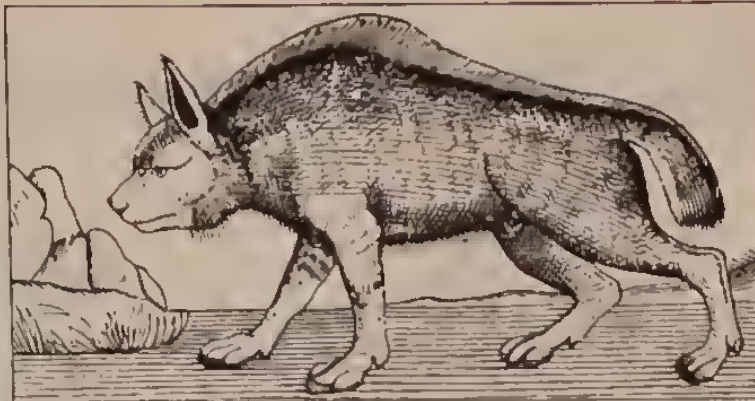
Folklorist Ellen Stekert knows hundreds of stories, myths, and beliefs about the wolf from all over the world. She will survey

both popular and little-known wolf lore, exploring not only the lore itself, but also its context. Why, for example, did European settlers and Native Americans have such different feelings about the same animals? What do the attitudes of these vastly different cultural groups reveal about their way of life? Stekert will not forget to spend some time on one of her favorite supernatural creatures of all — the werewolf.

Both Mech and Stekert were consultants for the exhibition *Wolves and Humans: Coexistence, Competition and Conflict*, on display in Gallery 3 through September 1. They have intrigued audiences at many institutions, both as a team and separately.

To register for *Wolves of Many Dimensions*, please use the adjacent Members' Programs Coupon.

Summer Members' Programs Coupon



Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Total Amount Enclosed: \$ _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Summer Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Voyage to the Outer Planets. Thursday, July 31. \$3.00 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are \$5.00.

Number of tickets at \$3.00 each: _____

Number of tickets at \$5.00 each: _____

Total amount enclosed for program: \$ _____

Sunset Tours. Wednesdays, August 6 and 13. \$6.00 and open only to Members. Please indicate a first and second choice of times, if possible.

August 6: Madison Square.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of tickets: _____

Amount enclosed: \$ _____

August 13: Columbus Circle.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of tickets: _____

Amount enclosed: \$ _____

Wolves of Many Dimensions. Thursday, August 21. \$3.00 for Members, \$5.00 for non-members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are \$5.00.

Number of tickets at \$3.00 each: _____

Number of tickets at \$5.00 each: _____

Total amount enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

Six miles up the road from Portal, Arizona, at an altitude of 5,400 feet, lies the Museum's Southwestern Research Station. Within a short driving distance from this fifty-three-acre outpost are found five different life zones: the Lower Sonoran, Upper Sonoran, Transition, Canadian, and Hudsonian. Located in the beautiful Chiricahua Mountains, the station is open to both researchers and vacationers during most of the year.

Part 1 of this series, which appeared in the January 1986 issue of *Rotunda*, introduced Members to the station. Part 2, in the April issue, featured a morning in the field with John Alcock, a scientist who studies the sexual behavior of dragonflies and other insects. Jan Randall, whose work with bannertail kangaroo rats is featured below, is one of the many other scientists who return to the station again and again to continue developing, expanding, and enjoying their research.



RQ Leibowitz

Notes from the Chiricahua Mountains Part 3:

By the Burrows of Bannertails

"Have you told Ruth about the dead cow?" Jan Randall asks. Claudia Stevens and Julie Pavin exchange glances, grimace, squeeze their noses, and point across the dry, creosote- and mesquite-studded terrain in the direction of a cow that died days ago on the study area. Somehow, I am not inspired to go over to take a look.



"Must be seen to be believed."

It is about 4:30 a.m. Although the drive down from the Museum's Southwestern Research Station was less than fifteen minutes, we've traveled from a forest to the desert environment that is home to the bannertail kangaroo rats. Small flags in the distance mark the hills of dry earth built by little rodents I have seen only in photographs.

Randall is a trim, dark-haired, energetic scientist in her early forties. She has brought me to her study site for my first visit. This morning, she and her two student assistants are checking the live traps they set up yesterday evening near the rats' mounds. They're looking to find previously unmarked rats to add to the study population, to weigh the animals and check their breeding condition, and to find out which rats have been visiting each other's burrows. These observations will help Randall flesh out her data and further explore ideas about the displacement of the animals from their burrows, the patterns of juvenile dispersal in the spring, and movements of the animals from one place to another.

Bannertail kangaroo rats, named for their strong hind legs and long, white-tipped tails, generally spend the day inside their mounds. These mounds can be up to five meters in diameter and half a meter high. Too large to be built by one animal alone, they are thought to be the combined work of successive residents.

With the exception of a mother and her young, only one rat lives inside each mound. The mounds have several entrances (see photo, opposite page). Inside them, the rats, who feed on the native range grasses, store seeds gathered on their nightly forages. A rat may store over a hundred quarts of seeds in its mound; one scientist who has studied bannertails suspects that they exceed all other animals in their seed-storing activity.

The mounds also offer the bannertails protection from the sun's glare, enabling them to conserve body moisture. Thus, the mounds are a necessary aspect of the animal's existence and well worth defending. Indeed, kangaroo rats are very territorial creatures, given to defending their mounds with great vigor yet little or no physical harm to one another. Their aggressive behavior will be discussed a little further on.

We won't be making any behavioral observations this morning; the rats are nocturnal. During the night, Randall and her assistants set gas lanterns up on tripods and sit on a platform ten to fifteen meters away from the animals under observation to watch their diminutive

subjects through binoculars. They record information on mound to mound visits, the appearance of newcomers in the "neighborhood," and the type and duration of aggression the rats display toward one another. "We are very quiet," says Randall. "We become part of the night."

"How easily do they get scared away if they notice your presence?" I ask. The answer reminds me once again that animals are individuals. Some bannertails become habituated to the scientists' presence and simply go about their activities as if no one were there but their fellow rodents. "Others," says Randall, "will actually approach the platform and look right up at us!"

Night work can be disappointing; even after the sun goes down the animals are not always active. Because they are sensitive to wind, the bannertails remain inside their burrows during those windy nights that are all too common.

To trap the rats, the scientists place galvanized steel boxes, each containing seeds, by each marked burrow. When a rat enters a box, it steps on a spring that pulls the door shut. The traps do not harm the bannertails; Randall had them especially made for her work "because the commonly used ones were too short and might cut off the animals' tails."

The three women have mapped out many of the mounds in the area and marked them with flags. Often, however, the flags disappear — removed on purpose by an unsympathetic rancher or accidentally by a clumsy cow.

Randall knows the identities of the occupants of almost all the mounds and is always on the lookout for changes in ownership. This particular study area is not saturated with animals. It contains twenty-four active and several unoccupied mounds.

The first flagged mound we visit is #18. Claudia

kneels down, puts one end of the trap into a cloth bag, and opens the door. Out pops a very active male bannertail. He weighs in at 135 grams and has a fully developed scrotal sack, indicating that he is sexually mature. Randall measures his dorsal gland, a gland whose scented secretions probably help the rats mark off their territories and recognize their neighbors.

The dorsal gland, a specialized sebaceous organ, is found in many animals that use scent to mark territory. At times the rats roll around in the sand outside their burrows, and Randall thinks that they are rubbing their dorsal gland in the sand. To achieve this end, they must roll over on their backs. Before seeing them do this with her own eyes, Randall reprimanded a graduate student for "taking a picture of a dead rat." Now she knows better.

When released, the male of mound 18, appearing a bit disoriented, hides beneath a crouching Claudia. Then, serenaded by a cacophony of vigorous moos from distant grazing cows, he leaps onto his mound and quickly disappears inside.

Next, we find a juvenile inside the trap at mound 100. At 87 grams, he is probably less than three months old. His dorsal gland is very small. Since he has been marked with an orange tab on his left ear and a blue one on his right, Randall's charts list him as Orange-Blue.

Then we capture Green-Green on mound 15. The previous morning she was trapped at 31. Which of these mounds is hers, and what was she doing in or near someone else's?

The rats are very tame when held. The scientists wear gloves to handle them, but the rats do not bite — although they are only too happy to quickly bound away once let go.

There is little difference in size between male and female bannertails. So far Randall has also found no differences in behavior between males and females, except



A bannertail forages for seeds.

J. Randall

for the obvious fact that females give birth and nurse their young (sharing their own mounds with the youngsters for up to a few months before they send them off to find their own). Such a notable lack of behavioral differences between males and females is typical of species in which little or no sexual dimorphism exists.

By 5:30 a.m. it is already fairly hot. We find a very feisty nonsocial juvenile male with a blue marker on one ear who calls out as he is held. "Have you felt how soft they are?" Randall asks. As we stoop down in front of one of the mounds, she holds him out toward me. I pet the fur on the back of his head, which is indeed very soft to the touch, appreciating the beauty and energy of this healthy little animal. Like most of his kind, he has grayish brown fur with a white underbelly and long, gray whiskers. He weighs in at 92 grams and is about three months old.

I try to focus my camera before he disappears, but as soon as Randall releases him he bounds away to mound 103, a few yards away. "When a juvenile runs away to a mound that is not its own," says Randall, "chances are that it is returning to its mound of origin."

Before proceeding to the next mound, we hear a percussive sound that seems to be emanating about two mounds to the east. "That's the foot drumming I told you

I am particularly interested in foot drumming because it is such a dramatic form of behavior, and most of my questions focus on this phenomenon.

Randall still does not know all the ways foot drumming is used in communication, but she is sure of some. For instance, kangaroo rats have a unique way of settling territorial disputes. Particularly at times of high population density, as mounds become an especially valuable commodity, the rats become more aggressive. During these bouts of aggression, foot drumming plays a major role.

To give the reader a clear picture of this behavior, I'll introduce two rats — one of which I'll call Joe, the other Josephine. The anthropomorphizing is my own and is used strictly for illustrative purposes.

Joe's mother has recently kicked him out of her mound. After all, he is old enough to take care of himself, and Mom, being a solitary sort of rat, wants her mound all to herself. So late one evening, Joe leaps across the dry terrain and comes across Josephine's mound, lully intending to wrest it from her.

But Josephine will not have it. She has lived in her mound for almost two years, has given birth to several litters here, and has a great deal of food stored. She will not budge. And so . . . a contest ensues in which there

Foot drumming does not always signify aggressive behavior toward a particular rat. Often, the animals simply "hang out" by their mounds at night, foot drumming. Several rats may foot drum simultaneously. Is this a way of affirming, "I am here. This is my burrow"? Is it a way of finding out if anyone new has moved into the neighborhood? Is it a way of familiarizing oneself with all the animals in the area so that future energies will not be wasted on neighbors that already have their own mounds and don't pose any actual threat?

Behavior such as foot drumming can blur the distinction between a social and nonsocial animal — a distinction which is not always clear.

Perhaps the bannertail is one of those creatures whose evolution demonstrates a sort of midway point between animals that are asocial and those — like the prairie dog — that are highly social. Other rodents that foot drum include several species of gerbils (which foot drum during or after mating) and ground squirrels and prairie dogs (which foot drum defensively at snakes).

Later that day, Randall and I relax together in one of the station's lab spaces, where she periodically clacks away on an old typewriter. She describes herself as a product of the fifties, when women were never encouraged to go into fields like science. "Yet science seemed like the natural field for me to enter. I grew up on a cattle ranch in Idaho and rode a great deal in the desert, collecting plants and insects. I look back on that as my beginnings in biology."

Now, more than a decade after Randall chose science as her career, there are still far more men in science than women, and the male-male mentor-student relationship is still the norm, a state of affairs that is potentially discouraging to young women. Randall stresses the importance of women role models and mentors in science, and I reflect that her all-women field crew is a positive way to express these values. Claudia and Julie are bright, inquisitive young college women who may very well opt for scientific careers after such a positive summer experience.

"What are your words of advice for young women who want to be scientists?" I ask, and the answer is twofold. "The bottom line is, do really good work, the best work you can do," and, finally, "Be tenacious, support each other, and keep your sense of humor."

It is almost time to head toward the dining room for dinner, but before that Randall has an exceptional treat prepared for me. Aware of my budding interest in bannertail foot drumming, she pops a tape into her cassette recorder, presses a button, and I hear a loud, quick drumroll. This is followed by short, staccato beats with plenty of silent spaces in between them. Several other patterns ensue, and I am delighted by the rhythmic self-expression of the small rodents I can now picture in my mind's eye.

As we head down the hill to dinner, I ask Randall how long she plans to keep studying the kangaroo rats, and she responds with the unofficial motto of a true behavioral biologist: "I'll keep studying them as long as I have good questions to ask."

— Ruth Q. Leibowitz



A bannertail's mound. Note that this one has at least two entrances.

about," says Randall. "A rat is foot drumming inside that trap over there, and that foot drumming can probably be heard by other rats up to over thirty yards away."

Foot drumming is one of the most exciting areas of Randall's research. After recording the drumming patterns of many individuals, she found that each rat has a unique pattern. A rat's foot drumming pattern is its "aural fingerprint." As with other aspects of the rats' behavior, Randall has uncovered no significant difference between the foot drumming of males and females.

Randall has avidly studied the "choreography" of this unique behavior. "At first," she says, "it seemed a logical guess that they were alternating feet." But as it turns out, these little animals thump both of their feet together at a rate of between eighteen and twenty-two times per second, "approximately the same frequency as the wing-beat of a large hummingbird." "They use their forepaws as a fulcrum to push off, and come down with the hind feet in unison." Oscillograms — visual recordings of the sound — show that sometimes the feet are just a tiny bit out of sync.

Aside from rats and cows, the only other animals we see that morning are flying grasshoppers, jack rabbits, and a number of small *Sceloporus* lizards that scurry along the sides of a mound as we explore one of the traps. Among the other animals that inhabit the area are snakes and owls, the bannertails' major predators.

By 6:00 a.m. we've banded seven new rats and have checked up on many others who were banded on past outings. It is time to return to the research station for breakfast. On the short trip back, we see something that makes me wish I had not finished my roll of film: three turkey vultures are sitting on fence posts, evenly spaced on a diagonal, mountains in the far distance. Their poses are identical: they are all staring intently in the same direction.

At the breakfast table, out of the sun and freed of the details of fieldwork, we discuss the context of Randall's research at greater length.

will be a great deal of activity but in which neither contestant will be physically hurt.

Josephine and Joe lunge at one another and back up to prepare for a new lunge, testing each other's ability to hold ground. Between these rushes, the rats "drumroll." Joe thumps his feet in his particular pattern of drumrolls, and Josephine answers with her own thumps.

This battle of movement and sound may last but a minute. If it ends the way it usually does, with the mound's owner giving the final and definitive lunge — Josephine will hold on to her territory. Joe will be out of luck.

Young Joe will continue his search until he finds an uninhabited mound to call home, successfully challenges a different rat he meets along the way, or builds his own mound (a rare occasion among bannertails). Or — and let us hope that Joe does not meet any of these ends — he may die of dehydration or get picked off by a snake or bird.

Although foot-drumming patterns differ widely from individual to individual, Randall (based on the study of numerous oscillograms) has preliminary evidence that the patterns of animals living in the same "neighborhood" are far different from those of animals that live far away from each other. These patterns overlap between areas.

In studying another aspect of behavior, Randall has collected a great deal of evidence suggesting that rats that live close to one another recognize each other and tolerate their neighbors far more than they do strangers. Rats from neighboring mounds that are placed together in an outdoor enclosure make far fewer lunges at each other than rats who live far away from one another. The attacks they do make are of shorter duration among neighbors than among strangers.

Rats that live close together are often related; when juveniles disperse from their mother's burrow they try to find mounds as close by as possible. Thus animals that are more likely to tolerate each other more may very well be close relatives — although this is not necessarily the case.

Jan Randall is currently an associate professor of biology at the Central Missouri State University in Warrensburg. Last year, she was a visiting associate professor at Cornell, supported by a National Science Foundation Visiting Professorships for Women grant.

Randall has spent several seasons researching at the station. She enjoys the accessibility of the study site and the scientific interactions she has with the station's other visitors. Grants she has recently received from the National Geographic Society and the National Science Foundation will help her to continue her important work with the bannertails during a sabbatical year spent at the station.

The Southwestern Research Station is a nonprofit research and educational institution owned and operated by the Museum. The land on which it stands was purchased in 1955 with monies donated by David Rockefeller. The station's residential facilities were made possible by gifts from the National Science Foundation and private individuals.

An informal atmosphere prevails at the station, where researchers and vacationers dine together at picnic tables outside or in an indoor dining room. Among the many attractions of the station are its swimming pool, library, and the many hiking trails in the area. Researchers are invited to take advantage of the station's lab space and scientific equipment, which should be reserved prior to each visit.

For a fee schedule and brochure, write to: The Resident Director, The Southwestern Research Station, Portal, Arizona 85632.



Fill a Llama's Pack

Children 8 through 14 years of age can learn about the world in *FACES*, a magazine about people all over the world. Each issue of *FACES* explores a different theme of anthropology. Past issues have contained articles and activities on ghosts, dragons, Pueblo Indians, and many other topics. The activity below comes from the May issue of *FACES*, which is all about our animal allies — animals that help us to travel, carry heavy loads, and enjoy richer lives.

While you are trekking across the Peruvian Andes, a llama is

an ideal "animal ally" for carrying your supplies, except for your clothes, which you carry in a backpack. An adult llama can carry about sixty pounds in a pack bag that the Peruvians call a *costal*. *Costals* are woven on backstrap looms using llama wool and are the llama's natural colors: black, brown, white, and tan. The pack resembles a potato sack. Llama-wool rope, called *soga*, is used to tie the *costal* onto the llama's back.

If you were to prepare a pack for your llama to carry for a week of walking the highland trails from Cuzco to Machu

Picchu in Peru, camping out along the way, which of the following supplies would you include?

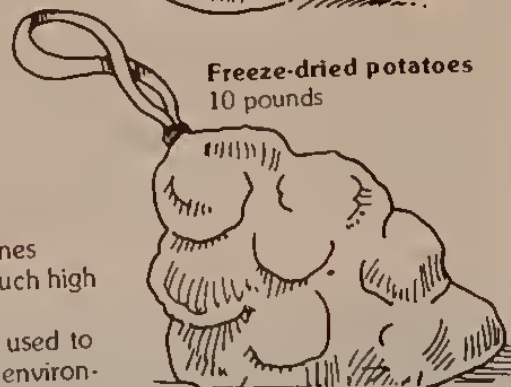
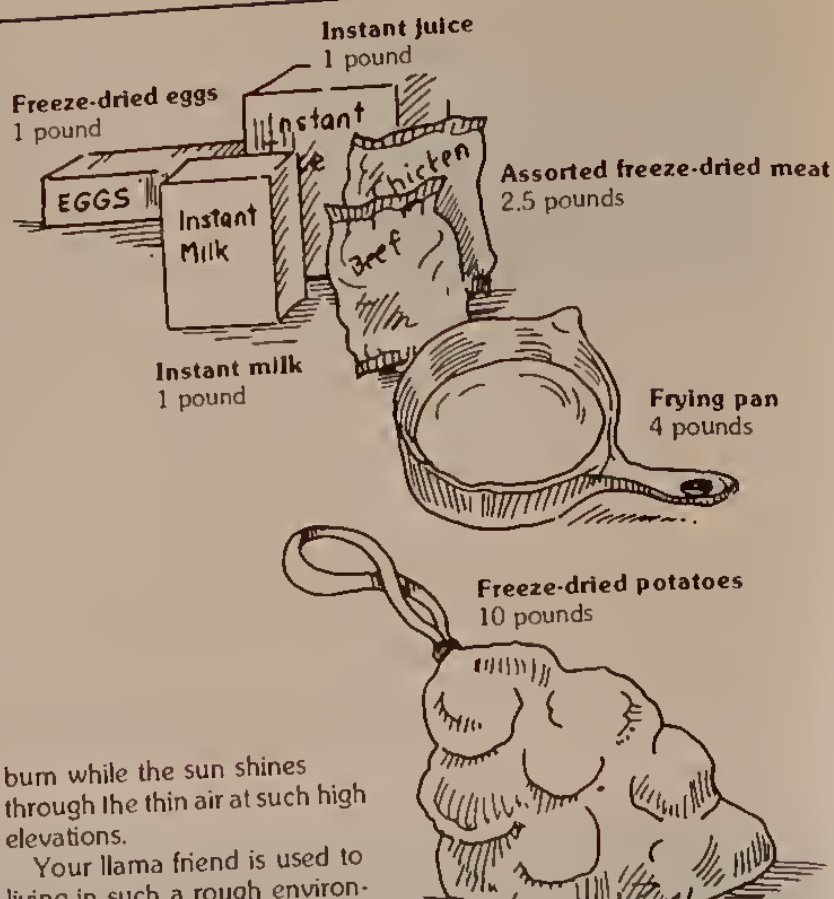
Remember, your llama can carry only sixty pounds over the steep mountains, and you must be sure to take along everything you need. There are no stores or motels on the road you will travel. There is no water along the route, and it becomes extremely cold when the sun sinks behind the next mountain. Sometimes when you cross the highest peaks you may walk through misty clouds. Other times you could get a bad sun-

burn while the sun shines through the thin air at such high elevations.

Your llama friend is used to living in such a rough environment and will help you climb the steep mountains if you feed him his llama food and give him water every day.

What would you put into your *costal*? Add the weight of all the items you have chosen. If the total equals sixty pounds, then you have packed the essentials for your trip.

by Marilyn D. Franz
illustrated by Emily Hall



Answers on page 7.

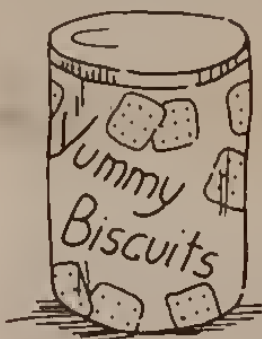


Sunglasses
6 ounces

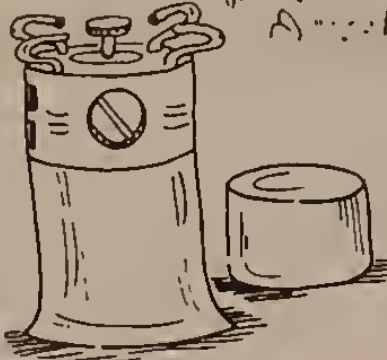


Chicken
5 pounds

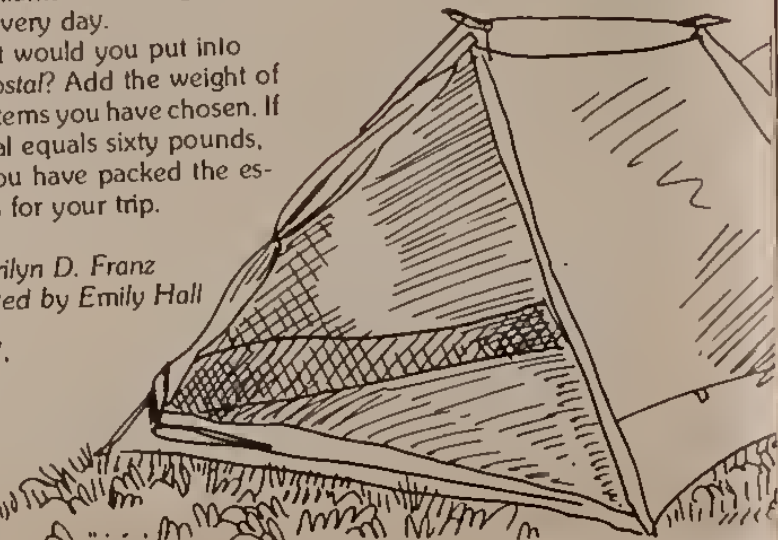
Biscuits
1 pound



Propane stove
1 pound, 9 ounces



Mountain tent
6 pounds

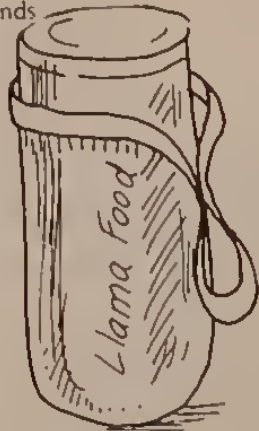


Swiss army knife
8 ounces



Chulpo
7 ounces

Llama food
(alfalfa and oat pellets)
10 pounds



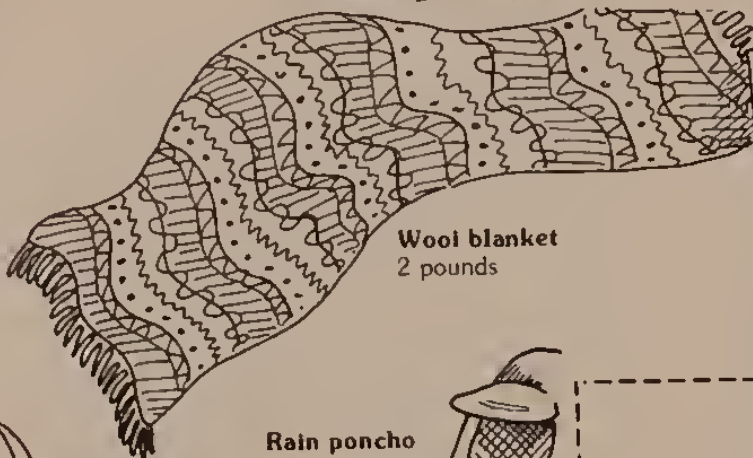
Camp cook kit
3 pounds



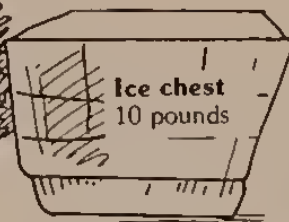
Rain poncho
10 ounces



Wool blanket
2 pounds



Matches (waterproof)
8 ounces



Flashlight
8 ounces



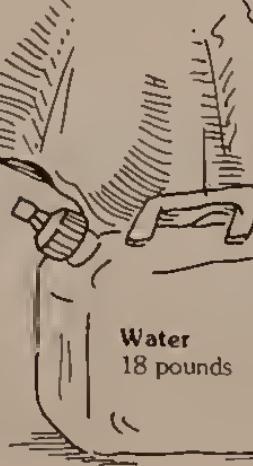
Rubber raft
8 pounds



Inca cola
3 pounds



Water
18 pounds



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#722

Museum Notes



A photograph from *Friends of the Field*, a small exhibition featuring legendary Museum expedition members with onimol companions acquired in the field. Through September outside the Museum library.

Special Exhibitions and Highlights

Gypsies: Photographs by Jan Yoors. Through July 27 in the Akeley Gallery. At age twelve, Jan Yoors ran away from his Belgian home to live side by side with Gypsies. Until the age of twenty-two, Yoors periodically left his home to join the Gypsies on their travels throughout Europe. He was adopted by a Gypsy family, learned Romani (the Gypsy language), and gained a knowledge of these unique people afforded to few outsiders. The exhibition features black-and-white photographs taken by Yoors between 1934 and the early 1970s. The photographs portray various aspects of Gypsy culture, such as home life and travel, and include many beautiful portraits of individuals.

Lost and Found Traditions: Native American Art 1965-1985. Through September 7 in Gallery 1. More than 350 works by Native American artists form the first comprehensive exhibition stressing the survival of Native American art forms. Textiles, pottery, baskets, jewelry, and carvings are among the art forms included in the exhibition, as well as objects that employ beads, feathers, quills, hides, furs, birch bark, bone, and other materials.

Wolves and Humans: Coexistence, Competition and Conflict. Through September 1 in Gallery 3. Few animals have exerted such a powerful influence on the human imagination as the wolf. This temporary exhibition, organized by the Science Museum of Minnesota, will explore the folklore, mythology, and natural history of the wolf. A special Members' program entitled *Wolves of Many Dimensions* will extend the scope of the exhibition by taking a look at the natural and supernatural worlds of this fascinating animal. See page 3 for details.

Carl Ethan Akeley, 1864-1926: Renaissance Man. In the Library Gallery through September. This exhibition of books, artifacts, photographs, and tools celebrates the diverse and extraordinary accomplishments of Carl E. Akeley, taxidermist, inventor, naturalist, explorer, and the prime force be-

hind the Museum's Hall of African Mammals.

The Brazilian Princess is still on display in the Roosevelt Rotunda. At 21,327 carats (nine and one-half pounds), it is the world's largest cut gem. This near-flawless light blue topaz was found in Brazil twenty-five years ago in the form of a seventy-five-pound crystal. It is a gift to the Museum from an anonymous donor.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the first-floor Information Desk. Please ask at an Information Desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

The Natural Science Center introduces young people to the plants, animals, and rocks of New York City. Some exhibits include live animals. In July and August the center is open Tuesday through Friday, 10:30 a.m. to 12:30 p.m. and 2:00 p.m. to 4:30 p.m.; Saturday, from 1:00 to 4:30 p.m. Closed Sunday and Monday.

The Discovery Room, where children can touch natural history specimens in imaginative "discovery boxes," is closed throughout July, August, and September. It reopens in October.

The Leonhardt People Center features ethnic dances, musical performances, films, lectures, and workshops. Open weekends from 1:00 to 4:30 p.m. In July, People Center programs feature China. **The People Center is closed during the months of August and September and reopens in October.**

Naturemax Information

The drama of space unfolds on New York's largest movie

screen — four stories tall and sixty feet wide — in *The Dream Is Alive*.

Naturemax's box office is located in the Seventy-seventh Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 50 percent discount at all shows, including the Friday and Saturday evening double features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. to 9:30 p.m., Monday through Thursday, and from 9:30 a.m. to 12:30 a.m., Friday through Sunday. There are only 100 spaces available. The entrance is on Eighty-first Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses. Parking is free after 5:30 p.m. for those attending programs and courses on Monday, Tuesday, and Thursday evenings.

For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a nonsmoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10% discount. The restaurant is located in the basement, near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays and most holidays: noon to 5:30 p.m.

Terrace Cafe. This outdoor cafe is open daily (weather permitting) from 11:30 a.m. to 2:00 p.m., on the Seventy-seventh Street side of the Museum.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. in the basement. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632. "By the Burrows of Bannertails" (pages 4-5) discusses one of the research projects in progress at the station.

Healing Our Children: The Heart of Learning

Wednesday, July 9
7:00 p.m.
Kaufmann Theater

"We tell children how to be and instead they keep mirroring what we are. Children learn by example. If we are to raise happy children, we must bring to wholeness the models they are following." So says Joseph Chilton Pearce, an internationally known author and expert in the field of human intelligence.

In *Healing Our Children: The Heart of Learning*, Pearce will address some of today's most serious problems, such as teen suicide, child abuse, and urban violence. Because the natural biological needs of children have been denied, Pearce says, we now face a host of individual and social problems.

Combining the findings of modern research in psychology with the insights of yoga philosophy and Siddha meditation, Pearce proposes a revolutionary solution to a difficult dilemma. "Meditation," he states, "is a biological process that puts the heart and mind back into



Joseph Chilton Pearce

proper relationship, making us the role models we want for our children."

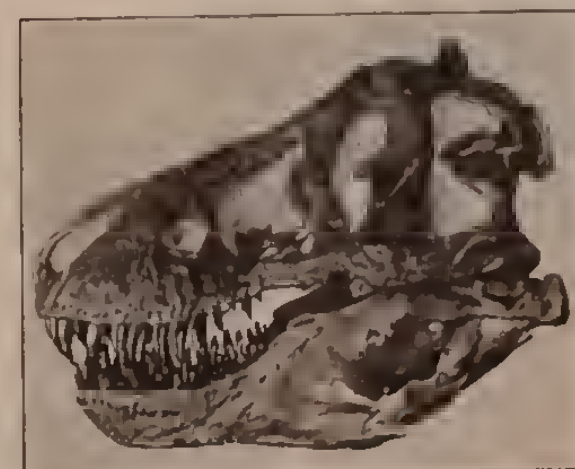
Pearce has spoken before prestigious educational and professional groups worldwide. He is the author of *Crack in the Cosmic Egg* and *Magical Child*.

Seating for the program is on a first-come, first-served basis. For further information, please call (212) 873-1300, ext. SS9.

Guest Stars



The meteorite and Tyrannosaurus rex skull were two Museum items highlighted on NBC's "Late Night With David Letterman" between March 31 and April 3.




Answers to "Fill a Llama's Pack" from page 6.

You will need water, instant milk, juice, eggs, sunglasses, propane stove, meat, matches,

blanket, tent, knife, potatoes, biscuits, rain poncho, cook kit, flashlight, *chulpa*, and llama food. Total weight equals sixty pounds.


| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|---|-----|
| | | | 2 | 3 | 4 Museum open Moon at apogee, 3:00 a.m. | 5 |

July 1986

| | | | | | | |
|--|-------------------------|---|--|---|----|---|
| 6 | 7 |  | 9 7:00 p.m. <i>Healing Our Children. The Heart of Learning.</i> Kaufmann Theater. Free. Page 7 | 10 | 11 | 12 1:00 to 4:30 p.m. <i>Cultural Traditions of China</i> Chinese shadow theater with Yueh Lung Shadow Theater; Chinese music and instruments with Chang Tsuan-nien. Leonhardt People Center. Free |
| 13 1:00 to 4:30 p.m. <i>Cultural Traditions of China</i> Chinese shadow theater with Yueh Lung Shadow Theater; Chinese music and instruments with Chang Tsuan-nien. Leonhardt People Center. Free. | 14 | 15 | 16 | 17 Members of the Discover Alaska Cruise arrive in Anchorage, board the <i>Sagafjord</i> , and begin a ten-day voyage to Vancouver. Discovery Tours. (212) 873-1440 | 18 | 19 1:00 to 4:30 p.m. <i>Cultural Traditions of China.</i> Tai chi ch'uan and summer festival dances with Tsui Yung Yung; Chinese bamboo flute with Tim Liu. Leonhardt People Center. Free Moon at perigee, 3:00 p.m. |
| 20 1:00 to 4:30 p.m. <i>Cultural Traditions of China</i> Tai chi ch'uan and summer festival dances with Tsui Yung Yung; Chinese bamboo flute with Tim Liu. Leonhardt People Center. Free | 21 Full moon, 5:40 a.m. | 22 | 23 8:00 p.m. Met Grotto. National Speleological Society. Room 129. Free. | 24 | 25 | 26 1:00 to 4:30 p.m. <i>Cultural Traditions of China.</i> Chinese women's dances with Margaret Yuen; Chinese storytelling with Mo Li-Min. Leonhardt People Center. Free |
| 27 1:00 to 4:30 p.m. <i>Cultural Traditions of China</i> Chinese women's dances with Margaret Yuen; Chinese storytelling with Mo Li-Min. Leonhardt People Center. Free | 28 | 29 | 30 | 31 7:30 p.m. <i>Voyage to the Outer Planets. Members' Program.</i> Main Auditorium. Page 1 Moon at apogee, 4:00 p.m. | | |

August 1986

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

| | | | | | | | |
|---|----|----|--|---|--|----|---------------------------|
| 3 | 4 | 5 | 6 6:00 and 7:30 p.m. <i>Members' Sunset Tour.</i> Page 3 | 7 | 8 | 9 | |
| | | | 12 | 13 6:00 and 7:30 p.m. <i>Members' Sunset Tour.</i> Page 3 | 14 Members of the Discovery Tour from Oslo to Dublin board <i>Illina</i> and begin their voyage retracing the routes of the Vikings. Discovery Tours. (212) 873-1440 | 15 | 16 Moon at perigee, noon. |
|  | | | 19 Full moon, 1:54 p.m. | 20 Members of the Discovery Tour to Tibet and China arrive in Guangzhou, where they begin their exploration of the Chinese and Tibetan civilizations. Discovery Tours. (212) 873-1440 | 21 7:30 p.m. <i>Wolves of Many Dimensions. Members' Program.</i> \$3.00 for Members, \$5.00 for non-Members. Main Auditorium. Page 3 | 22 | 23 |
| 24 | 25 | 26 | 27 8:00 p.m. Met Grotto. National Speleological Society. Room 129. Free. | 28 Moon at apogee, 10:00 a.m. | 29 | 30 | 31 |

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 10 October 1986

Paul Winter Consort

Internationally acclaimed musician-environmentalist Paul Winter will bring his distinctive fusion of jazz, classical arrangements, and African and Brazilian rhythms to the Planetarium Sky Theater. As the consort plays stars, planets, moonscapes, and lasers will appear on the dome.

Page 3.

Culture and Violence

The Department of Education presents a three-part program that will look to history, domestic life, and the media for an understanding of the causes and controls of violence.

Page 2.

Of Human Bonding

Economic equality may be hazardous to the health of a marriage. So says Dr. Helen Fisher, anthropologist and author, who will speak about the sexual contract that originated more than two million years ago.

Page 3.

Halloween Hobgoblins

Laura Simms, professional storyteller, will introduce gentle ghosts and devilish demons as she presents the sixth annual program of *Spint Stories from Around the World* this Halloween.

Page 9.



Spear-thrower with bison sculpted of reindeer antler.

Dark Caves, Bright Visions

Exhibition opens Thursday, October 23
Members' Private Viewing, Monday, October 27

Twenty thousand years ago people began wearing tailored clothes thanks to a new tool—the sewing needle. There is no direct record of what exactly the men and women of the Late Ice Age wore, but there are examples of eyed sewing needles, most made of bone or ivory and many as minute as those used today. Modern as it may seem, the sewing needle is a product of a technological revolution that began 35,000 years ago and continued 250 centuries, until the end of the Ice Age.

Dark Caves, Bright Visions, the exhibition opening in Gallery 3 this month, celebrates the myriad accomplishments of the anatomically and culturally “modern” humans of the Upper Paleolithic, or Late Ice Age. For the exhibition, more than 250 paintings, etchings, sculptures, and tools have been selected from private and institutional collections throughout Europe and North America—a greater number of original pieces

from the late Paleolithic period than has ever been displayed in North America. Together these objects and artworks suggest that the Upper Paleolithic saw, as guest curator Dr. Randall White puts it, “a virtual explosion of symbolic behavior.”

Throughout the Upper Paleolithic, art and survival were intertwined. The production of tools, for instance, became a process of many stages, some of which centered on decoration rather than practical function. Limestone lamps and spear-throwers (deadly devices for hurling spears with accuracy and velocity) were often embellished with animal forms, and many open-air dwelling sites show that people of the Late Ice Age built with an awareness of architectural form. *Dark Caves, Bright Visions* includes a full-scale reproduction of an open-air shelter constructed from the bones of woolly mammoths—bones taken not just from one or two but usual-

ly from dozens of these 10,000-pound animals.

The extraordinary cave paintings, engravings, and sculptures of the Upper Paleolithic are widely recognized. But as *Dark Caves, Bright Visions* makes clear, the people of Upper Paleolithic Europe had at their command a body of technological knowledge as sophisticated as that of any modern hunting-and-gathering people.

To attend the special Members' viewing and reception for *Dark Caves, Bright Visions* on October 27, please use the Members' programs coupon on page 3. For information about several exciting programs organized in conjunction with the opening of *Dark Caves, Bright Visions*, please see page 5.

This exhibition is supported by an indemnity from the Federal Council on the Arts and the Humanities.

Culture and Violence: A Timeless Dilemma in Perspective

In the minds of most urban Americans, violence is associated with crime. But the troubling truth is that violence appears in many guises: from the battleground to the playground, violence is manifest throughout society.

Culture and Violence, a three-part program presented by the Department of Education in conjunction with the Post Graduate Center for Mental Health and the Living Arts Foundation, examines violence from historical and contemporary perspectives.

In the opening lecture Wednesday evening, October 1, in the Museum's Main Auditorium, Dr. Lionel Tiger, professor of anthropology at Rutgers University, will explore what prehistory, human history, and the 20th century cross-cultural tapestry reveal about the causes and controls of violence. As he looks at the role of violence in society, Dr. Tiger will address a number of provocative questions: why, for instance, does the arms industry loom so large in the budgets of governments, and why do people choose to attend movies depicting warfare, mayhem, or murder?

On Wednesday, October 15, at 7:00 p.m. in the Main Auditorium, a panel of media representatives will examine the ways in which the media may encourage violent behavior. Though some evidence suggests a connection between the media's portrayal of violence and actual violent behavior, a debate rages. The panel dealing with this difficult topic will include Phyllis Hamison-Ross, M.D., director of the Community Mental Health Center, Metro-

politan Hospital, and member of the board of directors of the Children's Television Workshop; Dr. J. Ronald Milavsky, vice-president of News and Social Research for NBC; and Earl Caldwell, columnist for the *New York Daily News* and commentator for the CBS Radio Network. Malcolm Arth, chairman of the Museum's Department of Education, will serve as moderator.

Domestic violence ranges from verbal harassment to murder and particularly affects women, children, and the elderly. Through film, dramatization, and panel discussion, *Violence in the Home*, a program presented Sunday, October 26, in the Kaufmann Theater at 2:00 p.m. and again at 4:00 p.m., will examine all aspects of this disturbing phenomenon. *Deck the Halls*, a 20-minute film from ODUN Productions, focuses on a middle-class family to reveal how the cycle of violence passes from one generation to the next. Clifton Powell's play *Coming Round* centers on an upwardly mobile couple to illuminate the emotional conflicts that grip both the victim and perpetrator of battering. Powell has served as artist in residence for the New York University Creative Arts Team and works as an educator and actor in New York.

Analyzing the play and film will be the following four mental health professionals: Verona Jeter, former first director of the Women's Shelter, Henry Street Settlement; John Aponte, psychotherapist specializing in the development of programs for men who abuse their spouses; Jan Peterson, director,

National Congress of Neighborhood Women; and Judith C. White, director of public education, Postgraduate Center for Mental Health and practicing psychotherapist.

Culture and Violence is supported by gifts from the Samuel and May Rudin Foundation and from the Living Arts Foundation. Seating is on a first-come, first-served basis. For further in-

formation, please call (212) 873-1300, ext. 514.

An Education Department Public Program.



Russian crew fires a howitzer during World War II.

How the Bison Came to be Called Buffalo



If you have a yen for learning that is never quite satisfied, consider becoming a Museum Highlights Tour guide. The Museum is currently recruiting volunteer guides to lead Museum Highlights Tours on weekdays. The tours cover se-

lected exhibitions on all four floors, so guides become thoroughly immersed in the Museum. The training program is rigorous; after submitting an application and being interviewed, selected volunteers will attend 9 two-hour training ses-

sions beginning in January. The only requirements are boundless curiosity and a strong desire to exercise it. If you're interested in this and other volunteer opportunities, please call the Volunteer Office at (212) 873-1300, ext. 538.

ROTUNDA

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Of Human Bonding

Tuesday, November 18
7:30 p.m.
Main Auditorium
Free and open only to Members



Yoruba metal artifacts, including male and female fertility figures.

Dr. Helen Fisher's specialty is the sexual revolution — the one that began more than two million years ago. The human conventions of going steady, living together, and marrying, Fisher will explain in *Of Human Bonding*, a slide-illustrated Members' program, can be traced back to a time shortly after our distant ancestors first descended from the trees, women lost their period of heat, and men and women began to bond.

This ancient sexual revolution gave rise to synchronized courting rituals similar to those observable in today's singles' bars. It also initiated the brain chemistry that triggers infatuation and romantic love and triggered the development of sexual emotions like guilt and jeal-

ousy. Most important, this sexual revolution produced the human infant, the father-husband, and the family.

Looking at worldwide patterns of divorce, Fisher makes some compelling observations: lifelong monogamy is not the norm around the world, and divorce is common in cultures where men and women are equal partners and both have economic power. In her view, the American divorce and remarriage rates can be seen as reflections of rising economic equality — and a return to an ancient human pattern.

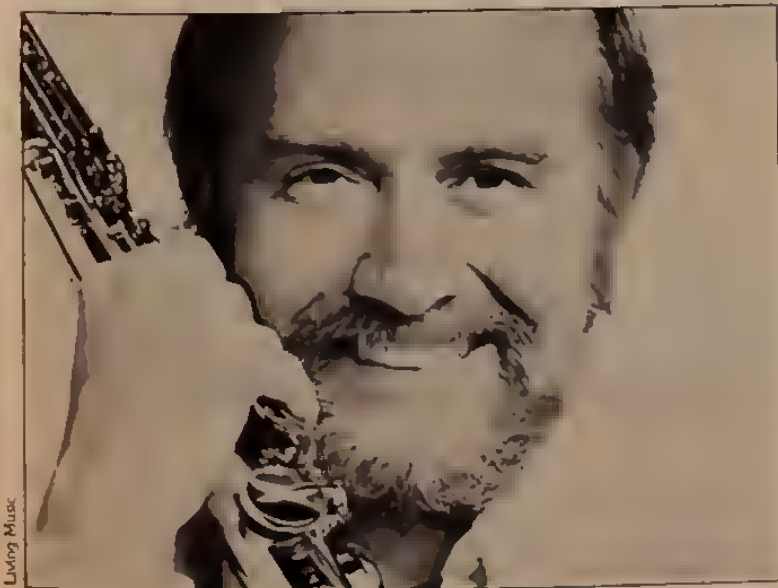
Of Human Bonding: The Evolution and Future of Human Sexuality will conclude with Fisher's projections about the future of male-female relationships and an optimistic

overview of the family. "To bond is human," she says. "It began a long time ago with the sex contract, and though the rules of the contract will change, the instinct to make a contract will prevail."

Since 1984, Helen Fisher has appeared regularly on NBC's "Today Show." Her book *The Sex Contract: The Evolution of Human Behavior* (William Morrow) has been published internationally and was an alternate Book-of-the-Month Club selection. Dr. Fisher is an associate in the Museum's Department of Anthropology and the former chair of the New York Academy of Sciences' anthropology section. To register for *Of Human Bonding*, please use the adjacent Members' programs coupon.

Paul Winter Consort at the Hayden Planetarium

Wednesday, October 15
6:30 and 9:00 p.m.
\$16 for Members, \$20 for non-Members



Paul Winter has performed and recorded in some of the world's most interesting spaces — from Carnegie Hall to a raft on the Colorado River. The distinct sounds of Winter's "world" music filling the Planetarium's Sky Theater on Wednesday, October 15, will mark the first time the celebrated musician-composer has ever played in a planetarium.

The 90-minute concert of the Paul Winter Consort will include selections from *Canyons*, a celebration of the Grand Canyon, and *Sun Singer*, a musical ode to the sun. Winter's music blends jazz and classical arrangements with African and Brazilian rhythms and often features the sounds of whales, wolves, loons, and other animals. Stars, planets, sunsets, moonscapes, and lasers will appear on the Sky Theater dome in accompaniment to the consort's enchanting sounds.

To purchase tickets to the Paul Winter Consort, please use the adjacent Members' programs coupon.

October Members' Programs Coupon

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime telephone: _____
Membership category: _____
Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *October Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Paul Winter Consort. Wednesday, October 15. 6:30 and 9:00 p.m. \$16 for Members, \$20 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first and second choice (if possible):

_____ 6:30 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$16 each: _____
Number of non-Members' tickets at \$20 each: _____
Total amount enclosed for program: \$ _____

The Odyssey of the Messenger. Friday, October 24. 8:00 p.m. \$4 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price.

Number of Members' tickets at \$4 each: _____
Number of non-Members' tickets at \$6 each: _____
Total amount enclosed for program: \$ _____

Dark Caves, Bright Visions. Monday, October 27. Free and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times.

_____ 6:30 p.m. _____ 7:00 p.m. _____ 7:30 p.m.

Number of people: _____

Spirit Stories. Friday, October 31, 7:30 p.m. (for adults). Saturday, November 1, 1:30 p.m. and 3:30 p.m. (for families). \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first and second choice of times, if possible.

_____ 7:30 p.m. (Oct. 31) _____ 1:30 p.m. (Nov. 1)
_____ 3:30 p.m. (Nov. 1)

Number of Members' tickets at \$3 each: _____
Number of non-Members' tickets at \$5 each: _____
Total amount enclosed for program: \$ _____

Of Human Bonding. Tuesday, November 18. 7:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

The Ice Age and Its Mammoth Hunters. Sunday, November 23. 1:30 p.m. and 3:30 p.m. (both for families). \$2 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$3. Please indicate a first and second choice of times:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of tickets at \$2.00: _____
Number of tickets at \$3.00: _____
Total enclosed for program: \$ _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? Thank you for checking.

All About Acupuncture

Saturday, October 18
6:30-10:00 p.m.
Kaufmann Theater
Free

This afternoon program offers the general public a chance to learn about developments in acupuncture and electrical therapy from some of its most renowned practitioners and researchers. The principal speakers and topics are:

Acupuncture and Treatment of Chronic Pain
Alfred Peng, M.D., F.I.C.A.E.

Acupuncture and Electro-Therapeutics for Facial and Oral Pain
William Greenfield, D.D.S., F.I.C.A.E.

Treatment of Abnormal Blood Pressure in the Brain and Lower Extremities in the Presence of Normal Blood Pressure in the Arms
Yoshiaki Omura, M.D., Sc.D., F.I.C.A.E.

Origins of Chronic Pain and its Treatment
Pekka Pontinen, M.D., F.I.C.A.E.

Evaluation of Current Theories and Treatments of Pain
Albert Cook, M.D., F.I.C.A.E.

The New Synthesis: A Discussion of New Early-Diagnostic Techniques for Certain Cancers and Cardiovascular Diseases, and a Critical Evaluation of Different Modalities of Therapy
Yoshiaki Omura, M.D., Sc.D., F.I.C.A.E.

This symposium is being held in conjunction with a four-day meeting at Columbia University of the Second International Symposium on Acupuncture and Electro-Therapeutics.

This program is made possible in part by grants from the Helena Rubinstein Foundation and Vincent Astor Foundation. The symposium is free to all Museum visitors, and seating is on a first-come, first-served basis. For additional information call (212) 873-1300, ext. 559.

An Education Department Public Program.

The Maria Lionza Cult: Spiritual Healing in Venezuela

Friday, October 10
7:00 p.m.
Kaufmann Theater
Free

In the Venezuelan cult of Maria Lionza, mediums fall into trances as spirits possess them. The summoned spirits, who are often historical personalities like Simon Bolivar, are then consulted by devotees in need of favors or healing. In a slide-illustrated lecture, Dr. Angelina Pollack-Eltz, professor of anthropology at the Universidad Catolica Adesso Bella, Caracas, Venezuela, will describe the evolution and the practices of this fascinating cult of Maria Lionza, a mother figure.

Today, the cult is expanding steadily and even becoming commercialized. Cultists now

wear beaded necklaces representing various deities and divine the future with shells. Lionza healers, who have always turned to exorcism and cleansing rites to treat the supernatural causes of illness, have begun to include pharmaceutical remedies in their rituals.

This program is presented in conjunction with the Third International Conference on Orisa Tradition and Culture and is made possible in part by a gift from the Samuel and May Rudin Foundation. Seating is on a first-come, first-served basis. For further information, call (212) 873-1300, ext. 514.

An Education Department Public Program.

Celebrating Africa Month



Top: West African deity (Congo). Bottom: Senufo wooden carvings. October is Africa Month at the Leonhardt People Center. Demonstrations and performances — whose subjects range from folksongs to cooking — are free. See the calendar on the back page for the complete schedule and call (212) 873-1300, ext 514, for further information.

Dark Caves, Bright Visions

Ice Age Escapades

Sunday, November 23
1:30 p.m. and 3:30 p.m. (both for families)
Kaufmann Theater
\$2 and open only to Members

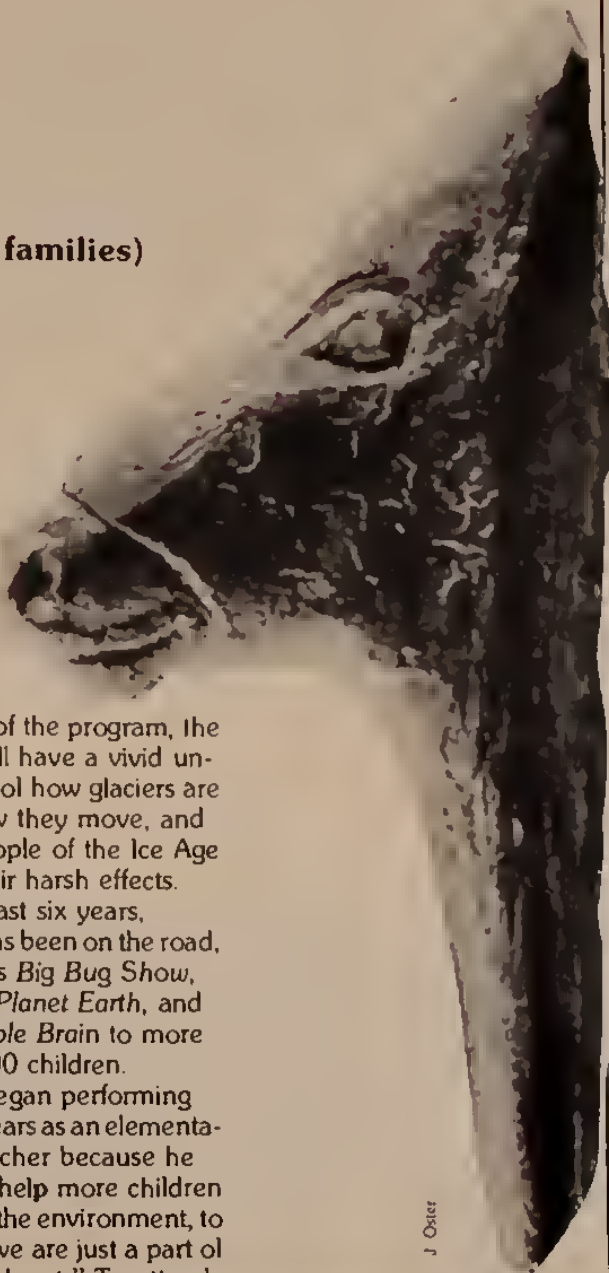
When Jack Branagan prepares for an upcoming performance, he goes right to the source. Last summer a helicopter dropped him atop Mendenhall Glacier, on the outskirts of Juneau, Alaska. Many of the slides Branagan took on his recent explorations will appear as part of *The Ice Age and Its Mammoth Hunters*, a Members' program for families.

Slide projectors, however, are just a small part of Branagan's equipment. With the help of a 25-by-12-foot scrim — and some members of the audience — he intends to create a moving glacier on stage. Using a puppet of a woolly mammoth, he will bring to life this fantastic but forgotten animal with stories about how it lived and how it hunted.

In *The Ice Age and Its Mammoth Hunters*, Branagan will use an imaginative array of props and illustrations to create a firsthand experience of a time when people hunted woolly mammoths and when glaciers changed the face of the earth.

By the end of the program, the audience will have a vivid understanding of how glaciers are formed, how they move, and how the people of the Ice Age survived their harsh effects.

For the past six years, Branagan has been on the road, taking *Jack's Big Bug Show*, *Our Home Planet Earth*, and *The Incredible Brain* to more than 400,000 children. Branagan began performing after eight years as an elementary schoolteacher because he "wanted to help more children be aware of the environment, to realize that we are just a part of life on this planet." To attend *The Ice Age and Its Mammoth Hunters*, the newest of Branagan's unique performances, please use the Members' programs coupon on page 3.



Engraving of a horse's head.

Emerging Humans: The Creative Revolution



Sculpted horse-head profile.

On three consecutive Thursday evenings, beginning October 16, Dr. Randall White, guest curator of *Dark Caves, Bright Visions*, will present a slide-illustrated lecture related to the new exhibition. *Disappearance of the Neanderthals and the Emergence of Modern Humans*, the opening lecture, will examine the adaptive significance of the transition from Neanderthals to Cro-Magnons, anatomically modern humans.

The archeological record attests to revolutionary changes. In *Dismantling the Cavedweller Myth*, on October 23, Dr. White turns to the evidence for a vivid view of everyday life in the Late Ice Age of Europe, when technological knowledge was startlingly modern. Upper Paleolithic people not only knew how to take advantage of solar heat by building open-air dwell-

ings on south-facing locations; they also knew how to construct tools and weapons of admirable efficiency. And, as Dr. White will describe in *Ice Age Art and Symbolic Expression*, his final lecture on October 30, art from the period reveals that Upper Paleolithic people were self-aware. Unlike the Neanderthals, who have left no record of representational art, the people of the Late Ice Age have left thousands of representational paintings, sculptures, and engravings, as well as evidence of their mastery of music and storytelling.

Dr. White's lecture series begins on Thursday, October 16, at 7 p.m. The fee is \$18 for Members, \$20 for non-Members. For details call (212) 873-7507.

An Education Department Public Program.

Members' Tour of the Month

The 250 artifacts on display in *Dark Caves, Bright Visions* constitute a physical record of how the human spirit has evolved. Members are invited to take special hour-long tours that will illuminate the vitality of life in the Late Ice Age, a time when people not only hunted but also traded, painted, and sculpted. In the company of a volunteer Highlights Tour guide, Members will gain an impression of the survival strategies, the social structure, world view, artistic achievement, and technological advances of *Homo sapiens sapiens*. The tour will also include stops at the musk ox, caribou, and bison displays in the Hall of North American Mammals to give Members a sense of the environment in which the people of the Late Ice Age lived.

For more information about *Dark Caves, Bright Visions*, please refer to the front cover article. To register for the special Members' tour of the exhibit, please use the adjacent coupon.



Semi-transparent female statue.

Members' Tour of the Month. *Dark Caves, Bright Visions*.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Telephone: _____

Membership Category: _____

Please indicate a first and second choice of dates and times:

| | | |
|--------------------|------------------|------------------|
| Sunday, Nov. 2 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, Nov. 5 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Saturday, Nov. 8 | _____ 4:30 p.m. | _____ 5:30 p.m. |
| Wednesday, Nov. 12 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Sunday, Nov. 16 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, Nov. 19 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Saturday, Nov. 22 | _____ 10:30 a.m. | _____ 11:30 a.m. |

Number of people: _____

Please mail with a self-addressed, stamped envelope to: *Dark Caves Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024. **Please note: registration closes on October 25.**

A Modern Unicorn Hunt

A Museum Curator's Search for Beasts of Lore and Legend

by Richard G. Van Gelder



Unicorns (Legend-Sea Calm), by Arthur B. Davies (American, 1862-1928).

"... God himself must needs be traduced, if there be no Unicorn in the world."

— Edward Topsell, 1658

There was quite a stir among the animal folk when Ringling Brothers Barnum and Bailey Circus showed up in New York with a unicorn last year. My first knowledge of it came from a curious commercial on my television set. Then the ASPCA got into the act, claiming that the circus had no unicorn, only a goat with a phony horn. And finally, the U.S. Department of Agriculture inspected and decided that it was, indeed, a goat with a horn job. The circus kept claiming it was a unicorn, and word was they had three more in reserve.

What I saw didn't look like a unicorn to me. I saw my first wild unicorn three years ago. My plane (which, believe it or not, had a painting of a yeti, or abominable snowman, on its side) had landed on a dirt strip in the lowlands of Nepal. The only transportation to the lodge where I was to stay was waiting by the airstrip — a nine-foot-tall, chauffeur-driven elephant. The same wooden ladder I had used to descend from the plane became my embarkation ramp for the elephant, and off we went across rivers and streams and through ten-foot-high elephant grass. In the next two hours I was to see six unicorns.

Aficionados of unicorns, yetis, sasquatches (Bigfoot),

Loch Ness monsters, and other, even more exotic creatures claim that scientists don't pay any attention to these animals or to reports thereof. On the contrary, scientists pay a great deal of attention to them — too much, in fact.

My own involvement came years ago at the height of the abominable snowman era because I was being asked to identify bits and pieces that would prove the existence of the beast. I can remember looking at foot-long white hairs left on a barbed-wire fence by a Florida "skunk ape." They looked like horse tail hairs to me. And at the British Museum I was shown the scalp of a yeti — which turned out to belong to a known hoofed animal.

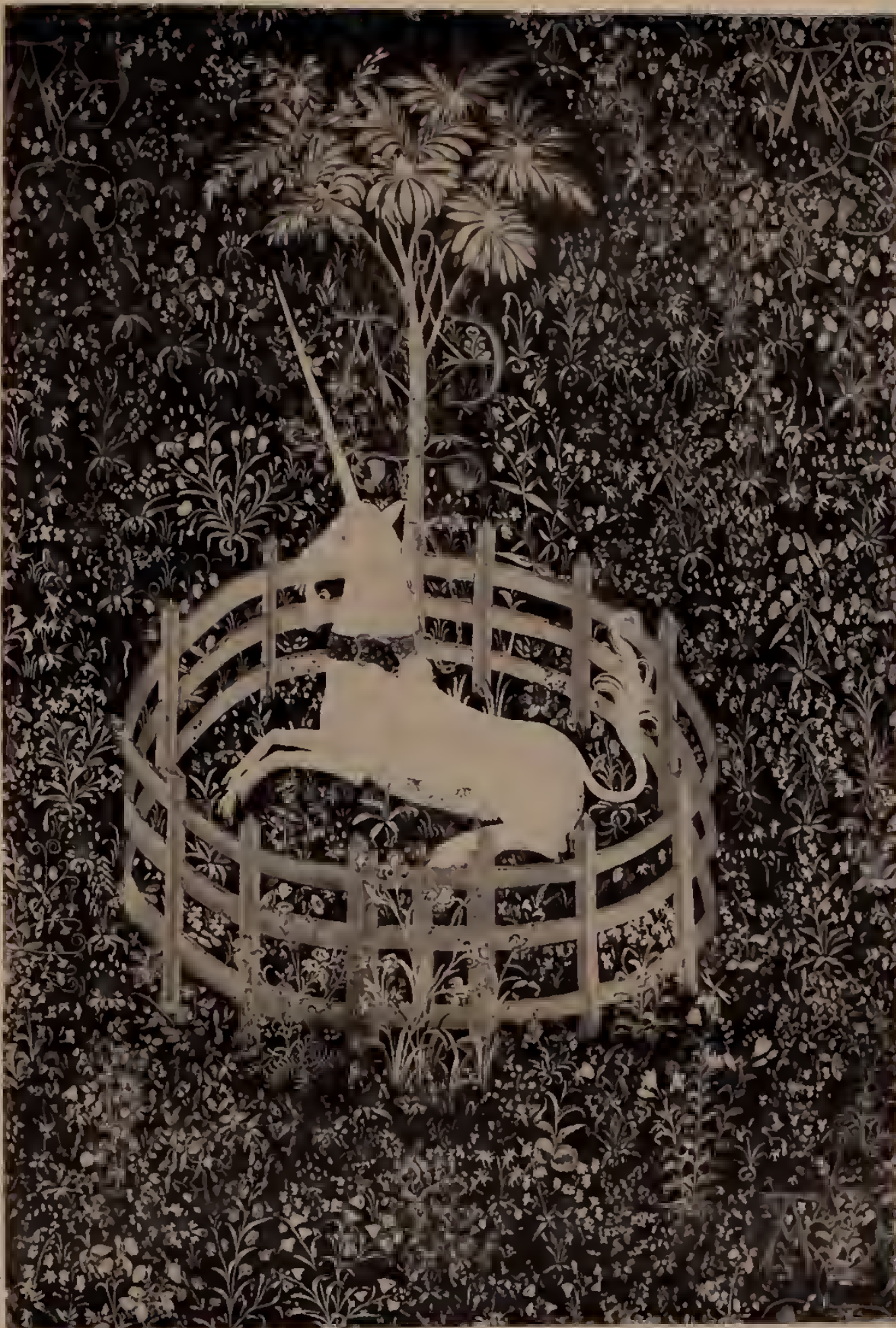
One young man brought me a very strange-looking object that he claimed was the toenail of a sasquatch-type creature from Virginia. It certainly was something new to me, and I had no doubt that it was mammalian (there were hairs at its base) and that it wasn't artificial (there was flesh and dried blood on it). It did appear to be composed of keratin, the material of toenails and claws. It was also doubled, with two claws coming out of one digit, and that rang a bell. A quick look in the Museum's collection of mammal skins and I was able to hand it back to its discoverer, saying, "Here's your beaver claw." I had remembered that beavers have a split claw on their hind feet they use as a comb, and my check of the alleged sasquatch against the beaver feet showed a perfect match.

But the unicorn was a different matter. In my thirty

years at the Museum, no one has brought in any unicorn parts for identification. True, we do have in the collection some piles of items that could be called unicorn horn. In fact, they are dead-ringers for the ones on the British coat of arms, and are also the same as some of the unicorn horns that are still housed in various churches and castles in Europe. They are long, whitish, and spiraled, and they come from a small whale called the narwhal. We have some other unicorn horns in the collection that don't look anything like these. One of them is about two feet long, dark blackish brown, tapered, and has the tip cut off and is housed in a magnificent carved leather case. Our notes with this particular unicorn horn identify it as the actual unicorn horn that was presented to Pope Gregory XIV in 1590. When he was ill and dying less than a year later, five inches were cut off from the tip and administered to him as medicine. It didn't work. He died, and we ended up with the horn many years later.

All of these things set me off in search of the unicorn. It was a tortuous expedition that led to Europe, Africa, and Asia and even included a glimpse into North America in Maine and Florida. It led through natural history and medical literature, bestiaires, and secular and lay literature, and I found unicorns all over the place — on land, in the sea, on ice floes, in deserts, in forests. I was led to the Bible and to Pliny, Aristotle, and their predecessors . . . and then the trail ended. I had found the first unicorn.

For seventeen years, the Persian king Artaxerxes II



The Unicorn in Captivity. (Flemish tapestry, 15th century).

had a Greek physician named Ctesias at his court at Cnidas. At that time, about 400 b.c., the Persian empire extended eastward from Macedonia, Thrace, Lybia, and Egypt to the Indus River of Asia. Ctesias wrote a comprehensive work on the history of Persia, only fragments of which remain. Our version of the original is secondhand, dating from the ninth century a.d., when Photius, the patriarch of Constantinople, abstracted it. Ctesias, who never visited India himself, heard about an animal there that he called a wild ass. He said it was the size of a horse or even larger, had a white body, a dark red head, and dark blue eyes. On its forehead, the Indian wild ass had a horn that was a foot and a half long.

The only part of an Indian wild ass that Ctesias ever saw was an ankle bone (ankle bones were used as dice), and he commented on its beauty. He didn't see the horn but described it as being white at the base, black in the middle, and red at the tip and as having particular medicinal powers if made into a cup: it prevented epilepsy and convulsions, and the drinker could not be poisoned. If already poisoned, a person could be cured by a unicorn cup of water or wine. If no unicorn cups were available, powdered horn added to a drink also worked against sickness and poison.

Ctesias also had some observations about the animal's natural history. Although the Indian wild ass starts slowly, Ctesias claimed, its running speed increases to a rate that exceeds that of a horse. And when it fights, it does so with horn, teeth, and hoofs.

What lives in India, is bigger than a horse, has a red head, white body, blue eyes, and a red, white, and black eighteen-inch horn? Nothing.

One can imagine how, over the seven hundred leagues of caravan trails from India to Persia, the description of the original animal changed until it reached Ctesias's ears. Perhaps we do Ctesias an injustice, for we don't know how much Photius may have added or altered when he rewrote the information thirteen centuries later.

The next mention of the unicorn was by Aristotle. The greatest naturalist of his day, Aristotle stated correctly that "a solid-hoofed animal with a pair of horns has never yet been met with" and added that animals are known "to be single-horned and single-hoofed, as the Indian Ass." He added an anatomical note that the Indian ass, of all the solid-hoofed animals, has an "astragalus, or knuckle-bone." This is a perceptive note, for Aristotle was familiar with single-hoofed animals (for example, horses, asses, and mules) and knew that the bone he was referring to was not like theirs and that, if the Indian ass were indeed in the horse family, it should not have a bone like this. (Actually, horses also have astraguli, but Aristotle and Ctesias were referring to the bones that were used as playing dice, which customarily came from cloven-hoofed animals.)

One wonders why Aristotle didn't quote Ctesias on coloration. Was it because he had received more accurate information from the explorations of his former student Alexander the Great (who was taught by Aristotle from the age of thirteen to sixteen)? If Aristotle had stopped with the Indian wild ass, the unicorn might have died a reasonable death, but he mentioned another kind of unicorn. This one, he said, was single horned and cloven hoofed, and he gave it the name oryx. He didn't give

any further description of the beast, nor did he say where it lived.

Between Ctesias and Aristotle — a span of one century — the kinds of unicorns had doubled.

Three hundred and fifty years later, Pliny produced his *Natural History* in a.d. 77. An uncritical compiler, Pliny extracted material from 147 Latin and 327 foreign authors, and he came up with at least four kinds of unicorns.

The first of Pliny's unicorns was the Indian rhinoceros, which, by this time, had been shown in Roman games. The next one, mentioned with the sphinx and winged horse, is an ox "like those of India, some with one horn, others with three" that also occurs in "Ethiopia" (probably meaning Africa). The third is the Indian wild ass-type. Pliny, however, describes them as "oxen also with solid hoofs and a single horn." The last of Pliny's beasts, also from India, he called the monoceros (one horn). This creature had the head of a stag, the feet of an elephant, and the tail of a boar. The rest of its body was like that of a horse. It had a single black horn, two cubits long, extending from its forehead and could not be taken alive.

So, when Pliny succumbed to the fumes of Vesuvius in a.d. 79, there were, depending on how you want to count them, anywhere from two to six kinds of unicorns in the literature: the Indian ass of Ctesias plus the cloven-hoofed oryx of Aristotle. Pliny's single-horned Indian ox and the Ethiopian single-horned ass could actually represent Ctesias's animal. Pliny added two new ones, the Indian rhinoceros and the elephant-footed monoceros.

These unicorns, except for the real Indian rhinoceros, might have joined the sphinx, winged horses, and other mythical creatures, if it were not for the Septuagint in the third century. Ptolemy II convened these seventy savants to straighten out discrepant versions of the Bible (fundamentalists please note). These men had a problem with the translation of the Hebrew word *re'em*. From the context, they knew that it was a formidable, horned beast, but no description accompanied the word. Finding ample material on large, horned beasts in Ctesias, Aristotle, and Pliny, they selected "monoceros" as the translation. Monoceros is Greek for "one horn," and it translates into Latin as "unicorn." It is very clear in *Deuteronomy* that the *re'em* had horns, plural, but this didn't stop the Septuagint, and thus the unicorn made it into the Bible as the result of an error. Now the word of God was the authority for the reality of the unicorn.

With the decline and fall of Rome, religion became the dominant social and political force in the Western world, and a fixed and ordained world was proclaimed and accepted. The Bible or ancient authorities such as Aristotle or Pliny were adequate describers of the earthly environment, and everything written was related to God and religion. Near the end of the fourth century, a work called the *Physiologus*, perhaps written by a Syrian monk about a.d. 370 (but certainly based on earlier material) rivaled the Bible in distribution. It attributed Christian morality to the unicorn.

The uncapturable unicorn now could be enticed by a virgin, and rather than being a formidable beast, it was kind, friendly, and protective of other kinds of animals. Later transcriptions of the *Physiologus* (the earliest Latin one dates from the eighth century) has the single horn representing the unity of God and Christ — the Father and Son were one. That it could not be captured signified that Christ could not be dominated by kings nor contained by hell. Just as mankind's salvation came from Christ's implantation in the virgin's womb, man could reach the unicorn (Christ) only through the purity exemplified by a virgin.¹

The earlier versions of the *Physiologus* contained forty-nine animals; a thousand years later, when the more recent versions were called bestiaries, there might be more than one hundred animals in them. Natural history information, of course, was secondary to the moral allegories. In one twelfth-century bestiary there are several unicorns, one of which maintains the moral allegory, and the unicorn has been reduced to the size of a young goat. This particular version of the animal can be captured only by a virgin. The others are pretty much straight out of Pliny.

The only factual mention of unicorns from the fall of Rome until the fifteenth century is that of Marco Polo, who encountered them several times and gives a rather accurate description of the appearance and habits of the Indian rhinoceros.

Ample evidence in sixteenth-century writings points out what astute observers were beginning to note — that, although the horn existed, no one was able to come up with the animal itself. This, interestingly, led to the hypothesis that, because of its size and long horn, the unicorn could not fit on the ark and thus perished in the flood, leaving only its antediluvian horns as evidence. Talmudic scholars disagreed, although admitting that it could not have fit on the ark, and suggested that Noah had tied a rope to its horn and towed it behind during the flood.

It was also in the sixteenth century that the efficacy of

the horn was questioned and subjected to experimentation in Italy and France: the horn was found to be useless. But in England, at this time and for the next two hundred years, the British had no doubts. In 1651 the Royal Society of Physicians required each registered pharmacy in London to stock unicorn horn. It was not until 1746 that unicorn horn was removed from the list — and that was some sixty years after the Royal Society had also demonstrated its medicinal uselessness. But although interest in

the unicorn diminished in the middle of the eighteenth century, it did not end. In 1846 Dr. Baikie, the leader of the Niger Expedition in Africa, reported that he was hot on the trail of a unicorn and hoped to capture one. He didn't, and that was pretty much the last of the unicorn hunts.

But what was the unicorn, and what did the circus have? Of living species, only in India and Asia are there one-horned rhinoceroses; the narwhal's "horn" is actu-

ally a tusk, or tooth. To Westerners — whose acquaintance with hoofed animals included those with an odd number of toes, all of which had only one on each foot (the horses and asses), and those with cloven hoofs, all of which had an even number of toes (deer, pigs, sheep, cattle, and so forth) — Ctesias's comments on the ankle bone of the unicorn is significant. For the rhinoceros would be the first animal they encountered with an odd number of toes (three) that was also cloven hoofed, and its ankle bones would be different from any they knew. In India, also, rhino horn was used to make royal cups, and it may actually have had some benefit against the alkaloid poisons used there. Other than Marco Polo's excellent observations of Indian rhinoceroses, there are no reports of actual sightings of the unicorn, with the exception of some early American accounts of them in Florida and Maine. The handsome straight-horned antelope, the oryx, is sometimes cited as a unicorn, but this too is a relatively late development and is probably related to Aristotle's having named one type of unicorn as oryx. Oryx is the Greek word for "pickaxe."

It is quite clear to me (based on more information than is presented here) that the unicorn sprang from a garbled report of an Indian rhinoceros. After that, the unicorn was confused with, or likened to, a variety of animals, and unicorn horn included African and Indian rhinoceros horn, oryx horn, narwhal tusk, walrus tusk, elephant tusk, and fossil ivory tusks from mammoths or mastodons.

There is a suggestion that some ancient people knew how to fuse the horn buds of young goats or cattle to produce a single horn growing from the forehead, which could produce a living unicorn. This was done with a bull about fifty years ago in the United States, and, according to the U.S. Department of Agriculture, the circus' unicorns are goats whose horn buds have been surgically manipulated to cause a single horn to grow from the middle of the forehead.

As for me, I've ended my search for unicorns. I'd rather ride elephants and watch Indian rhinoceroses.

Richard G. Van Gelder is curator in the Museum's Department of Mammalogy.

1. Tales of using virgins to capture wild beasts probably pre-date written history; the *Physiologus* account bears strong resemblances to the Sumerian Epic of Gilgamesh.



White rhinoceros in Kruger National Park, Africa.

Courses Galore Throughout The Fall

Now is the time to learn about the Hittites, rulers of Asia Minor who built picturesque cities, carved monumental friezes, and fashioned elegant gold and silver amulets. Or, if studying something more current seems appealing, how about discovering what life is like among hardy brown algae, from tropical to arctic waters, or among migrating humpback whales?

The Hittites, plants at the edge of the sea, and whales of the Atlantic Ocean are just a few of the many topics covered in this fall's Afternoon and Evening Lecture Series, which is presented by the Education Department. Courses get under way this month. For a complete listing, and a registration coupon, turn to the September issue of *Rotunda*. For information about whether particular courses still have openings, please call (212) 873-7507.



Standard with two long-horned bulls (circa 2300-2000 b.c.)

Messenger Odyssey

Friday, October 24

8:00 p.m.

Kaufmann Theater

\$4 for Members, \$6 for non-Members

The messenger, or carrier pigeon, is the unifying symbol in Joyce Cutler-Shaw's multimedia work *The Odyssey of the Messenger*. The pigeon symbolizes the artist as messenger, a migratory worker whose home is a portable loft and who brings news of hidden events, current events, and survival.

Performed by Cutler-Shaw and actor Arthur Wagner, the piece is presented in three voices. The first voice is "she": the artist-observer whose eye is the camera. The second voice is "he": a military man and a re-

porter who travels the world. The third voice is the voice of memory. The voices are complemented by slide projections of pigeons — static and in flight, alive and dead — ocean vistas, geologic formations, war scenes, and urban panoramas. The reading is intercut with a short film, edited from 1940s footage, about pigeon racing. The performance investigates parallel yet contradictory realities: confinement and freedom, separation and union, hope and despair, loss and return.

Cutler-Shaw's messenger

odyssey has been evolving internationally since 1974 in exhibitions and reading performances. She has presented her work at the National Academy of Sciences in Washington, D.C., the San Diego Museum of Natural History, and most recently at Cornell University's Herbert F. Johnson Museum of Art. Arthur Wagner is head of the professional actor training program at the University of California, San Diego.

To register for the program, use the Members' programs coupon on page 3.

Heart and Soul



Two scenes from *Puerto Rico: Encontro y Cancion* (Puerto Rico Sings).



On Monday, November 17, at 7:30 p.m. Repertorio Español will present *Puerto Rico Sings*, a celebration of great composers of the 19th and 20th centuries, in the Museum's Main Auditorium. Please call (212) 837-1300, ext. 514, for information and ticket prices.

Sprightly Spooks



The Museum will mark Halloween with *Spirit Stories from Around the World*. Laura Simms will tell favorite tales, old and new, on Friday evening, October 31, and Saturday afternoon, November 1. For details, refer to the Members' coupon on page 3.

Room Service for Members

The Membership Office is pleased to announce a new benefit for Museum Members **preferred** rates at select hotels. Any of the fine hotels bearing the Hilton, Ramada, Stouffer, or Westin name will now treat members as preferred guests. To qualify for special rates and to make reservations as well as to receive further information, call the following toll-free numbers:

Hilton Hotels:
Call 1-800-Hiltons and say you are a Hiltonplan member from the American Museum of Natural History.

Ramada Hotels and Inns:
Call 1-800-2-Ramada and state our corporate-rate number, 917553.

Stouffer Hotels:
Call 1-800-Hotels-1 and identify yourself as a corporate-rate member from the American Museum of Natural History.

Westin Hotels: Call 1-800-228-3000 and identify

yourself as a corporate member from the American Museum of Natural History

You must telephone these toll-free numbers in advance to qualify for the special rates and preferred-guest status. Hotel rates will vary. Be sure to inquire about other services that may be offered (some free of charge).

In addition to the new hotel benefit, Members are also entitled to discounts on car rentals with National, Avis, and Hertz. Just use the following identification codes to get your Members' discount on car rentals.

National: #5203847
Avis: #A/A 989500
Hertz: CPD-ID #25940

We hope you will take advantage of the hotel and car rental discounts the next time that you travel. These benefits are another token of our appreciation for your support.

Happenings at the Hayden

Sky Show Double Feature

Voyager: *Voyage to the Outer Planets*. Through November 24. Since 1977, two tiny robot spacecraft, both named *Voyager*, have made incredible journeys of discovery, visiting Jupiter, Saturn, and most recently Uranus. This new Sky Show presents the details of the discoveries and some of the images the spacecraft have sent back to Earth.

Starbom: *Earth's Odyssey Through Time and Space*, narrated by Gregory Peck. This Sky Show features the most fascinating planet of all — our own Earth. Witness volcanic activity, crustal movements, torrential rains, and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00 and 5:00 p.m.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars. *Wonderful Sky* will be shown on the following Saturdays: October 11, at 10 a.m.; November 1, at 10 a.m.; December 6 at noon. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, N.Y. 10024) and mail at least two weeks in advance. For additional information, please call (212) 769-3299.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 724-8700 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 873-8828.

Indonesian Interlude

Despite T. S. Eliot's opinion, February is the cruellest month — at least from a climatic perspective. Discovery Tours proposes a perfect solution to the deep-freeze doldrums: a custom cruise of the Indonesian Islands, designed to stimulate the mind and soothe the senses.

Set sail on the *Illiria*, a luxuriously appointed, privately chartered small vessel, in the company of four renowned scholars who will enhance the adventure with enlightening lectures and informal discussions held both on board and on terra firma. Cruise serenely to many of the world's most remote and fascinating ports and disembark to view astounding jungle kingdoms, lavish temples, gorgeous artworks, wildlife sanctuaries, exotic bazaars, and lush tropical paradises.

Every day will feature an exciting experience of the exotic. Highlights include stops at Java to see Borobudur, a glorious Buddhist monument and the largest ancient structure in the Southern Hemisphere; at Komodo, sanctuary of 250-pound lizards; and at the Aru Islands, considered the last outpost of the old Oriental trading routes.

For a complete description of Discovery Tours' Indonesian Odyssey, please call (212) 873-1440.



A performer of ritual Huke on the island of Flores.



An Indonesian boy gleeful over taming a buffalo-beast.

Museum Notes

Special Exhibitions and Highlights

Lost and Found Traditions: Native American Art 1965-1985. Through October 5 in Gallery 1. More than 350 works by Native American artists form the first comprehensive exhibition stressing the survival of Native American artworks. Textiles, pottery, baskets, jewelry, and carvings are among the artworks included in the exhibition, as well as objects that employ beads, feathers,

quills, hides, furs, birch bark, bone, and other materials.

City of Light. Through February 1987 in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

The Brazilian Princess is still on display in the Roosevelt Rotunda. At 21,327 carats (nine and one-half pounds), it is the world's largest cut gem and is a gift to the Museum from an

anonymous donor.

Dark Caves, Bright Visions. Opens October 23. Through January 18, 1987, in Gallery 3. See page one for a description of the exhibit.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the first-floor information desk. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

Birthday Parties

Last February, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last 2 hours and are held after 3:30 p.m. on weekdays and at 11 a.m. or 3 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 873-1327.

The Natural Science Center introduces young people to the wildlife and rocks of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. For ages five to ten only.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 50 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. until midnight every day of the week. There are only 110 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and com-

mercial vehicles. Parking is free on Monday, Tuesday, Thursday and Sunday after 6 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.



One of the stars of *On the Wing*, a new film at Naturemax. For details call (212) 496-0900.

Tea Time

Recent events have confirmed that the British are the world's masters of ceremony. They have always known how to celebrate their traditions — even modest ones like tea time. Now, when you take a break

from touring the exhibition halls, you can join in the grand old custom: the American Museum Restaurant is serving afternoon tea every day between 3:00 and 5:00 p.m. Sit down to a pot of your favorite

— a selection of specialty teas is available — and indulge in scones and preserves or, if you prefer, cheese and fresh fruit. Reservations will be accepted — call 874-3436 — or just stop by for tea and treats.



Conservation 2100

Prominent professionals in conservation biology, wildlife management, demography, botany, law, industry, and the media will gather to discuss major issues of global conservation at *Conservation 2100: A Fairfield Osborn Symposium*. The conference will focus on current ecological trends, the strategy of scientific research, wildlife and ecosystem management, and the critical contexts in which conservation measures must be carried out.

The symposium is dedicated to meeting the conservation challenges of the 21st century with a rational agenda. Among the 41 speakers will be Edward O. Wilson, the eminent sociobiologist and zoology professor at Harvard University; Norman Myers, ecologist and author; Mark Stanley Price,

conservationist from Oman; Bill Moyers, media commentator; and William Conway, director of the New York Zoological Society. The topics up for discussion include conservation and the developed world, extinctions, genetic requirements for natural evolution, and the process of reconstructing ecosystems.

The conference is a joint effort of Wildlife Conservation International and The Rockefeller University. It will take place October 20 to 23, from 9:00 a.m. to 6:00 p.m. at The Rockefeller University. The standard registration fee is \$100. Tickets for Members of the Museum and the Zoological Society are \$80. For ticket information, please call Wildlife Conservation International, New York Zoological Society, at (212) 220-6879.

Sun

October 1986

American Museum of Natural History

5 1:00 to 4:30 p.m. African Textiles, with Selina Akua Adzadi Ahoklu; African Beliefs, with Kwame Nkrumah; Music and Dance of the Senegambia, with Obara Wali Rahman and company. All three programs are part of Africa Month at the Leonhardt People Center. Free.

12 2:00 p.m. New York Shell Club. Room 419. Free.

1:00 to 4:30 p.m. African Folk songs, with Kwame Nkrumah; Games from Africa, with Amadoma Bediako; Folktales from the Motherland, with Moja Bakum. All three programs are part of Africa Month at the Leonhardt People Center. Free.

19 2:00 p.m. New York Paleontological Society. Room 426. Free.

2:00 p.m. New York Turtle & Tortoise Society. Room 129. Free.

26 1:00 to 4:30 p.m. Islam in Sub-Saharan Africa, with Dr. Michael Webb; Religious Symbols in African Woodcarving, with Mensa Dente; Religious Dances of the Akom, with Oduke G. Sackeyfi and the African Theater Ensemble—all part of Africa Month at the Leonhardt People Center. Free.



Bamba wooden carving.

20

21

27 6:30 to 9:30 p.m. Dark Caves, Bright Visions. Special Members' Viewing. Tickets required. Page 3.

28 8:00 p.m. Linnaean Society of New York. Room 319. Free.

Tue

Wed

1 7:00 p.m. Culture and Violence, a three-part program presented by the Department of Education, opens with a lecture by Dr. Lionel Tiger. Main Auditorium. Free. For information, please call (212) 873-1300, ext. 514. Page 2.

7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

8 7:00 p.m. New York Mineralogical Club. People Center. Free.

7 Members of the Discovery Tour cruise of the Saint Lawrence River to Chesapeake Bay will explore colonial Williamsburg.

Moon at perigee, 5:00 a.m.

15 6:30 p.m. and 9:00 p.m. Paul Winter Consort at the Hayden Planetarium. \$16 for Members. \$20 for non-Members. Page 3.

7:00 p.m. Culture and Violence: violence as portrayed in the media. Main Auditorium. Free. For information, please call (212) 873-1300, ext. 514.

14 8:00 p.m. Linnaean Society of New York. Room 319. Free.

16

17

Full moon at 2:22 p.m.

18 1:00 to 4:30 p.m. Calabashes and Etchings, with Rosalind Jeffries; Ugandan Cooking, with Lydia Matabi-Tulley; The Music of South Africa, with the Mbili Ensemble. All three programs are part of Africa Month at the Leonhardt People Center. Free.

6:30 to 10:00 p.m. All About Acupuncture. Free. Please call (212) 873-1300, ext. 559. Page 4.

Thu

2 Discovery Tour members will visit the Magao caves along the ancient silk route of China.



West African mask.

Sat

4 1:00 to 4:30 p.m. African Textiles, with Selina Akua Adzadi Ahoklu; African Beliefs, with Kwame Nkrumah; Music and Dance of the Senegambia, with Obara Wali Rahman and company. All three programs are part of Africa Month at the Leonhardt People Center. Free.

10 7:00 p.m. The Maria Lionza Cult: Spiritual Healing in Venezuela. Kaufmann Theater. Free. For information, call (212) 873-1300, ext. 514. Page 4.

11 1:00 to 4:30 p.m. African Folk songs, with Kwame Nkrumah; Games from Africa, with Amadoma Bediako; Folktales from the Motherland, with Moja Bakum. All three programs are part of Africa Month at the Leonhardt People Center. Free.

24 8:00 p.m. Messenger Odyssey. Kaufmann Theater. \$4 for Members. \$6 for non-Members. Page 9.

23 Dark Caves, Bright Visions exhibit opens today in Gallery 3. Page 1.

22 8:00 p.m. Met Grotto: National Speleological Society. Room 129. Free.

25 1:00 to 4:30 p.m. Islam in Sub-Saharan Africa, with Dr. Michael Webb; Religious Symbols in African Woodcarving, with Mensa Dente; Religious Dances of the Akom, with Oduke G. Sackeyfi and the African Theater Ensemble. All three programs are part of Africa Month at the Leonhardt People Center. Free.

31 7:30 p.m. Spirit Stories from Around the World. \$3 for Members, \$5 for non-Members. Page 9.



Figurine with pot from the Congo.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 10 November 1986



A glimpse of the Main Range of the Adirondacks as seen from Brothers Mountain.

Rock Performance

Tuesday, December 2 7:30 p.m. Main Auditorium
Free to Members, \$4 for non-Members

A few years ago, Dr. Yngvar W. Isachsen led a group of geologists on an expedition to find "moon rocks" — terrestrial moon rocks, that is. The experts had come to exactly the right spot — the Adirondacks — and to exactly the right guide: the New York State Geological Survey's principal research scientist. As Dr. Isachsen knew, the high peaks of the Adirondacks are composed of anorthosite, or moon rock, which makes them very rare and very worthy of some strenuous hiking.

In fact, Dr. Isachsen, who compiled the only geological map of the Adirondacks published since the 1901 edition,

finds the entire region amazing from a geological perspective: "The Adirondacks present North America's largest window, so to speak, into the lower continental crust." The region is made up of very diverse materials, which 1.3 billion years ago included sand, limy mud, and volcanic rocks. Two hundred million years later, subjected to both high temperatures and high pressure, the rocks responded like bread dough, crumpling without breaking. Since then, erosion has exposed the core rocks, or as Dr. Isachsen puts it, brought the rocks of the lower continental crust into view.

Until three years ago, Dr. Isachsen as-

sumed that the quarter of a century he had spent exploring the rocks of the region had introduced him to most of its geological features, including curiosities like moon rocks. Then he happened upon the first fossil found in the Adirondacks, an astonishing discovery he will describe in *The Adirondacks: New Mountains from Old Rocks*, an illustrated program that will trace the geological history of the region from its origin to its present. To register for this fascinating Members' program, which is presented in cooperation with The Adirondack Council, please use the coupon on page 3.

Mozart, Bach, and Moonlight

Ward off winter's chill with the soothing embrace of some of the world's most beautiful music. The Museum's third annual holiday concert will fill the Planetarium's Sky Theater with joyful sound as the dome is illuminated with whirling galaxies and dazzling sunsets.

Page 2.

Buried Secrets

The Department of Education presents the premiere of a film about one of the best adapted sea cultures whose many accomplishments are one of today's best-kept secrets. Following the premiere will be a panel discussion moderated by the film's director.

Page 4.

Sweet Inspiration

Inside — the perfect solution to holiday madness. The Museum presents one-fell-swoop shopping that will charm recipients and giver alike.

Page 5.

Afro-Cuban Jazz

The scintillating rhythms of New Yor-Uba, a 14-piece jazz ensemble — including bata drummers and vocalists versed in Cuban folkloric traditions — will resound in the Main Auditorium.

Page 7.

Dark Caves, Bright Visions

Gallery 3

Through January 18, 1987

Dark Caves, Bright Visions, the exhibition in Gallery 3, celebrates the myriad accomplishments of the anatomically and culturally "modern" humans of the Late Ice Age (35,000 to 11,000 years ago). The more than 250 paintings, etchings, sculptures, and tools attest to what guest curator Dr. Randall White has called a "virtual explosion of symbolic behavior."



Broken spear-thrower in the form of a headless ibex.

Starlight Serenade

Monday, December 15 and Tuesday, December 16

Hayden Planetarium

7:00 p.m. and 9:00 p.m.

\$7 for Members, \$10 for non-Members

At the third annual holiday concert in the Planetarium's Sky Theater, Mozart's *Eine Kleine Nachtmusik* will be performed in a perfect setting — under a crystal-clear night sky. As concertgoers sit comfortably inside the Sky Theater on a winter evening, they will listen to Mozart and Bach while dazzling laser and planetarium effects dance on the dome overhead.

Bach's rousing *Brandenburg Concerto No. 6* will offer contrast to Mozart's melodious serenade, and the concert will pay tribute to the flute with a performance of Mozart's *Flute Quartet in D Major* and Bach's *Suite No. 2 in B Minor for Flute and Strings*. All the players in the 9-piece chamber ensemble are members of Music for Occasions, Inc., directed by Paul Gary.

The annual holiday concert under the stars has sold out quickly in the past, so early registration is advised. Please use the November Members' programs coupon on page 3 to order your tickets for Mozart, Bach, and Moonlight.



A Mammoth Production

Sunday, November 23

1:30 p.m. and 3:30 p.m. (both for families)

Kaufmann Theater

\$2 and open only to Members

The inspiration for *The Ice Age and Its Mammoth Hunters* dates back to when Jack Branagan, its creator-producer-performer, was in the fifth grade. That year, 1955, *National Geographic* magazine ran a photo spread on ancient cave paintings. Branagan, like any 10-year-old, was beguiled by the fantastic creatures depicted in the art. The passage of 30 years didn't dull his enthusiasm. In fact, Branagan will bring the woolly mammoth of his childhood fantasy to life on stage in a special program for Members and their families.

Branagan, formerly an elementary school teacher, does extensive research before presenting any of his unique shows, whether it's *The Incredible Brain* or *Jock's Big Bug Show*. For *The Ice Age and Its Mammoth Hunters*, he was delivered by helicopter to Alaska's Mendenhall Glacier last summer. The slides he took on that adventure will appear as part of

his program, along with replicas of woolly mammoth and mastodon molars, whose distinct features, Branagan learned from his talks with scientists, served an important purpose. The mammoth molar was flat, while the mastodon molar was pointed, and the difference allowed these ancient animals to live together without competing for food.

In *The Ice Age and Its Mammoth Hunters*, Branagan will use an imaginative array of illustrations and props — including a re-creation of a moving glacier — to create a firsthand experience of a time when people hunted woolly mammoths and when glaciers changed the face of the earth. By the end of the program, the audience will have a vivid understanding of how glaciers are formed and how the people of the Ice Age survived its harsh effects.

To attend *The Ice Age and Its Mammoth Hunters*, please use the coupon on page 3.

ROTUNDA

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Of Human Bonding: The Evolution and Future of Human Sexuality

Tuesday, November 18
7:30 p.m.
Main Auditorium
Free and open only to Members

"Till death do us part" is the expectation of many newly married people of the Western world, even in modern times, when divorce is common. When divorce does enter a person's life, it often leaves a sense of failure in its wake — a legacy that can be more devastating than the loss itself.

Yet seen through the eyes of anthropologist Helen Fisher, divorce is not a personal failure of modern times but a cultural expression as old as our hunting and gathering past. Lifelong monogamy is not the norm around the world, and divorce is particularly common in cultures where men and women share economic responsibility and importance. And, in spite of divorce, people continue to remarry, to search for and hope for close bonds with one another.

Members are invited to take a new and refreshing look at marriage, divorce, remarriage, and the evolution of human sexuality from a broad cultural and biological perspective when Fisher shares thoughts, new data, and discoveries about human sexuality and bonding from prehistoric times to the present. Optimistic about the future of family bonds in our society, Fisher does not see the family as an endangered species. "To bond is human," she asserts. "It began long ago with the sex contract and though the rules of the contract will change with changing times, the instinct to make a contract will prevail."

Helen Fisher is the author of

The Sex Contract: The Evolution of Human Sexuality. She is an associate in the Museum's Department of Anthropology and has appeared regularly on

NBC's "Today Show."

To register for the program, please use the adjacent November Members' programs coupon.



Courtesy of the Lo Medico Family

Folding Floaters

Saturday, December 6
Free and open only to Members

A boat that floats is nothing special, but a paper boat that floats is quite a craft. Members are invited to come on board and join the Ninth Annual Origami Workshop, which this year will be dedicated to folding "floaters." Family participants can learn how to transform col-

orful squares of paper into whales, swans, and boats — one that's decorative and one that's buoyant. There will be special sessions for junior folders who might fold a swan, a jumping frog, or a simple boat — and a box to serve as dry dock until the next launching.

Eighteen teachers, all under the direction of volunteer origami specialists Alice Gray and Michael Shalf, will be on hand to teach Members and their children how to fold a floater. These teachers — volunteers and members of the Friends of the Origami Center of America — are also the folders of all the artistic trimmings of the Museum's Origami Holiday Tree.

All participants in the 40-minute workshops will receive a workbook and some origami paper so that they can fold a fleet at home — or, perhaps, try something completely different. To learn the exact times of the workshops and to register, please refer to the adjacent November Members' programs coupon.



Peter Goldberry

November Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: November Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Of Human Bonding. Tuesday, November 18, 7:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

The Ice Age and Its Mammoth Hunters. Sunday, November 23, 1:30 p.m. and 3:30 p.m. (both for families). \$2 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$3. Please indicate a first and second choice of times if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$2 _____

Number of non-Members' tickets at \$3 _____

Total enclosed for program: \$ _____

New Mountains from Old Rocks. Tuesday, December 2, 7:30 p.m. Free for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Folding Floaters. Saturday, December 6. Free and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third preference of times.

_____ 10:30 a.m. _____ 11:30 a.m. _____ 2:00 p.m.
_____ 3:00 p.m. _____ 4:00 p.m.

Number of people for regular workshop: _____

Number of adults and children (ages 4-6) for young children's workshop: _____

Mozart, Bach, and Moonlight. Monday, December 15 and Tuesday, December 16, 7:00 and 9:00 p.m. \$7 for Members, \$10 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first choice and a second choice of times, if possible:

December 15 _____ 7:00 p.m. _____ 9:00 p.m.
December 16 _____ 7:00 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$7 each: _____

Number of non-Members' tickets at \$10 each: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Sacred Mountains of the World

Two Wednesdays, January 14 and 21

7:00 p.m.

Main Auditorium

\$13 for Members, \$15 for non-Members

Mountains are hard to ignore, but what explains why so many cultures, throughout so many centuries, venerate them? Dr. Edwin Bembbaum, who is an author, Asian scholar, and climber,

will address that question in *Sacred Mountains of the World*, two slide-illustrated lectures exploring the symbolic role of sacred mountains, from ancient times to the present.

To register for *Sacred Mountains of the World*, please use the adjacent coupon.

An Education Department Public Program.

Polar Culture of the Red-Ocher People

Sunday, December 7

1:00 p.m.

Kaufmann Theater

\$13 for Members, \$15 for non-Members

The Maritime Archaic ranks as one of the world's most highly adapted sea cultures. Occupying the northeastern coast of North America 5,000 years before the first Inuit (Eskimo) people arrived in Labrador, the people of this time created complex burial mounds and elegant chipped stone tools. They left behind them evidence of trade networks that extended from northern Labrador to southern New England. By 3,500 years ago, they had disappeared. Discoveries and questions

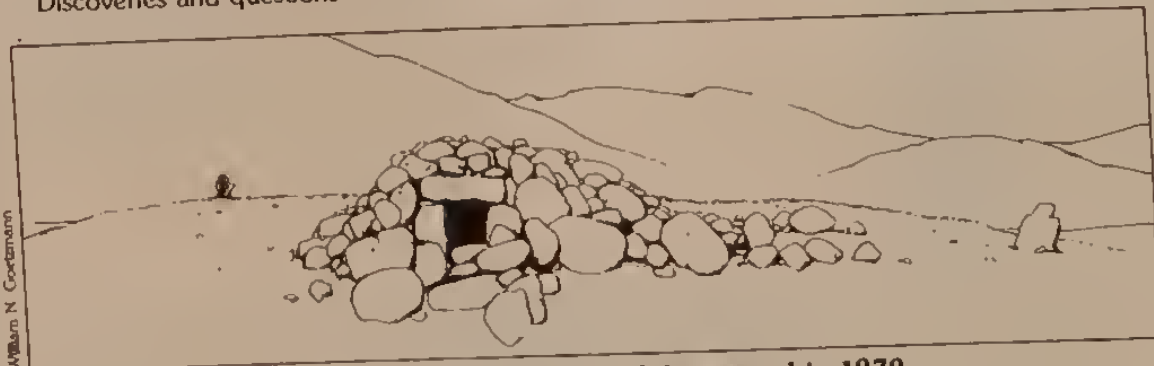
about this fascinating but little-known culture will be aired in a program featuring several distinguished speakers and a premiere of the documentary *Red Paint: The Lost Sea People of Maine*. The film places the Maritime Archaic people in historical perspective and explores the possibility of trans-Atlantic European contact.

The film's director, Ted Timreck, will moderate the panel discussion. Speakers are William Fitzhugh, curator of Arctic anthropology at the

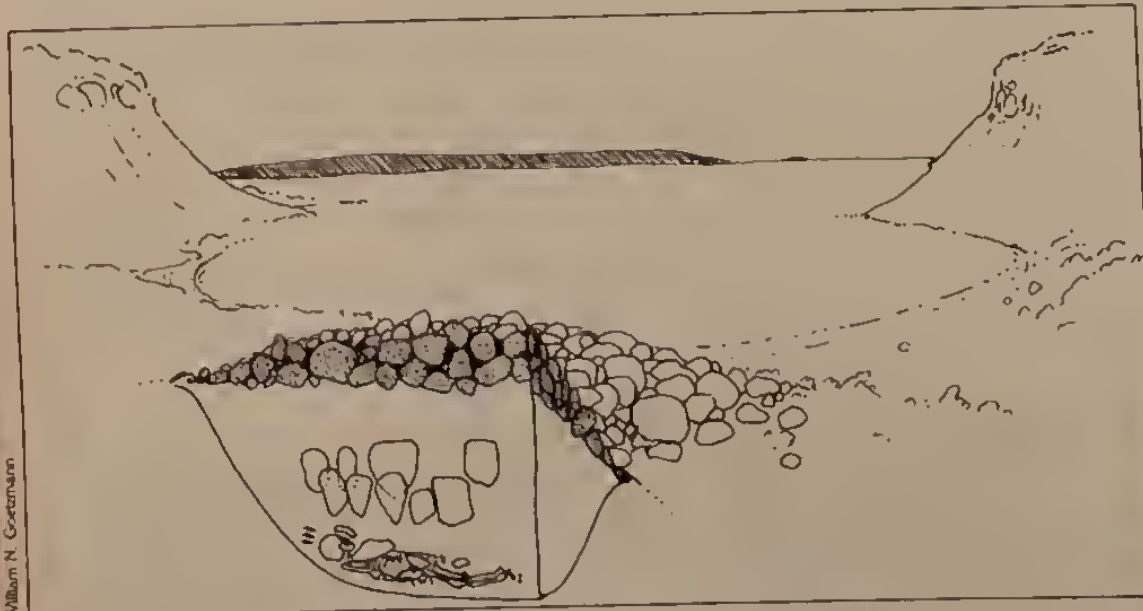
Smithsonian Institution; Bruce Borque, archeologist at the Maine State Museum; and James Tuck, professor of archeology at Memorial University in Saint John's, Newfoundland.

Advance registration for *Polar Culture of the Red-Ocher People* is requested. Please use the adjacent coupon. For further information, please call (212) 873-7507.

An Education Department Public Program.



Chamber and burial mound discovered in 1979 in Nulliak Cove, northern Labrador.



Maritime Archaic burial mound, over 7,000 years old, in L'Anse Amour, Labrador.

The Mind Unraveled

Saturday, December 13

1:00 p.m.

Kaufmann Theater

\$13 for Members, \$15 for non-Members

It was in 1906 that the German neurologist Alois Alzheimer first described the dreadful disease that would be named after him. Yet for the next 50 years Alzheimer's disease — which causes gradual disorientation and loss of memory, hallucination, and violent mood swings — received little medical attention. Victims and their families were left to assume that the harrowing symptoms were simply part of the last stage of human life, which even Shakespeare described as "second childishness and mere oblivion." Recently, research has defined the physical characteristics of Alzheimer's disease: plaques and tangles among normal brain cells and tremendously reduced levels of an enzyme crucial to carrying messages within the brain. For the two million Americans Alzheimer's affects today (a significant number of whom are below the age of 50), there may be less shame in being in the grasp of such grim symptoms, but little hope. Alzheimer's still has no known cause, prevention, or cure.

An *Alzheimer's Story* is a videotaped documentary depicting the deterioration of housewife Anna Jasper over a

two-year period. As her illness progresses, Anna Jasper's family is forced to adjust to the ever escalating burdens of the disease and, finally, to face the devastating prospect of placing her in an institution. This half-hour profile, which has never been shown publicly before, documents a condition that Dr. Lewis Thomas has described as causing "more damage to the family than any other disease I can think of."

The film will be followed by a panel discussion focusing on the personal, sociological, and medical aspects of the illness. Panelists include Dr. Kenneth Rosenberg, one of the producers of the documentary, Dr. Peter Davies, a researcher at the Albert Einstein College of Medicine, whose work has been critical to the medical understanding of Alzheimer's disease, and anthropologist Dr. Malcolm Arth, chairman of the Education Department, who will moderate the discussion.

To register for *A Cultural View of Illness*, please use the adjacent coupon. Advance registration by mail is requested. For additional information, please call (212) 873-7507.

An Education Department Public Program.

Winter Programs.

For the winter programs, Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price.

I would like to register for the following Winter Programs.

Polar Culture of the Red-Ocher People. Sunday, December 7, 1:00 p.m.

Number of Members' tickets at \$13: _____
Number of non-Members' tickets at \$15: _____
Total \$: _____

A Cultural View of Illness: An Alzheimer's Story. Saturday, December 13, 1:00 p.m.

Number of Members' tickets at \$13: _____
Number of non-Members' tickets at \$15: _____
Total \$: _____

Sacred Mountains of the World. Wednesday, January 14, and January 21, 7:00 p.m.

Number of Members' tickets at \$13: _____
Number of non-Members' tickets at \$15: _____
Total \$: _____

Total amount enclosed: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Wrapping Up the Season

Sweet Inspiration from the Museum Shop

If exotic gifts are your priority this season, your search might put you on a plane to Bali, source of handcrafted silver jewelry, or to the Soviet Union, source of handpainted lacquer boxes. Why not save your vacation time and the plane fare and, instead, catch the K train or the crosstown bus to the Museum's Gift Shop, home of hundreds of exotic presents?

Where else can you find a cassette of bird sounds (\$19.95) nestled against Roger Tory Peterson's new video cassette *Watching Birds: The Sights and Sounds of 52 Common Backyard Birds* (\$9.95) and, just a few steps away, an assortment of birdfeeders (from \$10)? And where else can dinosaur devotees satisfy their obsession with T-shirts (\$10 for kids, from \$12.50 for adults), neckties (\$15), and, for the budding enthusiast, dinosaur pop-up books (\$6.95 and \$12.95)? In fact, the Gift Shop's book balcony houses one of the world's

great dinosaur-literature collections.

If wearing a dinosaur on your chest seems too staid for the New Year, how about sporting rabbit ears that are neatly woven into handknitted wool caps from New England (\$30, also available with cat-ears or plain, \$27.50)? The Gift Shop carries lots of clothes that will keep you warm — pure alpaca vests from Bolivia (\$33) — and turn you into a fashion statement — sweatshirts, wrap coats, and dresses with bold, bright inserts of Japanese kimono material (from \$66). To offset them all are glistening silver inlaid bracelets, necklaces, and earrings from the Southwest (from \$10) and the rare pindotted sterling jewelry from Bali (from \$20).

Nothing in the Museum Shop is ordinary: boxes are made of blown glass and decorated with agate or jasper (from \$57); some of the scores of Christmas ornaments are made of brass (\$3.25), fabric (India, \$4.50),

and wheat straw (China, \$3.50); and posters include reproductions of the famous cave paintings of Lascaux and Altamira (\$25–30). In conjunction with the *Dark Caves, Bright Visions* exhibition, the main shop and the Gallery 3 shop are selling reproductions of tools, animals, and Venus figurines, as well as prints of cave paintings.

The main shop for adults, on the first floor near the 77th Street entrance, is open from 10:00 a.m. to 5:45 p.m. every day except Wednesday. On Wednesday, the hours are 10:00 a.m. to 7:45 p.m.

The Gallery 3 shop on the third floor is open daily from noon to 4:45 p.m., from November 29 to February 16.

Junior Shop hours are from 10:00 a.m. to 4:45 p.m. daily. The two junior shops — home of dinosaur models, postcards, and T-shirts galore — are located in the 77th Street lobby and in the basement near the subway entrance.



Members' Book Program

Gift giving can be as painless as tying fancy bows and stockpiling tape and wrapping — if you've got a copy of the 1987 catalog of the Museum's Members' Book Program. The catalog describes nearly 100 books — classics, brand-new publications, children's books — which deal with natural science, natural history, and anthropology. Scrooge himself would approve any choice drawn from this comprehensive list because all the books are available to Members at substantial discounts off the publishers' prices.

This year's holiday highlights include John Gould's *Exotic Birds of Asia: The American Museum of Natural History's 1987 Calendar*; *Dark Caves, Bright Visions: Life in Ice Age Europe*; and *The Language and Music of the Wolves*. Narrated by Robert Redford, the audio cassette of *The Language and Music of the Wolves* certainly qualifies as a unique gift. When it was originally issued as a record in 1971, Harold Schonberg, *New York Times* music critic, rhapsodized about the intricacies of the wolf sounds: "Each phrase is a glissando swoop, up and down, like a very lonesome, sentimental fire siren with a soul."

Dark Caves, Bright Visions: Life in Ice Age Europe is a landmark book published by the American Museum in conjunction with the current exhibition.

The more than 150 photographs of original Ice Age objects and text by guest curator Randall White document the extraordinarily creative period during the late Ice Age when a sudden burst of art, trade, and technology left as its legacy a breathtaking array of artifacts, tools, and art.

The 1987 Museum calendar features 12 brilliantly colored lithographs by John Gould, one of the most important and productive ornithological illustrators of the 19th century. An

Englishman who was responsible for the publication of over 3,300 color plates during his lifetime, Gould knew both fame and fortune through his work. Any bird lover would be delighted with the spectacular illustrations of an artist whose self-chosen epitaph reads "John Gould, The Bird Man."

To order the John Gould's *Exotic Birds of Asia Calendar* for 1987 and to send away for the free Members' Book Program Catalog, please use the adjacent coupon.

Gift Memberships: Save 30 Percent!

As a special holiday benefit, Members may give gift memberships at 30 percent off our regular membership rates. Only \$28 for a Participating Membership and just \$14 for an Associate one.

The recipient of this gift will receive notice of his or her new membership in a beautiful holiday card.

☐ YES! A gift of membership is a wonderful idea. Please enroll the following as:

_____ a \$14 Associate Member _____ a \$28 Participating Member

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

HRT 1

This membership is a gift from:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

_____ Enclosed is my check payable to the American Museum of Natural History.

_____ Please bill me after the holidays.

Save time — order by calling our toll-free number, (800) 247-5470.

When using this coupon, please mail it to: Membership Secretary, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024.

Members' Book Program

☐ YES, I would like to order _____ John Gould's *Exotic Birds of Asia* calendars at \$7.95 each.

Total amount enclosed
(please add \$1.50 for shipping and handling): _____

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with special discounts off the publishers' prices!

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please enclose check payable to the American Museum of Natural History.

Mail to: Members' Book Program
American Museum of Natural History
Central Park West at 79th Street
New York, NY 10024

Museum Notes

Special Exhibitions and Highlights

Dark Caves, Bright Visions. Through January 18, in Gallery 3. Evidence discovered in prehistoric and open-air sites indicates that by the late Ice Age humans had developed art forms, complex symbolic rituals, and systems of regional exchange that were to be the foundations of modern culture. *Dark Caves, Bright Visions* brings together the largest collection of Paleolithic artifacts ever shown in one place, including etchings, sculptures, tools, as well as replicas of painted cave walls.

City of Light. Through February 1987 in the Akeley Gallery. An exhibit of the work of a

team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the first-floor information desk. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of

Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

Birthday Parties

Last February, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last 2 hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 873-1327.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

November is Caribbean Month at the **Leonhardt People Center**. Weekends will be dedicated to the folklore, history, and diverse cultures of the peoples of the Caribbean and celebrated with live music, dance performances, demonstrations, slides, and films. Weekend hours are from 1:00 to 4:30 p.m. Seating is on a first-come, first-served basis and presentations will be repeated throughout each afternoon. For a complete schedule of events, please call 873-1300, ext. 514.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 50 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. until midnight every day of the week. There are only 110 spaces available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday and Sunday after 6 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.



Della Akeley, first wife of Carl Akeley, on a 1909 expedition to British East Africa. This photograph is part of *Ladies in the Field*, a new exhibition in the Library Gallery.

Happenings at the Hayden

Sky Shows

Voyage to the Outer Planets and *Starbom: Earth's Odyssey Through Time and Space* are presented as a double feature through November 24.

Since 1977, two tiny robot spacecraft, both named *Voyager*, have made incredible journeys of discovery, visiting Jupiter, Saturn, and most recently Uranus. *Voyager: Voyage to the Outer Planets* presents the details of the discoveries and some of the images the spacecraft have sent back to Earth.

Starbom: Earth's Odyssey Through Time and Space, narrated by Gregory Peck, features the most fascinating planet of all

— our own Earth. Witness volcanic activity, crustal movements, torrential rains, and other forces that have shaped our world. Travel through eons of time to explore the origin and evolution of our living planet.

The *Star of Christmas*. November 26 through January 4. Gaze out on a clear winter's night and then travel back nearly 2,000 years to explore the skies of the first Christmas. The story of how historians, theologians, linguists, and astronomers have worked together to unravel a classic mystery is one of beauty and intrigue.

Sky Show times are Monday through Friday, 1:30 and 3:30

p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street

Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars. *Wonderful Sky* will be shown on the following Saturdays: November 1, at 10 a.m.; December 6 at noon. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, N.Y. 10024) and mail at least two weeks in advance. For additional information, please call (212) 769-3299.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 724-8700 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 873-8828.

Afro-Cuban Jazz

Performed by New Yor-Uba

Wednesday, December 10

7:30 p.m.

Main Auditorium

\$5.00 for Members, \$6.00 for non-Members

New Yor-Uba in rehearsal.

When the Yoruba people were brought to the New World by the slave trade, they brought rhythms with them that can still be heard today. Ecstatic drumming, singing, and dancing were elements of their culture and religion that, in Cuba, became part of Santería. Yoruba rhythm comes to the Main Auditorium next month in the music of New Yor-Uba, a unique group of musicians who have created contemporary arrangements of traditional Yoruba chants. Led by pianist-composer Michele Rosewoman, this 14-piece jazz ensemble includes three bota (two-headed "talking drums") drummers and several vocalists who are masters of Cuban folkloric traditions. In New Yor-Uba's intriguing music, jazz melodies and Afro-Cuban rhythms play equally significant roles — a musical balance that is the group's trademark.

New Yor-Uba has performed at the Public Theater, Intar, and at several national and international festivals.

To order tickets for this New Yor-Uba performance, please use the adjacent coupon. Advance registration by mail is requested. For additional information, call (212) 873-1300, ext. 514.

An Education Department Public Program.



Jeffrey Day

Puerto Rico Sings Performed by Repertorio Español

Monday, November 17

7:30 p.m.

Main Auditorium

\$5 for Members, \$6 for non-Members

According to director Rene Buch, *Puerto Rico Sings: Encanto y Conción* is an homage to a "musical repertory too infrequently performed outside the island." A celebration of popular song from the 19th and 20th centuries, *Puerto Rico Sings* features the work of more than a dozen great Hispanic composers. In conceiving this special musical anthology, Buch says his intention was to convey to a wide audience "the peculiarly melancholic sensibility of a people whose lyricism is elegant, restrained and vital." The popular and semiclas-

sical songs include ballads of unrequited love, 19th century vocal donzas, and the typically Puerto Rican *oguinoldos*. As critic Stephen Holden pointed out in *The New York Times* last year, the repertory's range is broad, "encompassing both the florid, strongly Latin-flavored ballads of Sylvia Rexach, whose lyrics depict the sufferings of women in stormy melodramatic language, to Narciso Figueroa's refined arrangements of traditional Spanish songs for children."

Repertorio Español, founded in 1968, is a New York-based

theatrical company that produces original works by Spanish and Latin American writers. In 1981, Repertorio Español won an Obie Award for distinguished repertory.

Puerto Rico Sings is made possible in part by a gift from the Sidney, Milton and Leoma Simon Foundation.

To attend this spirited, colorful program, please use the adjacent coupon. Advance registration by mail is requested. For additional information, please call (212) 873-1300, ext. 514.

An Education Department Public Program.

Community Concerts

For Community Concerts, Participating, Donor, and Contributing Members are entitled to four tickets at the members' price. Associates are entitled to one. Additional tickets are at the non-Members' price.

I would like to register for the following musical programs:

Puerto Rico Sings. Monday, November 17, 7:30 p.m.

Number of Members' tickets at \$5: _____
Number of non-Members' tickets at \$6: _____
Total \$ _____

New Yor-Uba. Wednesday, December 10, 7:30 p.m.

Number of Members' tickets at \$5: _____
Number of non-Members' tickets at \$6: _____
Total \$ _____

Total amount enclosed: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Community Concerts, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

November 1986 American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

2 1:00 and 3:30 p.m. Sugar Cane Alley, a film set in Martinique, Kaufmann Theater. Call (212) 873-1300, ext. 514.

1:00 to 4:30 p.m. Puerto Rican Musical Journey: Puerto Rican Roots; Folktales from Borinquen — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.

New moon at 1:02 a.m.

9 2:00 p.m. N.Y. Shell Club. Room 419. Free.

1:00 to 4:30 p.m. Culture and Change in the Caribbean: Origins of Modern Caribbean Cuisine; Latin American Jazz — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.



Sugar Cane Alley.

16 1:00 to 4:30 p.m. Haitian Traditional Dance; Vodun: African-derived Religion in Haiti; Oral Tradition in Haiti — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.

2:00 p.m. N.Y. Paleontological Society. Room 426. Free.

2:00 p.m. N.Y. Turtle and Tortoise Society. Room 129. Free.

Full moon at 7:12 a.m.

23 1:30 and 3:30 p.m. The Ice Age and Its Mammoth Hunters. Kaufmann Theater. \$2 and open only to Members. Call (212) 873-1327. Page 2.

1:00 and 4:30 p.m. Caribbean Rhythms on Steel; African Religions in the Caribbean; Bob Marley: The Message, Music and Man — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.

3 Moon in pengee at 9:00 p.m.

4

5 7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

6

7 8:00 p.m. N.Y. Microscopical Society. Room 419. Free.



Sugar Cane Alley.

11 8:00 p.m. Linnaean Society of N.Y. Kaufmann Theater. Free.

12 7:00 p.m. N.Y. Mineralogical Club. People Center. Free.

19 8:00 p.m. Met Grotto: National Speleological Society. Room 129. Free.

Moon at apogee. 5:00 p.m.

18 7:30 p.m. Of Human Bonding. Main Auditorium. Free and open only to Members. Members' evening program Page 3.

17 7:30 p.m. Puerto Rico Sings. Main Auditorium. \$5 for Members, \$6 for non-Members. For more information call (212) 873-1300, ext. 514. Page 7.

21 8:00 p.m. N.Y. Microscopical Society. Room 419. Free.

20

22 1:00 and 3:30 p.m. The Harder They Come, a film with Jimmy Cliff. Kaufmann Theater. Free. For more information, call (212) 873-1300, ext. 514.

1:00 to 4:30 p.m. Caribbean Rhythms on Steel; African Religions in the Caribbean; Bob Marley: The Message, Music and Man — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.

29

27 Thanksgiving Day. The Museum is closed.

26

25 8:00 p.m. Linnaean Society of N.Y. Room 319. Free.

24

15 1:00 to 4:30 p.m. Haitian Traditional Dance, with Troupe Shango; Vodun: African-derived Religion in Haiti, with Dr. Regine Latortue; Oral Tradition in Haiti, with Mane Lourdes Elgrus. All three programs are part of Caribbean Month at the Leonhardt People Center. Free. For more information, call (212) 873-1300, ext. 514.

8 1:00 to 4:30 p.m. Culture and Change in the Caribbean, with Dr. Bert Thomas; Origins of Modern Caribbean Cuisine, with Charles Williams; Afro-Caribbean Music, with Spint Ensemble (Saturday only). All three programs are part of Caribbean Month at the Leonhardt People Center. Free. For more information, call (212) 873-1300, ext. 514.

1 1:30 and 3:30 p.m. Spirit Stories from Around the World. Kaufmann Theater. \$3 for Members, \$5 for non-Members. Call (212) 873-1327.

1:00 to 4:30 p.m. Puerto Rican Musical Journey: Puerto Rican Roots; Folktales from Borinquen — Caribbean Month at the Leonhardt People Center. Free. Call (212) 873-1300, ext. 514.

11:00 a.m. N.Y. Map Society. Room 129. Free.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 11, No. 11 December 1986

Celebrate Africa

Join the Brewery Puppet Troupe, the Charles Moore Dance Theater, De Drummers Dem and De Dautas Dem Ensemble, folk artists, singers, and African specialists in Kwanzaa, a festival honoring the cultural roots of black Americans.

Page 4.

Take a Peak

Discover the religious and secular symbolism of mountains. Dr. Edwin Bembaum, scholar and explorer, lectures on the history of Sacred Mountains of the World.

Page 5.

Tree for all Ages

Ten thousand shimmering stars and scores of exquisitely folded paper creatures adorn the 14th annual Origami Holiday Tree, on view in the Roosevelt Rotunda.

Page 5.

Behind the Scenes

The doors to the Department of Mammalogy will open to Museum members, who are invited to view the Department's outstanding collections and meet the scientists who study them.

Page 8.



High Bridge and High Service Works and Reservoir.

On Tap: New York City's Water Supply

**Exhibition opens Friday, December 12
Gallery 1**

New York City's worst features are better known to some Americans than the names of their congressmen. The best things about the city, though, often go unnoticed — even by its residents. Take the city water supply system, for example. It's doubtful that most New Yorkers are aware that their city's underground aqueduct qualifies as one of the world's greatest engineering feats.

On Tap: New York City's Water Supply, a new Museum exhibition, is bound to give New Yorkers something to crow about for a change. The exhibition ex-

amines the history of the system, beginning with the early settlers. It began as a public supply in 1842 and has been added on to ever since, according to population needs, until it now moves 1.5 billion gallons of water per day through 6,000 miles of tunnel and pipes. And the expansion doesn't stop: *On Tap* examines ongoing projects like Tunnel 3, being dug currently in the Bronx, Manhattan, and Roosevelt Island. The exhibition will also include sections on the future sources, the quality, and the conservation of the city's water.

When the original Croton system was completed, the engineers built a small craft, *The Croton Maid*, and sailed through the partially filled Highbridge Aqueduct. Recently Sidney Horenstein, curator of *On Tap* and member of the Museum's Department of Invertebrates, traveled through a portion of Tunnel 3, about 890 feet below the surface of Roosevelt Island. It was, he declares, an exhilarating experience, and just one more confirmation of his conviction that New York's water supply system is world-class.

Festival of Strings

Sunday, January 18
1:30 and 3:30 p.m.
Kaufmann Theater
\$3 for Members
\$5 for non-Members



The sounds of instruments from around the world will fill the Kaufmann Theater when Guitar People and friends present an international festival of strings. This Members' family program will introduce children to the West African kora, a magical 21-stringed harp; the sitar, a North Indian stringed instrument of the lute family; and the charango, a small South American guitar that is often made

from an armadillo shell. The festival will also feature the popular tunes of Guitar People.

The performance will include South American ballads, Indian ragas, jazz guitar duets, and a Native American folk song. At one point, children from the audience will be invited on stage to provide the percussion section for a lively rendition of the "Stars and Stripes."

The program has been or-

ganized by Roy Goldberg and Eve Weiss of Guitar People, who have presented their unique programs throughout the New York area. The other featured artists will be Bradford Catler (sitar), David Gilden (kora), and the South American duo of Rodolfo Alchourron and Analía Lovato.

To register for the program, please use the Members' program coupon on page 3.

Who Gives A Toot? A Children's Concert

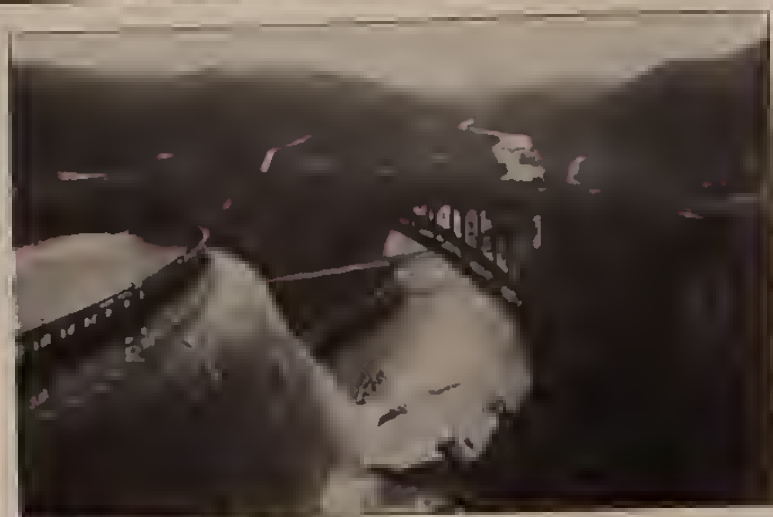
Sunday, December 14
3:00 p.m.
Kaufmann Theater
Free

In a musical program designed to appeal to young people, the Bloomingdale Chamber Orchestra will perform Sergei Prokofiev's *Peter and the Wolf* and other classical works. Martin Rutishauer and a special guest will conduct the musicians in a performance bound to delight music lovers of all ages.

Seating is on a first-come, first-served basis. For additional information, please call (212) 873-1300, ext. S59.

This program is made possible in part by grants from the Helena Rubinstein Foundation and the Vincent Astor Foundation.

An Education Department Public Program.



New Croton Dam (See page 1)

ROTUNDA

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Starlight Serenade

Hayden Planetarium

Monday, December 15, and Tuesday, December 16

9:00 p.m. (7:00 p.m. shows are sold out)

\$7 for Members, \$10 for non-Members

Bach's lilting *Brondenburg* Concerto No. 6 and Mozart's soothing *Eine Kleine Nachtmusik* will usher in the joyful season as the third annual holiday concert is held in the Planetarium's Sky Theater on two winter evenings. As concertgoers sit comfortably inside listening to Mozart and Bach, dazzling laser and planetarium effects — sunsets, whirling galaxies, and comets — will dance on the dome overhead.

The annual concert under the stars will pay tribute to the flute with a performance of Mozart's *Flute Quartet in D Major* and Bach's *Suite No. 2 in B Minor for Flute and Strings*. All the players in the 10-piece chamber ensemble are members of Music for Occasions, Inc., directed by Paul Gary.

To register for this special holiday concert, please use the December Members' programs coupon on this page.

Wolfgang Amadeus Mozart



New York Public Library

The Great Expeditions

Tuesday, January 13

7:30 p.m.

Main Auditorium

Free and open only to Members

The Central Asiatic Expedition

Since its founding in 1869, the American Museum of Natural History has sent out over 1,000 expeditions to the farthest reaches of the earth — to explore, to collect, and to gather research. Museum explorers have ventured to Outer Mongolia, to the wastes of the Polar Sea, the depths of the Congo, and the backyards of New Jersey.

The Great Expeditions, a Members' program presented by Douglas J. Preston, will take an in-depth look at three of the most dramatic expeditions in the Museum's history. The program will feature rare archival footage and photographs taken during these historic adventures, as well as material drawn from the explorers' unpublished journals, which are housed in the Museum's Rare Book Room.

The great expeditions include impossible successes and crushing disappointments. Regardless of the outcome, each required courage, stamina, and, be it noble or foolish, vision. One of the most dazzling expeditions in the history of science took place in the 1920s, after a persuasive young mammalogist at the Museum, Roy Chapman Andrews, convinced the Museum president and a series of wealthy backers to fund his plan to search Outer Mongolia and the Gobi Desert for fossils. Andrews had to be a great communicator: at the

time, only one fossil had been found in all of Central Asia — a rhinoceros tooth.

Spurred by the Museum's support and a dream of finding the so-called missing link (fossils of early man), Andrews and a field crew of some 20 scientists and assistants devoted 9 years to collecting, excavating, and mapping, as well as fighting off Mongolian bandits and dodging the bullets of Chinese soldiers. While they never found the missing link, they did uncover one of the greatest fossil graveyards in the world and so repaid their benefactors with priceless evidence of hundreds of previously unknown dinosaurs and early mammals.

The program will also feature Carl Akeley's last expedition to the Congo in 1926, which re-

sulted in the collection of the Museum's famed Mountain Gorilla group. Although Akeley died during the expedition, his wife, Mary, insisted that it continue and indeed took it over herself. Preston will tell the story of this expedition using photographs and drawings from Mary Akeley's unpublished field journal. Not all the Museum's expeditions were great successes, and Preston will relate the tragic tale of the 1913 Arctic expedition that set out to explore and map Crocker Land.

Preston is the author of a new book about the Museum, *Dinosaurs in the Attic* (St. Martin's Press), and was once editor of this newsletter. To attend this fascinating program, please use the December Members' program coupon on this page.

December Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: December Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Mozart, and Bach by Moonlight. Monday, December 15, and Tuesday, December 16. 7:00 and 9:00 p.m. \$7 for Members, \$10 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first choice and a second choice of times, if possible:

Mon., Dec. 15 at _____ 7:00 p.m. _____ 9:00 p.m.
Tue., Dec. 16 at **SOLD** 7:00 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$7 each: _____
Number of non-Members' tickets at \$10 each: _____
Total amount enclosed for program: _____

The Great Expeditions. Tuesday, January 13, 7:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Festival of Strings. Sunday, January 18, 1:30 and 3:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first and second choice of times, if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$3: _____
Number of non-Members' tickets at \$5: _____
Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Kwanzaa Experience

Saturday, December 27, Sunday, December 28, and Monday, December 29
See listing below for specific events, times, and locations
Free and open to all Museum visitors
Some programs require tickets

This year marks the twentieth anniversary of Kwanzaa, a unique seven-day holiday that pays tribute to the cultural roots of black Americans. For the third year in a row, the Museum, in association with the New York Urban Coalition, will host a variety of lectures, workshops, performances, and demonstrations throughout its halls in honor of a festivity that began humbly and now is celebrated internationally.

In the mid-1960s Dr. Maulana "Ron" Karenga, a black studies professor in California, got together with a small group of other cultural nationalists and declared December 26 through January 1 a time when people should gather to acknowledge their cultural roots with celebrations. Kwanzaa is organized around seven principles — unity, self-determination, collective work and responsibility, cooperative economics, purpose, creativity, and faith — each of which was gleaned from centuries-old African values.

Kwanzaa has more than lived up to the vision of its founders: New York's *Daily News* reported that, at last count, 13 million people celebrated Kwanzaa around the country. It's fitting, then, that the twentieth anniversary of Kwanzaa is dedicated to the spirit of Imani, or faith, since it took the strong conviction of a few to prove that Kwanzaa was, for a great many, an important idea.

*Seed Day

Saturday, December 27

Kaufmann Theater. *Brewery Puppet Troupe*. 2:00 p.m. and 4:00 p.m. Through the antics of musical, comical puppets, young and old alike will learn about the significance of Imani in terms of the preservation of African heritage.

Linder Theater. *Nguzo Saba: The Seven Principles Film Program*. 1:00 and 3:00 p.m. Animated films that demonstrate the universality of the human experience through the folklore of people of African descent will be shown. Each film illustrates one of seven principles that support values strengthening the family, school, and community.

Blum Lecture Hall. *Folk Songs and Folk Tales*. 1:30, 2:30, and 3:30 p.m. In a participatory program, Akyene Baako will explain the importance of faith in African culture.

People Center Activities.

Terrace I. *Kwanzaa Culinary Feast*. 1:00, 2:00, 3:00, and 4:00 p.m. Charles Williams shares traditional menus in a slide-illustrated program.

Terrace II. *Fashions of Faith*. 1:00, 2:00, 3:00, and 4:00 p.m. A presentation of Kwanzaa fashions by Marva Martin that pay tribute to the rich and diverse culture of people of the African diaspora.

Theater. *De Drummers Dem and De Dautas Dem Ensemble*. 1:30, 2:30, and 3:30 p.m. Demonstration of the distinctive rhythmic patterns of drumming, chants, and folk songs that are characteristic of the African-influenced Jamaican culture. Customary dance, as well as poetry and drama, will be shared.

Calder Lab. *Images to Inspire*. 1:00, 2:00, 3:00, and 4:00 p.m. Quassia Tukufu offers stenciling workshops inspired by African images.

*Elders' Day

Sunday, December 28

Kaufmann Theater. *Traces with the Charles Moore Dance Theater*. 2:00 and 4:00 p.m. Charles Moore won a special grant from the National Endowment for the Arts for his project of researching and re-creating black American dances from plantation days to the present. In honor of Kwanzaa, his com-

pany will perform some of those historic dances.

Blum Lecture Hall. *Magic of Africa*. 1:30, 2:30, and 3:30 p.m. Magician Phillip Jennings presents magic and illusion derived from ancient Egyptian mystics.

Calder Lab. 1:00, 2:00, 3:00, and 4:00 p.m. *Imani-Kuumba (Faith and Creativity)*. Four exciting miniworkshops led by Carmen Lowe illustrate how masks are used to instill faith while being artistic objects in themselves.

People Center Activities.

Terrace I. *Egungun (Ancestor*

Worship). In a slide-illustrated presentation, Quassia Tukufu explains the Yoruba tradition of ancestral worship.

Terrace II. *Continuance of Faith: Yoruba, Bini, and Fon Religious Influences in the New World*. 1:00, 2:00, and 4:00 p.m. Cynthia Turner conducts an audio-visual presentation on the orisha-vodun traditions of West Africa and their influence on cultures in the Caribbean, South America, and the United States.

Theater. *Songs of Faith*. 1:30, 2:30, and 3:30 p.m. L.D. Frazier performs gospel selections that reflect the black American spirit.

Linder Theater. *Pat Hall Smith and Warren Smith*. 1:00 and 3:00 p.m. The Smiths perform original compositions and dance derived from traditional African culture and its manifestations among African peoples of the Americas and of the Caribbean.

***All of the Kwanzaa programs described here are free and open to all Museum visitors. Seating for all programs is on a first-come, first-served basis. Tickets are required for all events held at the Kaufmann Theater, Linder Theater, and Calder Lab on December 27 and 28. Those tickets will be issued only on the day of the event and can be obtained at the Kaufmann Theater ticket booth, starting at noon on the day of the program.**

Community Day

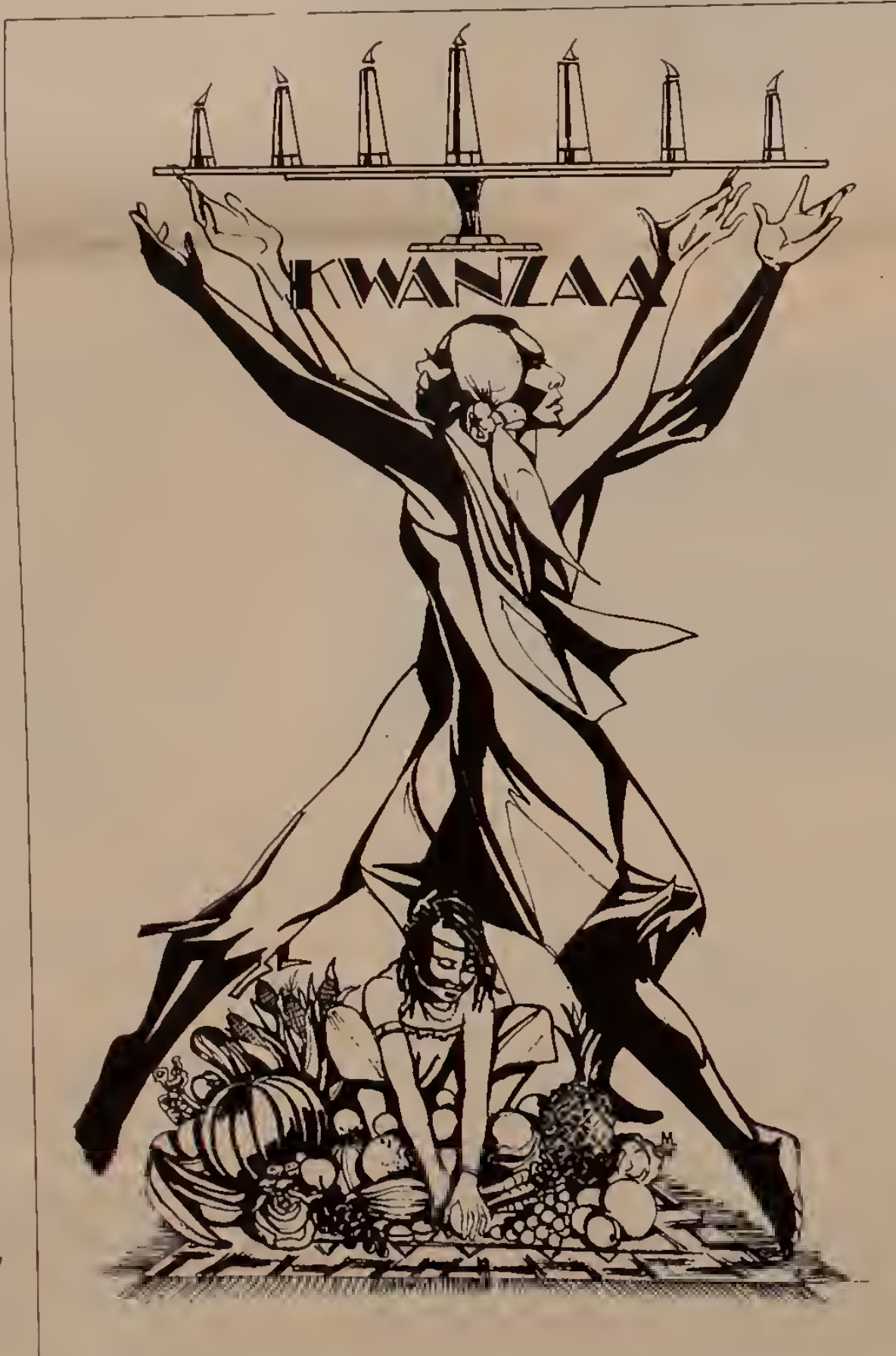
Monday, December 29

Main Auditorium. 7:30 p.m. A program of traditional African dance, Afro-Caribbean dance, and African-influenced jazz highlighting the principle of Imani and paying tribute to the African diaspora community. The Children of Dahomey, Spirit Ensemble, and Spirit of African Society join in a musical celebration of the richness and diversity of the community.

For free tickets to the program on Community Day, December 29, send a self-addressed, stamped envelope to Community Programs, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Ticket requests must be received by December 20.

For additional information about any of these Kwanzaa festivities, please call (212) 873-1300, ext. 514.

An Education Department Public Program.



Mel Wade

The Origami Holiday Tree

Through January 6
Roosevelt Rotunda

Escape the hectic crowds and winter chill with a visit to one of New York's great spaces, the Roosevelt Rotunda, home of one of New York's great sights, the Origami Holiday Tree. This is the 14th year that the majestic tree will reside in what may be the Museum's most elegant location. Though all the favorite origami figures — from piglets to plesiosaurs — float from its branches, this year's tree has a new look: each of its scores of origami decorations is slightly larger than in the past and many are folded from naturally colored, rather than foil, paper. Among the new figures are a panda and a frilled lizard.

Above the tree hangs the traditional 33-foot-high and 30-foot-wide mobile of the sun, stars, and Comet Kohoutek — the comet that passed by when it was first erected. The mobile was created by scientific assistant emeritus Alice Gray, the originator of the tree. The glistening galaxy contains 750 stars and takes over 200 hours to hang. The stars on the mobile are folded by volunteers, as are all the holiday tree figures. According to Museum origami specialist Michael Shall, the volunteers are from all states and are of all ages: "We couldn't present the holiday tree without the commitment and enthusiasm of our Museum volunteers and members of the Friends of the Origami Center of America."

Adjacent to the tree and its glorious crown is a table where Museum volunteers will demonstrate paper folding throughout the holidays. In the course of their teaching, those teachers will use close to 30,000 sheets of origami paper.

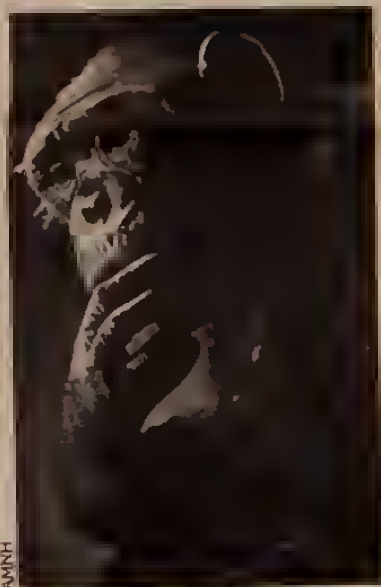
Paper scorpions, camels, a dinosaur, and dozens of other exceptionally beautiful origami creations are on display in the special exhibit, *Origami: Rooted In Ceremony*, presented in conjunction with the Origami Holiday Tree.



One of the "stars" of the Origami Holiday Tree

January Tour of the Month: Primates

The January Members' Tour of the Month features the mammalian order of primates, which includes not only monkeys, apes, and prosimians but also



The Chimponzee "Meshi"

ourselves. The tour begins in the Hall of Primates with an overview of the different primate species. Volunteer guides from the Museum's Highlights Tour program will explain how the primates evolved and point out how apes, humans, and monkeys differ from other mammals and from each other.

Members will then go to the halls of African mammals and Asian mammals to view primates in their natural habitats. The tour will explore the life styles and adaptations of baboons, mandrills, colobus monkeys, gibbons, and chimpanzees. It will conclude in front of one of the Museum's most famous dioramas, the Akeley mountain gorilla group.

To register for the tour, please use the adjacent coupon. The tour is open only to Participating, Donor, and Contributing Members.

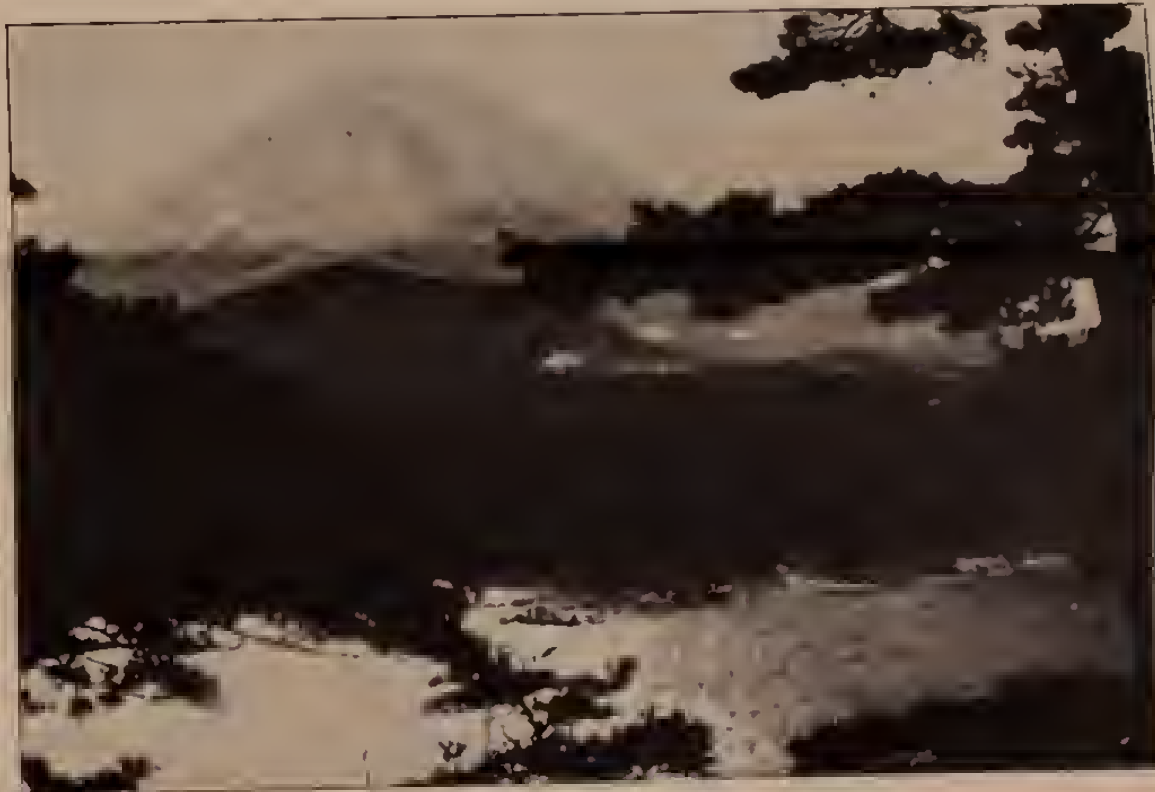
Sacred Mountains of the World

Two Wednesdays, January 14 and 21
7:00 p.m.

Main Auditorium

\$13 for Members, \$15 for non-Members

Mt. Fuji In the Moonlight



Whether viewed as abodes of the gods or stairways to heaven, mountains have been venerated by humanity throughout many cultures and many centuries. Zion in the Middle East, Olympus in Greece, and Fuji in Japan are just a few of the many mountains that are, perhaps, more famous as spiritual symbols than as exotic destinations.

In two slide-illustrated lectures, Edwin Bembaum — author, scholar, and climber — will explore the symbolic role of sacred mountains, from ancient times to the present. Bembaum will look to religion, literature, and art as he examines the different ways people have regarded sacred mountains throughout history, and he will discuss climbing as a way in which men and women strive to transcend themselves.

Edwin Bembaum holds a doctorate in Asian studies from the University of California, Berkeley. He has done extensive research in the Himalayas,

published articles on Tibetan pilgrimage, and lectured widely.

To register for *Sacred Mountains of the World*, please use the adjacent coupon. For additional information, please call (212) 873-7507.

An Education Department Public Program.

Members' Tour of the Month: Primates

Free and open only to Participating, Donor, and Contributing Members

Please indicate a first and second choice of dates and times:

| | | |
|--------------------|------------|------------|
| Wednesday, Jan. 7 | 6:00 p.m. | 7:00 p.m. |
| Saturday, Jan. 10 | 10:30 a.m. | 11:30 a.m. |
| Sunday, Jan. 11 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, Jan. 14 | 6:00 p.m. | 7:00 p.m. |
| Sunday, Jan. 18 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, Jan. 21 | 6:00 p.m. | 7:00 p.m. |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Telephone: _____

Membership Category: _____

Please mail with a self-addressed, stamped envelope to: *Primates Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please note: registration closes on December 26.

DEPARTMENT OF EDUCATION

Sacred Mountains of the World. Wednesday, January 14 and January 21, 7:00 p.m.

Number of Members' tickets at \$13: _____

Number of non-Members' tickets at \$15: _____

Total amount enclosed: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Department of Education*, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Year in Review

Some facts about the American Museum of Natural History are self-evident. A stroll through any exhibition hall on any day meets with crowds of visitors—including scores of exuberant children—satisfying their natural curiosity about subjects as diverse as primate evolution and the rise of pre-Columbian civilizations.

The Museum is renowned for its superb displays and popular events. Last year, thousands of people visited the special exhibitions *Masterpieces of the American West*, *Wolves and Humans*, and *Lost and Found Traditions: Native American Art*. Others enjoyed programs such as the Margaret Mead Film Festival, the Man and Nature Lectures, Black History Month, and Planetarium concerts.

There is more to the Museum than meets the eye of the casual visitor. One of the country's great scientific research centers, the Museum's resources are similar to those of a large university. These include more than 200 researchers, laboratories, unparalleled collections, a scanning electron microscope, and library and computer

facilities. Of the 50 individuals invited to convene symposia at this year's 19th Annual Ornithological Congress in Ottawa, seven were associated with the Museum—no other institution had more than two representatives. Perusal of any scientific journal will probably reveal details of Museum work.

Scholars from around the world come to study our collections. For example, the Department of Herpetology had an average of one professional visitor every three and a half days. The library served over 8,000 users. It also neared completion on a two-year project to restore, conserve, and catalog the remarkable film archives. Other departments are also working on major conservation and storage projects to make our collections more accessible to the scientific community.

The Museum is famous for the great expeditions it has sponsored to every corner of the globe: to the Gobi Desert in the 1920s, to the Arctic, Africa, and Polynesia. The tradition of far-flung research continues at the Museum, from the study of mammals of Bolivia and Chilean spi-

ders to western China's nocturnal birds and Korean wedding ceremonies.

The number and variety of research projects conducted in North America are less well known. This work ranges from Eugene Gaffney's (Vertebrate Paleontology) effort to reconstruct North America's oldest turtle to Howard Topoff's (Entomology) study of slave-making ants at the Museum's Southwestern Research Station in Arizona. In this "Year in Review," we highlight the research conducted by scientists in North America as well as provide some glimpses of intriguing on-site work at the Museum. The scholars with whom we spoke have travelled to all parts of the country and worked in a vast array of environments.

If you would like to learn more about the Museum's research, we would be glad to send you our 1986 Annual Report. Call (212) 873-1327 for your complimentary copy.



Arizona

Some of the world's largest known bees are uncommonly early risers, according to Jerome G. Rozen, Jr. (Entomology), who spent part of last summer observing matinal species of *Caupolicana* and *Martinapis* near the Museum's Southwestern Research Station in Arizona. Rozen and his wife, Barbara, were often up long before dawn, studying the bees' flight schedules, their nesting architecture (both species nest deep in the ground), and their food sources — a favorite being the nectar of a purple-flowered legume that grows in the area. "These bees are so big, they have to consume a lot," explains Rozen. "It makes good sense that they beat the competition to a food source that's bound to be depleted as the day wears on."

St. Catherines Island, Georgia

During the late seventeenth century, the Mission Santa Catalina on St. Catherines Island — one of the barrier islands off the Georgia coast — was abandoned as the English approached. Excavation of the mission began in 1981. Just last year, David Hurst Thomas (Anthropology) and a field crew uncovered a curious "font" (a basin set into the floor in a clay foundation) while investigating the mission's convento, or friary. Just how the basin relates to the personal habits of the mission's early residents is unknown, but one theory is that the Franciscans, also known as the barefoot friars, used it for foot-bathing.

Death Valley, California, and Northwestern Mexico

To Michael L. Smith (Ichthyology), there is no more fascinating irony than the fact that in the midst of one of the driest locations on earth — Death Valley, California — pupfishes get along swimmingly. Last year Smith continued his study of the desert populations of pupfishes, which in Death Valley tolerate higher salinity (two and a half times that of seawater) and in northwestern Mexico tolerate higher temperatures (113° Fahrenheit) than any other aquatic vertebrate. By looking at the history of pupfishes, Smith hopes to see how they came to inhabit these extreme locations and how they persist there. Smith's studies suggest that, even though pupfishes survive in uncommonly harsh environments, they are not desert-adapted organisms. In geological time, deserts are short-lived phenomena. Apparently, pupfishes survive in them only fortuitously because of the fishes' tolerance to variable heat and salinity.

South Dakota, Montana, Wyoming

Until they became extinct 65

million years ago, ammonites (shelled cephalopods) lived in the large seaway covering what is now South Dakota, Montana, and Wyoming. Last year, Neil Landman (Invertebrates) went west to determine whether they had experienced anything unusual around the time of their extinction. Would the shells of ammonites, preserved in rock from 70 million years ago, for instance, suggest that fish or reptiles had been preying on them? "All indications seem to be that the patterns of injuries are just too complex for one explanation," says Landman. "Predators did a lot of damage to some species."

New Jersey

"Everyone knows that birds are well reported," says Richard Kane of the New Jersey Audubon Society. "But the sad fact is that mammals aren't. Part of the problem may be that mammals are most active at night. But it certainly doesn't help that mammalogists themselves seem to be an endangered species these days." Whatever the reason for the scant records of mammals sighted throughout the country, Richard Van Gelder (Mammalogy) and the New Jersey Audubon Society did something last year that certainly will better the situation. It all began with an annotated checklist of the mammals of New Jersey, written by Van Gelder and published by the state's Audubon Society in the fall of 1984. That publication, the first of its kind on New Jersey since 1903, inspired a program of "mammal cooperators" — volunteers interested in reporting their observations, which are bound to range from gray squirrels to black bears. This year 70 mammal cooperators will turn their records over to editor Van Gelder, and for the second year in a row, the winter edition of the Audubon Society's *Records of New Jersey Birds* will contain a section on mammals.

New York City

"My field area is the asteroid belt," says Jeremy S. Delaney (Mineral Sciences), "and I certainly don't anticipate going there." For some time, Delaney has been concentrating on a theoretical reconstruction of a planet he calls BAP (Basaltic Achondrite Planetoid). What's known about BAP is that it is now represented by more than 80 meteorites — found all around the world — which makes it the best-sampled planet after Earth and the moon. Those samples suggest that BAP is a small body, perhaps 1,000 kilometers in diameter, and in some ways similar to Earth and the moon. In a sense, what Delaney's theoretical model will do is to predict what BAP would be like if it could be reached. Last year, with his work nearly finished, he focused on a synthesis. Though

his model may be completed very soon, Delaney will have to wait until the 1990s for critical response: that's when a planned French and Soviet space mission will journey to Vesta — a known asteroid that bears a suspicious resemblance to the theoretical BAP.

New York City

When the new Hall of South American Peoples got the official go-ahead in 1980, recalls Robert L. Carneiro (Anthropology), one of the first things to happen was that a large well in an unused hall was bridged with huge I-beams. As the work progressed downstairs, Carneiro and his assistant Laila Williamson began sifting through the 15,000 artifacts in the Amazonian ethnology collection with the coming exhibition in mind. Carneiro worked on, arriving finally at a rough collection of artifacts that might be exhibited. "It was preliminary, all right," says Carneiro, "and it was revised and revised as we kept whittling the possibilities down."

The Hall of South American Peoples has come a long way since then: as of this year, the Amazonian sections on pottery, on hunting, fishing, gathering, and on fibers and fabric are complete, thanks to the unwavering industriousness of Carneiro and Williamson. Craig Morris (Anthropology) and his assistant Peter Kvietok are working on a parallel section about South American archeology. Carneiro says his immersion in the Amazonian collection gave him a new appreciation of its comprehensiveness. "Working on a permanent exhibition hall is a once-in-a-lifetime experience," he reflects. "You give it your all and then gladly retire from the enterprise."

Long Island Sound

Until December 1985, only nine specimens of Kemp's

ridleys, the most endangered of all sea turtles, had been recorded from New York waters. But during December and early 1986, after a period of unusually cold weather, a total of 44 Kemp's ridleys were recovered after being stranded in Long Island Sound. Anne Meylan (Herpetology), part of a rescue-research team called together by Sam Sadove, director of the Okeanos Ocean Research Foundation, remembers finding several of the ice-cold, sometimes lifeless turtles amid the piles of storm wrack at the high-tide line.

Since 1947, when a private film was made by a Mexican engineer showing thousands of ridleys emerging on a stretch of Mexican shore, scientists have discovered no other breeding localities for Kemp's ridleys. The fact that these rarest of sea turtles have been seen in significant numbers as far north along the eastern seaboard as Cape Cod has led to many provocative questions and few answers about their migratory patterns. After last winter's strange events, and the capture of other Kemp's ridleys in pound nets in Long Island Sound this summer, many scientists, including Anne Meylan, wonder whether Long Island Sound might be a normal but unrecognized ridley habitat.

Cuba

In 1984, the Cuban government invited Lester Short (Ornithology) to help organize a quest for the possibly extinct ivory-billed woodpecker. This year the expedition achieved its goal with the discovery of two ivorybills in a remote pine forest in eastern Cuba. The discovery by American, Kenyan, and Cuban scientists has already aroused hopes that the Cuban birds may one day be reintroduced into the United States. According to Short, Cuban officials are receptive to this

idea. The last undisputed sighting in North America was in 1941.

After several expeditions and years of planning, Short spotted the elusive Ivorybill in April. A brilliant red-topped male crossed in front of him and disappeared. "My god, I've seen it," reported Short on his return to New York. The discovery of this handsome bird, which is America's largest woodpecker, was one of the most exciting ornithological events in years.

Appalachian Mountains

Since 1979 George Barrowclough (Ornithology) has traveled throughout the United States, Mexico, and Canada collecting juncos in order to probe their evolutionary secrets. Lately, Barrowclough has been working in the east, where, at least superficially, the dark-eyed junco looks much the same throughout its range.

Although the small gray birds may look the same from Georgia to Alaska, the northern and southern populations have had a very different evolutionary history. "What's interesting," explains Barrowclough, "is that 15 to 20,000 years ago much of North America was glaciated down to Pennsylvania." Consequently, populations of juncos to the north are geologically recent (10,000 years) while those to the south may be considerably older.

Barrowclough plans a comparative study of variation in proteins from populations of the dark-eyed junco, taken from north and from south of the point of maximum glaciation. In a study of a salamander with a similar distribution, performed by researchers in Maryland, populations to the north were genetically identical while populations to the south showed great variation. "I am hoping for results that will extend the salamander study," says Barrowclough.



Dr. Jerome G. Rozen at the Southwestern Research Station

Participating, Donor, and Contributing Members are invited to a special Behind-the-Scenes Tour of the Department of Mammalogy

Wednesday evening, January 28, and Sunday, February 1, \$7



The Department of Mammalogy's collection of 260,000 specimens, consisting chiefly of study skins, skulls, skeletons, and materials preserved in alcohol, is one of the finest in the world. The collection is used by both Museum curators and scientists around the world to further our understanding of mammal species and the relationships among them.

This special tour will take members to areas that are never open to the general public. Members will view collections from the newly expanded and upgraded storage facilities. The tour will visit the departmental laboratories where Museum scientists will describe their research and work in progress. Members will also learn how specimens are prepared and cataloged for the collection so that they can be made available to the scientific community.

The tour will include complimentary beverages in the Members' Lounge. To register for the tour, please use the adjacent coupon.

Behind-the-Scenes Tour of the Department of Mammalogy. \$7 and open only to Participating, Donor, and Contributing Members.

Tours will leave at fifteen-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- ☐ Wed., Jan. 28 between 5:15 and 6:15
- ☐ Wed., Jan. 28 between 6:30 and 7:30
- ☐ Sun., Feb. 1 between 10:30 and noon
- ☐ Sun., Feb. 1 between 1:00 and 2:30 p.m.

Number of tickets at \$7 each: _____
Amount enclosed for program: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Telephone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

New Yor-Uba

Wednesday, December 10

7:30 p.m.

Main Auditorium

\$5 for Members, \$6 for non-Members

"We want to bring the folklore to the contemporary, and the contemporary to the folklore," Michele Rosewoman, pianist-composer and leader of the 14-piece jazz ensemble New Yor-Uba, said recently. New Yor-Uba juxtaposes modern big-band music with drumming and singing from Cuban Santeria rituals, which are related to Yoruba culture. The result is an intriguing fusion of jazz melodies and Afro-Cuban rhythms — a musical balance that is the group's trademark. When New Yor-Uba per-

forms in the Museum's Main Auditorium this month, concertgoers will hear the energetic sounds of a big band, several bata (two-head talking drums), and vocalists steeped in Cuban folkloric tradition. They will also witness the unique musical talents of Michele Rosewoman, who, the *New York Times* declared, "has jazz history at her fingertips."

For information about ticket availability, please call (212) 873-1300, ext. 514.

An Education Department Public Program.

Up, Up, and Away

Roosevelt Rotunda



Pilot Julian Nott in the unique pressurized cabin of his balloon, Endeavor, which is temporarily grounded in the Roosevelt Rotunda through the middle of December.



A prototype of the Endeavor in flight over Australia. Nott and a navigator will attempt to become the first to circumnavigate the world by balloon.

A CULTURAL VIEW OF ILLNESS: An Alzheimer's Story

Saturday, December 13

1:00 p.m.

Kaufmann Theater

\$13 for Members, \$15 for non-Members

For the two million Americans Alzheimer's disease affects today (a significant number of whom are below the age of 50), there is little hope. Alzheimer's is still one of the country's leading killers, and 80 years after it was first described by a German neurologist, it remains incurable and virtually untreatable. What makes Alzheimer's so devastating is its harrowing symptoms. Victims do not go gently into that good night: initial forgetfulness turns into complete loss of intellectual and physical function, accompanied often by hallucination and violent mood swings. Recently, research has defined some of the physical characteristics of this organic brain disorder: plaques and tangles among normal brain cells and tremendously reduced levels of an enzyme crucial to carrying messages within the brain. Such knowledge constitutes enormous progress in the history of a disease given little medical attention for 50 years, but it obviously offers little comfort to those now suffering from this cruel unraveling of the mind.

An Alzheimer's Story is a videotaped documentary de-

picting the deterioration of housewife Anna Jasper over a two-year period. As her illness progresses, Anna Jasper's family is forced to adjust to the ever-escalating burdens of the disease and, finally, to face the devastating prospect of placing her in an institution. This half-hour profile, which premieres at the Museum, documents a condition that Lewis Thomas has described as causing "more damage to the family than any other disease I can think of."

The film will be followed by a panel discussion focusing on the personal, sociological, and medical aspects of the illness. Panelists include Dr. Kenneth Rosenberg, one of the producers of the documentary; Peter Davies, a researcher at the Albert Einstein College of Medicine, whose work has been critical to the medical understanding of Alzheimer's disease; and anthropologist Malcolm Arth, chairman of the Education Department, who will moderate the discussion.

For information about ticket availability, please call (212) 873-7507.

An Education Department Public Program.

Polar Culture of the Red-Ocher People

Sunday, December 7

1:00 p.m.

Kaufmann Theater

\$13 for Members,

\$15 for non-Members

The people whose culture is known to archeologists as the Maritime Archaic occupied the northeastern coast of North America 5,000 years before the first Inuit (Eskimo) peoples came to Labrador. When they disappeared about 3,500 years ago, their culture had reached a stage of elaborate sophistication: they left behind them elegant stone tools and evidence of complex burial mounds and trade networks extending from northern Labrador to southern New England. Overall, the Maritime Archaic ranks as one of the world's most highly adapted sea cultures.

Discoveries and questions about this fascinating but little-known culture will be aired in a program featuring several distinguished speakers and a pre-

miere of the documentary *Red Paint: The Last Sea People of Maine*. The film places the Maritime Archaic people in historical perspective and explores the possibility of trans-Atlantic European contact.

The film's director, Ted Timreck, will moderate the panel discussion. Speakers are William Fitzhugh, curator of Arctic anthropology at the Smithsonian Institution; Bruce Borque, archeologist at the Maine State Museum; and James Tuck, professor of archeology at Memorial University in Saint John's, Newfoundland.

For information about ticket availability, please call (212) 873-7507.

An Education Department Public Program.

On The Rocks



Gary Randorf



Gary Randorf



Gary Randorf

Three views of the Adirondacks. Learn about Adirondack geology at a Members' program on Tuesday, December 2, at 7:30 p.m. in the Museum Auditorium. Free to members. Call (212) 873-1327 for more information.

Courses for Stargazers

BASIC ASTRONOMY

Introduction to Astronomy
Eight Thursdays, beginning January 8
6:30-8:40 p.m.
Fee: \$70 (\$63 for Members)

A first course in astronomy designed to introduce many fascinating aspects of the universe to persons with no math or physics background. Topics include Earth as a planet, the moon, the Milky Way, galaxies, quasars, and black holes in space.

Stars, Constellations, and Legends
Five Thursdays, beginning January 8
6:30-8:10 p.m.
Fee: \$50 (\$45 for Members)

Introduces the lore of the sky. Using the Zeiss Planetarium Projector in the Sky Theater, this course identifies the prominent stars, constellations, and other sky objects of both hemispheres and discusses many of the myths and legends that have been told about them.

Life Beyond the Earth — The Search for Life in the Cosmos
Eight Mondays, beginning January 5
6:30-8:40 p.m.
Fee: \$70 (\$63 for Members)

This course presents the reasons that a large number of scientists believe there is intelligent life elsewhere in the universe. Some topics discussed are stellar evolution, theories of planet formation and development, origin of life, intelligence, problems of communications, and current investigations.

Understanding the Sky
Six Wednesdays, beginning January 7
6:30-8:40 p.m.
Fee: \$60 (\$54 for Members)

Why does the length of the day change during the year? What is the mid-night sun, and where and when can it be seen? What determines the visibility of the moon and planets? In this course, we will discuss these and other topics in the classroom and the Sky Theater.

AVIATION

Ground School for Private and Commercial Pilots
Fourteen Tuesdays and Thursdays, beginning January 6
6:30-8:40 p.m.
Fee: \$175 (\$157.50 for Members)

Introduction in preparation for the FAA written examination for a private or commercial license. This course will also help as a refresher for Biennial Flight Reviews and survey some of the practicalities of flight training and aircraft ownership.

Ground School for Instrument Pilots
Twelve Tuesdays and Thursdays, beginning January 20
6:30-8:40 p.m.
Fee: \$175 (\$157.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects covered include elec-

tronic navigation, weather analysis, aircraft performance, communications and radar procedures, and more.

NAVIGATION

Navigation In Coastal Waters
Eight Wednesdays, beginning January 7
6:30-9:00 p.m.
Fee: \$95 (\$85.50 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chart work and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites. Students are required to purchase an equipment kit (\$14.54).

Electronic Navigation and Communications
Eight Mondays, beginning January 5
6:30-8:40 p.m.
Fee: \$70 (\$63 for Members)

This is a basic course for those interested in learning about marine electronic navigation and communications. The course examines the types of electronic equipment used in navigation and communications, including VHF-FM, single-sideband transceivers, radio direction finders, OMNI Systems, hyperbolic navigation systems, Loran, Omega, Decca, fathometers, echo sounders, and radar. No prerequisites.

Introduction to Celestial Navigation
Ten Tuesdays, beginning January 6
6:30-9:00 p.m.
Fee: \$95 (\$85.50 for Members)

This intermediate course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position.

TIMEKEEPING

Intellectual Toys and Mechanical Jewels: An Informal History of Timekeeping Since the Renaissance
Five Tuesdays, beginning January 6
6:30-8:40 p.m.
Fee: \$50 (\$45 for Members)

This course will survey the development of mechanical timekeepers and related scientific instruments from 1500 to 1900. Using developments in astronomy and science as a historical context, we will discuss the astrolab and scientific instruments of the Renaissance, the contemporary literature of popular science, sundials and hour systems based on celestial events, and the technical and decorative development of clocks and watches.

FOR CHILDREN

The courses listed below are intended for the family, so that parents and children may learn together. They may be taken by children age ten and over without a parent. Much of the subject matter may not be appropriate for children under age eight. For additional information

about these courses, call (212) 873-1300 ext. 206.

Introduction to the Sky
Ten Saturdays, beginning January 10
12:00-12:50 p.m.
Fee: \$25 (\$22.50 for Members)

Meeting in the Sky Theater, this course discusses and illustrates the various stars and constellations, some of their lore, and some of the many interesting objects found in the sky.

The Solar System
Ten Saturdays, beginning January 10
10:30-11:20 a.m.
Fee: \$25 (\$22.50 for Members)

This course, designed for young people, provides a brief overview of histori-

cal astronomy and an introduction to the many theories concerning the origin of the solar system, as well as the "geology" of the planets and their satellites. Additional topics covered are meteors and meteorites, asteroids, lunar phases, tides, eclipses, and the sun.

Stars, Black Holes, and Galaxies
Ten Saturdays, beginning January 10
9:30-10:20 a.m.
Fee: \$25 (\$22.50 for Members)

Topics to be discussed include the evolution of the cosmos, star types, life cycles of stars, black holes, and quasars. Emphasis will be placed on the methods and instruments used by astronomers to collect information.



Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of Course _____

Price: _____ (Please note: only Participating, Donor, and Contributing Members are entitled to the Members' discount.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 873-1300, ext. 206, Mon.-Fri., 9:30 a.m.-4:30 p.m.

Happenings at the Hayden

Sky Shows

The Star of Christmas. November 26 through January 4. Gaze out on a clear winter's night and then travel back nearly 2,000 years to explore the skies of the first Christmas. The story of how historians, theologians, linguists, and astronomers have worked together to unravel a classic mystery is one of beauty and intrigue.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m. Extra performances are scheduled during holiday weeks.

Sky Show admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars. **Wonderful Sky** will be shown on Saturday, January 3, at noon and Saturday, February 7, at 10:00 a.m. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, NY 10024) and mail at least two weeks in advance. For additional information, please call (212) 769-3299.

Laser Shows

Laser visuals and rock music

combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212)

724-8700 for the current program.

It's always a good idea to call before visiting the Plan-

etarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium Information, call (212) 873-8828.



The Star of Christmas

Museum Notes

Special Exhibitions and Highlights

Dark Caves, Bright Visions. Through January 18, in Gallery 3. Evidence discovered in prehistoric and open-air sites indicates that by the late Ice Age humans had developed art forms, complex symbolic rituals, and systems of regional exchange that were to be the foundations of modern culture. **Dark Caves, Bright Visions** brings together the largest collection of Paleolithic artifacts ever shown in one place, including etchings, sculptures, and tools, as well as replicas of painted cave walls.

City of Light. Through February 1987 in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to docu-

ment death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through March 29, in Gallery 1. For a complete description of the exhibition, please refer to page 1.

Ladies in the Field: The Museum's Unsung Explorers. Through the spring, in the Library Gallery. Photographs, diaries, published monographs, and mementos will chronicle the contributions of women, usually wives of curators, to the development of science and the Museum.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the

history and exhibits of the Museum's most popular halls. These free tours leave regularly from the first-floor information desk. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

Birthday Parties

Last February, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last 2 hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 873-1327.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are dis-

tributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

December is a month of **Winter Celebrations** at the **Leonhardt People Center**. Weekends will be dedicated to the folklore, history, and diverse celebrations of the winter season with live music, dance performances, demonstrations, slides, and films. Weekend hours are from 1:00 to 4:30 p.m. Seating is on a first-come, first-served basis and presentations will be repeated throughout each afternoon. For a complete schedule of events, please call 873-1300, ext. 514.

The People Center will be closed on December 20 and 21.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 50 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot is operated on a first-come, first-served basis. It is open from 9:30 a.m. until midnight every day of the week. There are only 110 spaces available. The entrance is on 81st Street between Central Park West and Columbus Ave.

nue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch, Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Dinner reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. Rate is \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: The Resident Director, Southwestern Research Station, Portal, Arizona 85632.



One of many holiday gifts available in the Museum Shop

Sat

Fri

Thu

Wed

Tue

Mon

Sun

6 10:30 a.m. to 5:30 p.m. Folding Floaters. Members' Origami Workshop. For ticket availability call (212) 873-1327.

1:00 p.m. to 4:30 p.m. Winter Solstice in Poland; Christmas Folklore in the Tantra Mountains; Polish Folk Art of the Winter Season — at the Leonhardt People Center. Free.

11:00 a.m. New York Map Society. Room 129. Free.

13 1:00 p.m. An Alzheimer's Story. Kaufmann Theater. \$13 for Members, \$15 for non-Members. For information call (212) 873-7507.

1:00 to 4:30 p.m. Jaselka; Polish Christmas Decorations; Christmas Eve Celebrations — at the Leonhardt People Center. Free.

20 The Leonhardt People Center is closed.



19

18

10 7:30 p.m. Afro-Cuban Jazz performed by New Yor-Uba. Main Auditorium. \$5 for Members, \$6 for non-Members. For information call (212) 873-1300, ext. 514.

7:00 p.m. New York Mineralogical Club. Leonhardt People Center. Free.

17 Met Grotto National Speleological Society. Room 129. Free.

2 7:30 p.m. The Adirondacks: New Mountains from Old Rocks. Main Auditorium. Free to Members, \$4 for non-Members. Page 9.

Moon at perigee. 6:00 a.m.

9 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

16 7:00 and 9:00 p.m. Mozart, and Bach by Moonlight. Hayden Planetarium. \$7 for Members, \$10 for non-Members. Page 3.

8:00 p.m. New York Entomological Society. Room 129. Free.

Midnight, moon at apogee; full moon, 2:04 a.m.

25 Christmas Day. The Museum is closed.

27 The Museum celebrates Kwanzaa. See article on page 4 for details of programs throughout the Museum.



24

23

Give a gift of membership this holiday season. Participating, Donor, and Contributing Members are entitled to a 30% discount on all gifts. Call 212-873-1327 for rush orders.

15 7:00 and 9:00 p.m. Mozart, and Bach by Moonlight. Hayden Planetarium. \$7 for Members, \$10 for non-Members. Page 3.

14 3:00 p.m. Who Gives a Toof? Kaufmann Theater. Free. Page 2.

1:00 to 4:30 p.m. To Life, To Light — a Chanukkah celebration; Polish Christmas Decorations; Christmas Eve Celebrations. Leonhardt People Center. Free.

2:00 p.m. New York Shell Club. Room 419. Free.

22

21 2:00 p.m. New York Paleontological Society. Room 426. Free.

2:00 p.m. New York Turtle & Tortoise Society. Room 129. Free.

The Leonhardt People Center is closed.

Winter solstice, 11:02 p.m.

30 Members on Discovery Tours' Sail the Caribbean cruise arrive in the Guatemalan port of Puerto Barrios. For information on future trips, call Discovery Tours at (212) 873-1440.

29 The Museum celebrates Kwanzaa. See article on page 4 for details of programs throughout the Museum.

28 The Museum celebrates Kwanzaa. See article on page 4 for details of programs throughout the Museum.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

December 1986

American Museum of Natural History

POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 1 January 1987



A 21st-century aircraft traverses Valles Marineris, the Grand Canyon of Mars.

The Seven Wonders of the Universe

Open to the general public: Wednesday, January 7
Members' Private Viewing: Thursday, February 19
Hayden Planetarium — Sky Theater

The Colossus of Rhodes, a 105-foot wonder of the ancient world, seems barely significant in comparison with the eight-mile-high ice cliffs of Miranda, one of Uranus's satellites, first revealed by Voyager 2 in January 1986. The capacity for wonder has expanded in proportion with human frontiers, beyond our own planet to the perceivable brink of the cosmos.

The Seven Wonders of the Universe, the Hayden Planetarium's new show, is a visually dramatic journey through space and time to wonders that challenge the imagination. Viewers travel from the seven wonders of the ancient world to the seven wonders of the solar system and then beyond, to the seven wonders of the universe.

The interplanetary voyages include a flight into the rings of Saturn and a land-

ing on Io, a satellite of Jupiter, where volcanoes blast material 125 miles into the sky. These awe-inspiring features are examined in terms relative to our own planet. One Ionian volcano, for example, would cover all of New England; another wonder, the Grand Canyon of Mars, would stretch from New York to California.

Beyond the solar system, audiences will visit even more exotic objects, from intriguing black holes to dazzling globular clusters — spherical groups of thousands to hundreds of thousands of stars.

This thrilling new show starts on January 7. Admission to the Planetarium is \$2.75 for adult Participating, Donor, and Contributing Members and \$1.50 for Members' children ages 2 through 12, \$2.75 for students with I.D. and senior citizens, \$3.75 for non-Member adults,

and \$2.00 for children. Group rates are available. Please call (212) 873-8828 for show times, or see "Happenings at the Hayden," page 11.

Members' Private Viewing
Thursday, February 19
6:00 and 7:30 p.m.

Members are invited to attend a private screening of *The Seven Wonders of the Universe*. In conjunction with the viewing, Planetarium staff will set up special displays accompanied by informal talks. Admission is \$2.75 for adults and \$1.50 for children. To reserve your place at this private viewing, please see the January Members' programs coupon on page 3.

Life and Death

Evolution, immigration, and Mesoamerican funerary artifacts are just a few of the many subjects covered by the Department of Education's Spring Afternoon and Evening Lecture Series. From surveys of civilizations past and present to wildlife weekends, this series is certain to feature something for everyone.

Pages 6-8

Aloha

Teacher-performer Ozzie Tollefson spotlights the culture and ecology of Hawaii in a fast-paced, multimedia Members' family program.

Page 3

Looking Back

Explore Africa, Asia, and the Arctic in a retrospective look at scientific expeditions sponsored by the Museum. Douglas J. Preston lectures on the triumphs and tragedies in *The Great Expeditions*.

Page 4

Journey Across Three Continents

This film festival is a cinematic articulation of the black experience around the world. Its theme, *Images of Women of the Black Diaspora*, emphasizes sociopolitical definitions and self-perceptions.

Page 2

Journey Across Three Continents: Images of Women of the Black Diaspora

Thursdays, January 8, 15, and 22
7:00 p.m.
Main Auditorium
Free



A scene from *Sey Seyeti* (One Man, Several Women).

Journey Across Three Continents is a unique festival of films from Africa, Europe, and the Americas that portrays the richness and the realities of black experience in the Old World and New. Currently in its third year, the festival's 1986-87 focus is on black women and their sociopolitical definitions and self-perceptions. The festival will take place at the Museum on three consecutive Thursdays and feature the following films.

Thursday, January 8

The Road To Kukurantumi (The Road to Accra). The city represents money and status to the Ghanaian villagers who become part of the steady flow of "arrivees" in the city of Accra. This film depicts the lives of a debt-ridden driver, who shuttles his bus between village and city, and his daughter who tend the fields. The impact of demands for money and exchange on traditional family relationships and the status of

women in Ghanaian society are explored. (Coproducted by film artists of Ghana and Germany. Written and directed by Ghanaian filmmaker King Ampaw.)

Thursday, January 15

Arusi Ya Mariamu (The Marriage of Mariamu). New York premiere. Set in contemporary Tanzania, this film examines the art and science of healing through traditional medicine. Suffering from a serious illness, Mariamu finds herself and those close to her in conflict with traditional values. When hospital treatment fails to cure Mariamu, she is forced to confront her childhood fears of the traditional doctor. The film follows Mariamu's treatment, uncovering the causes of her illness, as well as her physical, psychological, and spiritual transformation. (Directed by Nangayoma N'oge and Ron Mulvihill, this film marks the first coproduction between

Tanzania and the United States.)

Sey Seyeti (One Man, Several Women). Three parallel stories of young couples' relationships in the Medina section of Dakar explore the ramifications of a recent Senegalese law requiring a premarital contract stating whether or not the husband will be monogamous. This film dramatizes the impact of polygamy in modern-day Senegal. (Directed by Ben Diogaye Beye. Guest speaker: Claire Andrade-Watkins.)

Thursday, January 22

The Passion of Remembrance. New York premiere. Memories of individuals of different generations of a black British family overlap and sometimes ignite in this experimental dramatic feature. Tracing the major events in the Baptiste family from the fifties to the eighties, the filmmakers portray black experience in the United Kingdom and show how members of different generations struggle to meet the demands of sexuality and gender. (Released by SANKOFA, a London-based film and video collective. Guest speaker: Loretta Campbell.)

The *Journey Across Three Continents* film festival was organized by Third World Newsreel and funded by the New York State Council on the Arts and the National Endowment for the Arts. This community program is made possible in part by a gift from the Grumman Corporation to the Department of Education.

There are no tickets and no reservations for the program. For additional information, call (212) 873-1300, ext. 514.

An Education Department Public Program.

Sacred Mountains

On two Wednesdays, January 14 and 21, author and climber Edwin Bernbaum will lecture on the spiritual symbolism of Sacred Mountains of the World. The programs will be held at 7:00 p.m. in the Main Auditorium. Please call (212) 873-7507 for ticket prices and further information.



Share Your Experience — Be a Museum Volunteer



Bonnie Kinney

Perhaps you'd like a high-visibility spot, such as assisting at an information desk. If a behind-the-scenes position is more to your taste, opportunities range from cataloging and rearranging specimens to clerical responsibilities in scientific and administrative offices. Whatever your preference, the Museum needs your skills.

As a volunteer, you'll exercise your talents in the company of individuals as unique as the Museum itself. From bankers and construction workers to re-

tired dentists and teachers, people from all walks of life find their common ground here. Staff members and visitors alike recognize the valuable contributions that volunteers offer; volunteers, in turn, enjoy the intellectual stimulus of the Museum environment and the company of others who appreciate their interest.

If you would like to share your experience and join this enthusiastic group, please call the Volunteer Office at (212) 873-1300, ext. 538.

ROTUNDA

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Festival of Strings

Sunday, January 18
1:30 and 3:30 p.m.
Kaufmann Theater
\$3 for Members and \$5 for non-Members

Guitar People and friends will serenade Members in a musicfest of international scope. This captivating and entertaining family program offers a stringed celebration of classical and popular tunes, as well as the music of many cultures. Among the featured instruments are the West African kora, a 21-stringed folk harp; the sitar, a North Indian touch to the lute, and its drum accompaniment, the tabla; and the

South American charango, a small guitar often fashioned from an armadillo shell. The multinational repertoire will include Indian ragas, jazz guitar duets, and folk songs. The guitar is certainly a child's most identifiable instrument, and this concert setting will invite participation. The musicians, with their colorful costumes and informal introductions, involve the audience throughout their performances.

The program has been organized by Roy Goldberg and Eve Weiss of Guitar People, who have presented their unique programs in schools, libraries, and museums. The other featured artists will be Bradford Catler (sitar), David Gilden (kora), and the South American duo of Rodolfo Alchourron and Analia Lovato. Please use the January Members' programs coupon to register for *Festival of Strings*.

The Story of Hawaii

Sunday, February 8
1:30 and 3:30 p.m.
Kaufmann Theater
\$2.50 and open only to Members

Take your family on a journey to Hawaii, ancient and modern. Ozzie Tollefson, a former teacher who is celebrated for his dramatic educational programs, will direct a lively look at the natural history of the fiftieth state. Skits, puppets, and songs will accompany his profile of the islands' inhabitants and their ecology. Ozzie will use a giant map to illustrate the disparate landscapes of the eight major islands. Overhead projections will accompany his explanation of plate tectonics and the formation of the islands. The rise of plant and animal

life on stark lava flows will be explored, as well as the islands' cultural development. Polynesian nomads, the first Hawaiians, established an insular culture of vibrant heritage. Like the volcanic islands themselves, Hawaiian society is constantly evolving; even as the land is subject to oceanographic change, so are the people influenced by their neighbors from the east and west. Preservation of the ecological balance and native culture will be the theme of Ozzie's presentation. This energetic and imaginative program will encourage au-

dience participation. Children will be invited on stage to assist in a demonstration of the islands' formation. A life-size perspective will be offered by a replica of a Polynesian double-hulled war canoe. The concluding slide show, featuring several projectors and a giant screen, will dazzle viewers with a breathtaking panorama of cliffs, valleys, and surf. This program is geared for families with children 5 years of age and older. Please use the January Members' programs coupon to register for *The Story of Hawaii*.



A majestic view of the Pacific from *The Story of Hawaii*.

January Members' Programs Coupon

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime Telephone: _____
Membership Category: _____
Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: January Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Great Expeditions. Tuesday, January 13, 7:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Festival of Strings. Sunday, January 18, 1:30 and 3:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. Additional tickets are at the non-Members' price. Please indicate a first and second choice of times, if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$3: _____
Number of non-Members' tickets at \$5: _____
Total amount enclosed for program: _____

The Story of Hawaii. Sunday, February 8, 1:30 and 3:30 p.m. \$2.50 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4.

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$2.50: _____
Number of additional tickets at \$4.00: _____
Total amount enclosed for program: _____

The Seven Wonders of the Universe: Members' Private Viewing. Thursday, February 19, 6:00 and 7:30 p.m. Open only to Participating, Donor, and Contributing Members. \$2.75 for adults, \$1.50 for children. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adult tickets at \$2.75: _____
Number of children's tickets at \$1.50: _____
Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

The Great Expeditions

Tuesday, January 13

7:30 p.m.

Main Auditorium

Free and open only to Members

From Outer Mongolia and the wastes of the Polar Sea to the backyards of New Jersey, the American Museum of Natural History claims a proud diversity of scientific research. The Museum has launched over 1,000 expeditions, dramatic quests for increased knowledge. Such expeditions demand great bravery and perseverance, particularly in light of the uncertainty of their rewards.

This month, Douglas J. Preston, author of *Dinosaurs in the Attic* (St. Martin's Press), will discuss three of the most exciting Museum expeditions. Members will learn about Roy Chapman Andrews's Central Asiatic Expedition to Outer Mongolia (1921-30), one of the most successful endeavors in the history of scientific expeditions. Although the explorers did not find what they were looking for,

the so-called missing link between apes and humans, they did discover one of the greatest fossil graveyards in the world, as well as evidence of hundreds of previously unknown dinosaurs and early mammals. Preston will show Members some of the remarkable film footage and photographs taken on this historic expedition.

Members will also hear the story behind the Museum's famous group of mountain gorillas on view in the Akeley Hall of African Mammals. For explorer Carl Akeley, the high, wooded slopes of Mount Mikeno in the Belgian Congo was an earthly paradise. One of his fondest dreams — which he did not live to see fulfilled — was to obtain a beautiful and accurate reproduction of the mountain gorillas' habitat for the Museum. Members will hear about



In search of Crocker Land, this explorer of 1915 pauses to be photographed.

Akeley's last expedition in Africa and the posthumous realization of his dream.

The program will also feature an exploration that had no happy ending at all: the Crocker Land Expedition to the Arctic in the early 1900s.

Preston was a Museum staff

member for seven years. He was editor of Rotunda, author of *Natural History's* "The Living Museum" column and the magazine's publications manager, and managing editor of *Cura-ior: Dinosaurs in the Attic: An Excursion into the American Museum of Natural History* is a

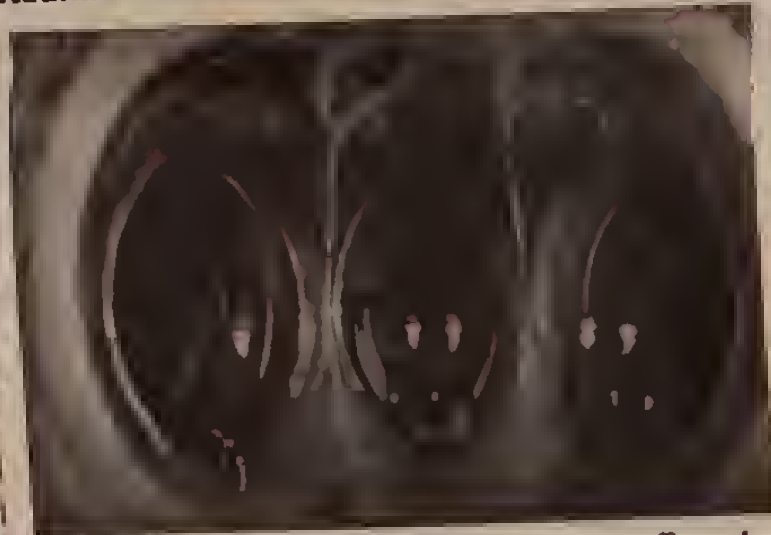
behind-the-scenes history of the Museum, spanning its difficult early years to its distinguished present.

Additional details of the book appear below. To register for *The Great Expeditions*, please use the January Members' programs coupon on page 3.

On Tap: The Water We Drink

Saturday, January 10 1:00 p.m.

Kaufmann Theater Free



Three branches merge in the Yankers Pressure Tunnel.

The water dripping out of your tap at this very moment is a high-quality product brought to you by nature — and one of the world's greatest engineering feats. Learn more about the water we use in New York City Water Supply: *Present and Future*, a symposium featuring four knowledgeable panelists.

The New York City water system delivers billions of gallons of pure water as needed. With increasing demands and the possibility of water emergencies, will the system be able to meet future needs? This program, inspired by the Museum's new *On Tap* exhibition, will seek answers to this and other important questions concerning the present and future status of our city's water supply.

The program will feature the following panelists and topics:

The New York City Water Supply of the Year 2050. Harvey Shultz, commissioner of the New York City Department of Environmental Protection

New York City's Water Quality: Present and Future. Gerald Iwan, administrative director for laboratories, Department of Water Supply

New York City's Water System: Is It Reliable? Robert Alpern, chairman of the New York City Citizens' Advisory Council

Upstate New York and Water Supply Problems. Tom Miner, executive director, Catskill Center for Conservation and Development

Sidney Horenstein of the Museum's Department of Invertebrates will introduce the presentations with a brief history of the New York City water supply system and moderate the forum. No tickets are necessary, and Members are advised to arrive early for seating. For additional information, please call (212) 873-1300, ext. 559.

An Education Department Public Program.

Members' Book of the Month

Dinosaurs in the Attic: An Excursion into the American Museum of Natural History

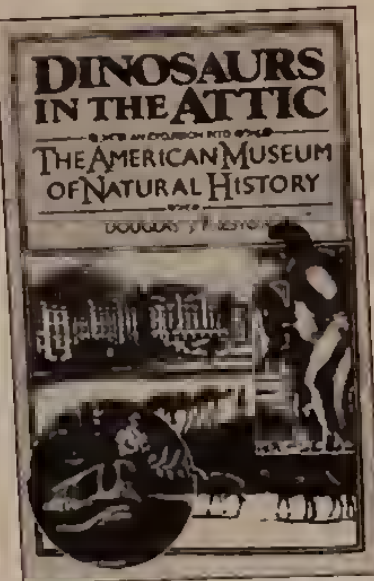
by Douglas J. Preston St. Martin's Press/\$18.95 Members' Price: \$15

Only a tiny fraction of the specimens contained in the American Museum of Natural History is ever seen by the public. The Museum's broad roof covers bones, beetles, birds, and other creatures, whose numbers run in the millions. How did they all get here, and who masterminded their acquisition? What personalities conceived of this institution, which houses more dinosaur bones and more fossil mammals than any other museum in the world?

Douglas J. Preston's *Dinosaurs in the Attic* is a behind-the-scenes view of the Museum's own history, from its inception more than 100 years ago to its intriguing present. Within this book, readers can discover for themselves the Museum's golden age of expeditions — journeys to distant lands in which men and women risked their lives and reputations for knowledge and fame.

Come with *Dinosaurs in the Attic* to the present-day institution of 23 buildings, millions of specimens, and the many fascinating people who make it work. Explore the great labyrinth of storerooms, housing everything from dinosaur skeletons and massive totem poles to tiny beetles and fossils of one-celled organisms. Meet some of the researchers and other personalities who secure and maintain the Museum's extraordinary collections.

During the seven years he



worked at the Museum as a writer and editor, Preston both experienced the environment and exercised the skills requisite for a book of unusual, absorbing stories and anecdotes about America's favorite museum.

Published by St. Martin's Press, *Dinosaurs in the Attic* is available in hardcover at the Museum's bookstore and through the Members' Book Program. Members can obtain this book at a special discount price of \$15, a savings of greater than 20 percent. To order, please use the adjacent coupon.

Members' Book Program

☐ YES, I would like to order *Dinosaurs in the Attic* at the special Members' price of \$15.00 (regular price: \$18.95). Total amount enclosed (please add \$1.50 for shipping and handling): _____

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with discounts off the publishers' prices!

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check payable to the American Museum of Natural History and mail to: Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Members' Memo

Happy New Year, and thank you for all the support you gave us in 1986. During the past year, the Participating and Donor membership program reached record levels, and we were especially gratified by your enthusiastic response to many of our programs.

The last year also saw a number of changes at the Museum. As we are embarking on a new year, I thought it would be a good time to review some of them.

Renovation of the Main Entrance. I am pleased to announce that the renovation of the Museum's main entrance has been completed. During the course of the work, the 1,200 stones and blocks of the plaza were taken apart one by one. With the plaza dismantled, 162 steel piles were driven into the foundation to provide much-needed additional support, and then the stones were reset and

rerouted over the new foundation. The project was funded under the city's capital budget through the Department of Cultural Affairs and was supervised by the Department of General Services.

The main entrance is now open, but it will be closed later this year to begin renovation of the Museum's Theodore Roosevelt Hall. The renovation will include new admission and information desks and a specially designed lighting system.

New System for the Hearing Impaired. We have installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. It will be available for most programs in the Auditorium and will be provided free of charge with the deposit of a driver's license or ma-

ior credit card. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

New Naturemax Prices. Effective January 1, the price of Members' tickets to the Naturemax Theater will increase from \$1.50 to \$1.95 for adults and from \$.75 to \$.95 for children. Triple-feature Members' prices will increase from \$2.25 to \$2.85 for adults and from \$1.50 to \$1.95 for children. The new prices represent a 40 percent discount off the regular prices.

These are just a few of the changes that have occurred. Next month, I will highlight some of the changes that have taken place with our permanent exhibitions.

Henry Schell

Members' Tour of the Month

Discovering Dinosaurs

Free and open only to Participating, Donor, and Contributing Members



Gone but not forgotten: 65 million years after their extinction, dinosaurs remain a focus of interest and speculation.

Dinosaurs are doubtless among the most popular of the Museum's attractions, and the February Members' Tour of the Month will explain how the Museum came to amass the world's most extensive and representative collection of dinosaur material. Accompanied by specially trained volunteer Highlights Tour guides, Members will learn about the dramatic expeditions sponsored by Museum president Henry Fairfield Osborn during the golden age of dinosaur hunting: sojourns to the American West, to the Red Deer Valley in Canada, and to Central Asia.

The tour will spotlight some of the fossils collected by Barnum Brown, such as the *Tyrannosaurus rex*, the virtually complete crested duck-billed dinosaur, and the *Omithomimus*.

Another veteran collector, Charles Strindberg, discovered the Museum's famous "dinosaur mummy," which has fossilized imprints of skin. Tour participants will also observe the remarkable series of *Protoceratops* skulls from the Gobi Desert, where Roy Chapman Andrews collected not only

these fossilized bones but also perfectly intact nests of dinosaur eggs.

To register for this special

Members' tour, please use the adjacent coupon. This tour is not recommended for young children.

Members' Tour of the Month: Discovering Dinosaurs. Free and open only to Participating, Donor, and Contributing Members.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Telephone: _____

Membership Category: _____

Please indicate a first and second choice of dates and times:

| | | |
|--------------------|------------|------------|
| Wednesday, Feb. 4 | 6:00 p.m. | 7:00 p.m. |
| Saturday, Feb. 7 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, Feb. 11 | 6:00 p.m. | 7:00 p.m. |
| Wednesday, Feb. 18 | 6:00 p.m. | 7:00 p.m. |
| Saturday, Feb. 21 | 10:30 a.m. | 11:30 a.m. |
| Sunday, Feb. 22 | 10:30 a.m. | 11:30 a.m. |
| Sunday, Mar. 1 | 10:30 a.m. | 11:30 a.m. |

Number of people: _____

Please mail with a self-addressed, stamped envelope to: **Discovering Dinosaurs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please note: registration closes on January 25.**

Participating, Donor, and Contributing Members are invited to a

Behind-the-Scenes Tour of the Department of Mammalogy

Wednesday evening, January 28, or Sunday, February 1
\$7 and open only to Participating, Donor, and Contributing Members

SOLD OUT from December Issue of ROTUNDA



Jumba, whose skeleton appears behind the scenes.

This tour will provide an insider's view of a department that houses one of the finest collections of mammal specimens in the world. Members will visit research and storage areas that are never open to the public. They will learn how specimens are cataloged and processed so that they can be used by scientific researchers from around the world.

Curators will describe their work in progress. One will discuss the Museum's recent expeditions to study the mammals of Bolivia; another, his research

on the differences between recent and fossil mammals.

The tour will include a visit to the old Museum powerhouse, where Members will discover how dermestid beetles, along with other techniques, are used to prepare specimens for the collection. Members will also have the chance to view the skeleton of Jumba the Elephant and the famed skeletal studies by S. Hammsted Chubb.

Complimentary refreshments will be served prior to all tours. To register, please use the adjacent coupon.

Behind-the-Scenes Tour of the Department of Mammalogy. \$7 and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Wednesday, Jan. 28 between 5:15 and 6:15 p.m.
_____ Wednesday, Jan. 28 between 6:30 and 7:30 p.m.
_____ Sunday, Feb. 1 between 10:30 a.m. and noon
_____ Sunday, Feb. 1 between 1:00 and 2:30 p.m.

Number of tickets at \$7 each: _____ \$ _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Telephone: _____

Membership Category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: **Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.**

Spring Afternoon and Evening Lecture Series

Two Lectures by Ashley Montagu*

Monday, Feb. 23, and Wednesday, Feb. 25
7:00–8:30 p.m.
\$15 (\$13.50 for Members)

Dr. Ashley Montagu, one of America's best-known authors and anthropologists, has written over forty books, including *Growing Young* and *On Being Human*. He has taught at Harvard University, the University of California at Santa Barbara, and Princeton University.

Feb. 23 — HOW WE GOT TO BE THE WAY WE ARE. This first lecture discusses the ways by which an apelike animal became a human being: the interactions between speech, intelligence, complex and abstract thought, weeping, and laughter. Such traits reflect prolonged maturity and dependency.

Yet with all those promising traits, how did it come about that humans find themselves today at what looks like the edge of doom? The uncontrolled reproduction of the cancer cell has become an almost universal pattern of reproduction of our species, and the threat of annihilation hangs over us all like a dark shadow in the sunlight.

Feb. 25 — WHAT ARE WE FOR? There are scientifically demonstrable solutions to the many problems that confront us. Our innate system of values — our basic behavioral needs or drives (which are at present understood only by a handful of people) — tell us clearly what we ought to be doing as creatures designed to grow and develop, not into the kind of adults we become, but into those qualities that are uniquely those of the child. The definition and cultivation of these qualities (needs) will be fully discussed.

Evolution and Human Origins*

Three Tuesday evenings, starting Feb. 24
7:00–8:30 p.m.
\$20 (\$18 for Members)

Feb. 24 — CURRENT DEVELOPMENTS IN THE SEARCH FOR OUR OLDEST ANCESTORS.

Donald C. Johanson, director of the Institute of Human Origins in Berkeley, California, discusses the fossil evidence for the earliest members of the human family tree — the australopithecines. In this illustrated presentation, Dr. Johanson highlights important archeological sites and offers interpretations of the beginning of human evolution.

Mar. 3 — WHEN HUMANS SPEAK. **Jeffrey T. Laitman**, associate professor of anatomy at the Mount Sinai School of Medicine, illustrates the origins of human speech. Tracing the developmental changes in the upper respiratory tract of mammals in general, and human infants in particular, Dr. Laitman outlines the range of sounds that animals can produce and the



This clay effigy, a Museum piece, has seen mysteries of ancient Mexico.

unique combination of elements that allowed the production of fully articulated speech.

Mar. 10 — ORIGIN AND EVOLUTION OF THE GENUS HOMO. **Eric Delson**, professor of anthropology at Herbert H. Lehman College and research associate at the American Museum of Natural History, describes the emergence of our ancestral relative *Homo habilis* from gracile australopithecines in Africa two million years ago. Making the first stone tools, and becoming hunters of small game, *Homo habilis* set the pattern of hominid development up to the emergence of modern humans, about 100,000 years ago.

Civilizations of the Andes*

Three Thursday evenings, starting Mar. 26
7:00–8:30 p.m.
\$20 (\$18 for Members)

Craig Morris, chairman and curator of the Museum's Department of Anthropology, presents three slide-illustrated lectures on the civilizations of the central Andes.

Mar. 26 — THE INCA: NATIVE AMERICA'S LARGEST EMPIRE. In the mid-fifteenth century, a small kingdom in the Cuzco region began to expand. It annexed some regions by peaceful means and others by conquest. By the time the Spaniards arrived in 1532, the Inca ruled the mountains and coast from northern Ecuador through Peru and Bolivia, well into Chile and Argentina.

Recent research on this vast empire is shedding new light on how it was formed and organized — and why it was so vulnerable to invasion by an alien culture.

April 2 — FROM CAVES TO CONQUESTS. The roots of Andean civilizations began more than 10,000 years ago as the first people arrived in the region. With the effective exploitation of the rich food resources of the Pacific, and the change to agriculture and herding, life was transformed and substantial villages, towns, and cities began to be built.

The history of the Andes was always dynamic, with an interplay between mountain and desert and the rise and fall of rich and powerful cultures such as Chimu, Moche, Nasca, Tiwanaku, Wari, and, finally, Inca.

April 9 — THE ANDEAN ACHIEVEMENT. In many respects, the civilization Europeans found in the Andes was more advanced than their own. Over the centuries, a complex balance had been worked out between the Andean peoples and a highly diverse, often harsh, environment. This ecological adjustment involved skillful management of resources, laying the base for a civilization of great wealth. The achievements in resource management were matched by important accomplishments in technology, administration, city building, science, religion, and the arts.

Spiritual Arts in Pre-Columbian Mexico and Central America*

Four Thursday evenings, starting Feb. 26
7:00–8:30 p.m.
\$25 (\$22.50 for Members)

Peter T. Furst, professor of anthropology at the State University of New York, Albany, and **Jill L. Furst**, adjunct associate professor at Albany, present four slide-illustrated lectures exploring the artistic and spiritual traditions of Mesoamerican civilizations.

* For these lectures, infrared headsets are available for the hearing impaired. This free listening system was made possible in part by a grant from the Sergei S. Zlinkoff Fund for Education and Research.

Feb. 26 — **TOMB ART OF WESTERN MEXICO.** In the western Mexican states of Nayarit, Jalisco, and Colima, deep shaft tombs preserved a sophisticated art, including hollow pottery figurines that were hand-modeled and spontaneous in character. The ancient inhabitants buried these figures of shamans, deities, and sacred animals with their dead. Many of these pieces are on display in the Museum's Hall of Mexico and Central America. They hold the key to religious beliefs and rituals and are the subject of Dr. Peter Furst's interpretation of this enigmatic culture.

Mar. 5 — **GOLD FOR GODS AND MEN.** The artistry of the goldsmith, the pantheon of the priests, and mortuary practices of the pre-Columbian civilizations of the Aztec and Mixtec cultures are discussed in this lecture by Dr. Jill Furst. The ideals, impulses, and beliefs of the people of these cultures are most powerfully revealed in their works of art and entombed offerings.

Mar. 12 — **HALLUCINOGENS AND TRANSFORMATIONS IN PRE-COLUMBIAN ART.** Many ancient peoples employed psychoactive plants in healing, curing, and establishing direct contact with the supernatural. Hallucinogenic snuff, mushrooms, morning glory seeds, peyote, and tobacco that induce temporary "altered states of consciousness" were depicted on temple walls and in stone and clay sculptures. In this lecture, Peter Furst examines the uses of these substances from 1200 B.C. to the Spanish conquest.

Mar. 19 — **THE RABBIT AND THE DEER: NATURAL HISTORY, ART, AND SYMBOLISM IN WESTERN MEXICO.** Sun, moon, and nature are central spiritual elements reflected in the art and ethnography of the people of western Mexico. Jill Furst illustrates the mythology and spiritual-ritual dynamics of Mexican cultures, including the Huichol and the Aztec.

Chaco Canyon: Center of the Anasazi World*

Two Monday evenings, starting Mar. 9
7:00-8:30 p.m.
\$15 (\$13.50 for Members)

In conjunction with the special exhibition *The Chaco Phenomenon*, two slide-illustrated lectures are presented on the prehistoric cultural and architectural complex that is centered in Chaco Canyon.

Mar. 9 — **THE PREHISTORIC AND HISTORIC SOUTHWEST.** J.J. Brody, professor of art history at the University of New Mexico and research curator at the Maxwell Museum of Anthropology, discusses the art and architecture of the Anasazi and Pueblo peoples. Dr. Brody focuses on the Classic Chaco period (ca. A.D. 950-1150), with emphasis on the role of the American Museum of Natural History (beginning in the late nineteenth century) in the discovery, curation, and preservation of Chacoan materials.

Mar. 16 — **THE CHACO PHENOMENON.** After A.D. 900, Chaco, a center of the Anasazi world, began to take on a very different character from other Anasazi centers. Thomas C. Windes, archeologist for the National Park Service and principal investigator for the Chaco Project, explains the characteristics of the canyon and the changes in its inhabitants' life styles from the early Anasazi occupation (A.D. 1-900) to the Mesa Verdean reoccupation (A.D. 1200-1300).

Anthropology on Film

Five Thursday evenings, starting Feb. 26
7:00-9:00 p.m.
\$35 (\$31.50 for Members)

Malcolm Arth, anthropologist and chairman of the Margaret Mead Film Festival, presents a series of new films illuminating aspects of different cultures. On several evenings Dr. Arth is joined by filmmakers for lively discussions. To take advantage of works now being completed, some selections will not be announced until the series begins.

Feb. 26 — **PITJIRI/THE SNAKE THAT WILL NOT SINK.** 1986. (48 min.) Director: Karen Hughes. An 85-year-old Australian nurse returns to Arnhem Land, where she worked with Aborigines and had paranormal experiences. Best Australian film prize, 1986 Atom Awards.
Second film to be announced.

Mar. 5 — **NO LONGER SILENT.** 1986. (57 min.) Director: Laurette Deschamps. The changing lives of

women in India, revealed through the work of an extraordinary contemporary woman. Guest: Laurette Deschamps.
Second film to be announced.

Mar. 12 — **CHUCK SOLOMON: COMING OF AGE.** 1986. (57 min.) Directors: Marc Huestis and Wendy Dallas. A theater director who develops AIDS shares with us a special gift from his community and family.
Second film and guest to be announced

Mar. 19 — **DRIVE-IN BLUES.** 1986. (48 min.) Director: Jan Krawitz. Part living room, part bedroom, and part dining room, the drive-in movie is an American cultural phenomenon.
Second film to be announced.

Mar. 26 — **BLUE SNAKE.** 1986. (60 min.) Director: Niv Fitchman. Dancers from the National Ballet of Canada communicate the tension and exhilaration of creating a new piece. The film culminates in the premiere performance of the ballet in its entirety. Awarded the Silver Sesterce, Nyon International Film Festival.
Guest to be announced.



Explore the American wilderness.

Immigration in New York

Five Mondays, starting Feb. 23
7:00-8:30 p.m.
\$30 (\$27 for Members)

This series explores cultural expressions related to immigration in the New York metropolitan area. It emphasizes the importance of understanding lifeways in the newcomers' countries of origin. Immigrant groups are seen within the context of particular neighborhoods, and present trends and former patterns are compared. The series examines the drama of migration, the rise and fall of neighborhoods, and little-known folk arts and rituals that persist. **Dr. Mary Strong** is an urban anthropologist affiliated with the State University of New York and the City University Office of Special Programs.

Feb. 23 — **CARIBBEAN ISLANDERS**
Mar. 2 — **CHINESE**
Mar. 9 — **EAST INDIANS**
Mar. 16 — **ITALIANS**
Mar. 23 — **LATIN AMERICANS**

Magic, Witchcraft, and Sorcery

Six Tuesday evenings, starting Feb. 24
7:00-8:30 p.m.
\$35.00 (\$31.50 for Members)

"Eye of newt and toe of frog, wool of bat and tongue of dog. . . . Cool it with a baboon's blood, then the charm is firm and good." Witchcraft, like religion, deals with controlling problems through complex beliefs and rituals. What are the similarities and differences in magic and witchcraft from society to society? In what social contexts is witchcraft used? This series is a serious anthropological inquiry into beliefs and practices. **Paul J. Sanfaçon** is lecturer in anthropology at the Museum.

1. **DOCTORS OR WITCHDOCTORS.** White and black magic — legitimate and illegitimate use of power.
2. **POLITICS AND THE ECONOMICS OF WITCHCRAFT.** The African variant — ancestral ghosts are interested in the affairs of the living.
3. **WITCHES, GOD, AND THE DEVIL.** The European variant — the pious lusts of social reform.
4. **EXORCISTS, INCANTATIONS, AND PREACHERS.** Aspects of voodoo and other religious and possession cults — unbelievably subtle words and deeds.
5. **THE SALEM WITCH TRIALS.** An American variant.
6. **CONCLUSIONS.** What works, and what is it that is working?

Exploring American Wilderness Areas

Five Monday afternoons, starting Feb. 23
2:30-4:00 p.m.
or
Five Monday evenings, starting Feb. 23
7:00-8:30 p.m.
\$30 (\$27 for Members)

Much of the remaining scenic grandeur and wildlife of the United States and Canada is restricted to federally preserved areas such as national parks, monuments, and wildlife refuges. With rich color slides, this series introduces some of the most beautiful and diverse of these regions. Emphasis is on plant and animal life, their conservation and ecological significance.

Kenneth A. Chambers is lecturer in zoology at the Museum and author of *A Country Lover's Guide to Wildlife*.

Feb. 23 — **GEYSER BASINS TO MANGROVE SWAMPS.** Yellowstone and Grand Teton national parks; plant and animal life in the subtropical Everglades.

Mar. 2 — **DESERT WILDLIFE IN NEW MEXICO AND ARIZONA.** Chiricahua, White Sands, and Carlsbad Caverns.

Mar. 9 — **WILDLIFE OF THE NEW YORK ADIRONDACKS.**

Mar. 16 — **WILD FLOWERS AND BIG GAME.** Wild flower spectacular on Mount Rainier; big game in the Canadian Rockies.

Mar. 23 — **LAND OF THE TREMBLING EARTH.** Okefenokee National Wildlife Refuge.

Dance Culture in Morocco and Egypt

Five Tuesday evenings, starting Feb. 24
7:00-8:30 p.m.
\$30 (\$27 for Members)

Carolina Varga Dinicu performs, teaches, and directs her own dance company under the stage name Morocco. She has been researching dance, music, and dress in North Africa, the Middle East, the Mediterranean, and Caucasus for 23 years. For this series, she draws extensively on films and tapes she made herself.

Feb. 24 — **FOLKLORE OF MOROCCO.** Dance and dress are extraordinarily varied in Morocco. Using videotape, this lecture covers dances of over 20 Berber tribes, plus stylistic differences between city and country Sheikhat, theatricalized folk dances, and the best male shaba and tray dancers in Morocco.

Mar. 3 — **NATIONAL FOLKLORE TROUPE OF EGYPT (FIRQUA KAWMIYYA).** Theatrical dances based on folkloric or satirical themes. Which are truly traditional dances and costumes, and which are fantasy or satirical? How much influence came from outside? Has this affected attitudes toward dance and dancers in Egypt and elsewhere? Videotapes of live performances will be used.

Mar. 10 — **STARS OF EGYPTIAN ORIENTAL DANCE.** Stylistic differences among three of the top stars of the current Egyptian Oriental dance scene (Negwa Fouad, Soheir Zaki, and Azza Shafiq). Changing styles in costuming, music, and movement. The use of theatrical and political themes. Video excerpts from live performances.



Pitchers from Chaco Canyon, center of the Anasazi world.

Weekend in Geology

May 30 and 31
Limited to 36 adults

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain, there are visits to Sandy Hook and the highlands of the Navesink. Collecting stops are made en route. The group is accommodated overnight near Parsippany. **Dr. George Harlow**, associate curator in the Department of Mineral Sciences at the Museum, leads this field study tour.

Weekend Whale Watch Off Cape Cod

May 8, 9, and 10
Limited to 45 persons

Join us for a weekend of whale watching off the rich feeding grounds of Stellwagen Bank, near Cape Cod, where several species of whales are commonly seen at close range. Our search for these magnificent creatures involves three 4-hour whale cruises by private charter from Provincetown. In addition to the marine biologists aboard the boat, two Museum staff members will accompany the group: **Allison Loerke**, lecturer in natural science from the Department of Education and **Stephen C. Quinn**, a field ornithologist, who will assist in identifying the many species of coastal birds.

Other features of the weekend include optional guided nature walks along the dunes and marshes of the Cape Cod National Seashore, exploring historic Provincetown, an evening marine mammal slide talk by **Dr. Charles "Stormy" Mayo**, and a visit to the reconstructed whaling port of Mystic, Connecticut. Cost includes transportation, two nights accommodations, meals, and lectures.

For weekend field trip itinerary and application, call (212) 873-7507.

Mar. 17 — **STARS OF EGYPTIAN ORIENTAL DANCE**. Stylistic differences among four top performers (Nadia Hamdy, Nahed Sabry, Eman Wagdi, and Hanan). How do they rate with Egyptians? Nadia Hamdy's fascinating candelabrum dance and how it compares with that of its originator, Nazia el Adel. Video excerpts from live performances.

Mar. 24 — **FOLKLORE OF EGYPT AND SUDAN**. Who are the dervishes, and why do they whirl? What are the differences between the Turkish and Egyptian dervishes? Who and what are the Ghawazi? Videotape excerpts from live performances highlight this lecture.

techniques, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant whether beginner or experienced artist.

The following areas serve as studios: the Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and the Hall of Ocean Life.

Birds of the Wetlands: A Day Trip to Jamaica Bay

Saturday, May 2
or
Saturday, May 30
8:00 a.m.—5:00 p.m.
\$35
Limited to 36 people per trip

An all-day excursion by bus to the marshlands and estuaries of Jamaica Bay Wildlife Refuge to observe the spring migration of marsh and water birds. Herons, egrets, waterfowl, and shore birds are only a few of the diverse varieties of birds attracted to these rich wetlands. Field ornithologist **Stephen C. Quinn** leads the trip.

Travel Photography

Six Thursday evenings, starting Feb. 26
7:00–9:00 p.m.
\$70
Limited to 22 persons

Designed for the traveler who wants to photographically record peoples and places, near and far. The course covers the role of travel photography, the special problems related to photographing while traveling, the basics of camera technology and lighting, proper exposure, selection and use of equipment, and most important, how to see photographically. **Willa Zaklin**, a professional photographer trained in anthropology, offers lectures, slides, and class demonstrations of lighting and camera mechanics. Weekly assignments will be followed by a class critique.

Weekend for Bird Enthusiasts

May 16 and 17
Limited to 36 adults

Two-day bus trip covering wooded areas near New York City and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen. **Kenneth A. Chambers**, lecturer in zoology at the Museum, leads this field study tour.

Mushrooms, Mosses, Ferns, and Other Nonflowering Plants

Five Tuesday afternoons, starting Feb. 24
2:30–4:00 p.m.
or
Five Thursday evenings, starting Feb. 26
7:00–8:30 p.m.
\$30 (\$27 for Members)

Giant conifers and kelps, tiny mosses and filamentous seaweeds — altogether about a third of all plants reproduce without ever bearing flowers. Included are some of the choicest edible plants, as well as some of the deadliest. Many play key roles in the web of life. This series of slide-illustrated lectures introduces diverse living things: mushrooms, mosses, and ferns of forest floors and meadows; lichens of rocky and sandy places; algae at the edge of the sea; and conifers. Identification and ecology of species in the northeastern United States are stressed. This series of slide-illustrated lectures is presented by **Helmut Schiller**, lecturer in botany at the Museum.

1. THE VEGETABLE HOUSING PROBLEM. Some of its consequences.
2. SEaweEDS GREAT AND SMALL
3. MUSHROOMS AND LICHENS
4. MOsSES, FERNs, AND OTHER PRIMITIVE LAND PLANTS
5. CONIFERS. The vegetable skyscrapers.

Animal Drawing

Eight Thursday evenings, starting Feb. 26
7:00–9:00 p.m.
\$90 (materials not included)
Limited to 25 persons

Join a Museum artist to sketch a variety of subjects, such as gazelles on the African plains and timber wolves in the snowbound north. After the Museum has closed to the public, students draw from the famed habitat groups as well as mounted specimens. **Stephen C. Quinn**, senior principal preparator-artist in the Museum's Exhibition Department, discusses drawing

DEPARTMENT OF EDUCATION Afternoon and Evening Lecture Series.

I would like to register for the following lecture series:

Course(s): _____

Day(s): _____

Time(s): _____

Price: _____ (Please note that discount prices shown apply only to Participating, Donor, and Contributing Members.)

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime Phone: _____

Membership Category: _____

Please enclose a check payable to the American Museum of Natural History and a self-addressed, stamped envelope and mail to: Afternoon and Evening Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Palmer Station Diary

Dr. Judith Winston, associate curator (Invertebrates), became a marine biologist quite simply because she loves the water. For the past 20 years, she has studied bryozoans — tiny, colonial animals found in watery habitats throughout the world. Winston has collected bryozoans from Central Park, the Caribbean, the Pacific, New York Harbor, and — as she reports here — the Antarctic. She was the recipient of a grant from the National Science Foundation to study the behavioral and chemical ecology of Antarctic bryozoans.

Bryozoans are a choice group for study because of their abundance and diversity and because their hard skeletons provide a good fossil record. According to Winston, the delicate-looking creatures can also be quite beautiful. Large colonies resemble seaweed or corals, for which they are sometimes mistaken. Most individuals within the colony are equipped with tentacles that enable them to feed on phytoplankton and other small organisms; of particular interest to Winston are the avicularia, specialized individuals resembling miniature pincers or trapdoors.

With a specially designed video system that she brought to the Antarctic, Winston was able to film the capture of small worms, crustaceans, and other minute organisms by the avicularia. Study of frozen material later revealed that bryozoans may produce chemical defenses against predators or disease.

Late in the austral summer of 1985, Winston and her assistant, Beverly Heimberg, began the long trip south. At Punta Arenas, Chile's most southerly city, they joined other scientists aboard the Polar Duke. An 11-day voyage aboard the research vessel brought them to the U.S. Antarctic Research Program's Palmer Station, located on an off-coast island of the Antarctic Peninsula. En route, they dropped off a party of geologists in the Weddell Sea and trawled for fish and bryozoans through fierce weather at Low Island, in the South Shetlands.

Excerpts from Winston's diary of life at Palmer Station follow.

February 23, Palmer Station

We arrived yesterday morning about 9:00 a.m. We unpacked, got the bryozoans into holding tanks, and started to look at their behavior. We have seen some exciting things already.

Nematoflustra is superb; its long bristles sweep over the colony surface in waves, brushing off debris and trespassers. A *Cornucopina* was disappointing — couldn't get any response from those avicularia. Last night I went up to the bar. It was funny to see the crew on their one night ashore. They got amazingly drunk — just as sailors are supposed to do. I listened to people's stories of the good old days — last year was always best! I walked back to my room at quarter past three. Light snow was falling and the glacier loomed brightly behind the station:

Antarctica — even the snowflakes have to be thickly furred.

Tonight I am pretty tired. I think I just want to go to bed. What I'd really like is privacy, but I won't have that until I go back out on the ship. It is hard to adjust to so many new people — most of them not scientists but carpenters or support staff, mostly young and having a great adventure. My adventure will be to see some of the natural world here — if I can only get away from the people. I would like to hear nothing but the cries of the skuas (gull-like birds, but more raucous than gulls) and the crash of the ice "calving" off the glacier into the harbor.

February 25

We got everything set up in the lab. I made a behavior checklist yesterday, then (since it was Sunday) took the rest of the day off. Today I am really keen to start collecting data. I am asking Beverly, my assistant, to catalog and quantify injuries to the most common species of bryozoans from Low Island, one of the

South Shetland Islands and our principal collecting area. That may tell us more about where they fit in the total picture — what eats or grazes on them. It will be interesting to know whether the colonies that have avicularia suffer less injury. We also want to freeze-dry as many species as possible to be tested for possible chemical defenses.

Yesterday we walked up the glacier about three-quarters of a mile (as far as has been designated safe). The slope is gradual and curving. Palmer Station disappears from view as you climb, but at the line of barrels that marks the safety limit, the top of the glacier seems as far away as it did from the bottom:

Halfway up the curve of the glacier it looks just as far to the top.

Where the glacier projects over sea (rather than rocky peninsulas) it becomes an icefall, slumping in great curved crevasses — each wide enough to swallow a station building — paralleling the glacier's edge. After descending the glacier we walked down to Hero Inlet (east of the station), where we watched gulls and skuas and heard the bellowing of an elephant seal. We also surprised a solitary Adélie penguin that complained loudly — sounding almost like a cow.

There was pizza for dinner and the Superbowl on videotape. Later, a group of us tried out the sauna, sat around in it drinking wine until quite late, rushing out to the steps occasionally to cool down.

February 26

A sunny day — the first since we arrived. This morning we got a ride with Jay, the lab manager, to Old Palmer Station, the original site and building. It is located in the northwestern part of the harbor on high ground, covered with green-brown mosses, and appears much more attractive than the bare rock around the



Adélie penguins, some of them molting, at home in the Old Palmer Station Antarctic locale.



A bryozoan colony from one of the South Shetland Islands. These creatures are the subject of Dr. Winston's research.

Beverly Heimberg

Beverly Heimberg



The glacier overlooking Palmer Station. A glacier meltwater pond appears in the foreground.

new station. But there was no deep-water anchorage, so Palmer Station was moved to Gamage Point.

We had to watch out for angry skuas as we walked through their nesting ground (though the nesting season is about over), and we saw some molting penguins that looked very tacky. On the way back we stopped at Elephant Island and photographed the elephant seals.

February 28

Yesterday we worked in the lab trying to finish observing and preparing the material we have so that we can go out and collect more. Most colonies are no longer in very good shape, so I am going to try to do some feeding observations on board the ship, which will only work if it is very calm.

February 28, Polar Duke, Gerlache Strait

Like it or not — these ice-covered mountains will sit here.

We are on our way to Low Island again. As the ship left the harbor I watched Palmer Station disappear — the blue buildings almost immediately dwarfed by the glacier behind them. I thought about how welcome those small buildings must have looked to the people on the two yachts that have been anchored in Hero Inlet the last few days. As romantic an experience as it may be to cruise the coast of Antarctica, the lights of civilization, warmth, wine, and a shower in fresh water have great appeal.

March 1

The seas were very rough when we started trawling but calmed somewhat as the day progressed. The clouds were spitting snow until about three, then the sky began to clear. We got lots of fish and a pretty good haul of bryozoans. We managed to do about half the things I had planned. Tried the video for a few trials with *Nematoflustra*, but the vibration was bad even with a damping plate. We also prepared a lot of material for freeze-drying. Now we are heading inshore to try a new trawling ground that is only about seven hours from Palmer.

March 3, Palmer Station

Got back in yesterday morning and did make some good tapes this afternoon, but I can see that the seawater here is already doing the bryozoans in. There are two problems: air bubbles caused by an air leak in the incoming pipes and decreased salinity in the harbor, thanks to meltwater from the glacier. But I hope to get at least one more good day of observations.

March 4

The ship has gone to pick up the geological party that had been working on Seymour Island. The crew is supposed to trawl for us on the way back. Today Beverly and I went with some of the others to Cormorant Island. It was a great day — perfectly clear and still — except for the artillery sounds of ice breaking off the glacier and crashing into the sea. It

was beautiful on the island — in the foreground, the warm yellow-orange of lichens and green of moss on the dark roots and, in the background, blue water and snow-covered mountains. We landed on a cobble beach where there were a lot of penguins. A fur seal lying in a warm spot out of the wind barely woke up enough to grumble at us. The others decided to climb over to the far side of the island, but I wanted some time alone. So I climbed the ledges where the shags had their nests. It was amusing to see downy chicks, already adult sized, still being fed by their parents, who were with some difficulty stuffing fish down the chicks' throats. Then I went back to the penguin beach and sat in the sun with the penguins. One was standing only a few feet away. He complained occasionally about my presence or life in general. I dozed off, and when I awoke he had vanished into the sea.

March 5

It is close to a month since we left New York — what have we accomplished? Made a good start — but I need to write down what remains to be done. I feel that if we can get two more good collections at Low Island, I could get most of the information I need from those species. Next we need to try dredging for some shallow-water species in the harbor here.

March 7

I have been sitting in our room, gazing out the window at the water. The harbor is calm, pale blue-gray, full of chunks of ice. Occasionally I can see a school of feeding penguins. As they pop out of the water, one after another, they look amazingly like the neck of a sea serpent as depicted in old prints. They must be the sea serpents of the Southern Hemisphere:

In the calm harbor
a sea serpent writhes —
feeding penguins.

March 8

Today the harbor wasn't calm — a strong wind was blowing from the sea, and it took a long time for the returning ship to dock. The crew had brought bryozoans, and I did get shots of feeding in a couple more species — before they started to fill with air bubbles.

March 10

Sunday — I didn't do much all day — wrote letters and postcards that will go north with the ship on the 14th. Tonight about 8:00 p.m. a few of us took the cable chair across the inlet to Bonaparte Point. There was a strong wind blowing on the station side of the point so we sat on the rocks down by the water on the leeward side of the point, drinking some wine and watching the southern constellations brighten, the moon rise over the curve of the glacier, and the rain squalls drift across the sky. It was dark and starting to rain when we came back. Now I am lying in bed listening to the raindrops patter on the window and the metal walls of the building — blown by that strong wind. The rain is good; the air feels a little warmer, a little damp, and it may help replenish our water supply, which (being chiefly glacier meltwater) is now quite low. There have been some terrific crashes and roars from the glacier today. It seemed as if half of it must have fallen into the sea — but at last light it was still there:

When the glacier
calves — even primeval
granite — quakes.

March 14

Stone blue or clear
as glass — ice floes transilluminated
by the setting sun.

March 18

Yesterday, a Saint Patrick's Day party at Old Palmer — cooking steaks outside, eating potato salad and green-frosted cake, drinking Guinness (traded with one of the British ships).

The old station certainly has a more beautiful location. From its height, you can see all down the peninsula. It is also a place in which it is easier to get outside and around; you can walk some good distances there (if the skuas and elephant seals permit) before coming to the glacier or the sea. The station is a wooden building that's getting pretty decrepit. Walking in is like entering one of those sheds that connect the barn and the house on old New England farms. To the right are shop and generator rooms, to the left, living quarters — one big living-dining area, a kitchen (quite pleasant), and several little curtained-off two-bunk cubicles. Once eight people wintered over here. Now some kind of black mold is growing on everything — especially the kitchen china. The place is kept stocked with emergency supplies, and people are also allowed to spend the night camping out here. It might come alive again, but now it has a sad, decaying air, down to the old copies of the *Journal of Geophysical Research* moldering on the shelves. I read the station logbook. It is getting tattered, too, but was fascinating reading. We all added our names and the date for posterity.

Today spent the morning transferring tapes to VHS. The loss of quality is disappointing, but we need space on the small tapes to record new experiments. Right now it is hard to believe we will be getting the bryozoans for them. We spent all afternoon trying to collect in the harbor but ended up with very little — a few stones and pieces of seaweed.

March 19

Just went out to walk off a little dinner. I was thinking about what simple creatures primates are — fill our fat bellies and we're halfway happy, ready for sleep or sex then, spending far less time in contemplation than a cat does. It was cold on the harbor and the glacier side. Light, fluffy snowflakes were still falling, clumping on the rocks, coating the brash ice at the water's edge, but not really making much of an impression on the situation, which is dry. Water rationing started again today. And today the bands of low clouds that seem to swirl almost continuously around the mainland of the Antarctic Peninsula were back over us, but instead of rain they brought only this dry, feathery snow. Tonight the clouds had pulled apart. Blue sky and pink sky were visible between the bands, but the wind was chilly, so I walked back up the edge of Hero Inlet, past the chairlift to Bonaparte Point, and climbed down the other side of that hill to look for elephant seals:

Sit down. After
awhile, two of those beached rocks
are elephant seals.

Even up there the smell of smoke from the station fireplace was still strong enough to obliterate the smell of the snow. But it was quiet, and I could hear some of the sounds of the natural world — the gurgle and hiss of the surge in the inlet, the occasional clunking and thwacking of pieces of brash ice against the rocks or each other, the rumbling of seals, and every so often a distant roar, as another piece of glacier crashed into the sea. Skuas were flying silently up the inlet. One sat quite close, eyeing me, sure I had no business there. My business was finished. Having heard the Antarctic twilight, I still had some work to do in the lab, so I walked down back over the rocks to the station.

— Judith Winston

Museum Notes

Special Exhibitions and Highlights

Dark Caves, Bright Visions. Through January 18, in Gallery 3. Evidence discovered in prehistoric and open-air sites indicates that by the late Ice Age humans had developed art forms, complex symbolic rituals, and systems of regional exchange that were to be the foundations of modern culture. *Dark Caves, Bright Visions* brings together the largest collection of Paleolithic artifacts ever shown in one place, including etchings, sculptures, and tools, as well as replicas of painted cave walls.

City of Light. Through February, in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through March 29, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Ladies in the Field: The Museum's Unsung Explorers. Through the spring, in the Library Gallery. Photographs, diaries, published monographs, and mementos chronicle the contributions of women, usually wives of curators, to the development of science and the Museum.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 873-1440.

Birthday Parties

Last February, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last 2 hours



An Ice Age "Venus" from *Dark Caves, Bright Visions*. In Gallery 3 until January 18.

and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 873-1327.

The **Natural Science Center** introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

The **Leonhardt People Center** hosts a series of performances, talks, and demonstrations devoted to Native American cultures on January weekends from 1:00 to 4:00 p.m. The celebration features storytelling, traditional dances of the Plains Indians and others, and short films. Seating for the presentations, which are repeated throughout each afternoon, is on a first-come, first-served basis. For a complete schedule of events, please call (212) 873-1300, ext. 514.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Happenings at the Hayden

Sky Shows

The Star of Christmas. Through January 4. Gaze out on a clear winter's night and then travel back nearly 2,000 years to explore the skies of the first Christmas in this story of beauty and intrigue.

The Seven Wonders of the Universe. Beginning January 7. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers.

Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars. *Wonderful Sky* will be shown on Saturday, February 7, at 10:00 a.m. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, NY 10024) and mail at least two weeks in advance. For additional information, please call (212) 769-3299.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 724-8700 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 873-8828.

Twinkle, Twinkle



The Friends of the Origami Center of America will hold special sessions at the Museum on Saturday and Sunday afternoons in February and March. For information on registration and fees, send a stamped self-addressed #10 envelope to: The Friends of the Origami Center of America, 15 West 77th Street, New York, NY 10024.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

January 1987

3 11:00 a.m. New York Map Society. Room 129. Free.

1:00 to 4:30 p.m. *Tales of the Coyote* by Susan Strauss; *Native American Weaving*, a slide-talk by Diosa Summers-Fitzgerald; *American Indian Dolls* with Mary Jane Lenz — Native American Month at the Leonhardt People Center. Free.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

4 1:00 to 4:30 p.m. *Tales of the Coyote*; *Native American Weaving*; *American Indian Dolls* — Native American Month at the Leonhardt People Center. Free.

Last day to see *The Star of Christmas* Planetarium Sky Show.

The bright object near the moon tonight is Jupiter.

11 1:00 to 4:30 p.m. *The Little Rabbit Dancers*, performed by Enale and Snow Flower; *Pueblo Pottery*, a slide-talk with June Reiss; *Woodlands Beadwork*, a demonstration by Lou Gilson — Native American Month at the Leonhardt People Center. Free.

2:00 p.m. New York Shell Club. Room 419. Free.

18 1:00 to 4:30 p.m. (See January 17 events.)
1:30 and 3:30 p.m. *Festival of Strings*. Members' Family Program. Kaufmann Theater. \$3 for Members, \$5 for non-Members. Page 3.
2:00 p.m. New York Paleontological Society. Room 426. Free.
2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free.

Last day to see *Dark Caves*. Bright Visions, the exhibit in Gallery 3.

25 1:00 to 4:30 p.m. *Shawls, Feathers, and Turtle Shells*, storytelling and dance with Jami Bradford and Brendan James Ferraro; *Native American Art of Woodcarving*, a slide-talk by Diosa Summers-Fitzgerald; *Colorin, Colorado*, *Cuentos*... Coyote, tales by Vira and Hortensia Colorado — Native American Month at the Leonhardt People Center. Free.

5 The bright object near the moon tonight is Mars.



6 Last day to see *The Ongami Holiday Tree*, in the Roosevelt Rotunda.

First-quarter moon.

7 7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

The Seven Wonders of the Universe, a new space odyssey, begins today in the Planetarium Sky Theater. For more information, see page 1.

13 7:30 p.m. *The Great Expeditions*. Members Evening Program. Main Auditorium. Tickets required. For more information, call (212) 873-1327. Page 4.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

14 7:00 p.m. *Sacred Mountains of the World*, the first of two slide-illustrated lectures by Edwin Bembaum. Main Auditorium. For tickets and further information, call (212) 873-7507.

Full moon.

15 7:00 p.m. *Ansi Yariamu (The Marriage of Manamu)* and *Seyi Seyeti (One Man, Several Women)*, two films in the series *Journey Across Three Continents*. Main Auditorium. Free. Page 2.

8 7:00 p.m. *The Road to Kukurantumi (The Road to Accra)* will be screened as part of the film series *Journey Across Three Continents*. Main Auditorium. Free. Page 2.



17 1:00 to 4:30 p.m. *The Little Rabbit Dancers*, performed by Paul Sanjacon; *Clowns and Coyotes*, a slide-talk by Nadema Agard — Native American Month at the Leonhardt People Center. Free.

1:00 p.m. New York City Water Supply: Present and Future. Kaufmann Theater. Free. For more information, see article on page 4.

2:00 p.m. New York Shell Club. Room 419. Free.

19 Martin Luther King, Jr., Day. The Museum is open.

18 1:00 to 4:30 p.m. (See January 17 events.)
1:30 and 3:30 p.m. *Festival of Strings*. Members' Family Program. Kaufmann Theater. \$3 for Members, \$5 for non-Members. Page 3.
2:00 p.m. New York Paleontological Society. Room 426. Free.
2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free.

26 Discovery Tours participants land on the seventh continent with the *Discovery Antarctica Cruise*. For information on future tours, call (212) 873-1440.

22 7:00 p.m. *The Passion of Remembrance*, the third evening of film in the series *Journey Across Three Continents*. Guest speaker: Loretta Campbell. Main Auditorium. Free. Page 2.

21 7:00 p.m. *Sacred Mountains of the World*. Main Auditorium. For tickets and further information, call (212) 873-7507.

20 8:00 p.m. New York Entomological Society. Blum Lecture Hall. Free.

Participants in *Discovery Tours' Archeology Tour to Mexico* visit the ancient Maya city of Palenque today. For information on future *Discovery Tours*, call (212) 873-1440.

26 Discovery Tours participants land on the seventh continent with the *Discovery Antarctica Cruise*. For information on future tours, call (212) 873-1440.

24 1:00 to 4:30 p.m. *Shawls, Feathers, and Turtle Shells*, storytelling and dance with Jami Bradford and Brendan James Ferraro; *Native American Art of Woodcarving*, a slide-talk by Diosa Summers-Fitzgerald; *Colorin, Colorado*, *Cuentos*... Coyote, tales by Vira and Hortensia Colorado — Native American Month at the Leonhardt People Center. Free.

27 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

28 5:15 to 7:30 p.m. *Behind-the-Scenes Tour of the Department of Mammalogy*, open to Participating, Donor, and Contributing Members. \$7. Tickets required. Page 5.

29

31 1:00 to 4:30 p.m. *The Little Rabbit Dancers*, with Enale and Snow Flower; *Totem Poles and Chilkat Blankets*, a slide-talk by Karen Gleeson; *Native American Courting Flutes*, a demonstration by Tchinn — Native American Month at the Leonhardt People Center. Free.

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 2 February 1987

Natural Explorations

The origins of speech, the effect of mind-altering drugs on pre-Columbian art, and the rise of the Inca civilization are among the subjects of the Department of Education's Spring Afternoon and Evening Lecture Series. This series, taught by Museum staff and other educators, offers a wealth of information on topics ranging from prehistoric cultures to modern-day mores. Highlights from this year's series follow.

Two Lectures by Ashley Montagu

Montagu. Monday, February 23, and Wednesday, February 25, 7:00–8:30 p.m. \$15, \$13.50 for Members.

Noted anthropologist and author Ashley Montagu will offer insights into human development. In the first of his two lectures, "How We Got to Be the Way We Are," Dr. Montagu examines the physical and social conditions under which apelike animals developed the human capacities of complex thought, speech, and emotion. "What Are We For?" his second lecture, defines the genetically transmitted system of values that humans possess and discusses its cultivation.

Evolution and Human Origins

Three Tuesday evenings, starting February 24, 7:00–8:30 p.m. \$20, \$18 for Members.

This series of lectures will explore archeological and physiological evidence of human development. In "Current Developments in the Search for Our Oldest Ancestors," Dr. Donald Johanson, director of the Institute of Human Origins in Berkeley, California, will discuss fossil evidence for australopithecines — the earliest humanlike primates — and interpret the beginning of human evolution.

"When Humans Speak," a lecture by Dr. Jeffrey T. Laitman, looks at the developmental changes in the mammalian upper respiratory tract. Dr. Laitman, an associate professor of anatomy at the Mount Sinai School of Medicine, discusses the range of sounds that animals can produce and explains the unique combination of elements that permits humans to enjoy fully articulated speech.

Eric Delson, professor of anthropology at Herbert H. Lehman College and research associate at the American Museum of Natural History, describes the emergence of *Homo habilis* from the australopithecines in "The Origin and Evolution of the Genus *Homo*." These hunters and tool makers appeared in Africa two million years ago and set the pattern of hominid development for modern humans.



The distinctive Veracruz style of sculpture is evident in this face from the Museum. The ornamental headdress is characteristic of Central American art, but the smile is a feature unique to the region. Spiritual Arts in Pre-Columbian Mexico and Central America examines the symbolic and cultural significance of figures such as this "Laughing Head."

Spiritual Arts in Pre-Columbian Mexico and Central America. Four Thursday evenings, starting February 26, 7:00–8:30 p.m. \$25, \$22.50 for Members.

Ceramic figures representing shamans, deities, and sacred animals, many of which can be seen in the Museum's Hall of Mexico and Central America, are among the subjects discussed in "Tomb Art of Western Mexico." Dr. Peter T. Furst, professor of anthropology at the State University of New York, Albany, explains their relevance to ancient Mexican religious beliefs and rituals. "Hallucinogens and Transformation in Pre-Columbian Art," his second lecture (March 12), details the ceremonial use of mind-altering substances, whose effects are depicted in pre-Columbian iconography.

Dr. Jill L. Furst, adjunct associate professor of anthropology at the State University of New York, Albany, and visiting associate professor at Yale University,

specializing in Pre-Columbian manuscripts and iconography, will present "Gold for Gods and Men." She will explain the symbolic significance of ancient Mexican gold and its use as an artistic tool. Dr. Jill Furst's second lecture, "The Rabbit and the Deer: Natural History, Art, and Symbolism in Ancient Mexico," is the final presentation of the pre-Columbian series. This lecture explores the role of rabbits and deer in myths and how it relates to current knowledge of animal behavior.

Other courses included in this series are programs on animal drawing, travel photography, and the dance cultures of Morocco and Egypt, as well as field trips for whale watchers, bird enthusiasts, and weekend geologists. For more information about these and other programs, please call (212) 873-7507.

An Education Department Public Program.

Coming Attraction

Members are invited to a special preview of next month's new exhibit, *The Choco Phenomenon*.
Page 4

Reach for the Sky

Discover *The Seven Wonders of the Universe* at the Members' private viewing of the new show at the Hayden Planetarium.
Page 4

Black History Month

The Department of Education commemorates political, social, and artistic achievements in celebration of *Black History Month*.
Page 5

Dance

The Alvin Ailey Repertory Ensemble will entertain Museum audiences with their March performance.
Page 5

Dinosaurs on Parade

The *Rollickin' Dinosaur Revue* is a lively Members' family program that combines learning with laughter.
Page 3

Members' Memo

The Museum presents an extensive schedule of temporary exhibitions throughout the year. In recent months, we have had exhibitions on Ice Age art, New York's water supply, and India's holy city of Benares. Next month, *The Chaco Phenomenon* will open (see page 4 for details of a special Members' preview). We are planning exhibitions later this year on the Titanic, the ancient ivories of the Bering Strait, and the art of dinosaur illustration. These temporary exhibitions provide an exciting complement to our permanent exhibition halls and are vivid evidence of the Museum's continuing vitality.

Although visitors are usually aware of our temporary exhibits, few people notice that our permanent exhibitions are also undergoing constant changes. Our Hall of South American Peoples is nearing completion. The Department of Exhibition and our scientific staff are also beginning work on a new Hall of Human Evolution and Biology and the renovation of the Hall of Late Mammals.

Whenever I walk around the Museum, I enjoy seeing some of the small changes taking place in our permanent exhibition halls. Classic exhibits in the Hall of African Mammals have been cleaned and restored to their original luster. New and updated label copy has been written for exhibits in the Hall of North American Mammals. I have sometimes walked

through halls and noticed that a new exhibit has replaced one with which I have long been familiar.

A fascinating exhibit, *The Frontier of Life*, opened a year ago in the Hall of Invertebrates. The exhibit features the discovery of animal life on the ocean floor, one and a half miles below the ocean surface, in an area that was thought to be barren of life. The animals exist near geothermal springs or vents that are located at places where the earth's crust is moving apart. These animals, unlike almost all other animals on the planet, receive their energy from a source other than the sun. The source is bacteria that thrive in the nutrient-rich environment.

The exhibit contains specimens of tube worms that have no mouths or digestive systems and probably feed by absorbing molecules through their tentacles. There are also foot-long vent clams, a new species of mussel, relatives of blue crabs and hermit crabs, and acorn worms that drape themselves over rocks like spaghetti. Film footage taken on the ocean floor shows scenes of the animals in action.

If you want to learn more about how the geothermal springs were formed, then you can view the new audiovisual show in the Hall of Earth History. The multimedia show uses slides, film, and interviews with the experts to explain the

earth's dynamic geology. The show focuses upon plate tectonics and illustrates how the movement of crustal plates has shaped the earth from the formation of the Himalayas Mountains to the San Andreas Fault.

You can explore the earth's geologic processes further at *Forever Gold*, the new audiovisual show in the Hall of Minerals and Gems. The show, narrated by George Plimpton, explains how gold is formed and deposited in veins in the earth's surface. Then it takes a look at human fascination with gold throughout history, illustrating the quest for gold and its importance in different cultures. When you leave the hall, be sure to see the Lounsbury necklace, which was placed on display only a few months ago. The gold-and-rose diamond necklace, containing over 100 diamonds, was designed by Richard Lounsbury and executed by Cartier of Paris.

The exhibits I have described will take only a short time to view, and they certainly merit a side trip the next time you visit the Museum.

Henry Schulson

The Secret of the Cardboard Rocket

Members' Private Viewing

Sunday, March 8

10:30 and 11:30 a.m.

Planetarium Sky Theater

\$2.75 for adults, \$1.50 for children

Have you taken your pre-schoolers to see *Wonderful Sky* at the Planetarium in the last few years? Are your children a little older now and ready for another Planetarium experi-

ence? If so, get ready to blast off in the Sky Theater with the premiere of a brand-new show, *The Secret of the Cardboard Rocket*.

This exciting new program

was created especially for children aged 5 through 8. The adventure begins when two young children build a cardboard rocket in their backyard and take off one night with a special, magical friend for a tour of the planets. The entire audience, of course, will come along for the ride and visit all of the important aspects of the solar system, including the sun, moon, all nine planets, and even some of the planetary satellites.

The Secret of the Cardboard Rocket is intended as the perfect "next step" for your child. It offers an entertaining and informative introduction to the solar system and encourages children to follow up their visit to the Planetarium by reading books on astronomy. As an added attraction, children will construct and decorate their own cardboard rockets.

To register for *The Secret of the Cardboard Rocket*, please use the February Members' programs coupon on page 3.



Next stop, Saturn.

The Story of Hawaii

Sunday, February 8

1:30 and 3:30 p.m.

Kaufmann Theater

\$2.50 and open only to Members

Educator-performer Ozzie Tollefson will transport audiences to Hawaii, past and present, in his multimedia Members' family program geared for children 5 years of age or older. Traditional Hawaiian music, performed by Jimmy Kaina and Frank Cooper, will also be featured. Use the coupon on page 3 to register, or call (212) 873-1327 for further information.



ROTUNDA

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The Rollickin' Dinosaur Revue

Saturday, March 28, and Sunday, March 29
11:30 a.m., 1:30 and 3:30 p.m.
Kaufmann Theater
\$3 and open only to Members

"Growl! Chomp! Prowl! Stomp!"

He's back, and he's bringing his reptilian pals again. Mike Weilbacher, whose Members' family program sold out six shows at the Museum last year, returns this month to premiere a brand-new show, *The Rollickin' Dinosaur Revue*. Young Members and their parents will delight in this presentation of scientific fact through participatory theater.

The revue combines the latest discoveries about dinosaurs with magic tricks and music. Singalongs introduce the biggest dinosaurs ("Earth Shakers, Earth Quakers") and the fiercest dinosaurs ("Rock Us, Deinonychus"), and skits include "Mr. Rex's Neighborhood" and a radio show, "The Prairie Bone Companion."

Weilbacher, who serves on the education staff of the Academy of Natural Sciences of Philadelphia, has performed his

natural science programs throughout the eastern United States. The revue, which is designed especially for children aged 4 to 10, is a fun and memorable program for dinosaur lovers of all ages. In conjunction with the program, Members will

be able to win prizes at Dinosaur Bingo, take a dinosaur hunt in the dinosaur halls, and help create a special dinoscape.

To register for *The Rollickin' Dinosaur Revue*, please use the February Members' programs coupon.



Host Mike Weilbacher and on assistant.

Elephants Underground

Wednesday, March 18
7:30 p.m.
Main Auditorium
\$3 for Members, \$6 for non-Members



Appetite can lead animals into uncharacteristic situations with unlooked-for results, and it is appetite that sends the elephants of Kenya's Mount Elgon underground to act as unconscious interior designers. In this special Members' program, biologist Ian Redmond will describe his extraordinary findings after months of study of these giant pachyderms, which not only explore caves but also play, sleep, and bathe in them.

A natural craving for salt sends these creatures, as well as antelopes, monkeys, buffaloes, and others, on their startling subterranean forays. Because the soil of Mount Elgon, a vast, dormant volcano, is devoid of salt, herbivores must seek alternative means for satisfying their need for sodium.

Redmond first observed the elephants feeling their way underground by moonlight. Further study revealed that dusk is their preferred time to quit the forest and slowly single-file into the caves. Inside, they engage in geophagy — the ingestion of earth or rock. Volcanic agglomerate from the cave walls and pools of stagnant water from seepage within the caves contain far higher sodium levels than plants and streams above ground. Thus the elephants' subterranean sojourns are rewarded in a feast of salty rocks.

Successive generations of these troglodyte tuskers, Redmond contends, have actually influenced the caves' formation, or speleogenesis. Scientists previously supposed that the mines were shaped by wave

formation or by the habitation of local people. Redmond proposes, however, that erosion by tusks is chiefly responsible and that Elgon's caves exhibit the first known example of elephant speleogenesis.

This Members' program, illustrated with Redmond's remarkable photographs of elephants underground, will begin with a brief explanation of the East African environment and elephant biology, behavior, and ecology. Redmond commenced his postgraduate work with the late Dian Fossey at her mountain gorilla Karisoke Research Centre in Rwanda and subsequently worked in New Guinea and elsewhere in Africa.

To register for *Elephants Underground*, use the February Members' programs coupon.

February Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: February Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Story of Hawaii. Sunday, February 8, 1:30 and 3:30 p.m. \$2.50 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4. Please indicate a first and second choice of times, if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

The Seven Wonders of the Universe: Members' Private Viewing. Thursday, February 19, 6:00 and 7:30 p.m. Open only to Participating, Donor, and Contributing Members. \$2.75 for adults, \$1.50 for children. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

Elephants Underground. Wednesday, March 18, 7:30 p.m. \$3 for Members and \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

The Rollickin' Dinosaur Revue. Saturday, March 28, and Sunday, March 29, 11:30 a.m., 1:30 and 3:30 p.m. \$3 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first and second choice of times, if possible:

Sat., March 28 _____ 11:30 a.m. _____ 1:30 p.m. _____ 3:30 p.m.
Sun., March 29 _____ 11:30 a.m. _____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

The Secret of the Cardboard Rocket. Sunday, March 8, 10:30 and 11:30 a.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 10:30 a.m. _____ 11:30 a.m.

Number of children's tickets at \$1.50: _____

Number of adults' tickets at \$2.75: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

The Chaco Phenomenon

Members' Preview: Sunday, March 1
10:00 a.m. to 5:00 p.m.

Exhibition open to the general public: Friday, March 6
Gallery 3 (third floor)

This preview is free and open only to Participating, Donor, and Contributing Members of the Museum. Your Membership card is your ticket of admission. It will admit you and any guests you wish to bring. Please present it at the entrance to the exhibition on the third floor of the Museum. (Advance reservations are not necessary.)

They farmed the desert. Without metal tools, they quarried tons of sandstone to build massive, many-storied mansions with hundreds of rooms. For over 200 years, they were the heart of an ancient civilization, the end of every road for 30,000 surrounding miles, the focus of a complex economic, ritual, and social system. And then they vanished.

They were the Anasazi, ancestors of the modern Pueblo people, and their prehistoric culture was centered on northwestern New Mexico's Chaco Canyon. The mystery of why their civilization collapsed is scarcely less intriguing than its very prosperous existence. Speculation about the demise of the Chaco Canyon culture favors a combination of factors, including drought, overuse of resources, and internal discord.

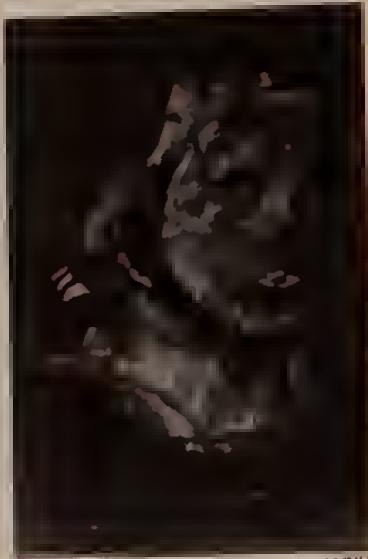
Faced with insurmountable environmental damage and overpopulation, the Chaco people left their homes to begin new lives elsewhere.

Behind them they left the society's crowning glory, its architecture, much of which has survived nearly 1,000 years of neglect. With its elaborate masonry building techniques and solar-efficient design, Chacoan architecture attests to the strategic

mobilization and management of human and natural resources.

Along with discoveries and theories about this ancient culture, the exhibition features more than 200 artifacts excavated at Chaco over the last century, including turquoise-covered basketry, turquoise and jet-inlaid jewelry, and striking black-and-white pottery. Canyon architectural features will be reproduced in full-sized replicas. Many historic and modern photographs are included, as well as original paintings by Richard Kern, who was one of the first modern-day explorers of Chaco Canyon. The exhibition is supported by grants from the National Endowment for the Humanities, the University of New Mexico Foundation, the Maxwell Museum Association, and Santa Fe Industries.

In conjunction with the preview, there will be a screening of "The Chaco Legacy." This film, which was made for the Odyssey Television series, explores the townships that developed between 1,400 and 1,000 years ago in Chaco Canyon. It visits many archeological sites, focusing particular attention upon Pueblo Bonito. The film will be shown on a continuous basis throughout the day.



Fragmented block-and-white vessel from Pueblo Bonito, the heart of Chaco excavations.

Sword Dance Festival

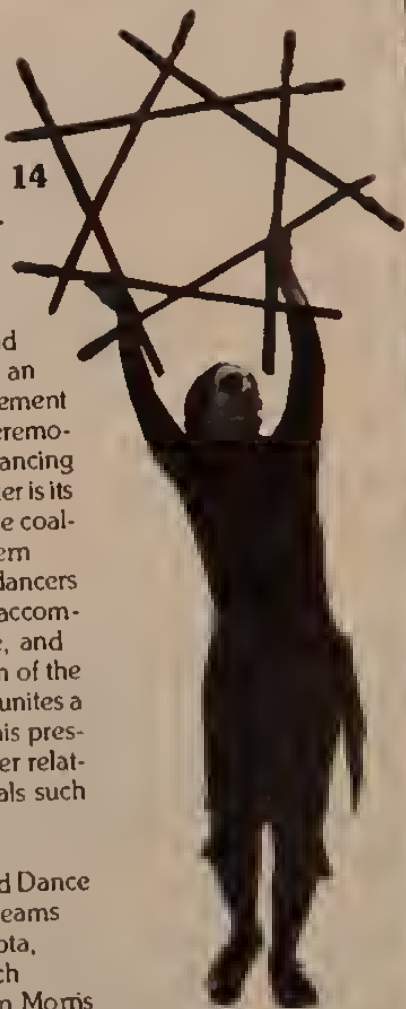
Saturday, February 14
1:30 and 3:30 p.m.
Kaufmann Theater
Free

Stately long swords and sprightly rappers whirl in an age-old tradition of movement and drama. Like most ceremonial folk dances, sword dancing is a seasonal activity; winter is its customary period and the coal-mining regions of northern England its source. The dancers will perform to the lively accompaniment of fiddle, flute, and accordion. In the custom of the sword dance ale, which unites a variety of performers, this presentation will feature other related folk dances and rituals such as Morris dancing and mummery.

The Half Moon Sword Dance Team will host dance teams from Maine to Minnesota, including the Greenwich Guard, the New Haven Morris and Sword, and the Greenwich Morris Men.

This program is made possible in part by grants from the Helena Rubinstein Foundation and the Vincent Astor Foundation. For additional information, please call (212) 873-1300, ext. 559.

An Education Department Public Program.



Joseph M. Cruz, Jr.

A rapturous member of The Half Moon Sword Dance Team in performance.

The Second Ark

Wednesday,
February 25
7:30 p.m.
Kaufmann Theater
Free

The end is near. Recognizing this, a modern-day Noah attempts to save humanity from extinction by engineering the preservation of 100 souls. Not only do these chosen individuals perish, but every trace of their existence vanishes with their lives.

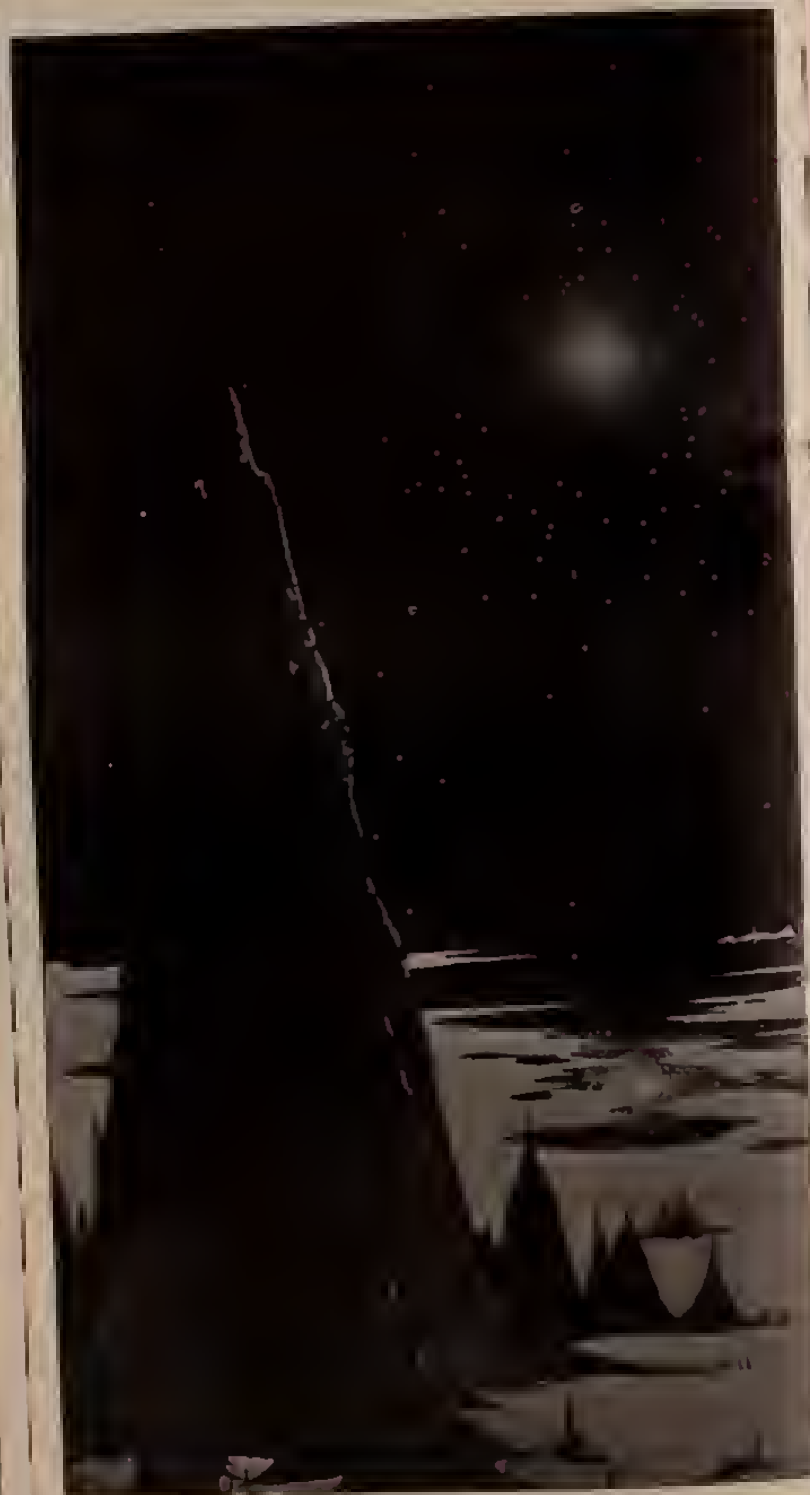
The bizarreness and inexplicability of these deaths strike panic into the hearts of survivors, and the resolution of their fear is the locus of *Conscience de Tracteur* (The Second Ark). This contemporary drama, by Congolese author Sony Lab'ou Tansi, will be enacted by the Ubu Repertory Theater. Ubu is the only organization in the United States dedicated to introducing modern French-language plays to English-speaking audiences.

Seating for The Second Ark will be on a first-come, first-served basis. For additional information, please call (212) 873-1300, ext. 514.

An Education Department Public Program.

Out of this World

Members' Private Viewing
The Seven Wonders of the Universe
Thursday, February 19
6:00 and 7:30 p.m.
Planetarium Sky Theater
\$2.75 for adults, \$1.50 for children



Hitch your wagon to a globular cluster, one of The Seven Wonders of the Universe. Audiences journey to Sotum, Mors, Jupiter, and beyond, stepping inside black holes and exploring the galactic core. Members are invited to attend a private viewing of this new show at the Hayden Planetarium Sky Theater that will feature special displays and informal talks by Planetarium staff members. To reserve your place, please see the February Members' programs coupon on page 3.

Black History Month

The warmth of music, dance, and drama will enliven the Museum during the coldest month of the year as the Department of Education celebrates Black History Month. This series of programs will include profiles of individuals — lectures on Marcus Garvey and Langston Hughes, for instance, and a puppet show characterizing contributors to the Harlem Renaissance — as well as surveys of the influence of heritage on contemporary societies, such as *African Religious Retentions in the Caribbean* and *African-Derived Culture in Puerto Rico*. In addition to the programs listed below, short films highlight each week-end.

The Museum has a pay-what-you-wish admission policy, but there is no additional charge for these events. These community programs are made possible in part by the generosity of the family of Frederick H. Leonhardt and a gift from the Sidney Milton and Leona Simon Foundation.

For further information, please call (212) 873-1300, ext. 514.



Personalities from The Harlem Mosaic (February 18).

James Van DerZee Institute

James Van DerZee Institute

The Leonhardt Peale Center

1:00-4:30 p.m.

Seating is limited and is on a first-come, first-served basis.

February 7 and 8

Pioneers in Black Dance. In this slide-illustrated talk, Joe Nash discusses the individuals who laid the foundation for black concert dance in the United States.

Marcus Garvey: Pioneer Leader. Quassia Tukufu uses slides to recount the life and politics of Marcus Garvey in honor of the centennial of Garvey's birth.

Dance, Rhythm, Dance.

Mellow Moves Plus 1 demonstrates the history of popular dance forms. Cosponsored by the New York Committee for Young Audiences.

February 14 and 15

The Poetry of Langston Hughes. With music and slides, Clifton Powell highlights the poetry of this great American writer.

Basketry: A Continuing Craft Tradition. Using slides and artifacts, Carmen Lowe illustrates the craft of basketry and discusses its role in both rural

southern Africa and the southern United States.

Yoruba Musical Influences.

Solomon Elori and Company demonstrate the influence of Yoruba musical traditions on gospel, blues, and other musical styles.

February 21 and 22

Black American Heroes.

Isaiah D. Ruffin presents a slide-illustrated profile of blacks who have made significant contributions to the development of American society.

How Cornrows Got Their Name. Using slides from her award-winning book *Cornrows*, Camille Yarbrough explores the African tradition of braiding hair and explains its significance in America today.

Portraits. Music, drama, and dance highlight Blackberry Productions' magical exploration of courageous black women who have had a profound effect on American history.

February 28 and March 1

Sacred and Secular African Music in the New World.

Kimati Dinizulu demonstrates the practice of African religions in the Caribbean.

African-Derived Culture in Puerto Rico. The Carambu Ensemble illustrates Africa's cultural impact on Puerto Rico with music and dance demonstrations of Bomba and Plena.

Kaufmann Theater

Seating is limited and is on a first-come, first-served basis.

February 7, 2:00 and 4:00 p.m.

Music of Two Worlds.

Montego Joe and Company explore the ways in which African-Americans have retained and drawn on African creative expression to form unique dance and music styles.

February 15, 2:00 and 4:00 p.m.

Harlem Renaissance.

Schroeder Cherry and his puppets salute noted personalities of the Harlem Renaissance. This enchanting presentation celebrates the lives of Langston Hughes, Zora Neale Hurston, Eubie Blake, and other great figures.

February 18, 7:00 p.m.

The Harlem Mosaic. In this slide-illustrated lecture, Hazel V. Rodriguez of the Department of Community Education at the Metropolitan Museum of Art describes life in Harlem from the turn of the century to the present. The presentation will feature the works of photographer James Van DerZee, who devoted much of his life to documenting the growth and development of Harlem, and will include materials from the Metropolitan Museum and other collections.

February 22, 2:00 and 4:00 p.m.

Rhythms, Rhymes, and Rituals. Using a dramatic combination of poetry, song, and dance, the Caribbean Theatre of the Performing Arts depicts the rich diversity of Caribbean cultures.

An Education Department Public Program.

Alvin Ailey Repertory Ensemble

On Wednesday, March 25, the critically acclaimed Alvin Ailey Repertory Ensemble will perform at 7:30 p.m. in the Museum's Main Auditorium. To obtain your tickets, which are \$6 for Members and \$7 for non-Members, please use the coupon below. For additional information, please call (212) 873-1300, ext. 514.



Byrd



Byrd

DEPARTMENT OF EDUCATION

Alvin Ailey Repertory Ensemble

Wednesday, March 25, 7:30 p.m.

Number of Members' tickets at \$6: _____

Number of non-Members' tickets at \$7: _____

Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Children's Corner: Meet FACES

Inca Road Race

A tremendous network of roads and highways connected the Inca world. Traveling through the mountains was not easy. In some places, the roads were so steep that the Inca had to cut steps into the mountain. To cross rivers, runners dashed over suspension bridges made of rope. Relay runners could travel between the great centers of Cuzco and Quito — a distance of more than 1,000 miles — in less than eight days. Pretend you and your team of runners must carry an important message from Cuzco to Quito and back. You can take any route you wish — each way presents its own share of obstacles.

Two to four people can play this game with you. You need a marker for each player (perhaps a small stone) and one die, which can be taken from another game. Start at Cuzco and roll the die to determine how many

spaces you will move. Along the way, you might land on the following:



stairs going up — lose your next turn



stairs going down — take another turn

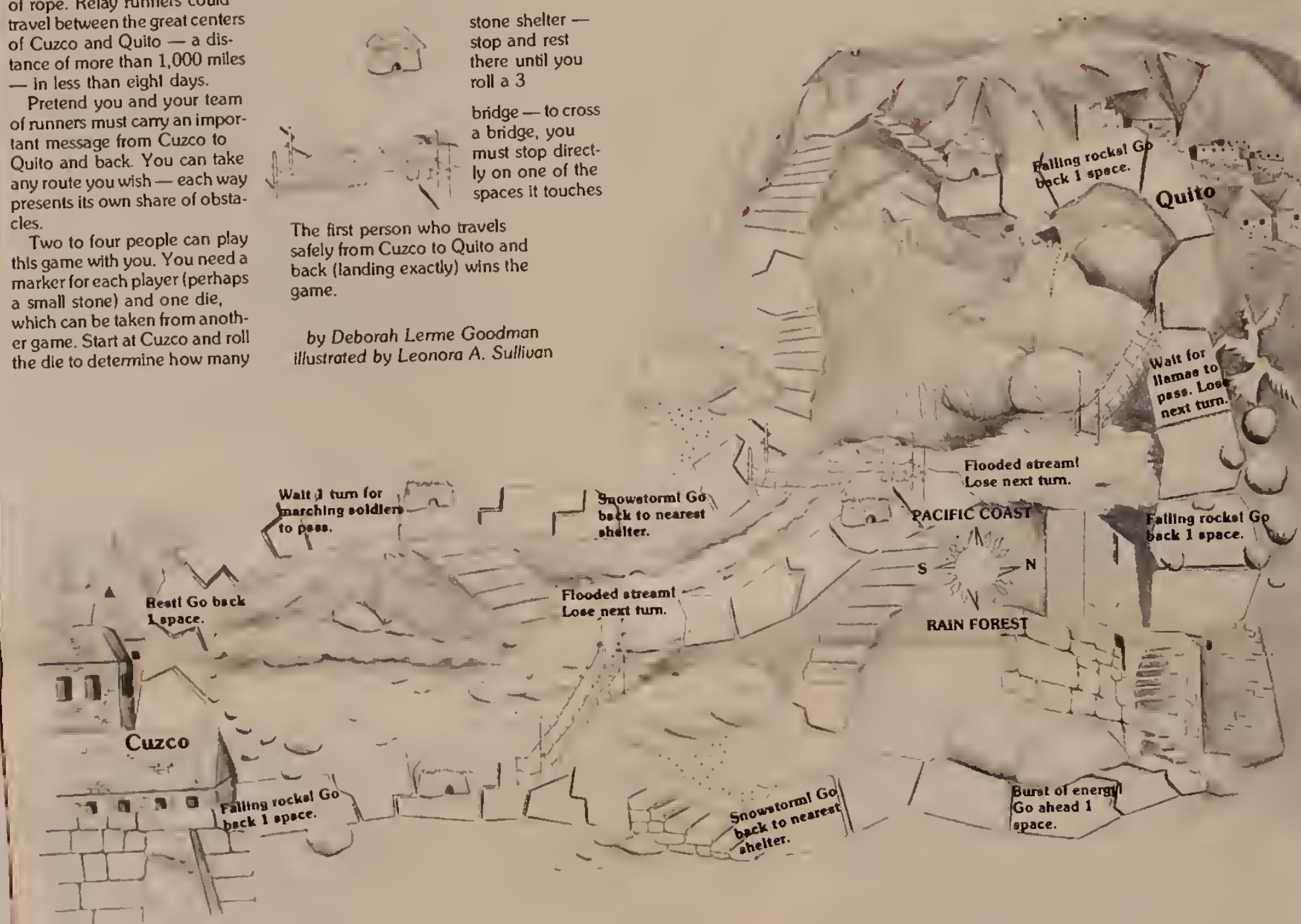
stone shelter — stop and rest there until you roll a 3



bridge — to cross a bridge, you must stop directly on one of the spaces it touches

The first person who travels safely from Cuzco to Quito and back (landing exactly) wins the game.

by Deborah Lerme Goodman
illustrated by Leonora A. Sullivan



FACES

An Anthropology Magazine for Young People

Winner, 1986 Parents' Choice Award

Introduce your child to world cultures with FACES. This innovative magazine for children aged 8 to 14 is published in cooperation with the Museum and features a different theme every month. Previous issues have looked at dragons, greetings, migration, and the elderly, sparking the reader's imagination through articles, stories, illustrations, and crafts.

FACES explores the customs and folklore of many nations, revealing to children the interesting variety of human societies. A lively approach to learning is offered by contests, puzzles, and games such as the one above.

Members can take advantage of a special discount on FACES by using the adjacent subscription coupon.

SUBSCRIBE TO FACES

A children's magazine published ten times a year.

— \$14.75 (Members) — \$16.50 (non-Members)

Please add \$4 for foreign orders.

Child's name: _____

Address: _____

City: _____ State: _____ Zip: _____

Your name: _____

Your address: _____

City: _____ State: _____ Zip: _____

Please make check or money order payable to FACES and mail with this coupon to: FACES, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Museum Notes

Photograph of a bootman on the Ganges, currently on display in the City of Light exhibition in the Akeley Gallery.



Special Exhibitions and Highlights

City of Light. Through February, in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through March 29, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Ladies in the Field: The Museum's Unsung Explorers. Through the spring, in the Library Gallery. Photographs, diaries, published monographs, and mementos chronicle the contributions of women, usually wives of curators, to the development of the Museum.

Programs and Tours

Museum Highlights

Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to

Discovery Tours at the Museum or call (212) 873-1440.

Birthday Parties

Last February, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last 2 hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 873-1327.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

February is Black History Month at the **Leonhart People Center.** This celebration features lectures, music and dance programs, and other special presentations. For further details, please see page 5, or call (212) 873-1300, ext. 514.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. It will be available for most programs in the Auditorium and will be provided free of charge with the deposit of a driver's license or major credit card. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe. Through June. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars.

The spring schedule for *Wonderful Sky* is as follows: Saturday, March 7; Saturday, April 4; Saturday, May 2; Saturday, June 6. Showtimes are 10 a.m. and noon. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, NY 10024), include a self-addressed, stamped envelope, and mail at least two weeks in advance. For additional information, please call (212) 769-3299.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 724-8700 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 873-8828.

Sat

Fri

Thu

Wed

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February 1987

American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.



James Van DerZee Institute

1 10:30 a.m. to 2:30 p.m. Behind-the-Scenes Tour of the Department of Mammalogy, open only to Participating, Donor, and Contributing Members. \$7. Tickets required.

Members of the Discovery Tour Ancient Civilizations of South America and the Pacific arrive at legendary Machu Picchu. Call (212) 873-1440 for information about future expeditions.

8 1:30 and 3:30 p.m. The Story of Hawaii. Kaufmann Theater. \$2.50 and open only to Members. For information, call (212) 873-1327.

Black History Month Programs. For details, see page 5.

2:00 New York Shell Club. Room 419. Free.

15 Black History Month Programs. For details, see page 5.

2:00 p.m. New York Paleontological Society. Room 426. Free.

2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free.

22 Black History Month Programs. For details, see page 5.

Discovery Tours participants visit Irian Jaya, the most remote and least visited part of New Guinea, on Indonesian Odyssey. Call (212) 873-1440 for information about future tours.

February is Black History Month.

9 Moon at apogee.

10 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

16 Washington's birthday observed. (The Museum is open.)

17 8:00 p.m. New York Entomological Society. Room 129. Free.

18 Black History Month Programs. For details, see page 5.

19 6:00 and 7:30 p.m. The Seven Wonders of the Universe: Members' Private Viewing. Hayden Planetarium Sky Theater. \$2.75 for adults, \$1.50 for children, and open only to Members. For further information, call (212) 873-1327. Page 4.

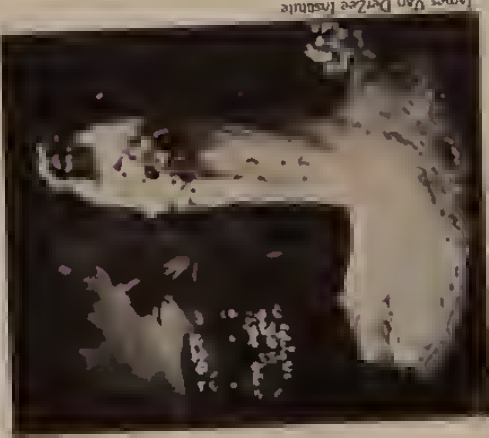


James Van DerZee Institute

13 Full moon.

14 Black History Month Programs. For details, see page 5.

1:30 and 3:30 p.m. Sword Dance Festival. Kaufmann Theater. Free. Page 4.



James Van DerZee Institute

21 Black History Month Programs. For details, see page 5.

Last-quarter moon.

23 The Department of Education's Spring Afternoon and Evening Lecture Series starts today. For details of the courses to be offered, call (212) 873-7507.

24 8:00 p.m. Linnaean Society of New York. Room 426. Free.

25 7:30 p.m. Conscience de Tracteur (The Second Ark), a dramatic performance by the Ubu Repertory Theater. Kaufmann Theater. Free. Page 4.

26

27 8:00 p.m. New York Microscopical Society. Room 419. Free.

New moon.

28 Black History Month Programs. For details, see page 5.

11:00 a.m. American Littoral Society. Room 426. Free.

POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No 3 March 1987

Kids' Stuff

The legends of the Native Americans, the lives of ocean-dwelling animals, and how to use a microscope are just a few of the subjects of the *Workshops for Young People* offered by the Department of Education.
Page 5

An Evening in Java

If the music and dance of Java are your cup of tea, this Members' program by the New York Indonesian Consulate Gamelan is sure to suit your taste.
Page 2

Music, Music, Music . . .

Melodies of many nations will fill the Kaufmann Theater this month in a weekend series of concerts.
Page 6

Stargazers

The Hayden Planetarium offers courses in astronomy, aviation, and navigation, in levels ranging from basic to advanced.
Page 8

Have Tusks, Will Travel

This Members' program ventures under a volcano to explore caves with the extraordinary *Elephants Underground*.
Page 2



Of Chaco Canyon's many arcane features, the great kivas are among the most spectacular. Casa Rinconada, pictured above, dates from the height of this civilization, between a.d. 1000-1150. Excavation of stylized benches, niches, and altars indicates that the kivas were ceremonial centers.

The Chaco Phenomenon

Members' Preview: Sunday, March 1

10:00 a.m.—5:45 p.m.

Open to general public: Friday, March 6 through Sunday, August 2

Gallery 3 (third floor)

More than 3,000 years before Christopher Columbus sailed for the New World, a community of desert dwellers in what is now called Chaco Canyon, New Mexico, had formed a religious and political center with a population that may have exceeded 10,000. The road system they created covered more than 250 miles and may have extended through several states. These people wore turquoise from distant mines and traded seashells with people from far-off shores. The giant communal buildings they created, called Great Houses, were the largest apartment buildings built on North American soil up to the industrial revolution. Their great city flourished for about 200 years — and then collapsed.

These people were the Anasazi, ancestors of today's Pueblo peoples. Their resourcefulness in the face of a harsh desert environment, the richness of their material culture and their ceremonial life, and the story of their rise and fall are explored in the traveling exhibition *The Chaco Phenomenon*. In addition to artifacts unearthed at Chaco, the exhibition contains photo murals, a map table, video presentations, and models of the Chacoan Anasazi that are based on their skeletal remains. Museum visitors can also see lithographs of paintings by the artist Richard Kern, fiberglass replicas of Chacoan masonry, and historical and modern photographs of the area.

Your membership card is your ticket of admission to the Members' preview

on Sunday, March 1, from 10:00 a.m. to 5:45 p.m. It will admit you and your guests. In conjunction with the Members' preview, there will be a screening of "The Chaco Legacy," a film made for the Odyssey Television series that explores the townships that developed in Chaco Canyon between 1,400 and 1,000 years ago. Next month, Members can take special guided tours of this exhibit — please see page 7 for details.

The Chaco Phenomenon, prepared by the Maxwell Museum of Anthropology in Albuquerque, is supported by grants from the National Endowment for the Humanities, the University of New Mexico Foundation, the Maxwell Museum Association, and Santa Fe Industries.

Gamelan Concert

Thursday, April 23
8:00 p.m.
Main Auditorium
\$7 for Members,
\$10 for non-Members

Members can enjoy the exotic rhythms of *Ikatan Karawitan Indonesia*, the New York Indonesian Consulate Gamelan, in an evening of traditional Javanese music and dance. The gamelan, a distinctive musical ensemble of Indonesia, is the traditional accompaniment for puppet shows, dances, leas, and other ceremonies.

A typical gamelan consists of gonglike instruments — ranging in pitch from deeply sonorous bass to sweetly ringing altos and tenors — and bronze metallophones, which somewhat resemble xylophones or marimbas, with bronze keys suspended over hollow bamboo tube resonators. Other instruments include a two-string fiddle and long bamboo flutes, which lend a notably vocal quality to the music, and several double-headed drums that are played with the hands.

This performance will feature pieces from the courts at Surakarta and Yogyakarta in Central Java. The dancers will perform in the male and female styles, the two basic formats of Javanese dance. In the female style, the dancer's feet remain close to the ground while the arms and hands perform intricate movements. A *sampur*, a long scarf tied about the waist, accentuates the arm movements. Male-style dancing features two modes, *alus* (refined) and *gagah* (strong). *Alus* dances resemble the female style, and male roles are often performed by women. *Gagah* dances are characterized by exaggerated movements and bold steps.

This performance will feature dances of several styles, including *Panji-Bugis*, the story of a pirate prince, and *Golek Ayun-Ayun*, a female-style court dance of Yogyakarta.

The New York Indonesian Consulate Gamelan is a group of Americans interested in the performance of traditional Javanese music. Several of its members have traveled to Java to study with native performers and teachers. The group is under the direction and artistic guidance of Sumarsam and I. M. Harjito, both of whom are graduates of the National Music Academy in Surakarta, Java, and have been instructors in gamelan performance for many years. Principal dancers are Sal Murgiyanto, renowned in Indonesia as a classical dancer and teacher, and Endang Nrangwesti Murgiyanto, an outstanding performer and teacher of Javanese dance.

The program is presented in cooperation with the World Music Institute. To register for the Gamelan Concert, please use the coupon on page 3.

Subterranean Elephants

Wednesday, March 18
7:30 p.m.
Main Auditorium
\$3 for Members, \$6 for non-Members



Greetings from underground.

Below Mount Elgon, a dormant volcano in East Africa, elephants play, eat, sleep, bathe, and assist in the formation of a remarkable underground world where salt abounds.

We've all heard of animals like bats and blind salamanders living in caves — but elephants? How did this unusual arrangement come to be?

Like many other animals, elephants have a strong physiological need for salt. When available salt happens to be underground, so are the elephants. And the elephants are not alone. They are joined by antelopes, monkeys, buffaloes, and a host of other salt lovers. Because the soil of Mount Elgon is devoid of salt, these animals must venture into caves beneath the volcano to satisfy their craving.

Join biologist Ian Redmond for *Elephants Underground*, an unforgettable introduction to the elephants of Mount Elgon National Park — their behavior, the fascinating ecosystem in

which they live, and their animal neighbors. Redmond, who first observed the elephants feeling their way underground by moonlight, will show slides of the animals in their subterranean forays and describe the forests, caves, and life forms of the park.

He will also advance a theory that is contrary to what was first believed about the formation of Mount Elgon's caves. Scientists previously supposed that the volcano's underground mines were shaped by wave formation or human habitation, but Redmond proposes an alternative cause — the tusks of determined troglodytes.

Redmond began his postgraduate work with the late Dian Fossey at the mountain gorilla Karisoke Research Centre in Rwanda and went on to do fieldwork in Papua New Guinea and elsewhere in Africa.

To register for *Elephants Underground*, please use the March Members' programs coupon on page 3.

ROTUNDA

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March 1987

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A graceful duo from the New York Indonesian Consulate Gamelan illustrate the appeal of Javanese dance.

Free as a Bird

Tuesday, April 7
7:30 p.m.
Main Auditorium
Free for Members,
\$4 for non-Members

What featherless biped has not looked to the sky, envying a passing flock of birds their freedom of flight? For migratory shorebirds, however, this "freedom" is no wanton exercise of liberty, but critical to their survival. The Members' program on *Shorebird Migration* will describe the routine flight of thousands of miles nonstop performed by these birds in their annual circuit between the Arctic and the Southern Hemisphere.

One of nature's most spectacular migrants is the red knot, a robin-sized shorebird named for the distinctive blush of its breeding plumage. These diminutive creatures fly from one end of the globe to the other, a distance of up to 18,000 miles, with only a few brief stops. Ornithologist Brian Harrington will describe for Members the migratory patterns of red knots and other shorebirds and their dependence on a chain of few and far-between stopover sites in the Americas. He will explain

why hundreds of thousands of birds perform this dangerous feat each year.

Crucial to the red knots' successful completion of their lengthy flights are the brief stops along the way. They and other migratory shorebirds depend on a very limited number of highly productive areas in which they can prepare for their long-distance flights. At these critical stopover areas, the red knots gorge themselves on a feast of crustaceans, eating so heartily that they nearly double their body weight. These fat reserves, fuel for the long migration, are metabolized in the course of their subsequent flight.

The identification and assessment of these precious stopover areas is a focus of Harrington's work. His home base of Manomet Bird Observatory on Cape Cod Bay is one such place: at the season's height, as many as 20,000 leeding shorebirds may blanket a 15-mile stretch of beach.

Harrington and co-workers identify the migrants and trace their progress by attaching colored bands to the birds' legs. Research gathered by the International Shorebird Survey, a network of 500 bird-watching volunteers throughout the Americas, indicates that major conservation considerations are necessary to protect the migration stopover sites. Efforts by the Manomet team and other cooperating institutions were rewarded last May when the critical site of Delaware Bay was declared an international shorebird reserve.

Harrington will illustrate his presentation with slides of the migratory shorebirds at various locations in the course of their journey from the top of North America to the bottom of South America. This program is presented in cooperation with the Manomet Bird Observatory. To register for *Shorebird Migration*, please see the March Members' programs coupon.

Galápagos

Sunday, April 12
11:30 a.m. (for families) and 1:30 p.m. (for adults)
Kaufmann Theater
Free and open only to Members

"The chief sound of life here is a hiss."
— Herman Melville
The Encantadas



The mild-natured and lethargic land iguana inhabits the islands' arid zones.

It's a peculiar place, situated on the equator and in the Pacific Ocean, some 600 miles west of the Ecuadorian coast. Galápagos is home to a strange array of creatures and in this slide-illustrated lecture, Members will learn how these animals have managed to survive in this land of barren lava and cool seas. Nowhere else on Earth do penguins, tropical fish, sea lions, marine iguanas, and thousands of sea birds coexist. Among the animals unique to these islands are night-flying sea gulls, cor-

morants that cannot fly, and the famous giant tortoises. Virtually all of the reptiles of the Galápagos — as well as most of the land birds, half of the plants, and even a third of the inshore fish — are found exclusively in these islands.

The dramatic volcanic landscapes and remarkable lack of fear shown by the animals, so impressive to young Charles Darwin on his five-week visit to the islands aboard the *Beagle*, continue to intrigue today's scientists and visitors. These is-

lands, which first emerged from the Pacific Ocean some five million years ago, are perhaps the world's clearest natural laboratory of evolution.

Educator and naturalist Darrel Schoeling will draw from the fascinating bestiary of Galápagos life to discuss how plants and animals may have arrived at this isolated archipelago and how they may have changed in this new, largely unoccupied and harsh place. He will describe for Members the geological formation of the islands, their wildlife, and some current research. Schoeling, who was an instructor in the Museum's Department of Education and has served as a coordinator of Highlights Tours, recently returned from a two-year stint in the Galápagos Islands as a Naturalist-Guide licensed by the Ecuadorian government.

The 11:30 a.m. program is geared toward families with 7- to 10-year-olds, and the 1:30 p.m. program is for adults. A Discovery Sheet will be available for families who would like to explore the Museum's exhibits about the Galápagos Islands. To register for *Galápagos*, please use the March Members' programs coupon.

March Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: March Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Secret of the Cardboard Rocket. Sunday, March 8, 10:30 and 11:30 a.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 10:30 a.m. _____ 11:30 a.m.

Number of children's tickets at \$1.50: _____

Number of adults' tickets at \$2.75: _____

Total amount enclosed for program: _____

Elephants Underground. Wednesday, March 18, 7:30 p.m. \$3 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

The Rollickin' Dinosaur Revue. Saturday, March 28, and Sunday, March 29 shows SOLD OUT. Extra shows on Sunday, May 3. \$3 and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first and second choice of times, if possible:

Sun., May 3 _____ 11:30 a.m. _____ 1:30 p.m.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Shorebird Migration. Tuesday, April 7, 7:30 p.m. Free for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Galápagos. Sunday, April 12, 11:30 a.m. and 1:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.

_____ 11:30 a.m. (for families) _____ 1:30 p.m. (for adults)

Number of tickets: _____

Gamelan Concert. Thursday, April 23, 8:00 p.m. \$7 for Members, \$10 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$10.

Number of Members' tickets at \$7: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Happy Birthday!

Celebrate your child's next birthday with *Brontosaurus*, the African elephants, and other Museum friends at one of our Members' birthday parties. We began the parties a year ago and have been celebrating ever since. Members can now choose one of three themes.

Dinosaur Party. Our most popular party features a tour of the dinosaur halls to see such prehistoric favorites as *Tyrannosaurus rex*, *Triceratops*, the dinosaur mummy, and a nest of dinosaur eggs. Children will touch a dinosaur tooth, handle fossils, and then make one of their own. They might also create a dinoscape and play dinosaur trivial pursuit or the dinosaur skeleton game.

Safari Party. Our newest party features the halls of African Mammals and Man in Africa. When the partygoers arrive, they make their own safari hats. Then it's off to the halls to explore for lions, giraffes, and gorillas and to learn about the different ways in which people have adapted to the African environment. When the children return from the safari, each one will make an African animal

mask and perhaps hear an African tale or play African games.

Star Party. This party is presented in conjunction with one of our Planetarium shows or the Naturemax presentation *The Dream Is Alive*. After viewing the show, children will take a tour of either the meteorite hall or the Planetarium's exhibition halls. Then they will return to the party room to make a flying saucer, hold a meteorite, and play musical planets.

The parties are geared for children aged 5 to 10 years old. There can be a minimum of 10 children and a maximum of 20 children. The price for the parties is \$195, plus \$10 per child. The price includes all materials, room decorations, a special favor bag (with a month's complimentary membership pass), ice cream, and juice. Cake is not included, and lunch or dinner is extra. The parties are held on weekends at either 11:00 a.m. or 2:30 p.m., and on Wednesdays and Fridays after 4:00 p.m.

Please call (212) 873-1327 for further information and reservations. We are now booking for April through June.



Kids on safari can celebrate with this party animal.

The Secret of the Cardboard Rocket

Members' Private Viewing

Sunday, March 8

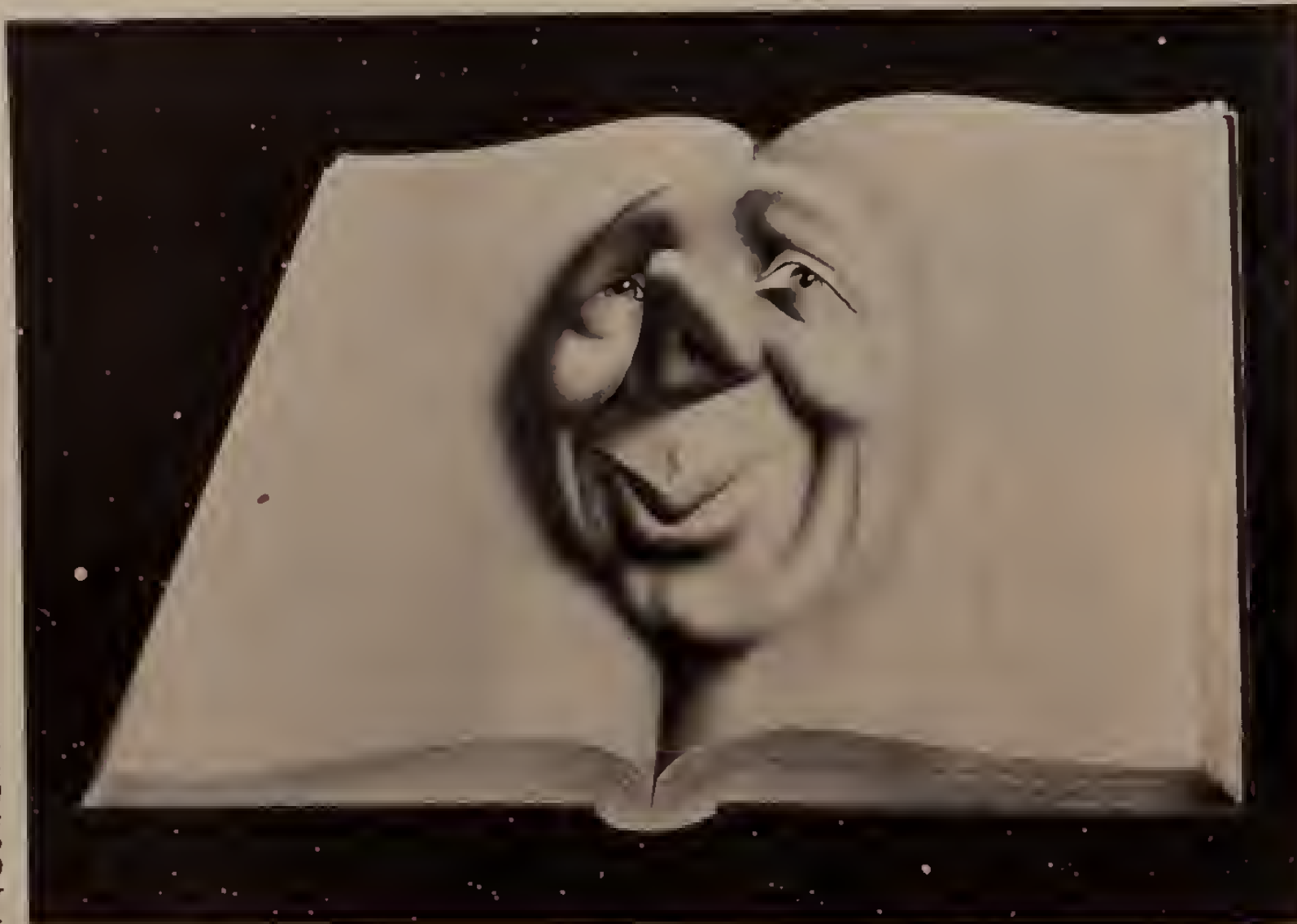
10:30 and 11:30 a.m.

Planetarium Sky Theater

\$2.75 for adults, \$1.50 for children

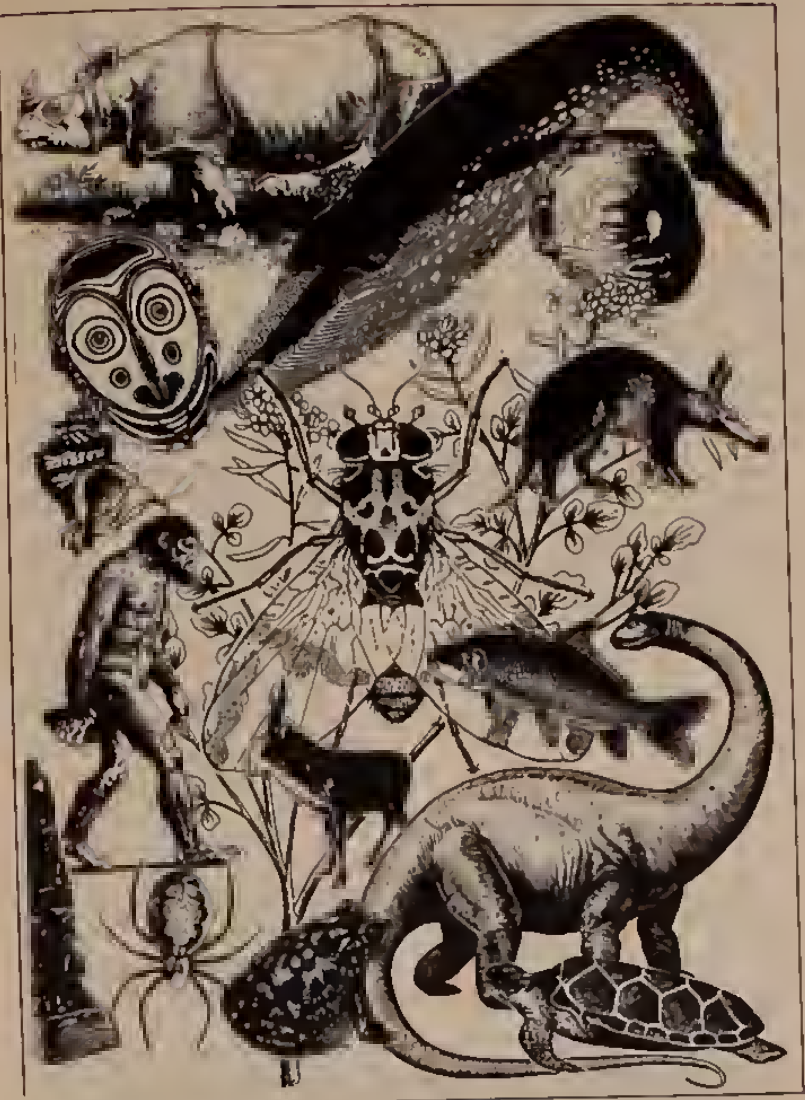
Astronomy is more than an open book for Members and their children. It's a spellbinding adventure.

Designed especially for children aged 5 through 8, this brand-new Planetarium Sky Show takes viewers on an introductory spin around the solar system. The Members' Private Viewing of *The Secret of the Cardboard Rocket* offers children an opportunity to construct and decorate their own cardboard rockets. Please use the coupon on page 3 to register, or call (212) 873-1327 for further information.



The Department of Education Presents

Workshops for Young People



WEEKEND COURSES

Through the Eyes of a Child: Introducing the Museum

S- or 6-year-olds with one adult
Two Sundays
Section A: April 26 and May 3;
10:15–11:45 a.m.

or
Section B: May 17 and 24;
10:15–11:45 a.m.
Fee: \$25 (\$23 for Members)

The American Museum is a treasure house of wonderful things, and a Museum educator will introduce you and a child to this exciting place. Rocks, minerals, and plant and animal specimens offer children a broader perspective on the world around them. Presented by Marjorie M. Ransom, Museum Educator.

Nature Activities for the Very Young

Grades 1 and 2
Two Sundays
Section A: April 26 and May 3;
10:15–11:15 a.m.

or
Section B: May 31 and June 7;
10:15–11:15 a.m.
Fee: \$15 (\$13 for Members)

Children participate in springtime nature activities, from growing seeds to learning about different kinds of leaves. They explore the nature of New York City in the Alexander M. White Natural Science Center; visit there with Sam, a talking starling; and view the exhibition halls. Taught by Mary Croft, early childhood specialist.

Animals Without Backbones

Grades 7, 8, and 9
Five Sundays, beginning April
26; 10:30 a.m.–12:00 p.m.
Fee: \$30 (\$28 for Members)

From cockroaches to butter-

flies, students survey the fascinating world of invertebrates. How does a starfish eat or an earthworm breathe? What is in a single drop of pond water? By performing simple behavioral experiments, students discover how spineless animals have survived and adapted to many different environments. Using dissecting 'scopes as well as microscopes, students investigate internal and external anatomy. Taught by Dr. Betty Faber, entomologist.



Learning to Draw Animals

Grades 6, 7, and 8
Two Sundays
Section A: April 26 and May 3;
1:00–3:00 p.m.

or
Section B: May 31 and June 7;
1:00–3:00 p.m.
Fee: \$15 (\$13 for Members)

Using exhibition halls as drawing studios, students explore the basic structures and shapes of animals. From skeletal anatomy to the addition of important muscles, students see how an animal takes form. Quick sketching exercises give practice in drawing skills. Materials provided. Presented by Stephen C. Quinn, of the Museum's Exhibition Department.

Discovering the Microscopic World

Grades 7 and 8
Two Sundays: April 26 and
May 3; 1:00–3:00 p.m.
Fee: \$15 (\$13 for Members)

This course is an introduction to the use of the microscope. Discover the shape of a salt crystal, compare different kinds of animal hair, and look at plant cells. Students learn how to prepare their own slides and view living organisms under the microscope. Presented by Andrea Thaler, Museum Educator.

Splash

Grades 4 and 5
Two Sundays: May 17 and 24;
10:30 a.m.–12:00 p.m.
Fee: \$15 (\$13 for Members)

Discover familiar and unusual animals that live in or near the ocean. Find out about surface-breathing mammals. Learn about the shell builders through the use of the Museum's extensive shell collection and examine other animals of shore and sea. Presented by Frances Smith, Museum Educator.

SATURDAY WORKSHOPS

Students should bring
a bag lunch.

Archeology

Grades 5 and 6
April 25; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

Students participate in the excavation of a simulated archeology site in the classroom. This and other activities help youngsters acquire an understanding of the field techniques and approaches used by archeologists. Taught by Anita Steinhart, lecturer and teacher of anthropology.

Playing and Learning

Grades 3 and 4
May 2; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

Games are played in virtually all parts of the world and can awaken a child's sense of wonder. They help children learn the art of cooking, sharpen hunting skills, or discover other adult roles. Participants in this workshop learn about the games of other cultures and how they are played. Museum exhibition halls and display objects are included. Presented by Mary Kim, Museum Educator.

Native American Lore and Legend

Grades 3, 4, and 5
May 9; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

Native Americans consider the land, plants, and animals gifts from the creator that are to be used and respected. Students will develop an understanding of Native American traditions, beliefs, and values through stories, crafts, films, and a visit to the Museum's exhibition halls. Children will be encouraged to discuss the relevance of Native American legends to their own lives. Taught

by Rob Bernstein, instructor at the New York Botanical Gardens.

Wonderful Whales

Grades 3 and 4
May 16; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

There is a great mystery about whales, creatures that spend most of their lives below the surface of the sea. They can approach 100 feet in length, weigh over 140 tons, and devour eight tons of food a day, and some species are nearing extinction. Participants learn all about whales and their endangered status through film, songs, games, artifacts, and a visit to the Museum's Hall of Ocean Life. Taught by Merryl Kafka, educator at the New York Aquarium.

But Will It Bite?

Grades 3 and 4
June 6; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

Discover how insects live and grow. Watch dragonflies soar through the air and hear grasshoppers sing. Delight in many-colored ladybird beetles and ants at work on constructing a home. Students use the

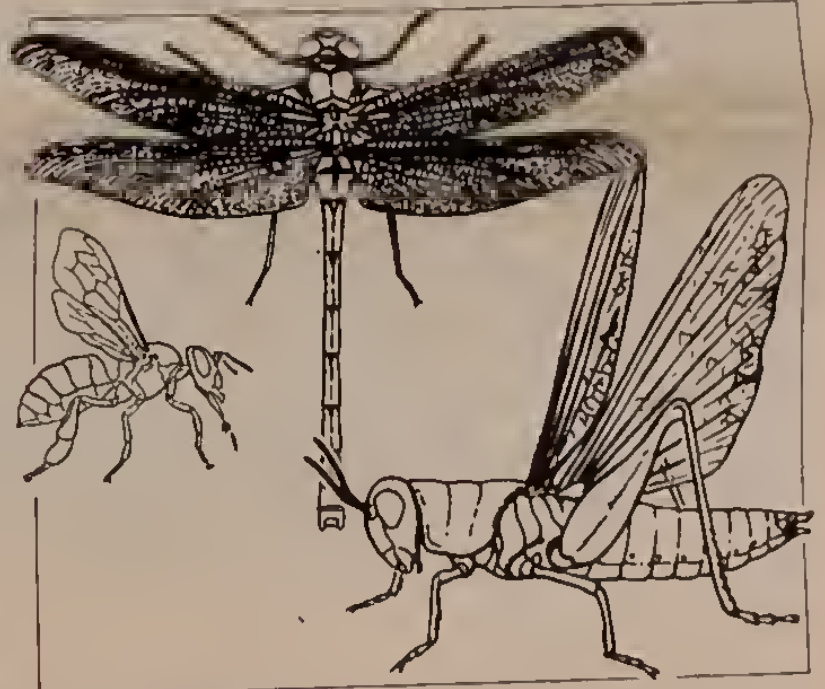
wooded areas and meadows of Central Park and a laboratory classroom to investigate the behavior of some very common animals — the insects. Taught by Dr. Betty Faber, entomologist.

FOR THE LEARNING DISABLED

Marvelous Mammals

Limited to 15 children
Ages 8–10 years
May 9; 10:30 a.m.–1:30 p.m.
Fee: \$10 (\$9 for Members)

Have you ever wondered what a raccoon's favorite food is, what a muskrat does with its house during winter, or why a squirrel has a bushy tail? Children will use mounted specimens and explore the Museum's exhibition halls to learn about many different mammals and their habitats. This program is designed for the learning-disabled child and provides high-interest material in a small-class setting with a hands-on approach. Presented by Rhonda Young, the Museum's special education instructor in the Education Department.



DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____
(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: *Workshops for Young People*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

March Music in the Kaufmann Theater

This month finds an international diversity of music at the Museum — from ancient traditions of the Caucasus Mountains to modern-day variations on Japanese folk rhythms. Storytelling and dance are also featured in a weekend series of musical celebrations in the Kaufmann Theater.

There is no charge for these

programs, which are made possible by grants from the Helena Rubinstein Foundation and the Vincent Astor Foundation to the Museum's Department of Education.

For additional details of these programs, call (212) 873-1300, ext. 559. No tickets are necessary, and seating is on a first-come, first-served basis.

Middle Eastern Music and Legend Saturday, March 7 7:00 p.m.

The World Story and Music Ensemble, a group devoted to the dramatization of oral traditions from around the world, presents *Majnun Layla*, a Middle Eastern legend of love

found and lost. The legend is narrated and performed by Margaret Wolfson to the accompaniment of a musical score by Simon Shaheen. The score features the Arabic lute (oud), violin, flutes, harp, and percussion instruments, played by Mr. Shaheen and Paula Chan Bing. Their backdrop is a 20-foot painting by artist Xavier de Callatay, an evocative rendering of the Arabian desert.

This moving romantic drama recounts the passion of medieval poet Al-Majnun for the beautiful Layla. A central theme of *Majnun Layla* is the spiritual and artistic transformation engendered by the suffering and ecstasy of obsessive love. This production, which has been performed at the Museum of Fine Arts in Boston, is the New York premiere.

Drums of Japan Saturday, March 14 2:00 p.m.

Taiko drumming offers both entertainment and inspiration. The storytelling drums speak of sacred themes, such as the descent of dragon gods from heaven, and embody the forces of nature, as in their re-creation of an evening storm. This folk art, interpreted by the group *Soh Daiko*, combines regional traditions of festival drumming with modern improvisational techniques.

The drummers of *Soh Daiko* take their name in part from the Japanese word meaning "peace" and "harmony" (*soh*). The term is reflective of the group's attitude toward life and their music: taiko drummers require a high degree of mental and physical discipline to capture the feeling and intensity characteristic of their musical tradition.

This performance, made possible in part with funds from the

New York State Council on the Arts, is in conjunction with the Museum's celebration of Japan Month. For details of other programs in this series, please see page 9.

Joy in Every Land Sunday, March 15 2:00 p.m.

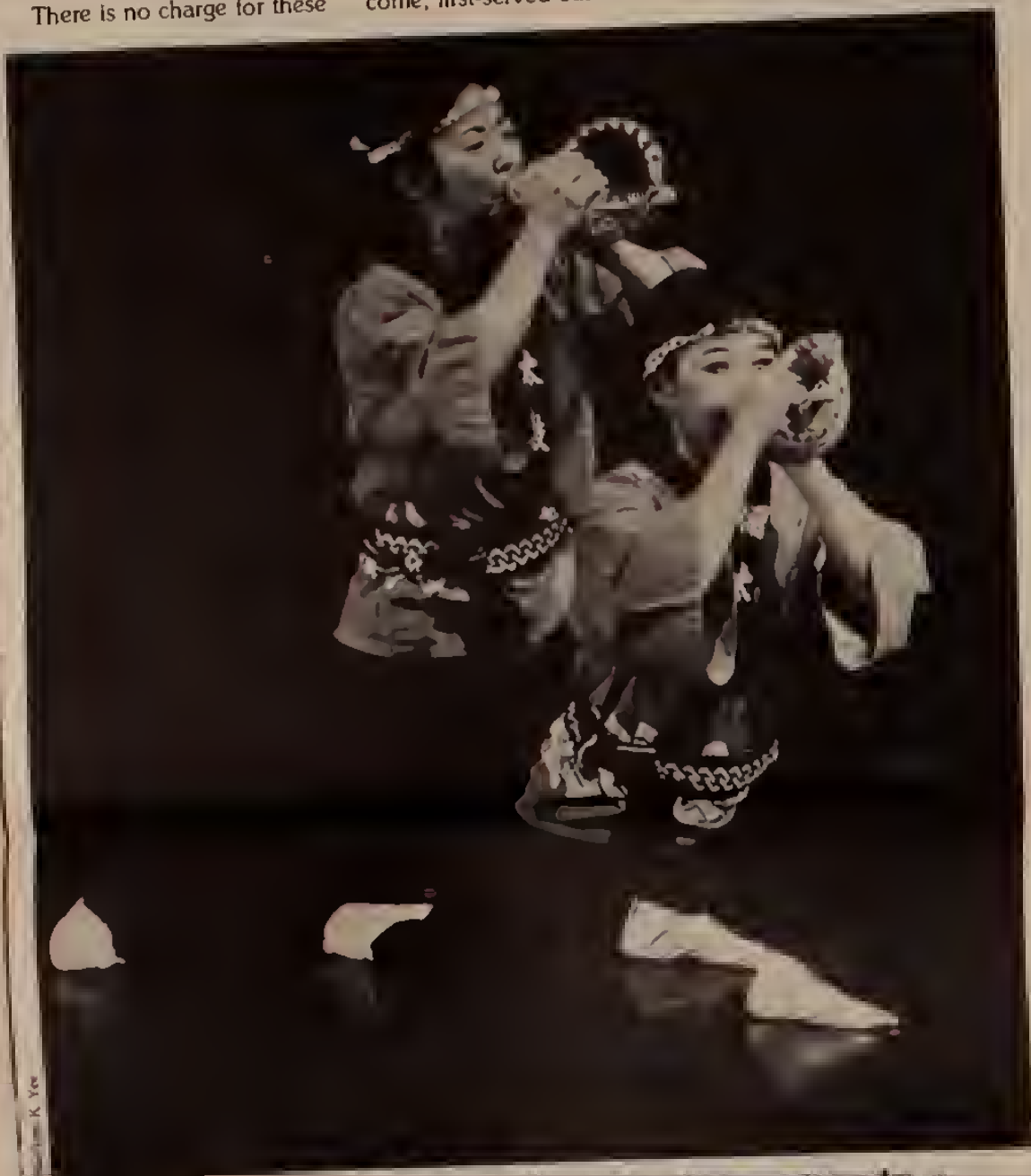
Dance as a means of fostering international understanding is the creed of the ALLNATIONS Dance Company. Formed in 1963 at New York City's International House, it is one of America's most successful and well-traveled dance troupes. The company's program of dances from around the world includes traditions from Spain, India, Mexico, Russia, and the Philippines.

Music of the Soviet Caucasus Mountains Sunday, March 22 2:00 p.m.

The Kavkaz (Caucasus) musical traditions extend into the distant past to a period long before Christianity. This area — which includes Daghestan, Armenia, Georgia, and Azerbaijan — developed a format and repertoire that are basic to present-day Judeo-Christian-Islamic liturgies and, consequently, to Western folk and classical compositions.

The four chief forms of Kavkaz music are featured: the mugamat, classical music based on religious chants and other sacred music; *ashokh*, epic tales; traditional folk dance pieces; and popular urban songs. The primary instruments are the *kamancha* (skin-faced spiked fiddle), the *tar* (skin-faced lute), and the *gabal* (a large tambourine-like drum). These instruments, constructed according to ancient principles, are as old as the culture itself.

An Education Department Public Program.



Performers from *Soh Daiko*, whose primary instruments are drums, exhibit versatility with conch shell horns.

The Rollickin' Dinosaur Revue

Saturday, March 28, and Sunday, March 29 (SOLD OUT)

Extra Shows on Sunday, May 3 at 11:30 a.m., 1:30 p.m.

Kaufmann Theater

\$3 and open only to Members

These lizards of long ago are coming back, and this time they have a sense of humor.

Teacher Mike Wellbacher presents a fun-loving look at the world of dinosaurs in an educational Members' family program.

Singalongs, stories, and magic tricks highlight this program, which is geared toward children aged 4 through 10. A series of dinosaurian games and activities has been organized in conjunction with the revue. Use the coupon on page 3 to register, or call (212) 873-1327 for further information.



Cities in Ruins

Explore ancient cultures of South America and the southwestern United States in the Department of Education's Spring Afternoon and Evening Lecture Series. These slide-illustrated programs are presented by experts who place archeological findings within a historical context, attempting to recapture the glorious achievements of these vanished civilizations and account for their inevitable destruction.

For further information about availability of series tickets for these programs, please call (212) 873-7507.

Civilizations of the Andes

March 26, April 2, and April 9
7:00-8:30 p.m.

Main Auditorium
\$20 (\$18 for Members)

Craig Morris, chairman and curator of the Museum's Department of Anthropology, hosts this three-part examination of the dynamic civilizations of the central Andes. Dr. Morris,

who has conducted on-site archeological research in Peru for many years, will discuss some of the results of his investigations.

The Inca: Native America's Largest Empire (March 26). Until their conquest by Pizarro in 1532, the Inca commanded a sprawling, 2,500-mile kingdom that extended from northern Chile to Ecuador. Their vast empire was connected by a complex network of roads by which Inca armies and relays of messengers traveled. It was ruled by a divine monarch who exercised autocratic control. This series explores the development and organization of the rich Inca civilization, as well as the factors contributing to its vulnerability to the conquistadors.

From Caves to Conquest (April 2). This presentation focuses on the beginnings of Andean civilization, from the arrival of the first inhabitants over 10,000 years ago to the com-

plex culture of the Inca. These pioneers, presented with the Pacific's extensive environmental opportunities, developed effective means of exploiting these resources. The rise of agriculture and herding led to the building of substantial villages, towns, and cities and to the evolution of rich and powerful cultures such as that of the Inca.

The Andean Achievement (April 9). Sixteenth-century explorers of the New World discovered a civilization whose accomplishments in many ways surpassed those of the Europeans. The people of the Andes faced a changeable, often cruel environment, yet through centuries of ecological adjustment, they developed a finely balanced system of managing their natural resources that enabled them to amass the wealth that so dazzled their conquerors. This presentation explores other significant areas of Andean achievement as well, including technology, administration, urban development, science, religion, and the arts.

Chaco Canyon: Center of the Anasazi World

Two Monday evenings,
March 9 and March 16
7:00-8:30 p.m.

Main Auditorium
\$15 (\$13.50 for Members)

In conjunction with the special exhibition *The Chaco Phenomenon*, these lectures examine the prehistoric civilization of New Mexico's Chaco Canyon (for details of the exhibition, please see page 1).

The Prehistoric and Historic Southwest (March 9), presented by J. J. Brody, professor of art history at the University of New Mexico and research curator at the Maxwell Museum of Anthropology (the institution that lends this temporary exhibition). Art and architecture from the classic Chaco period (ca. a.d. 950-1150) are the focus of Dr. Brody's lecture. In the late 1800s, representatives of the American Museum of Natural History were among the initial investigators of Chaco Canyon, and the Museum's role in the excavation, curation, and preservation of Chacoan artifacts will be examined.

The Chaco Phenomenon (March 16), presented by Thomas C. Windes, archeologist for the National Park Service and principal investigator for the Chaco Project. After a.d. 900, life at Chaco Canyon differed from that in other centers of Anasazi civilization in such a way that the canyon became the focus of all surrounding life for thousands of miles. This lecture will explain characteristics of the canyon and alterations in the daily existence of its residents between the years of early Anasazi occupation (a.d. 1-900) and the Mesa Verdean reoccupation (a.d. 1200-1300).

Members' Tour of the Month

The Chaco Phenomenon

Free and open only to Participating, Donor, and Contributing Members

Explore the prehistoric mysteries of Chaco Canyon at the Museum's new exhibition in Gallery 3. Members will be accompanied by specially trained Highlights Tour guides in a closeup view of this vanished culture. To register, please use the coupon below.



Pottery, along with jewelry and tools, is a characteristic Chacoan artifact.

Members' Tour of the Month: The Chaco Phenomenon.
Free and open only to Participating, Donor, and Contributing Members.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first and second choice of dates and times:

| | | |
|----------------|------------------|------------------|
| Wed., April 1 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Sun., April 5 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wed., April 8 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Sat., April 11 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wed., April 22 | _____ 6:00 p.m. | _____ 7:00 p.m. |
| Sun., April 26 | _____ 10:30 a.m. | _____ 11:30 a.m. |

Number of people: _____

Please mail with a self-addressed, stamped envelope to: *The Chaco Phenomenon*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. **Please note: registration closes on March 21.**



The remarkably well-preserved Inca city of Machu Picchu, Peru, contains fine examples of fifteenth-century masonry.

Courses for Stargazers



Robert Kane

ASTRONOMY: BASIC COURSES

Introduction to Astronomy
Eight Tuesdays, beginning April 7; 6:30-8:40 p.m.
Classroom 2
Instructor: Dr. Bartol
Fee: \$70 (\$63 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include the earth as a planet, the moon, the solar system and sun, the stars, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Stars, Constellations, and Legends

Five Tuesdays, beginning April 7; 6:30-8:10 p.m.
Sky Theater
Instructor: Mr. Beyer
Fee: \$50 (\$45 for Members)

An introduction to the lore of the sky. Using the Zeiss Projector in the Sky Theater, this course identifies the prominent stars, constellations, and other sky objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated.

How to Use a Telescope
Eight Wednesdays, beginning April 8; 6:30-8:40 p.m.
Classroom 3
Instructor: Mr. Storch
Fee: \$70 (\$63 for Members)

An introduction to selection and use of a small amateur telescope. Topics include basic optics of telescopes, equatorial and altazimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other aids for observation.

Charting the Cosmos
Five Mondays, beginning April 6; 6:30-8:40 p.m.
Classroom 3
Instructor: Mr. Lovi
Fee: \$50 (\$45 for Members)

How do astronomers map the universe? This course will explore some of the interesting and unusual aspects of the geography of the heavens. Starting with the lore of the earliest constellations and star names, we will cover the increasingly

sophisticated techniques by which the innumerable celestial objects have been pinpointed. We will see how the astronomer has, since the last century, conquered the "third dimension" of space and gauged the distance to stars, clusters, and nebulae — all the way to the most remote galaxies and quasars at the fringes of creation.

ASTRONOMY: INTERMEDIATE COURSES

Survey of the Planets
Eight Thursdays, beginning April 9; 6:30-8:40 p.m.
Classroom 2
Instructor: Ms. Jackson
Fee: \$70 (\$63 for Members)

Information supplied by spacecraft in the past several years has made the planets an exciting subject for scientific study. This course will introduce the planets both as parts of the entire structure of the solar system and as individual, unique bodies. Topics include structure, composition, weather, rings, and satellite systems of the various planets. Images from the many planetary spacecraft will be used to complement the class lectures and discussions. Prerequisite: Introduction to Astronomy is recommended but not required.

Anthropic Measures of the Cosmic Realm

Eight Tuesdays, beginning April 7; 6:30-8:40 p.m.
Classroom 3
Instructor: Dr. Allison
Fee: \$70 (\$63 for Members)

What is the relationship of humankind to the astronomical universe of stars and galaxies? The anthropic principle, a recent and still-controversial concept, suggests a reexamination of humankind's place in the universe. This perspective is motivated in part by a remarkable series of coincidences in the relationship of physical constants and measured cosmic dimension that appear critically set to the requisite values for human existence. This course will examine the scientific evidence and philosophical arguments associated with this idea in the context of modern astronomy. Special topics include a discussion of astrophysical measurements, black holes, galaxies, Big Bang cosmology, and high energy physics. This course assumes a knowledge of high school algebra and the concepts of modern physics (to

be reviewed in class). This course is of particular interest to anyone who enjoys the interplay of ideas and contemporary science.

METEOROLOGY

Weather and Climate
Eight Thursdays, beginning April 9; 6:30-8:40 p.m.
Classroom 2
Instructor: Mr. Rao
Fee: \$70 (\$63 for Members)

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

AVIATION

Ground School for Private and Commercial Pilots

Fourteen sessions, Mondays and Wednesdays, beginning April 6; 6:30-8:40 p.m.
Classroom 2
Instructor: Mr. Cone, CFIA, AGI
Fee: \$175 (\$157 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for Biennial Flight Reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotter, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, Federal Aviation Regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Twelve sessions, Mondays and Wednesdays, beginning April 20; 6:30-8:40 p.m.
Classroom 2
Instructor: Mr. Cone, CFIA, AGI
Fee: \$175 (\$157 for Members)

Intended for those planning to take the FAA written examination for an instrument license.

The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters

Eight Tuesdays, beginning April 28; 6:30-9:00 p.m.
Classroom 1
Instructor: Dr. Hess
Fee: \$95 (\$85 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

NAVIGATION: INTERMEDIATE COURSES

Piloting for Sailboat Operators

Eight Thursdays, beginning April 30; 6:30-9:00 p.m.
Classroom 1
Instructor: Dr. Hess
Fee: \$95 (\$85 for Members)

This course draws upon and reviews material covered in

Navigation in Coastal Waters and is geared to the sailboat navigator with some experience who wishes more information on position determination techniques and methods. Topics include the mariner's compass with a review of compass error and deviation, dead reckoning, determination of speed, position-finding methods with vertical sextant angles, the use of ranges and other lines of bearing for fixes and running fixes, sailing in currents, and estimation and application of leeway. The equipment kit obtained for Navigation in Coastal Waters will be used in the course. Prerequisite: Navigation in Coastal Waters or equivalent experience with the permission of the instructor.

Introduction to Celestial Navigation

Eight Mondays, beginning April 6; 6:30-9:00 p.m.
Classroom 1
Instructor: Prof. Parnham
Fee: \$95 (\$85 for Members)

For those who have completed Navigation in Coastal Waters or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

NAVIGATION: ADVANCED COURSES

Advanced Celestial Navigation

Eight Wednesdays, beginning April 8; 6:30-8:40 p.m.
Classroom 1
Instructor: Prof. Parnham
Fee: \$70 (\$63 for Members)

This course includes subject matter not covered in Introduction to Celestial Navigation with

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note: only Participating, Donor, and Contributing Members are entitled to the Members' discount.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail this coupon with a stamped, self-addressed envelope and your check payable to the American Museum-Hayden Planetarium to: Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024. Registration by mail is strongly recommended. For additional information, call (212) 873-1300, ext. 206, Mon.-Fri., 9:30 a.m.-4:30 p.m.

Stargazers (continued)

additional practice problems for the solution of the celestial line of position, latitude by meridian transit of the sun and other celestial bodies, latitude by observation of Polaris, computations of sunrise, sunset, moonrise, moonset, and twilight phenomena. Other subjects include navigational astronomy, star identification by altitude and azimuth methods, azimuth computations for determining compass error and deviation at sea, comparison of sight reduction tabular methods using marine navigation and air navigation tables, and sight reductions by formula methods. Prerequisite: *Introduction to Celestial Navigation* or equivalent experience with the permission of the instructor.

FOR CHILDREN

The courses listed below are intended for the family, so that children and parents may learn together about astronomy and the space age. The courses may be taken by children aged 10 years and over without a parent if desired; however, much of the subject matter may not be appropriate for children under the age of 8. Fees are per person. For additional information about the young people's courses, please write to the address appearing on the coupon or call (212) 873-1300, ext. 206 (Monday through Friday, 9:30 a.m.-4:30 p.m.).

Stars, Black Holes, and Galaxies

Ten Saturdays, beginning April 11; 9:30-10:20 a.m. Classroom 1
Instructor: Mr. Small
Fee: \$25 (\$22.50 for Members)
Topics include the evolution of the cosmos, star types, life cycles of stars, nebulae, black holes, galaxies, and quasars. Methods and instruments used by astronomers to collect their information will be emphasized. This course, together with *The Solar System*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

The Solar System

Ten Saturdays, beginning April 11; 10:30-11:20 a.m. Classroom 1
Instructor: Mr. Small
Fee: \$25 (\$22.50 for Members)
This course includes a brief overview of historical astronomy and considers the many theories concerning the origin of the solar system, as well as the geology of the planets and their satellites, including the earth and the moon. Additional topics include meteors and meteorites, asteroids, lunar phases, tides, eclipses, and the star of our solar system, the sun. This course, together with *Stars, Black Holes, and Galaxies*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Celebrate Japan Month

Japan's proud history of cultural achievements is celebrated this month in a series of weekend performances, talks, and demonstrations in the Leonhardt People Center. Along with musical programs and performances of classical and folk dancing, the Japan Month presentations feature unique modes of artistic expression. Explore how Japanese artists confer beauty on common and familiar objects and learn about Japanese-style gardens, techniques of flower arranging, ceramic arts, and the tea ceremony, all of which are featured in the following schedule of performances.

In addition to the People Center programs, the drummers of *Soh Daiko* will give one performance on Saturday, March 14, at 2:00 p.m. in the Kaufmann Theater. Dramatically played, these large drums resonate with both traditional and newly interpreted compositions. For further details about the *Soh Daiko* performance, please see page 6.

Presentations are repeated several times between 1:00 and 4:30 p.m. in the Leonhardt People Center. The Museum has a pay-what-you-wish admission policy, but there is no additional charge for these programs, which are made possible by a gift from the family of Frederick H. Leonhardt, the Helena Rubinstein Foundation, and the Vincent Astor Foundation. No tickets are necessary, but seating is limited and on a first-come, first-served basis. Programs are subject to change. Short films also highlight each weekend presentation.

March 7 and 8

Shodo, the Japanese art of calligraphy, demonstrated by Reverend Jomyo Tanaka.
Shakuhachi, traditional flute music of Japan, performed by Ronnie Nygetsu Seldon.
The Martial Art of Aikido with

Ki, explained and demonstrated by Master Shizuo Imaizumi, seventh Dan.

March 14 and 15

The Art of Japanese Kite Making, demonstrated by Atsushi Moriyasu.

Doll Making, the Kimekomi tradition, discussed and demonstrated by Tazuko Usami.

Folk Dances of Japan, including *Hanagasa Odori*, the flower hat dance, performed by members of the Sahomi Tachibana Dance Company.

March 21 and 22

Ikebana, a Sogetsu-style demonstration of floral arrangement by Setsuko Hata.

Japanese Gardens and Fountains, a slide-talk by Margaret Lanzetta on major styles and developments of Japanese gardens.

Koto, a performance of traditional Japanese music by Fusako Yoshida, master of the koto.

March 28 and 29

Chado, the Way of Tea, a ceremony performed by tea

masters Tomi Inoue (March 28) and Hisashi Yamada (March 29).

Raku Ware and Other Japanese Ceramic Arts, a slide-talk by Lloyd Reiss.

Classical Dance of Japan. Miyoko Watanabe (Fujima Nishiki) performs *Fuki Ondo*, an excerpt from the Kabuki dance, *Wisteria Maiden* (March 28); and *Urashima*, the Japanese legend of a fisherman and a turtle (March 29).

An Education Department Public Program.



Fusako Yoshida, pictured above with the elaborate, 13-string koto, performs traditional Japanese music on March 21 and 22.

Discovery Tours



See the world through the eyes of Museum experts with *Discovery Tours*. Call (212) 873-1440 for detailed brochures describing trips to more than 30 countries.

The Department of Education Presents

Workshops for Youngsters and Adults

Some of the following workshop programs are exclusively for either adults or children and some are designed for combined participation. For registration information, please call (212) 873-1300, ext. 514.

FOR ADULTS ONLY

Calabash Arts: The Shekere
Three Saturdays: March 7, 14, and 21; 11:00 a.m.-1:00 p.m.
Instructor: Madeleine Yayodele Nelson
Fee: \$25

Learn about traditional African uses of the calabash, including how to make and play a musical instrument designed from a gourd, the shekere.

Dances of Brazil

Three Saturdays: March 7, 14, and 21; 11:00 a.m.-1:00 p.m.
Instructor: Mari Nobles;
Musician: Claudio De Silva
Fee: \$20

An introduction to some of the popular dances of Brazil. Dance and sing to the music of samba, a traditional dance of Rio's carnival. Learn about the orixas ("deities") of Candomblé and how to move to their rhythms.

Jazz Dance

Three Sundays: March 1, 8, and 15; 11:00 a.m.-1:00 p.m.
Instructor: Cyndi Galloway
Fee: \$20

An introduction to one of America's most popular dance styles. Learn jazz rhythm and movement, then choreograph your own routine.

Traditional Drum Carving

Three Sundays: March 1, 8, and 15; 11:00 a.m.-1:00 p.m.
Instructor: Mensa Dente
Fee: \$25

This series will begin with an overview of traditional African drums. Students will then learn the techniques of drum carving, including how to use the basic tools, from start to finish.

Beadwork of Cameroon

Sunday, March 29;
11:00 a.m.-5:00 p.m.
or
Sunday, April 5;
11:00 a.m.-5:00 p.m.
Instructor: Carmen Lowe
Fee: \$25

Discover the ancient cultures and rich heritage of Cameroon artisans and their traditional and contemporary beadwork techniques. Students will use some of these in the design and completion of their own projects.

FOR YOUNGSTERS ONLY

The Art of Puppetry

Three Saturdays: March 7, 14, and 21; 11:00 a.m.-12:30 p.m.
Instructor: Brad Brewer
Fee: \$20

An overview of puppetry and how it reflects African culture. Students will make their own puppets and take part in a class presentation.

Pre-Columbian Taino Indian Art

Two Saturdays: March 7 and 14; 2:00-4:00 p.m.
Instructor: Miguel Paz
Fee: \$15

Create pre-Columbian Taino Indian wooden art pieces and learn about Taino culture.

FOR ADULTS AND YOUNGSTERS

Masks from La Fiesta de Ponce

Three Sundays: March 1, 8, and 15; 11:00 a.m.-2:00 p.m.
Instructor: Josephine Monter
Fee: \$25 per participant

Create colorful papier-mâché masks influenced by African, Spanish, and Taino Indian art and inspired by Puerto Rico's Ponce Festival.

African Language Workshop

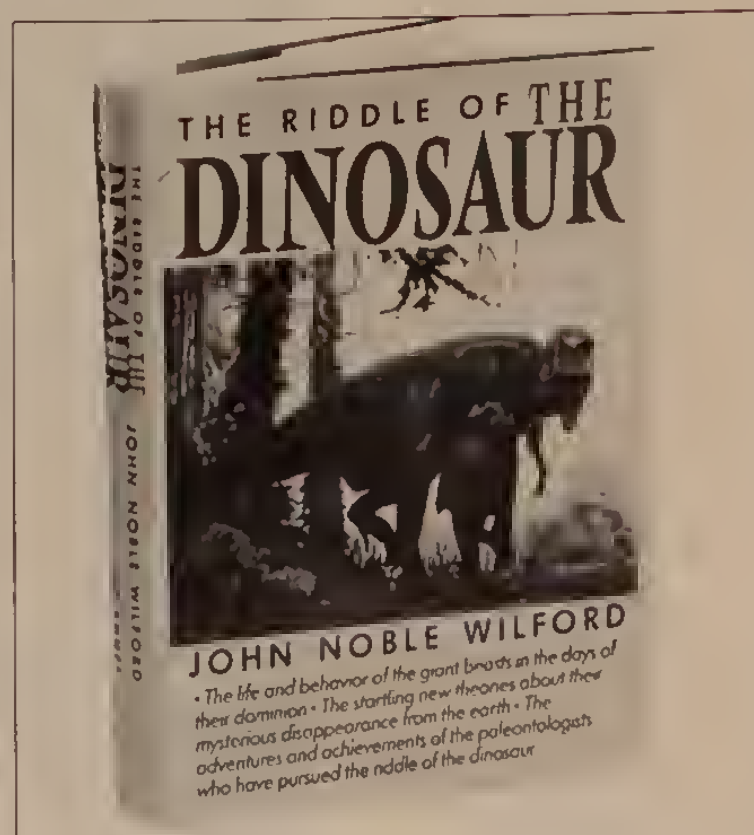
Two Sundays: April 5 and 12; 11:00 a.m.-2:00 p.m.
Instructor: Selina Akua Ahoklui
Fee: \$15 per participant

Explore Ewe, one of the oldest African languages, spoken in several countries on the west coast of Africa. Learn how to speak and how to trace names from their roots in this language.

Book of the Month

The Riddle of the Dinosaur

by John Noble Wilford
Alfred A. Knopf
Publisher's price: \$22.95
Members' price: \$20.75



"The wonder of dinosaurs is not only that they lived so long ago, grew so large, and then became extinct under mysterious circumstances millions of years before humans came on the scene. The wonder also is that the human mind could resurrect the dinosaurs and through this resurrection begin to comprehend the fullness of time and the richness of life."

This succinct appraisal of the human fascination with those long-ago giants of the Age of Reptiles introduces John Noble Wilford's lively account of discoveries and theories about dinosaurs. More than the dim-witted, archaic lizards of childish fantasy or museum curiosity, the author argues, dinosaurs satisfy a human need for mystery and adventure. And an enduring mystery they are, despite the many and marvelous facts that science has revealed.

The Riddle of the Dinosaur offers a detailed historical perspective on the pursuit of knowledge about this vanished species, from the first identification of dinosaur remains in the early nineteenth century to contemporary discoveries. Paleontology was but an infant science when the first traces of the dinosaurs' existence were uncovered, and the concept of mass extinction of a species was controversial indeed. The earth was thought to be no more than 6,000 years old, a far cry from today's projection of 4.6 billion years, and most minds found it not only difficult but also downright heretical to conceive of a world dominated by a nonhuman species. Until the 1859 publication of Darwin's treatise on mutability of species, doubters of tradition and dogma were without a plausible explanation for evolution.

The personalities involved in the collection of dinosaur material provide some of the book's most colorful passages. The first complete skeletons were constructed from findings from the

fossil graveyards of the American West, where rivals Edward Cope and O.C. Marsh engaged in a bitter feud throughout the 1880s, each eager to surpass the other in the amount and value of acquisitions. Other "firsts" were achieved by the father-and-sons team, headed by Charles Sternberg, who uncovered a fossil of a mummified duck-billed trochodont that gave paleontologists their first look at the scaly texture and patterns of dinosaur skin, and Barnum Brown's discovery of the first skeletons of *Tyrannosaurus rex*, the largest carnivore that ever preyed over land. Perhaps the greatest gambler of the dinosaur hunters was Roy Chapman Andrews, whose ambitious hope was to discover the origins of modern man in central Mongolia. At the time, the fossil history of Asia was completely unknown, and it was through purest persuasion that Andrews acquired financial backing and convinced suspicious Chinese and Mongol officials to permit him to lead a team of explorers into the Gobi Desert. Although the Andrews team did not find the missing link, they did unearth *Protoceratops*, the long-

sought ancestor of *Triceratops*, and discovered clusters of *Protoceratops* eggs.

While these patient and resourceful fossil hunters sought their impressive discoveries and amassed their storehouses of bones, battles of interpretation raged among paleontologists. What could and could not be said of the life and times of dinosaurs? Were they warm-blooded, like birds and mammals? Or was their metabolism more reptilian than mammalian? The general assumption was that dinosaurs, whose closest living relatives are crocodiles, were slow, sluggish, and inactive in comparison to modern mammals. This school of thought was radically altered with the 1964 discovery in Montana of *Deinonychus*. This swift and agile predator stood or leaped about on one foot, slashing with the other, which bore its eponymous "terrible claw." Other recent findings indicate that dinosaurs were social creatures with a sense of community.

The Riddle of the Dinosaur concludes with an examination of these creatures' most intriguing aspect — what happened to them? Theories include that of a sweeping environmental crisis such as the destruction of the earth's ozone layer or saturation of the atmosphere with carbon dioxide and the resultant greenhouse effect. One hypothesis proposes the explosion of a supernova close to earth, yielding a lethal disruption of the earth's magnetic field or overwhelming bursts of radiation. Another possibility is that an asteroid impact destroyed the most vulnerable life forms. Yet another theory suggests that dinosaurs have not entirely vanished but have evolved and are with us still in the form of birds. All of these theories await conclusive proof, and in this respect, *The Riddle of the Dinosaur* remains just that.

Members can take advantage of a special discount through the Members' Book Program. To order your copy of *The Riddle of the Dinosaur*, please use the coupon below.

Members' Book Program

☐ YES, I would like to order *The Riddle of the Dinosaur* at the special Members' price of \$20.75 (regular price: \$22.95).

Total amount enclosed (please add \$1.50 for shipping and handling): _____

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with special discounts off the publishers' prices!

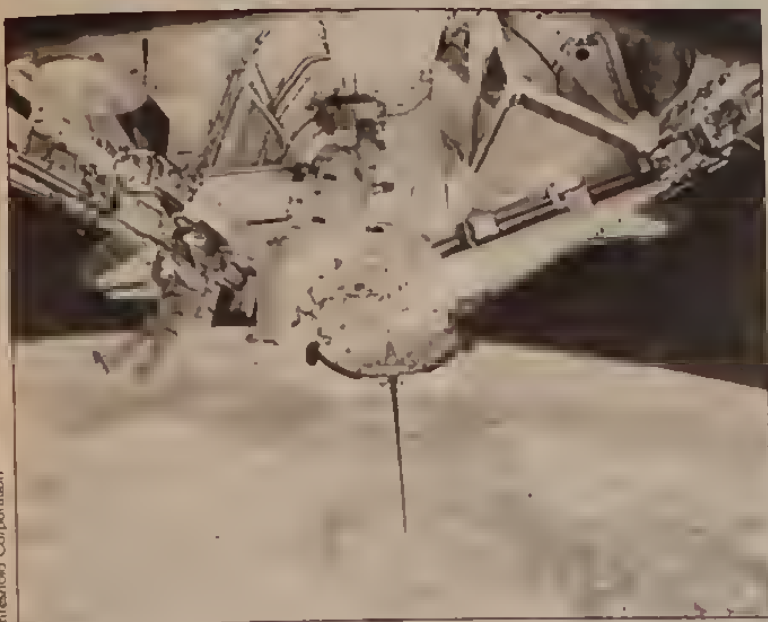
Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check payable to the American Museum of Natural History and mail to: Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Museum Notes



Experience the weightlessness of space in the Naturemax feature, *The Dream Is Alive*.

Special Exhibitions and Highlights

The Chaco Phenomenon. in Gallery 3 from Friday, March 6 through Sunday, August 2. This exhibition explores the rise and fall of an ancient civilization centered in New Mexico's Chaco Canyon. Inhabitants of this desert city were the ancestors of modern-day Pueblo people, and their prehistoric culture was the focus of a complex ritual, social, and economic system for over 200 years. Artifacts excavated from the ruins of Chaco Canyon are featured, as well as reproductions of the society's outstanding characteristic, its architecture. See page 1 for further details.

City of Light. in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through August 2, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Ladies in the Field: The Museum's Unsung Explorers. Through the spring, in the Library Gallery. Photographs, diaries, published monographs, and mementos chronicle the contributions of women, usually wives of curators, to the development of the Museum.

Programs and Tours

Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 873-1300, ext. 538.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum

or call (212) 873-1440.

March is Japan Month at the **Leonhardt People Center**. This celebration features lectures, music and dance programs, and other special presentations. For further details, please see page 9, or call (212) 873-1300, ext. 514.

Children's Activities

Birthday Parties

A visit with the dinosaurs, an African safari, or an interplanetary voyage can make your child's next birthday a treasured experience. Members can choose from three Museum party themes — details and fees appear on page 4. For further information and reservations, please call (212) 873-1327.

The **Natural Science Center** introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

FACES is an anthropology magazine for children between the ages of 8–14. Each month features a different theme, which is explored through stories, puzzles, games, pictures, and other imaginative activities. FACES is published ten times a year by Cobblestone Publishing, Inc., in cooperation with the Museum. Subscriptions are \$14.75 per year for Museum Members and \$16.50 for non-Members. (Add \$4 per year for foreign orders.) To start your subscription, send your order and payment to FACES, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the*

Deep. The Dream Is Alive is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 873-1327.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the basement, near the subway entrance.

Reservations are recommended. Call (212) 874-3436 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. It will be available for most programs in the Auditorium and will be provided free of charge with the deposit of a driver's license or major credit card. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe. Through June. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 873-8828.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars.

The spring schedule for *Won-*

derful Sky is as follows: Saturday, April 4; Saturday, May 2; Saturday, June 6. Showtimes are 10:00 a.m. and noon. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. This popular show sells out quickly, so please indicate a second choice of date and time, if possible. Make your check payable to the Hayden Planetarium (Central Park West and 81st Street, New York, NY 10024), include a self-addressed, stamped envelope, and mail at least one month in advance. For additional information, please call (212) 769-3299.

Laser Shows




Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound on Friday and Saturday evenings. Laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 724-8700 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 873-8828.

The Marine World of Reef and Tidepool

The American Littoral Society presents its 22nd annual New York Film Festival in the Main Auditorium at 7:30 p.m. on Wednesday, March 11. Tickets, which are \$6 for Members and \$7 for non-Members, can be obtained from the Society at (201) 291-0055.



| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|--|---|---|---|--|---|--|
| 1 10:00 a.m. to 5:45 p.m. <i>The Chaco Phenomenon</i> . Members' Preview. Gallery 3. Free, and no reservations are necessary. Please bring your membership card. Page 1. | 2 | 3 | 4 Ash Wednesday. 7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free. | 5  | 6 <i>The Chaco Phenomenon</i> in Gallery 3 opens to the general public. Page 1. | 7 11:00 a.m. New York Map Society. Room 129. Free. 7:00 p.m. <i>Middle Eastern Music and Legend</i> . Kaufmann Theater. Free. Page 6. Japan Month Programs. For details, see page 9. First-quarter moon. |
| 8 10:30 and 11:30 a.m. <i>The Secret of the Cardboard Rocket</i> . Members' Private Viewing. Planetarium Sky Theater. \$2.75 for adults, \$1.50 for children. Page 4. 2:00 p.m. New York Shell Club. Room 419. Free. Japan Month Programs. For details, see page 9. | 9 Moon at apogee.  | 10 | 11 7:30 to 9:30 p.m. <i>The Marine World of Reef and Tidepool</i> . 22nd Annual New York Film Symposium, sponsored by the American Littoral Society. Main Auditorium. Tickets are \$6 for Members and \$7 for non-Members. For tickets and further information, call the American Littoral Society at (201) 291-0055. | 13  | 14 2:00 p.m. <i>Drums of Japan</i> . Kaufmann Theater. Free. Page 6. Japan Month Programs. For details, see page 9. | 21 Japan Month Programs. For details, see page 9. |
| 15 2:00 p.m. <i>Joy in Every Land</i> . Kaufmann Theater. Free. Page 6. 2:00 p.m. New York Paleontological Society. Room 419. Free. 2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free. Japan Month Programs. For details, see page 9. | 23 | 17 Saint Patrick's Day. 8:00 p.m. New York Entomological Society. Room 319. Free. | 18 7:30 p.m. <i>Elephants Underground</i> . Members' Evening Program. Main Auditorium. \$3 for Members, \$6 for non-Members. Page 2. 25 7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free. 7:30 p.m. <i>The Alvin Ailey Repertory Ensemble</i> . Main Auditorium. \$6 for Members, \$7 for non-Members. For more information, call (212) 873-1300, ext. 514. | 19 | 20 Vernal equinox. | 28 11:30 a.m., 1:30 and 3:30 p.m. <i>The Rollickin' Dinosaur Revue</i> . Members' Family Program. Kaufmann Theater. \$3 and open only to Members. Page 6. Japan Month Programs. For details, see page 9. |
| 22 2:00 p.m. <i>Music of the Soviet Caucasus Mountains</i> . Kaufmann Theater. Free. Page 6. Japan Month Programs. For details, see page 9. Last-quarter moon. | 30 | 24 8:00 p.m. Linnaean Society of New York. Room 426. Free. Moon at perigee. | | | | |
| 29 11:30 a.m., 1:30 and 3:30 p.m. <i>The Rollickin' Dinosaur Revue</i> . Members' Family Program. Kaufmann Theater. \$3 and open only to Members. Page 6. Japan Month Programs. For details, see page 9. New moon. | 31 | 31 | | | | |

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

March 1987 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 4 April 1987



The Museum presents an irresistible evening of Javanese music and dance.

An Evening of Javanese Music and Dance

Thursday, April 23
8:00 p.m.
Main Auditorium
\$7 for Members
\$10 for non-Members

An evening of scintillating sounds and superb pageantry awaits Members when *Ikatan Karawitan Indonesia*, the New York Indonesian Consulate Gamelan, presents an evening of Javanese music and dance. The instruments of this traditional gamelan include several gongs and xylophone-like instruments, a two-string fiddle, bamboo flutes, and double-headed drums.

This distinctive type of music has close relatives in other parts of Southeast Asia and is not confined to the Indonesian archipelago. The Javanese gamelan, however, has attained a unique degree of refinement, perhaps attributable to its

development in the highly stylized atmosphere of court life. This performance will feature pieces derived from royal settings in Surakarta and Yogyakarta.

Several styles of Javanese dance will be featured in this Members' Evening Program, two of which are depicted above. The male dancer exemplifies the *gagah* ("strong") mode, which is noted for its exaggerated movements and bold steps. The *alus* ("refined") style is represented by the female dancer, who is actually impersonating a man.

The New York Indonesian Consulate Gamelan members are Americans accomplished in the performance of

traditional Javanese music and dance. Several of them have studied in Java with native teachers. The group is under the direction and artistic guidance of Sumarsam and I.M. Hanjito, both of whom have been instructors in gamelan performance for many years. Principal dancers are Sal Murgiyanto and Endang Nrangwesti Murgiyanto, distinguished performers and teachers of Javanese dance.

The program is presented in cooperation with the World Music Institute. To register for the *Gamelan Concert*, please use the April Members' programs coupon on page 3.

Stay Tuned

The tradition of Members' concerts under the stars continues next month with presentations of *Celestial Rhythms* and *Space Age Music* at the Hayden Planetarium.

Page 3

Jeweled Realms

Explore the ancient glories of India, Tibet, and Burma in this two-part program offered by the Department of Education. Dr. Ronald Bemier, a renowned authority on Asian art, will discuss *Cave Temples, Stupas, and Goddesses and Visionary Arts of Tibet and Burma*.

Page 9

How Do They Do It?

Next month, Members can step behind the scenes in the Department of Exhibition to observe some of the methods used by designers and artists in the preparation of Museum displays.

Page 5

Castanets in Concert

East meets West with castanets in this Members' evening program. Matteo and his EthnoAmerican Dance Theater accompany themselves with castanets in their performance of folk and classical traditions from around the world.

Page 2

Natural History Films from Wildscreen

Saturday, April 4, and Wednesday, April 8
Kaufmann Theater
Free



In conjunction with the World Wildlife Fund-U.S., the Museum will host selections from the acclaimed international film and television festival Wildscreen '86, featuring some of the newest works of the world's best wildlife filmmakers. The films offer insights into efforts in wildlife conservation and scientific study of animals ranging from the Arctic polar bear to the African elephant. Each program will be introduced by a scientist or educator and followed by a period in which the audience may ask questions.

Saturday, April 4
11:00 a.m. to 4:00 p.m.

11:00 a.m.: *Fish*. Eugenie Clark, a renowned shark expert and diver, has conducted explorations of the undersea world of tropical oceans for the past 25 years. In this film, she takes Julian Pettifer, host of the "Nature Watch" series, beneath the surface of the Red Sea on what she describes as the "best dive in the world."

11:30 a.m.: *Together They Stand*. In defense of its family, the dwarf mongoose will face the deadliest of enemies. Within their unique and highly organized society, female mongooses lead groups in which all members have clearly defined duties.

Through daring, skill, and exceptional courage, they manage to keep one step ahead of their enemies and successfully raise their families.

12:30 p.m.: *Kingdom of the Ice Bear*. The stars of this film include the mightiest and most feared of hunters, the polar bear, and its neighbors beneath the ice — belugas, harp seals, walrus, and the so-called unicorns of the sea, one-tusked narwhals.

2:00 p.m.: *24 Hours in Deepest Dulwich*. Forests, marshes, and downland are generally considered Britain's major nature reserves. One of Britain's largest habitats, however, is its million acres of gardens. The diversity of this special environment is revealed in a small pond, a rotting log, and a compost heap in a southeast London garden.

2:30 p.m.: *Fastest Claw in the West*. Killer shrimps? Just when you thought it was safe to go back into the water, along comes a tiny creature with a knockout punch. The strike of the mantis shrimp is one of the fastest animal movements known, with an impact equivalent to that of a .22-caliber bullet, and it can even punch through glass and batter its way out of aquariums.

3:00 p.m.: *The Careful Pred-*

ator. Out of Africa comes a radical new approach to conservation that might help secure both human and animal survival. Wildlife is doomed by too many people and too many animals sharing a common space — or so it was thought. Ongoing experiments in Zimbabwe are contradicting that theory as villagers encourage the return of elephants, lions, and leopards.

Wednesday, April 8
6:30 to 8:30 p.m.

6:30 p.m.: *Lords of Hokkaido*. This portrait of Japan's northernmost island follows the fortunes of a family of foxes over a year. Red-crowned cranes and nesting sea eagles are also featured.

7:30 p.m.: *Galápagos: Cold on the Equator*. The waters around the equatorial Galápagos Islands abound in sea lions, fur seals, green turtles, and penguins. Sequences show sharks attacking a shoal of needlefish and being driven off by sea lions guarding their young. Also featured is a first-ever view of the whirling courtship of the flightless cormorants.

For additional details, call (212) 769-5305.

**An Education Department
Public Program.**

Castanets in Concert

Thursday, May 21
7:30 p.m.
Main Auditorium
\$5 for Members, \$8 for non-Members



Clifford E. Horton

Despite their popular associations, castanets are neither indigenous nor unique to Spain, as Members will find in this enjoyable program of international melodies. Matteo and his EthnoAmerican Dance Theater trace the evolution of the castanets from their origin as an ancient Egyptian weapon to their still-expanding role as a musical and interpretive instrument.

Matteo, whose presentations are noted for their sophisticated audience rapport, will define for Members the ethnic characteristics of each number. Performances vary from solo arrangements such as "Paseo," an eighteenth-century costume dance that features small ivory castanets played in a baroque style, to the rousing "Stars and Stripes" finale, performed by an eight- to ten-piece castanet orchestra. The repertoire includes a Viennese waltz, a Gypsy wedding dance of northern

India, a Hayden minuet performed with zils (the finger cymbals used by belly dancers), and Scott Joplin's "Maple Leaf Rag."

Matteo's technique has been termed a "smorgasbord approach" to ethnic music, combining the folk and classical traditions of many nations and presenting them in a spirit of both reverence and delight.

Matteo has toured extensively as a performer, lecturer, and teacher. His distinguished career, beginning with studies under the guidance of ethnic specialist La Meri and dance masters in India and Sri Lanka, includes performances with the Metropolitan Opera Ballet. In his programs, he stresses the importance of the contributions of all cultures to Americans.

To register for Castanets in Concert, please use the April Members' programs coupon on page 3.

ROTUNDA

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CORRECTION: The period of The Chaco Phenomenon was more than 300 years before Christopher Columbus sailed for the New World, not "3,000 years," as stated on page 1 of the March issue of Rotunda. Although earlier estimates placed the population of Chaco Canyon in excess of 10,000 people, current research suggests that 5,000–6,000 may be a more realistic population estimate.

The Dream Comes First: In Balance with Mother Earth and Father Sky

Saturday, April 25
2:00 p.m.
Kaufmann Theater
Free

Natural healing practice, as expressed in a rich blend of traditional and contemporary Native American culture, is the focus of this slide-illustrated lecture and demonstration. Sundance Aquero and Gabriel Sharp share their exploration of the natural and supernatural methods of healing.

Ms. Aquero, born into the Metis tribe of Canada, and Gabriel Sharp, who was raised on the Mohave Reservation, are well known for their workshops in the healing arts of Native Americans.

This program is made possible in part by grants to the Museum's Department of Edu-

cation from the Helena Rubinstein Foundation and the Vincent Astor Foundation. For additional details, call (212) 769-S305.

An Education Department
Public Program.

Concerts Under the Stars

Celestial Rhythms

(for adults)
Thursday, May 7
7:00 and 9:00 p.m.
Planetarium Sky Theater
\$9 for Members, \$12 for non-Members

Space Age Music

(for families with children aged 7 and older)
Saturday, May 9
11:15 a.m.
Planetarium Sky Theater
\$4 for Members, \$6 for non-Members



These Planetarium concerts are your keys to the stars.

Don't miss the latest in the ever-popular Members' concert series at the Hayden Planetarium. This combination treat of sight and sound features laser lights and special effects with the live accompaniment of contemporary and classical electronic music.

Celestial Rhythms appeals to all age groups with popular se-

lections such as Pachelbel's "Canon in D," the "Top Gun" theme, "Danger Zone," and many others.

Space Age Music is a Members' family program on Saturday morning designed especially for children. The musicians will demonstrate how much fun this new high-tech musical equipment can be and perform

a variety of popular music. Original works by performers Jonn Semie and Mark Petersen are included. These musicians are celebrated throughout North America for their planetarium soundtrack creations.

To register for Space Age Music and Celestial Rhythms, please see the April Members' programs coupon.

April Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: April Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Shorebird Migration. Tuesday, April 7, 7:30 p.m. Free for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Galápagos. Sunday, April 12, 11:30 a.m. and 1:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.

_____ 11:30 a.m. (for families) _____ 1:30 p.m. (for adults)

Number of tickets: _____

An Evening of Javanese Music and Dance. Thursday, April 23, 8:00 p.m. \$7 for Members, \$10 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$10.

Number of Members' tickets at \$7: _____
Number of additional tickets at \$10: _____
Total amount enclosed for program: _____

Celestial Rhythms. Thursday, May 7, 7:00 and 9:00 p.m. \$9 for Members, \$12 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$12. Please indicate a first and second choice of times, if possible:

_____ 7:00 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$9: _____
Number of additional tickets at \$12: _____
Total amount enclosed for program: _____

Space Age Music. Saturday, May 9, 11:15 a.m. \$4 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$4: _____
Number of additional tickets at \$6: _____
Total amount enclosed for program: _____

Castanets In Concert. Thursday, May 21, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Discover the Amazon

with the American Museum of Natural History and a little help from Zeiss



"Eyes" for details.

A collection of binoculars and theater glasses from Zeiss, the world's most famous name in optics, is on display this month at the Museum's 77th Street entrance by the Great Canoe.

The theater glasses and seven styles of binoculars featured in the "Discover the Amazon" display are for sale in the Museum Shop. Members participating in the Discovery Tour to the Amazon — or any other trip — will find Zeiss binoculars perfect companions.

These models feature world-famous optics for clear, crisp im-

age contrast throughout the field of view. This feature is ideal for observation of natural phenomena such as the waterfalls and colorful birds of the Amazon. Other features include antireflective lens coatings for unsurpassed light transmission and "B" eye cups and compensated optics for unrestricted field of view with or without eyeglasses or sunglasses.

Stop in at the Museum Shop to examine the different models and to take advantage of the special Members' rate for any Zeiss purchase.

The Department of Education Presents Field Class in Bird Identification

Tuesdays, 7:00 to 9:00 a.m.

April 21, 28 and May 5, 12, 19, 26

Thursdays, 9:00 to 11:00 a.m.

April 23, 30 and May 7, 14, 21, 28

Join field ornithologist Stephen C. Quinn in a series of field walks specifically designed to observe the spring migration of birds through Central Park. Participants will learn about field marks, habitat, behavior, and song as a means of species

identification.

The fee for this program is \$4, to be paid each morning before the walk starts (there is no preregistration). Classes meet at 77th Street and Central Park West. For further information, please call (212) 769-5310.

Shorebird Migration

Tuesday, April 7

7:30 p.m.

Main Auditorium

Free for Members, \$4 for non-Members

What's black and white and sometimes red, commutes from one end of the globe to the other, and both doubles and halves its weight in a matter of weeks? The answer, as revealed by the Members' program *Shorebird Migration*, is the red knot. Named for the scarlet hue of their breeding plumage, red knots fly annually from the Arctic to the tip of South America, a distance of up to 18,000 miles, with only a few stops along the way to rest and refuel.

In his discussion of the migratory patterns of red knots and other shorebirds, ornithologist Brian Harrington will explain the shorebirds' dependence on the few highly productive areas

where they prepare for their long-distance flights. At these stopover areas, the red knots feed voraciously on crustaceans and clams, building up fat reserves that will last through their long journey. No bigger than a robin, the red knot's dainty weight of 120 grams swells to as much as 200 grams before departure from a stopover area.

Manomet Bird Observatory on Cape Cod Bay, where Harrington conducts his shorebird studies, is one of the key stopover areas. He and co-workers identify the migrants and trace their progress by attaching colored bands to the birds' legs. With the cooperation of the International

Shorebird Survey, a network throughout the Americas of 500 professional and amateur bird-watching volunteers, the Manomet team has identified and assessed the major migration stopover sites.

Harrington will discuss with Members the conservation considerations necessary for the preservation of these stopover areas, illustrating his presentation with slides of the migratory shorebirds at various locations in their yearly circuit. This program is presented in cooperation with the Manomet Bird Observatory. To register for *Shorebird Migration*, please see the April Members' programs coupon on page 3.



High-flying shorebirds head out for the season.



These hungry migrants make the most of their brief stopovers.

Galápagos

Sunday, April 12

11:30 a.m. (for families) and 1:30 p.m. (for adults)

Kaufmann Theater

Free and open only to Members

The natural history of these islands is eminently curious and well deserves attention.

Charles Darwin, *Voyage of the Beagle*

As a young man aboard the *H.M.S. Beagle* in 1835, Charles Darwin spent five weeks in the Galápagos Islands, now recognized as one of the world's best natural laboratories of evolution. Here, he made observations that were crucial to his un-

derstanding of organic change, and which made the islands famous. Today, this remote archipelago continues to fascinate, as Members will discover in these slide-illustrated programs.

Hardly a tropical paradise, the Galápagos is a harsh land of

barren lava and cool seas, located in the Pacific about 600 miles off the coast of Ecuador. One of the most volcanically active island groups in the world, it is populated by a strange array of plants and animals, many of which can be found nowhere else: flightless cormorants, gulls that are active only at night, tiny penguins that scramble over lava, giant tortoises, and marine iguanas.

The evolution of the islands, their geological formation, and present status will be the focus of this program, presented by educator and naturalist Darrel Schoeling. A former coordinator of the Museum Highlights Tour Program and currently a consultant with Discovery Tours at the Museum, Schoeling recently returned to New York after two years in the Galápagos as chief naturalist-guide aboard an Ecuadorean ship. He also assisted in a study of the endangered Hawaiian petrel and conducted surveys for the Charles Darwin Research Station.

The 11:30 a.m. program is geared toward families with 7- to 10-year-olds, and the 1:30 program is for adults. A Discovery Sheet will be available for families who would like to explore Museum exhibits on the Galápagos Islands. To register for Galápagos, please use the April Members' programs coupon on page 3.



A giant Galápagos tortoise.

Latin American Month

On Monday, April 27, at 7:30 p.m., Inkay will perform South American Highland Music in the Main Auditorium. Their appearance is one of the many free performances and demonstrations this month celebrating Latin American cultures. The calendar on page 12 has a complete schedule of events, and further information is available at (212) 769-5315.



Participating, Donor, and Contributing Members are cordially invited to a

Behind-the-Scenes Tour of the Department of Exhibition

Wednesday evening, May 13
or Sunday, May 17, \$7



The American Museum of Natural History contains an enormous variety of exhibits, ranging from lifelike habitat groups of animals to spectacular displays of anthropological artifacts. The exhibits have been created by the combined talents of curators and an exhibition staff consisting of designers, sculptors, preparators, painters, and other technicians and artists. Members are invited to learn how our exhibits are made in a special behind-the-scenes tour of the Department of Exhibition.

During the tour, Members will meet the Exhibition staff and visit their studios. Artists

and preparators will demonstrate different modelmaking and taxidermy techniques. They will reveal some of the tricks of the trade used in creating our remarkably realistic exhibits.

The tour will include a sneak preview of the Hall of South American Peoples (scheduled to open in 1988) to learn about the steps involved in creating a new exhibition hall. The tour will also feature fascinating archival footage of the mounting of the Indian elephant exhibit.

Please use the adjacent coupon to register for the tour. Complimentary beverages will be served prior to all tours.

Behind-the-Scenes Tour of the Department of Exhibition. \$7 and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Wednesday, May 13, between 5:15 and 6:15 p.m.
_____ Wednesday, May 13, between 6:30 and 7:30 p.m.
_____ Sunday, May 17, between 10:30 a.m. and noon
_____ Sunday, May 17, between 1:00 and 2:30 p.m.

Number of tickets at \$7 each: _____

Amount enclosed for program: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

In the Field: Seeking the Honeyguides

For many years, Lester L. Short, chairman and curator of the Department of Ornithology, and his wife, Kenyan bioacoustician Jennifer Home, have studied woodpecker-like birds in Africa. One of their specialties is the group known as the honeyguides, drab-colored birds that derive their name from their tendency to lead humans and other mammals to beehives.

The honeyguides' taste for beeswax allowed Short and Home to conduct a close-range study of the birds' behavior and vocalizations. The field work described in this article was carried out on a 100,000-acre ranch, the Ol' Ari Nyiro, on the Laikipia Plateau in central Kenya. Daily, the researchers replenished an abandoned beehive with wax, built a fire, and simulated a chopping sound to attract birds to the hive.

Using these techniques, Short and Home attracted four species of honeyguides to their feeding station and successfully color-banded 210 birds. They've documented numerous previously unknown behavioral displays and vocalizations and have discovered hierarchies of dominance within and between species of honeyguides. A few dominant birds control all activity at the three main feeding sites of the hive; their presence frightens the other honeyguides away. The smaller, subordinate birds feed while the dominant birds are away from the hive or fighting among themselves.

Short is the author of *Woodpeckers of the World* and at work on a book about African birds. The following represents a typical day in the field with the honeyguides.

I beat the 6:00 a.m. alarm today, rising at 5:55 to a cool and damp (56 degrees F, 93 percent humidity) morning. Routine chores follow: opening the mess tent windows, checking tent guy ropes, examining our two 12-volt batteries and measuring their charge (they connect to our solar power unit and provide tape-recorder and radio battery charges), and checking the Land Rover, our main vehicle. No excitement of yesterday's caliber — we were awakened by lions roaring, and on getting up we found that every tent had been circled very closely, not three meters from our faces!

At 6:30, our attention is drawn by the chatter of a young greater honeyguide near the field assistants' tent. I play with this bird, "chukking" at it for ten minutes. It doesn't give the loud, full chattering characteristic of the guiding call of older birds, and it flies in a circle before me, so it's not guiding me to any honey source. Greater honeyguides regularly attract attention by calling and bidding humans to beehives. The humans open the hives to extract the honey and leave the wax to the honeyguide; it is one of the few birds that can digest wax, which is a staple in its diet.

After other chores — distribution of dawa (medicine) to two sinus-affected staff members and loading equipment into the Land Rover — we drive out at 7:55 a.m. Although our study site is only a mile downslope from us, a gorge prevents us from driving, and elephants and buffaloes make walking with heavy equipment very risky. The track is a half an hour from the site — a pleasant, often surprising drive. Yesterday, for example, we turned a corner to face 11 elephants, four of them very small calves. Even in a Land Rover, one yields to trumpeting elephants. We waited five minutes for them to cross the track and move downslope, then gunned the car to beat them to another crossing where they could have detained us again.

Jennifer, my wife and colleague, drives the Land Rover with one hand (the car is hers) and radios the ranch center with the other. She checks on crises minor to major and finds out the location of any injured or wounded large mammals. There are none today.

When we reach the site, we take a sharp look about before getting out of the car, although we've seen only zebras along the way. Our routine has been affected by the killing of an eland by two lions (probably those that visited our camp!) four days ago. The lions walked through our hides (blinds), leaving their great footprints. The kill attracted 60-some vultures of four species, as well as jackals, whose noise made our honeyguides skittish and probably kept some from visiting the site.

In the past year, our research on these wax-eating, nest-parasitic birds has centered on an abandoned beehive. Cut open by humans about 11 years ago, the hive is located in a big, nearly dead fever tree (*Acacia xanthophloea*) that was pushed to an angle by elephants years ago. The tree is half-lying, with its trunk parallel to the ground. Two meters above it is a year-round flowing stream, the Mukutan. In addition to the

vast opened hive, the twisted trunk has two smaller crevices, into which we put plain beeswax, both in loose pieces and tied onto boards (so it won't all be carried away rapidly by the birds). This is our honeyguide wax-feeding station. Nearby is our photographic hide; at some distance, an observation hide with a powerful telescope; and still farther from the wax feeder, a general observation site that provides the best overall view.

Dikson and Loni, our assistants, prepare the wax, set it out, and build a smoky fire. Jennifer adjusts and gathers her gear, and I secure mine. We check the hides, making repairs as necessary and adding foliage to render them as inconspicuous as possible — this is essential only for newcomer honeyguides, since the old-timers do not seem to mind our presence. The assistants put up mist nets for catching unbanded honeyguides and other birds that we band for the "Kenyan ringing scheme."

Through observations of these birds during the breeding season, which is usually from July to August, we hope to gain new insight into what we have learned from marking them at the hive. We also hope to determine their sex (of the four species at the hive, only one is sexually distinguishable by plumage). This is planned for next year, if the weather cooperates (only nine inches of rain fell last year, versus the average 24, and no honeyguides bred).

Jennifer arranges her sound equipment and sets up, usually in the overview hide, and I set up photographic, telescopic, and playback recorder gear, usually in the middle hide. Before we're fully set up, I often begin voice playbacks of honeyguides and their hosts. When all is ready, the fire is made very smoky and one of us pounds on the tree with a stick, imitating the ax noises of honey-hunting people. Then we settle ourselves for a wait. Often, as today, a greater honeyguide greets us with the familiar *chukka-chukka-chukka*, the guiding



The honeyguide feeding site, the focus of Dr. Short's field work (see below for close-up).



An assistant places beeswax in the feeder to attract the birds.



A pallid honeyguide waits for its turn at the feeder.

call that we have found is the aggressive call of the species, used in altercations among themselves (the significance of this must await a future letter). This is the local dominant male, White (named for the color of his ring, or band). He then backs off and waits for us to put out the wax; he does not usually come to it, for we usually leave some out overnight that he probably eats in the morning. Having monitored our hive activities, he disappears from the site for most of the morning.

The firstcomers, often waiting in the wings, are the scaly-throated honeyguides. At this site, we have ringed 19 of them with distinctive colored bands. This morning the first to arrive is Young Green, a green-ringed subadult that we banded only four days ago. It eats wax inside the hive, where we have loose pieces and wired-down chunks. The bird prefers the loose pieces because it can carry them off if pressed by a dominant bird. Yellow-Blue is in next, an adult in ratty plumage that must be circumspect in getting wax — it does so, entering the slit at the right, out of sight of Young Green. The latter, however, chooses to go up to that slit next, and there it raises its crown feathers and chatters at Yellow-Blue, which departs to a nearby bush. Now come Green-White-Green, a female that

laid an egg in our net last May, and Red-Black, a newly ringed bird. There are some brief fights that help us establish the dominance hierarchy among them. Subordinate birds take off in heavy, dipping flight with a mass of wax, often chased by one of the others, which may try to seize the wax. The birds must compete with the bush squirrels that we periodically trap and remove, and they may be frightened by lizards hunting insects over the honeycomb.

Late in the morning, White, a male greater honeyguide, returns to the hive and vigorously downs much wax before aggressive Young Green, the scaly-throated honeyguide, furiously chases him downstream. I record notes about behavior and interactions on tape, to be transcribed at night by gaslight. Jennifer records vocalizations, and we take appropriate photos. When the action is slack, I pick the packets of tea, butter, and cheese from the evaporative water bag and get out bread for lunch. This never fails to increase action of the honeyguides, or so it seems to us as we gulp our food and grab our gear.

The equatorial sun beats down (we are a half degree from the equator), but although it is hot here, it is not so unbearable as New York in summer. The humidity is

about 25 to 45 percent, and the altitude (5,800 feet) keeps daytime temperatures to 70 to 80 degrees — ideal, we find. In the air above, vultures and two eagles wheel. Apparently, the eland carcass is too well eaten to provide a sufficient meal for the vultures, and they are seeking other food.

Afternoon brings a surprise: Pink, a scaly-throated honeyguide, appears at the hive, fighting with an unringed young honeyguide. First caught in November 1984, Pink had not been seen since December 1984; we netted the bird three days ago and put new rings on it. Today it deigned to feed at the wax site.

Olive baboons eye us and bark from a rocky crag. A waterbuck and its single calf haltingly pass by, looking at our hides, but the wind is with us, and they do not start. A giant kingfisher rattles — Jennifer records this and plays it back, and the big bird circles the stream. When brown babblers break into song, we play back a tape of Nubian woodpecker and red-frontedinkerbird calls, bringing in one of the latter (we also study these birds). Even when the honeyguides are quiet, we manage to keep very busy. I examine the remains of the eland carcass and find a pallid flycatcher hawking numerous flies from one protruding rib. I smile when I see a fly perched on the bird's tail, unobserved by its host.

The air begins to cool, and we pack up at about 4:00 p.m. We have netted and ringed three doves and other birds but did not net the unringed scaly-throated and must try again tomorrow. Eleven birds of three species kept us busy most of the day, leaving us with new questions and fewer answers — these come only with time. While bumping our way out of the valley, we frighten ten warthogs, six of them babies. Did the other two adults just join the pair, or did they help raise the young? We stop to check the rings on a honeyguide that we see along the road and note a male Nana's trogon in a small clump of trees — a rather arid setting for this creature. A radio check gives us the welcome news that new brown bread has come in from town (Nyahururu, 50 miles distant) and our share has been sent to camp by horseback.

We unload at camp, check batteries and solar panels, and keep a wary eye out for an eight-foot spitting cobra seen in camp two days before but not since. Water is heated and we bathe, using an old pasture tub previously used to water cows. The stillness is broken by screeching guinea fowl — something has disturbed them. Our camp drongos call and hawk for insects in the spectacular sunset. Soup's on, and we eat a delicious meal. The lanterns are lit, and the gas lamp turned on as we commence transcribing notes and checking off today's ringed birds against our log. The moon rises late as we go to bed — a few days ago we saw it pass through a total eclipse. An eagle owl wings by; katydids and other insects, as well as a distant hyena, call; and we drift off to sleep.

— Lester Short

The world is at your fingertips with a Group Package Tour



This crystal Atlas is displayed in the Hall of Minerals.

Do you belong to an organization that is looking for an interesting and memorable activity — one that is certain to appeal to a variety of tastes? From fossils to precious stones, dinosaurs to chimpanzees, remote galaxies to totem poles, the diversity of Museum displays is certain to include something to fascinate and delight every member of your group. The tour package, priced at \$19 per person, includes admission, a guided tour, lunch, and screenings of current Naturemax and Planetarium features.

The day begins with a tour of Museum highlights. Enter the Hall of Ocean Life to visit with walruses, seals, and dolphins under the awesome 94-foot arc of the blue whale. An eye-filling feast awaits in the Morgan Hall of Gems — rubies, diamonds, and other sumptuous jewels are gathered in a glittering array of treasures that includes the Star of India, the world's biggest blue star sapphire at a hefty 563 carats. Observe the ferocious Komodo dragons as these ten-foot lizards feed inside their

habitat group in the Hall of Reptiles and Amphibians.

After a glimpse of the exciting diversity of exhibits, view one of the 30-minute features on Naturemax's gigantic movie screen: you can fly with astronauts in *The Dream Is Alive*, with Canadian geese in *Skyward*, or with a prehistoric pterodactyl in *On the Wing*; you can dive beneath the sea with whales in *Nomads of the Deep*.

At the American Museum Restaurant, you'll lunch in a delightful greenhouse setting. The delicious group luncheon menu includes an appetizer, entree, and dessert.

After lunch, relax under the starry dome of the Hayden Planetarium's Sky Theater, where you'll see a 45-minute presentation on astronomy or space science. The current Sky Show, "The Seven Wonders of the Universe," takes viewers on an intergalactic quest for natural marvels that challenge the imagination.

Upon your return to Earth, you can explore two floors of Planetarium exhibits and four

floors of Museum displays. At the Museum, all corners of the globe are open to you. The Hall of Man in Africa offers a range of disparate environments, including desert, tropical rain forest, river valley, and grassland. The site of the earliest civilizations is re-created in the Hall of Asian Peoples, where intricately painted religious tapestries, ceremonial masks, temple images, and theater costumes represent the rich and colorful history of this continent and its people. Meet South Seas natives in the Margaret Mead Hall of Pacific Peoples and view the feather capes of Hawaii, the replica of a colossal Easter Island stone head, and the finely wrought household goods, theatrical equipment, and beaded weapons of Indonesia.

To make reservations, contact Paula Cohen of Restaurant Associates at (212) 997-1380. There is a group minimum of 20 and a group maximum of 60, and one free escort per bus is available. Come on, the world is waiting for you at the American Museum of Natural History.

Dances from Here and There



MOROCCO, of the Casbah Dance Experience.

Faraway lands such as the Middle East, North Africa, and India as well as North American folk traditions are featured in this month's series of free musical programs in the Kaufmann Theater. These programs are made possible in part by grants to the Museum's Department of Education from the Helena Rubinstein Foundation and the Vincent Astor Foundation. For additional details, call (212) 769-5305.

Middle Eastern and North African Dance
Sunday, April 5
2:00 and 4:00 p.m.

The Casbah Dance Experience, featuring MOROCCO, the acclaimed performer and teacher of Middle Eastern dance, presents dances from Egypt to Turkey and Mauritania to Morocco. Raks Sharki, a 5,000-year-old classical dance of the Orient, Schikhatt and Guedra from Morocco, and Turkish Karsilama are included in the repertoire of this exciting festival of dances from the Middle East.

American Heritage: Music and Dance
Saturday, April 18
2:00 p.m.

The Vanaver Caravan pres-

ents an afternoon of North American folk music with step dances from Quebec, Appalachia, and Louisiana. Singing to the accompaniment of banjo, guitar, fiddle, accordion, harmonica, and assorted drums, the Caravan celebrates the rich heritage of authentic American folk music. Come and share in this enlightening and thoroughly enjoyable experience.

Rang Barang: The Many Colors of Kathak Dance
Sunday, April 26
2:00 p.m.

Born and nurtured in the temples of North India, kathak dance is a classical form that later flourished in the princely courts of Moslem rulers. This program includes Indian temple styles, royal court dances of the nabobs, and the freestyle dances of the Gypsies of Rajasthan. The Gangani Kathak Dance Company is under the artistic direction of Najma Ayashah, who originally studied kathak dance and tabla in Lahore, Pakistan, and is the recipient of many awards for her choreography.

An Education Department Public Program.

Members' Book of the Month

Females of the Species: Sex and Survival in the Animal Kingdom

Bettyann Kevles
Harvard University Press
Publisher's price: \$20
Members' price: \$18

Despite the great physical and genetic differences between vertebrates and invertebrates, female animals share some remarkable similarities in their strategies of reproduction. *Females of the Species* offers a fascinating panorama of female behavior throughout the animal kingdom, from the activities of creatures as common and infinitesimal as cockroaches to those of gigantic, mysterious animals such as whales. The ways in which females court then mate with males, nurture their young, and cooperate and compete with one another for survival are depicted in a series of colorful vignettes drawn from the laboratory and the field.

Fertilization is seldom a random procedure, and when there are a variety of potential mates, most female animals select from the available candidates through a courtship process. Since the potential father represents a genetic contribution to the offspring's chances of survival, courting females seek not only immediate physical satisfaction but also "shop around" for the male with the most to offer. Female birds often choose a mate for the shelter he can provide — male bow-erbirds spend months decorating their nests of twigs and brush with fruit, flowers, and bits of glass, while the female watches, keeping her distance and assessing his skill. Nourishment may be the deciding factor for some animals — a courting male may offer a tidbit as proof that he will be a good provider in the future. A male road-runner may attract a female by making her the edible offer of a mouse, but he is careful to withhold the offering as a postcoital reward.

Other criteria are physical attractiveness — vivid tailfeathers or large antlers, for instance — and strength. The latter appears to be the foremost consideration of female elephant seals. The snarls uttered by these females during copulation seem

to encourage interference from other males, and by inciting the males to compete among themselves, the females attempt to ensure that the very strongest male will father next year's pup. Before the mating season's end, however, the females switch tactics by courting the younger, smaller bulls that have been bystanders thus far. This ensures the females fresh, viable sperm and impregnation, one way or another.

Courtship rituals may feature a chase. A female cheetah gathers a cluster of eager males and leads them on a run around her territory, exhausting all but the one with whom she eventually mates. Gray squirrels offer a rather forgiving version of the ritual chase: the female leads the way, and if her pursuer falls too far behind, she pauses to let him catch up. Flamingos perform the chase slowly, like a dance, the steps of which lead to copulation.

Females of the Species takes a variety of reproductive strategies into consideration, from the do-it-yourself methods of hermaphrodite earthworms to the month-long embraces of frog couples. Although the author's observations are interpreted within an evolutionary framework whenever possible, she does not attempt to relate her findings to human behavior, and the reader is free to draw personal conclusions. In her account of the social units in which animals mate, Kevles notes that "monogamy creates stress, which may account for its relative rareness among longer-lived and larger-brained species." Many species do live in stable pairs, including fish, birds, and mammals. The promiscuous behavior among Barbary macaques makes a crucial difference in their offspring's chances of survival. Females solicit the sexual attentions of one male after another, eliminating any demonstration of favoritism by offering all of the males some probability of siring her off-

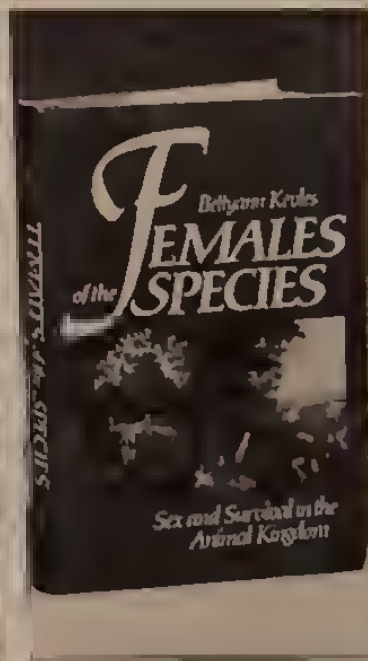
spring. This assures her not only fertilization but also help in rearing the young.

Activities customarily associated with motherhood — feeding, protecting, teaching — are discussed, as well as the seemingly unmaternal practices of infanticide and cannibalism. Natural sources of stress, including population pressures, may cause a mother to fail to protect her young. During periods of great shortages of food, maternal infanticide may become a way for the mother to eliminate potential competition for food while providing herself with enough protein so that she can survive to try to reproduce again.

There is a widespread cooperation among females in many species in which males bear little or no responsibility for care of the young. For example, bottlenosed dolphins and elephant mothers find giving birth too difficult a process to do alone and are assisted by other females who act as midwives. Adolescent or postreproductive females may "baby-sit" the young and act as sentries, warning the others of territorial predators. Lionesses past their prime, with worn-down or missing teeth, are able to survive for 20 years or more because within the pride system they are cared for by younger females that do their hunting for them.

Competition is as easily evidenced as cooperation within the animal kingdom. Many species dwell within hierarchies, in which ascendant females harass the females of lower status, destroying female competitors by suppressing their sexual maturation, harassing them into miscarriage, interfering with attempts at conception, or committing infanticide.

With its copious illustrations and minimal jargon, *Females of the Species* is an absorbing foray into the world of wildlife. To order your copy at the special Members' discount, please use the adjacent coupon.



Members' Book Program

☐ YES, I would like to order *Females of the Species* at the special Members' price of \$18 (regular price: \$20).

Total amount enclosed (please add \$1.50 for shipping and handling): _____

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with discounts off the publishers' prices!

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check payable to the American Museum of Natural History and mail to: Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Department of Education Presents

May and June Lectures and Field Trips

Jeweled Realms: India, Tibet, and Burma

Two Wednesdays, May 6 and 13

7:00–8:30 p.m.

Fee: \$15 (\$13 for Members)

Dr. Ronald Bemier, director of the Center for Asian Arts at the University of Colorado, presents two slide-illustrated lectures. Dr. Bemier has traveled throughout Asia and lectures on the Museum's Discovery Tours to India, Indonesia, Korea, Tibet, Thailand, Burma, and China.

May 6: Cave Temples, Stupas, and Goddesses

Mysterious and powerful arts in India defined the universe in terms of perfect geometry and superhuman ideals. As long ago as the second century B.C., chaitya halls and monasteries were excavated from the cool, embracing granite of the Western Ghats near Bombay. We are drawn into the orbit of structural sacred space and activated by the dynamic form of the Great Stupa at Sanchi. Hinduism is seen to extol the wonder of mother goddesses through an ideal sensuality. The Gupta age, India's golden period (A.D. 350–650), refines previous symbols of earthy reality, providing the foundation for all later arts in India and Southeast Asia.

May 13: Visionary Arts of Tibet and Burma

This lecture traces paths of selective borrowing that explain the remarkable arts of India's neighbors, including visually dazzling monuments such as Rangoon's golden Shwe Dagon, the loftiest stupa in the world, and Tibet's unique Buddhist tower at Gyantse. Analysis of the changing regional tastes that are part of later Buddhism indicates that tons of gold and breathtaking color are characteristic features of Asian art. We will bring these beautiful arts within Western grasp as we travel visually through Nepal, Sikkim, and Bhutan to major monuments in Tibet and Burma.

Bird Identification for the Beginner

Saturday, May 30

10:30 a.m.–3:00 p.m.

Fee: \$40 (No discount for Members)

Limited to 25 adults

This workshop is designed to help the novice bird watcher learn techniques for bird identification, such as charting, recording, and observation. In the morning, the group will view mounted specimens representing the variety of birds in the New York area. After lunch in the Museum (a sandwich lunch is included in the fee), the class moves to Central Park, adding practical experience

to their newly acquired knowledge. John Bull, author of *Birds of North American Eastern Region: The Quick Identification Guide For All Bird Watchers* and *Birds of New York State*, and a field associate in the Museum's Department of Ornithology, leads the workshop.

Coal-mining Geology: A Day Trip to Pennsylvania

Saturday, June 20

8:00 a.m.–7:30 p.m.

Fee: \$65 (No discount for Members)

Limited to 45 adults

This geology and nature bus trip explores the major geological province of the Northeast. The bus will depart from the Museum and travel across New Jersey, stopping at the spectacular Delaware Water Gap, where a ranger will describe the water gap's origins and geology. Continuing across the Pennsylvanian Appalachians, the group will enter both subsurface and open pit mines on ore trains and have discussions with retired coal miners. The journey continues with a tour of a town that is being evacuated because the coal mine beneath the town is burning and represents a hazard to residents. The final stop is for a short walk along a delightful wooded path to collect plant fossils from an abandoned coal field. Sidney S. Horenstein of the Museum's Department of Invertebrates leads this adventure in geology.

Sunset Cruises Around New York

Nooks and Crannies of Western New York Bay

Tuesday, June 2

6:00–9:00 p.m.

Fee: \$22 (\$20 for Members)

A three-hour twilight boat tour around the Upper Bay travels south and allows unusual views of the Statue of Liberty and Ellis Island. After sailing into the Kill van Kull, which features abundant birdlife, the boat moves north into Newark Bay. This unique visit will give passengers an opportunity to learn how the bays and other features of metropolitan New York were formed. The boat then returns to the Circle Line pier via Governor's Island. Sidney S. Horenstein of the Museum's Department of Invertebrates will provide a running commentary. Bring your own box supper.

A Geology Cruise Around Manhattan

Tuesday, June 9

6:00–9:00 p.m.

Fee: \$22 (\$20 for Members)

This three-hour boat trip around Manhattan at twilight surveys regional geology. Learn about the origins of the Palisades and see the landscapes of Manhattan Island as you travel through North America's most southern fjord. The itinerary includes the Hudson, Harlem, and East rivers, and the trip back to Circle Line pier allows views of Roosevelt and Governor's islands. Gain a deeper understanding of the geological origins of Manhattan and its intricate waterways. Sidney S. Horenstein of the Museum's Department of Invertebrates is the host. Bring your own box supper.

Nooks and Crannies of Eastern New York Bay

Tuesday, June 16

6:00–9:00 p.m.

Fee: \$22 (\$20 for Members)

Travel south in the Hudson estuary and enter historic Upper Bay. On this three-hour cruise, discover forts from the War of 1812 and voyage into Gowanus Bay, which takes us back 100 years to a different New York. The boat moves along the Brooklyn shoreline, land built by glaciers a mere 17,000 years ago. Beneath the Verrazano Narrows Bridge, participants learn why the bridge was built there and how the Narrows were formed. Cruise past Staten Island's high coastal hills and Liberty Island and the Statue of Liberty. Sidney S. Horenstein of the Museum's Department of Invertebrates will be on hand to provide running commentary. Bring your own box supper.



A Geology Cruise sight.



The Sunset Cruises offer a fresh perspective.

DEPARTMENT OF EDUCATION May and June Lectures and Field Trips

| | No. of tickets | at (Members) | Total |
|---|-------------------|-----------------|-------|
| Jeweled Realms | — | \$15 (\$13) | — |
| Bird Identification | — | \$40 (\$40) | — |
| Coal-mining Geology | — | \$65 (\$65) | — |
| Nooks and Crannies of Western NY Bay | — | \$22 (\$20) | — |
| Geology Cruise around Manhattan | — | \$22 (\$20) | — |
| Nooks and Crannies of Eastern NY Bay | — | \$22 (\$20) | — |
| Grand total | \$ | | |

(Please note that discount prices apply only to Participating, Donor, and Contributing Members.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please enclose a check payable to the American Museum of Natural History and a self-addressed, stamped envelope and mail to: *May and June Lectures and Field Trips*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. For further information, call (212) 769-5310.

Museum Notes

Special Exhibitions and Highlights

The Chaco Phenomenon, in Gallery 3 through Sunday, August 2. This exhibition explores the rise and fall of an ancient civilization centered in New Mexico's Chaco Canyon. Inhabitants of this desert city were the ancestors of modern-day Pueblo people, and their prehistoric culture was the focus of a complex ritual, social, and economic system for over 200 years. Artifacts excavated from the ruins of Chaco Canyon are featured, as well as reproductions of the society's outstanding architecture.

City of Light, in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through August 2, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Ladies in the Field: The Museum's Unsung Explorers. Through April, in the Library Gallery. Photographs, diaries, published monographs, and mementos chronicle the contributions of women, usually wives of curators, to the development of the Museum.

Programs and Tours

Museum Highlights
Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 769-5700.

April is Latin American Month at the **Leahurst People Center**. This celebration features lectures, music and dance programs, and other special presentations. For further details, please see page 12, or call (212) 769-5315.

Children's Activities

Birthday Parties

Last year, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last two hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends.

The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 769-5600.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays (April 19).

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

FACES is an anthropology magazine for children between the ages of 8 to 14. Each month it features a different theme, which is explored through stories, puzzles, games, pictures, and other imaginative activities. **FACES** is published ten times a year by Cobblestone Publishing, Inc., in cooperation with the Museum. Subscriptions are \$14.75 per year for Museum Members and \$16.50 for non-Members. (Add \$4 per year for foreign orders.) To start your subscription, send your order and payment to **FACES**, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Naturemax Information

Three new films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 769-5121 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m.

The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the lower level, near the subway entrance.

Reservations are recommended. Call (212) 769-5865 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. It will be available for most programs in the Auditorium and will be provided free of charge with the deposit of a driver's license or major credit card. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Spiritualism and Santeria

On Wednesday, April 29, Sylvia Del Villard will present a slide-illustrated program in the Main Auditorium at 7:00 p.m. on Santeria, an African-derived religion that is practiced in the Caribbean. This Education Department public program is free, and seating is on a first-come, first-served basis. For further information, call (212) 769-5315.



New Phones

The Museum has installed a brand-new telephone system, which should alleviate many of the problems people have experienced in trying to contact the various Museum offices. The new system also means new numbers, and the new telephone number for Membership is:

(212) 769-5600

Please make a note of this number on your membership card and use it whenever you have questions about a Members' program or a particularly difficult membership problem.

If you are changing your address, receiving duplicate issues, need a new card, or want to check your membership status, then please call our toll-free number:

(1-800) 247-5470

This number will connect you directly with our record service, and the people there will quickly adjust the records.

Activating Heaven: The Sacred Icons of the Yoruba

Wednesday, April 22
7:00 p.m.
Main Auditorium
Free

Paradise is regained through Yoruba art, which conveys the idea of heaven to humans through its depiction of ancient ideals. These ideals, in turn, have provided the Yoruba with the philosophic means for cultural triumph over the devastating effects of diaspora. The artistic embodiment of cultural ideals is the focus of *Activating Heaven: The Sacred Icons of the Yoruba*, a slide-illustrated program presented by Robert Farris Thompson.

Yoruba religion is centered on the worship of various spirits under a supreme god. The spirits are messengers and embodiments of *àṣhẹ*, which is spiritual command and the power to make things happen. God is the supreme quintessence of *àṣhẹ*, and works of art that possess *àṣhẹ* represent divine force incarnate.

Other significant considerations in Yoruba religion and art

are the related concepts of *iwa* ("character") and *itutu* ("coolness"). *Iwa* is a force that infuses physical beauty with everlastingness. The sense of certainty conferred by *iwa* is enriched by mystic coolness, or *itutu*. By living generously and discreetly and exhibiting grace under pressure, humans exercise *iwa*, *itutu*, and ultimately *àṣhẹ*.

Professor Thompson teaches African and Afro-American art history at Yale University and has mounted major exhibitions of African art at the National Gallery in Washington, D.C. Seating for this program is on a first-come, first-served basis. For further information, call (212) 769-5315. This community program is made possible in part by a gift to the Museum's Education Department from the William R. Hearst Foundation.

An Education Department Public Program.

It's Origami Time!

Six special origami sessions for volunteers, beginning Wednesday, May 6

An Introduction to Origami offers all visitors a chance to learn how to fold paper into pandas, strawberries, stars, and other models. This special course is free, with all materials provided; in exchange, students are asked to help the Museum prepare for and teach at the annual Origami Holiday Tree.

Museum origami specialists Alice Gray and Michael Shall are the instructors in this six-week series. Classes will be held from 6:30 p.m. to 8:30 p.m. on May 6, 13, and 27 and June 3, 10, and 24. (There will be no classes on May 20 and June 17.) Students begin with the very simple swan, sailboat, and

jumping frog, proceed to less simple origami models such as the flapping bird, and finish with the popular omega star and the peacock.

An Introduction to Origami has a limited class size; for information and registration, please call the Volunteer Office at (212) 769-5566.



This Yoshizawa gorilla is an Origami Holiday Tree favorite.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through June 29. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children and includes two floors of exhibitions. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and take off one night with a special, magical friend for a tour of the planets. Cardboard Rocket will be shown on Saturday, April 11 (noon), and May 16 (noon). Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations by mail are recommended. Make your check payable to the Hayden

Planetarium (Central Park West at 81st Street, New York, NY 10024) and mail at least three weeks in advance. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and the twinkling stars.

Showtimes are 10:00 a.m. and noon, on Saturday, May 2, and Saturday, June 6. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations, by mail only, are strongly recommended. Please use the adjacent coupon to make your reservations. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound in "Laser Genesis," on Friday and Saturday evenings. Featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel, laser light shows take place at 7:30, 9:00, and 10:30 p.m. Call (212) 769-5921 for the current program.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Inside the Zombie Phenomenon

Wednesday, April 1
7:00 p.m.
Main Auditorium
Free

"We propose to send you to the frontier of death," they offered. With his acceptance, ethnobotanist Wade Davis set out for Haiti and began the anthropological investigations and remarkable personal adventures that he will recount in the program *Inside the Zombie Phenomenon*.

The invitation came from medical researchers intrigued by two cases of zombies — people who had reappeared in Haitian society years after they had been officially declared dead and had been buried. Zombification, the researchers thought, could be caused by a powerful sedative, a drug that might revolutionize the practice of surgical anesthesiology. Davis's background in ethnobotany, the study of other cultures through plants, made him a prime candidate to undertake such an inquiry, and he was commissioned to do so.

In seeking the formula by which the living are transformed

into the living dead, Davis was initiated into secret rites and ceremonies traditionally off-limits to outsiders. He did indeed discover the zombie formula, a poisonous powdered substance that contains a well-known nerve toxin and produces a trancelike state of suspended animation that is superficially indistinguishable from death.

More interesting than the poison itself, he found, are the social conditions under which zombification occurs.

Zombies are a real though rare phenomenon, Davis maintains, to be understood within the context of the voodoo religion. Within the complex blend of herbal medicine, religious passion, and strict social codes that constitutes Haitian mores, zombification is a weapon wielded by the secret societies that govern village life. Only those who break the code are ever subjected to zombification, which is a socially accepted punishment for a criminal act.

In the creation of a zombie, the critical issue is to steal the willpower and personality of the individual. The fear in Haiti is not of zombies but of becoming a zombie. The fate of the zombie is slavery and something feared more than death — the loss of personal identity.

Davis, who holds degrees from Harvard University in anthropology and biology, will illustrate his presentation with slides. He has published numerous scientific papers, lectured extensively, and detailed his pursuit of the Haitian zombies in his book *The Serpent and the Rainbow*. For further information, call (212) 769-5315. This community program is made possible in part by a gift to the Museum's Education Department from the William R. Hearst Foundation. Seating for this program is on a first-come, first-served basis.

An Education Department
Public Program.

Wonderful Sky. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' prices. There are no refunds or exchanges on tickets. Please indicate a first and second choice:

_____ Saturday, May 2 (10:00 a.m.)
_____ Saturday, June 6 (10:00 a.m.)
_____ Saturday, June 6 (noon)

Number of adult Members' tickets at \$2.75: _____
Number of additional adults' tickets at \$3.75: _____
Number of children's tickets at \$1.50: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check payable to the American Museum-Hayden Planetarium and mail with a self-addressed, stamped envelope to: Wonderful Sky, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024. All ticket orders must be received one month prior to show date. Orders cannot be processed without telephone number and self-addressed, stamped envelope.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

April 1987

5 1:00 to 4:30 p.m. Andean Dances by John Mecca and his Alma Solana Dance Ensemble; Mexican Folktales by Colonn Colorado; Music of the Andean Highland by Pepe Santana — Latin American Month at the Leonhardt People Center. Free.

2:00 and 4:00 p.m. Middle Eastern and North African Dance. Kaufmann Theater. Free. Page 8.

12 11:30 a.m. and 1:30 p.m. Galápagos. Kaufmann Theater. Free and open only to Members. Page 5.

1:00 to 4:30 p.m. Latin American Month at the Leonhardt People Center. Free. (See April 11 listings.)

2:00 p.m. New York Turtle and Tortoise Society. Room 129. Free.

19 Easter. (The Museum is open.) The Leonhardt People Center is closed.

26 1:00 to 4:30 p.m. Latin American Chamber Music; Traditional Andean Spinning and Weaving; Huichol Arts — Latin American Month at the Leonhardt People Center. Free.

2:00 p.m. Rang Barang: The Many Colors of Kathak Dance. Kaufmann Theater. Free. Page 8.

2:00 p.m. New York Paleontological Society. Room 426. Free.

6 First-quarter moon. Moon at apogee.

7 6:00 p.m. James Arthur Lecture. Dr. N. Humphrey, speaker: "The Uses of Consciousness." Kaufmann Theater. Free.

7:30 p.m. Shorebird Migration. Members' Evening Program. Main Auditorium. Free for Members. \$4 for non-Members. Page 4.

13 Full moon.

14 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

Passover begins.

15

1 7:00 p.m. Inside the Zombi-
bie Phenomenon, a slide-illustrated lecture by Wade Davis. Main Auditorium. Free. Page 11.

7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

8 6:30 to 8:30 p.m. Wildscreen '86, a wildlife film festival. Kaufmann Theater. Free. Page 2.

7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.



11 1:00 to 4:30 p.m. Brazilian Candomblé, Afro-Brazilian religious dances by Ligia Barreto and her Roots of Brazil Ensemble; Afro-Brazilian Culture on Parade, a slide-talk by Dr. Morton Marks; Garifuna of Honduras, a video-illustrated talk by Walter Krochmal on the Garifuna culture on the Atlantic Coast of Honduras — Latin American Month at the Leonhardt People Center. Free.

18 2:00 p.m. American Heritage: Music and Dance. Kaufmann Theater. Free. Page 8.

The Leonhardt People Center is closed.

Moon at perigee.

24 8:00 p.m. New York Microscopical Society. Room 419. Free.

23 8:00 p.m. An Evening of Japanese Music and Dance. Members' Evening Program. Main Auditorium. \$7 for Members, \$10 for non-Members. Page 1.

22 7:00 p.m. Activating Heaven: The Sacred Icons of the Yoruba. Main Auditorium. Free. Page 10.

7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

8:00 p.m. Met Grotto National Speleological Society. Room 129. Free.

25 1:00 to 4:30 p.m. Latin American Chamber Music by Tino Musica Hispana; Traditional Andean Spinning and Weaving; Huichol Arts — Latin American Month at the Leonhardt People Center. Free.

2:00 p.m. The Dream Comes First: In Balance with Mother Earth and Father Sky. Kaufmann Theater. Free. Page 3.

30

29 7:00 p.m. Spiritualism and Sentencia: African-Derived Religion in the Caribbean, a slide-illustrated lecture by Sylvia Del Villard. Main Auditorium. Free. Page 10.

28 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

27 7:30 p.m. South American Highland Music, performed by Inkhay. Traditional music and dance of the Andean regions. Main Auditorium. Free.

New moon.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 5 May 1987



B. Grey

Jane Goodall and the Chimpanzees of Gombe

**Thursday, June 18
5:30 and 8:30 p.m.
Main Auditorium
\$10 for Members
\$15 for non-Members**

The human race is not separated from the rest of the animal kingdom by a wide chasm, asserts Jane Goodall. In her 27 years of studying chimpanzees, Dr. Goodall has seen the chimps exhibit many traits once thought uniquely human, and she will share some of her most recent findings with Members when she comes to the Museum next month. Her observations have given scientists some clues to human behavior, and her discoveries have influenced thinking in many branches of the behavioral sciences.

Since 1965, Dr. Goodall has studied the East African monkeys of Gombe Stream Research Center in Tanzania. She was the first to observe chimpanzees making and using tools (they use sticks to gather and eat termites and sometimes go on to hurl stones at potential en-

emies). Dr. Goodall's observations have also corrected the earlier misapprehension that chimpanzees are completely gentle and nonaggressive; it now seems that their hostile behavior may extend to murder and cannibalism.

Dr. Goodall considers the chimpanzee family an excellent model for studying physiological and psychological disturbances that may arise in human children of nuclear families or single-parent families. Because chimpanzees are promiscuous, it is not often possible to know which male fathered which infant—thus chimpanzee societies have no father-child relationships. Only mothers and young form stable units that last for years. Chimpanzees have long periods of childhood dependency: the mother nurses a youngster for about five years, even after birth of subsequent offspring.

These long periods are necessary because chimpanzees, like humans, learn by observation and imitation.

The Jane Goodall Institute for Wildlife Research, Education, and Conservation was established in 1976 to ensure continuation of the study of chimpanzees in Gombe and to support research on the great apes. Dr. Goodall is the recipient of numerous awards and has written several books. The most recent, *The Chimpanzees of Gombe: Patterns of Behavior* (Harvard University Press), represents the culmination of many years' work and features insight into chimpanzee mother-child relationships, hunting strategies, and intelligence.

To register for Jane Goodall, please use the coupon on page 3. This lecture is presented in cooperation with the William M. Clements Foundation.

Emotions in Motion

The expression of attitudes as well as social interactions and cultural change through dance is the theme of the Department of Education's three-part lecture/performance series *The History of African and African-American Dance*.

Page 2

Music of the Spheres

The tradition of live music under the starry Planetarium dome continues this month with the Members' concerts *Celestial Rhythms* and *Space Age Music*.

Page 6

Tales and Poems, Myths and Legends

From Native American lore of the Southwest come two storytelling programs.

Page 5

Clever Clappers

Castanets in Concert is a musical Members' program with a worldly wealth of styles and traditions.

Page 3

The History of African and African-American Dance

Two free public lectures and a dance performance

The history of black dance in America is older than the nation itself. The significant role of dance in the African, African-American, and popular American cultures is the theme of this three-part lecture/performance series. The programs trace the evolution of black dance, revealing it as a means by which people express feelings, attitudes, and ideas.

During the 1970s, African dance experienced a revitalization in the United States. Since then, the history of African dance and its influence upon American culture and social life have been better addressed and understood. These programs, which are presented by renowned authorities, emphasize the ways in which dance not only reflects a culture but also influences it. Each program features a question-and-answer period.

This program is cosponsored by the New York State Department of Parks, Recreation, and Historical Preservation.

For additional information, call the Department of Education at (212) 769-5315.

This program is made possible in part by a gift from the Avon Products Foundation, Inc.

Traditional Dance in African Society

Lecturer: Camille Yarbrough
Thursday, May 14
7:00 p.m.
Main Auditorium

In Africa, important events — birth, death, the planting of crops, even the dedication of a public building — are often observed with dance. Besides ceremonial purposes, Africans dance for sheer pleasure and entertainment. Movements, postures, and facial expressions are used to convey ideas, and a dancer can express virtually any emotion — joy, anger, helplessness — without speaking a syllable.

Professor Camille Yarbrough has studied under the direction of Katherine Dunham and Jerome Robbins and danced with major New York dance companies. Currently, she is professor of African dance in the Black Studies Department of City College, New York.

Seating is on a first-come, first-served basis. Note: Starting at 6:30 p.m., the entrance on Central Park West near 81st Street and the Museum parking lot entrance on West 81st Street will be open.

Evolution of Black Dance in America

Lecturer: Joe Nash
Wednesday, May 20
7:00 p.m.
Main Auditorium

This program focuses on dance traditions retained and adapted by blacks during and after slavery. The slaves, forbidden to speak in their African tongues, used dance as a vehicle for venting their grief and frustration. Dance lightened the burden of oppression, allowed indirect expression of aggression, and helped to sustain hope for a better future.

The dancers sometimes incorporated European styles into their dances, creating a unique American form. Elements of such popular dances as the minuet, quadrille, and Virginia Reel are discernible in the footwork and posture of some of today's black American dances.

This program will feature excerpts from the film "The Spirit Moves," which documents dance forms from the cakewalk to those inspired by rock-and-roll.

Joe Nash, dance historian and educator, will be the speaker. Mr. Nash's many accomplishments include coordination of a course on the history of black dance for the Alvin Ailey American Dance Theater.

Seating is on a first-come, first-served basis.

Black Dance: From Traditional to Breakdance

Dance Performance
Wednesday, May 27
7:30 p.m.
Main Auditorium
Tickets required

In this program, Mama Lu Parks' Traditional Jazz Dancers illustrate the development of black dance, from African forms to street and social dances from the early 1900s to the present.

Breakdancers are linked with an ancient dance tradition whose roots run deep into a vigorous African heritage. Many breakdancing elements — improvisation, call-and-response patterns, acrobatics, complicated body and foot rhythms — are derived from African sources.

At the turn of the century, the cakewalk was the first fad dance to cut across racial barriers. Everybody — whether in elite ballrooms or ghetto nightclubs — cakewalked. Since then, other dances of black origin have inspired many popular dances — the Charleston, the cha-cha, the jitterbug, and the twist, to name but a few.

Mama Lu Parks, who has conducted master classes for Mikhail Baryshnikov and Twyla Tharp, will narrate the program. Her highly acclaimed company has toured the United States, Europe, and Africa.

For free tickets to the dance performance, send a stamped, self-addressed envelope postmarked by May 15, 1987, to: Department of Education, Community Programs, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. No more than two tickets are available per request.

An Education Department Public Program.

Double or Nothing

A program for the hearing impaired

Saturday, May 30
2:00 and 4:00 p.m.
Kaufmann Theater
Free

Vibrations/Productions in Deaf Awareness returns this year with an original theatrical production entitled *Double or Nothing*, written by Bara Casely-Swain, who received the 1983 Writers-Voice New Playwright award. This play explores the complicated relationship between fraternal twins, a brother and sister, one of whom is deaf. We follow them from childhood to see how they cope with separation anxiety. What is it like to be separated for the first time after such dependency, and what is independence really all about? This heartwarming story is suitable for the entire family and will be signed as well as spoken.

The troupe is back by popular demand following a previous sold-out engagement. Seating is on a first-come, first-served basis, and no tickets or reservations are necessary. For additional information, please call (212) 769-5325.

An Education Department Public Program.

Jeweled Realms



Monuments and shrines of India, Tibet, and Burma are the focus of two presentations by Dr. Ronald Bernier, director of the Center for Asian Arts at the University of Colorado: *Cave Temples, Stupas, and Goddesses* (May 6) and *Visionary Arts of Tibet and Burma* (May 13). These slide-illustrated lectures will take place from 7:00–8:30 p.m. in the Main Auditorium, and tickets for both programs are \$13 for Members and \$15 for non-Members. For further details, call the Department of Education at (212) 769-5310.

ROTUNDA

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Castanets in Concert

Thursday, May 21

7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members



Motteo makes it snappy.

They're not merely incidental, accompanying rhythm to traditional Spanish tunes, they're highly individualized, expressive instruments appropriate for all kinds of music. This unique Members' program features a vivid assortment of ethnic music performed on castanets, embracing folk and classical traditions from around the world.

Matteo and his EthnoAmerican Dance Theater are popular performers whose previous programs at the Museum have been warmly received. Their repertoire includes "Paseo," a baroque-style costume dance of the eighteenth century, a

Gypsy wedding dance of northern India, a Hayden minuet performed with zils (the finger cymbals used by belly dancers), a Viennese waltz, and Scott Joplin's "Maple Leaf Rag." The lively finale will be a rendition of "Stars and Stripes" by an eight-to-ten-piece castanet orchestra.

Matteo's narration will link the musical numbers and explain the evolution of castanets, from their ancient use as a weapon to their refinement as a precise and sophisticated rhythmic instrument. The remarkable diversity of the musical pieces featured in *Castanets in Concert* becomes even more interesting when considered

within the instrument's historical context — vases with drawings of dancing castanetists have been unearthed in prehistoric Egyptian tombs, medieval Chinese art features many representations of castanet players, and castanets are invoked in the poetry of ancient Greece. They have been used in Catholic ritual since the eleventh century in the cathedral dance *los seises*. (Saint Theresa of Avila, founder of the Carmelite order of nuns, is said to have been an adept castanetist.)

The instruments are fashioned from a variety of materials, including ivory, bone, jade, seashells, and brass. Castanets are intimate and personal instruments: a master craftsman designs them from a tracing of the hand so that they will be suited to individual strength, flexibility, and temperament.

Matteo, who wrote his master's thesis on the history of the castanets, has toured extensively as a performer, lecturer, and teacher. He has played the castanets in Notre Dame de Paris and listened to them in the temple courtyards of India. His distinguished career includes studies under the guidance of ethnic specialist La Meri as well as with dance masters in India and Sri Lanka, and he has performed with the Metropolitan Opera Ballet.

To register for *Castanets in Concert*, please use the May Members' programs coupon.

Woodlore and Wildwood Wisdom

Wednesday, June 3

7:00 p.m.

Kaufmann Theater

\$3 for Members

\$5 for non-Members



Totes from the backwoods.

Stories, songs, legends, lore, and truth that's stranger than fiction are featured in this Members' program about the world of nature and the ways that people relate to it. Naturalist, herbalist, and raconteur Doug Elliott peppers his presentation with ancient Indian legends, humor-

ous haunt tales, and outrageous possum poems and flavors them with regional dialects and accents.

Elliott is a professional root forager who earned his living for many years as a traveling herbalist, collecting and selling herbs, teas, and old-time reme-

dies. His search for herbs and plant lore has taken him beyond his native mountains of North Carolina to the forests of the Far North and to Central American jungles. In the course of his travels, Elliott has acquired a wealth of botanical knowledge — the classification of plants, their uses in various cultures, their history, medicinal properties, food value, and other practical contemporary uses. His herbal expertise and spirited presentations have enlivened lectures and workshops at schools and colleges from Canada to the Caribbean.

Woodlore and Wildwood Wisdom features a cast of critters that includes groundhogs, catfish, grouse, and possums. The oldest and most successful American species, the possum is a folk favorite and enjoys a rich store of stories, songs, and bizarre natural history.

To register for *Woodlore and Wildwood Wisdom*, please use the May Members' programs coupon.

May Members' Programs Coupon

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: May Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Celestial Rhythms. Thursday, May 7, 7:00 and 9:00 p.m. \$9 for Members, \$12 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$12. Indicate a first and second choice of times, if possible:

_____ 7:00 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$9: _____

Number of additional tickets at \$12: _____

Total amount enclosed for program: _____

Space Age Music. Saturday, May 9, 11:15 a.m. \$4 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Castanets in Concert. Thursday, May 21, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Woodlore and Wildwood Wisdom. Wednesday, June 3, 7:00 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Jane Goodall and the Chimpanzees of Gombe. \$10 for Members, \$15 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$15.

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first and second choice of times:

Thursday, June 18 _____ 5:30 p.m. _____ 8:30 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$15: _____

Total amount enclosed for program: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Jane Goodall, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Members' Book of the Month

Shamans, Housewives, and Other Restless Spirits: Women in Korean Ritual Life

by Laurel Kendall

University of Hawaii Press

Publisher's price: \$20

Members' price: \$18 (available in the Museum Shop)

This ethnography of the ritual realm of Korean women features a firsthand account of their public and private rites, the spirits with whom they commune, and the shamans who assist them in their supernatural communions.

Shamans (*mudong*, *monsin*) are the specialists Korean women consult for a range of advice and for ritual expertise in all dealings with the supernatural. Men worship ancestors in solemn, dignified rites in the Confucian tradition. Women, sometimes aided by a shaman, honor household gods and expel ghosts in rites that are often noisy and exuberant and consequently scorned by conservative Confucians.

Even so, Korean women wield positive powers. Together the shaman and housewife secure health, prosperity, and harmony in the household and village and drive away malevolent spirits. The role of women in re-

ligious activities is a measure of Korea's distinctiveness within the Confucian world.

Dr. Kendall, who is assistant curator in charge of Asian ethnographic collections in the Museum's Anthropology Department, began her study of Korea in 1971 as a Peace Corps volunteer. In 1976 she returned as a Fulbright Fellow to a village in Kyonggi province, where she lived for two years. As a resident of this community, she came under the tutelage of a wise and witty young shaman, called Yongsu's Mother, whose observations add a personal flavor to Kendall's ethnography. (By Korean etiquette, adults are not addressed by their given names; a woman is identified by her child — Yongsu's Mother — or by her residence — the Hilltop Auntie — or by her profession — the Rice Shop Auntie.)

Women visit a *mansin* for a variety of reasons. A *monsin*'s client may be concerned about a family member's career prospects or sudden financial reverses, or she may suspect malevolent forces behind a sudden or persistent illness. Although they may diagnose a supernatural cause for an ailment and recommend an exorcism, *monsin* are not opposed to cosmopolitan medicine and encourage clients to patronize pharmacists, herbalists, acupuncturists, and hospitals. They assume, however, that angry ghosts or gods are responsible for the necessity of medical expenses and that healing rituals will benefit the entire family.

A consultation begins with a divination — the *mansin* shakes brass bells and chants, asking the gods to send her a correct message. She then tosses coins and spills handfuls of rice grains. The configurations of rice and coins hint at the client's concerns and thus the *mansin* is able to offer advice.

Many women perform simple exorcisms in their own homes, without a *mansin*'s help. According to Dr. Kendall's village landlady, "Parents have to be half shamans to raise up their children." Illness within the household may be the work of spiteful imps: a change of residence, construction around the home, moving furniture within the home, or bringing stone or wooden objects into the house may invite the entry of wood imps and earth imps, who instigate and perpetuate illness. When a *mansin* divines that ghosts and noxious influences lurk behind a persistent illness, she arms herself with a kitchen knife and draws inauspicious forces away, casts them out, and cuts or rips away their hold on the afflicted.

A flamboyant event called *kut* features a *mansin*'s finest performance. *Kut* is a progress through the house wherein gods and ancestors appear. Spirits bless and protect a family: in return, the family must feast and entertain the spirits with a *kut*. A *kut* may be held for purposes of healing an ailing member of the household, to send off the dead, or as insurance of continued prosperity and good fortune. Many *kut* include all of these elements in a daylong and nightlong celebration.

The house is the setting of a *kut*, embracing living members of the household, ancestors, and the gods of the dwelling. This is appropriate, since the household is the irreducible unit of the Korean peasant's social, political, economic, and religious life.

The *monsin* represents a dynamic link between her clients and the supernatural elements of their households. She begins the *kut* by performing a drum song to expel pollutions accumulated in the house through birth, death, and profane existence. This accomplished, she sings an invitation to household gods to enter.

Korean household gods hide within the structure of the house itself: the House Lord in the roofbeam above the porch, the Birth Grandmother in the inner room, the House Site Official behind the house, the Mountain God and Seven Stars on the storage jars beside the house. In a trance, the *monsin* personifies the household gods. The gods are offered rice cakes, pigs' legs, and cash; in return, they lay blessings into pockets and under the clothing of family and guests. The spirit of a dead shaman leads the family ancestors into the house.

In the person of the possessed *mansin*, the ancestors, like the gods, claim a dramatic presence. The dead confront the living with anger and reproaches that ultimately give way to reconciliation. The family and guests don the costumes in which the *monsin* has summoned and

been possessed by the household spirits. Now, the women dance to a mild state of euphoria, which pleases their own personal spirits and consequently brings additional blessings to their families.

A *kut* is a time of drinking and laughter, and much of its comedy comes from the *monsin*'s portrayal of the greedy, extortionate gods who demand money from resistant housewives. This is play, and the rules are understood: *monsin* and client settle on a price well in advance of the *kut*.

A family's social and supernatural circumstances individualize each *kut*. Some gods are especially strong in certain households by virtue of the family's particular traditions and history. There were officials who served in the palace, warriors, or grandmothers who worshipped on sacred mountains. The household pantheon is colored by family traditions, transmitted from mother-in-law to daughter-in-law, down through the generations.

Mansin, who perform *kut* in teams, see their skilled performance as a blend of talent, effort, and divine will. Although a *kut* is a women's party, it is not a separate female cult, nor is it subversive of men and men's objectives. The male head of the household must greet his gods and ancestors, and each spirit delivers a divination to each member of the family. Sometimes, a man's affliction is the central concern of a *kut*.

Mansin share the ambiguous social status of other glamorous but morally dubious female professionals — the actress, the prostitute. They make a living, often a comfortable one, by public performance in a society where so-called good women stay at home. But the *mansin* is the ritual specialist of housewives, and the good women who stay at home need her. The *mansin* came from their midst, lives like them, and speaks to their anxieties and hopes.

This report offers a unique perspective on shamanism in Asian family life and paints an evocative portrait of Korean ritual life. *Shamans, Housewives, and Other Restless Spirits* is available in the Book Balcony of the Museum Shop.

Initiation of a Shaman

Before recognizing their vocation, the Korean shamans (*mansin*) experience a series of traumatic events. They refer to this "call" as a "descent of the gods," sometimes revealed through bizarre, "crazy woman" behavior — screaming, chattering, manic wandering, and random pilfering. If she accepts her calling, an initiate has her spirits settled during an initiation *kut* and serves as an apprentice spirit daughter to an experienced *mansin*, learning chants, dances, and ritual lore. In *Shamons, Housewives, and Other Restless Spirits*, Dr. Kendall describes Yongsu's Mother's calling:

In late adolescence she had frightening hallucinations. The little Buddha statue a friend brought her from Japan burst into flames in the middle of the room. She watched her mother's face turn into a tiger's face. She wandered about at night, drawn to the stone Buddha near a neighborhood temple. Her mother held a healing *kut*. During the *kut* the girl fell asleep. A white-haired couple appeared and gave her a bowl of medicinal water to drink. When she woke up, she told her dream to the *mansin*, who was pleased. The *monsin* asked her to become her spirit daughter and be initiated as a *mansin*, but she and her mother relused.

Years later, on her wedding night, her sister-in-law dreamed that the new bride was sitting in the inner room hitting a drum. Overhead, on a rope line, hung all of the gods' clothes, as if a *kut* were in progress. Later, when her husband was fatally ill, Yongsu's Mother went to a *mansin*'s shrine for an exorcism. She set out her offerings and the *monsin* began to chant, but when Yongsu's Mother went to raise her arms over her head and bow to the ground, her arms stuck to her sides as if someone were holding them down. She could not budge them. It was destined that her husband would die and she would become a *monsin*. There was nothing she could do about it.



Shaman with pig's-head offering.



Warding off the Death Messenger.

Native American Stories from the Southwest

The Storytelling Legacy

Friday, May 1
7:00 p.m.
Linder Theater
(first floor)
Free

Leslie Marmon Silko reads selections from her book, *Storyteller*, a collection of tales and poems from the Pueblo people of the Southwest. These tales express the warmth of family life and pride in tradition, as well as the darker realities of life on a reservation — hunger, poverty, and injustice.

Ms. Silko, who grew up on the Laguna Pueblo Reservation, is also the author of the novel *Ceremony*.

Earth-Women-Creators-Warriors-Shamans

Saturday, May 2
2:00 p.m.
Linder Theater
(first floor)
Free

This theatrical performance for children and their families presents some of the creation myths and legends of the Southwest Indians. The performers are Vira Colorado, Hortensia Colorado, and Gloria Miguel, with music by Louis Mofsie.

Vira Colorado and her sister Hortensia, founding members

of "Native Americans in the Arts" at the American Indian Community House, have presented several storytelling programs at the Museum. Vira Colorado is a founding member of "Off the Beaten Path," a traditional and contemporary Native American ensemble, resident at the Theater for the New City.

This program is made possible in part by grants from the New York State Council on the Arts, the Vincent Astor Foundation, and the Helena Rubinstein Foundation. Seating is on a first-come, first-served basis. For additional information, please call (212) 769-5305.

An Education Department Public Program.

Members' Tour of the Month

Minerals and Gems

Free and open only to Participating, Donor, and Contributing Members



Jade brush holder from the Hall of Gems.

Legend proclaims the topaz to be the stone of fruitfulness and faithfulness; wearing a topaz instills cheerfulness, calms passions, and prevents bad dreams. The upcoming Members' Tour of the Month offers a lavishly illustrated look at the facts behind the fancies surrounding topazes and the many other gems in the Museum's vast and dazzling collection.

Accompanied by specially trained volunteer Highlights Tour guides, Members will learn about the formation of the items on display in the Halls of Minerals and Gems. A combination of physical factors including heat and pressure yields the numerous species of minerals within the earth's crust. Minerals, in turn, undergo continuous cycles in which they are broken down, re-formed, weathered, dissolved, and recombined into different kinds of rocks in different environments and eventually form substances as various as sand, salt, silver, and sapphires.

To register for the tour, please use the adjacent coupon.

Members' Tour of the Month: Minerals and Gems.

Free and open only to Participating, Donor, and Contributing Members.

Please indicate a first, second, and third choice.

| | | |
|--------------------|------------|------------|
| Sunday, May 31 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, June 3 | 6:00 p.m. | 7:00 p.m. |
| Saturday, June 6 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, June 10 | 6:00 p.m. | 7:00 p.m. |
| Sunday, June 14 | 10:30 a.m. | 11:30 a.m. |
| Wednesday, June 17 | 6:00 p.m. | 7:00 p.m. |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *Minerals and Gems Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. **Registration closes May 25.**

Participating, Donor, and Contributing Members are cordially invited to a

Behind-the-Scenes Tour of the Department of Exhibition

Wednesday evening, May 13
or Sunday, May 17, \$7

SOLD OUT from April issue of *Rotunda*



"Membership" is your password.

Have you ever looked into a display case and almost expected to see animals breathe or blink because they're so life-like? This month, Members can step behind the scenes at the Museum to learn how our remarkable exhibits are made.

The exhibits bespeak the skills of curators and an exhibition staff of designers, sculptors, preparators, painters, and other technicians and artists. During the tour, Members will meet the Exhibition staff and visit their studios, where artists and pre-

parators will demonstrate different model-making and taxidermy techniques.

A sneak preview of the Hall of South American Peoples (scheduled to open in 1988) will illustrate some of the steps involved in the creation of a new exhibition hall. The tour will also feature fascinating archival footage of the mounting of the Indian elephant exhibit.

Please use the adjacent coupon to register for the tour. Complimentary beverages will be served prior to all tours.

Behind-the-Scenes Tour of the Department of Exhibition. \$7 and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Wednesday, May 13, between 5:15 and 6:15 p.m.
_____ Wednesday, May 13, between 6:30 and 7:30 p.m.
_____ Sunday, May 17, between 10:30 a.m. and noon
_____ Sunday, May 17, between 1:00 and 2:30 p.m.

Number of tickets at \$7 each: _____
Amount enclosed for program: \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Behind-the-Scenes*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Concerts Under the Stars

Celestial Rhythms

(for adults)

Thursday, May 7

7:00 and 9:00 p.m.

Planetarium Sky Theater

\$9 for Members

\$12 for non-Members

For your ears: live contemporary and classical electronic music. For your eyes: dazzling laser lights and special effects. Treat your senses to the latest in the Members' Planetarium concert series, *Celestial Rhythms* and *Space Age Music*.

Celestial Rhythms will feature unique electronic arrangements of a variety of popular selections, including Pachelbel's

"Canon in D," the "Top Gun" theme, "Danger Zone," and many others. Original works by performers Jonn Semie and Mark Petersen will also be featured. Semie and Petersen have created scores and soundtracks for planetariums throughout North America.

A Members' family program that's both educational and fun, *Space Age Music* is designed es-

Space Age Music

(for families with

children aged 7 and older)

Saturday, May 9

11:15 a.m.

Planetarium Sky Theater

\$4 for Members, \$6 for non-Members

pecially for children. Petersen and Semie will demonstrate how sophisticated synthesizers can turn electricity into a nearly infinite variety of sound, ranging from music of orchestras and jazz combos to voices of aliens from space.

To register for *Space Age Music* and *Celestial Rhythms*, please see the May Members' programs coupon on page 3.

Maya Cave Painting

Sunday, May 10

2:00 p.m.

Kaufmann Theater

Free

The Maya have long considered caves a powerful link between the upper world and the underworld, between life and death. Filled with art and hieroglyphics that date back a millennium, these sacred places are steeped in tradition.

Andrea Stone shares her findings from one such cave, Naj Tunich in Guatemala, where almost 100 inscriptions and figures detail the meaning of Maya ritual. Although many questions remain unanswered, the research in which Ms. Stone

has participated provides striking insights into the sacred and secular worlds of the Maya.

This program is made possible by grants to the Museum's Department of Education from the Helena Rubinstein Foundation and the Vincent Astor Foundation. Seating is on a first-come, first-served basis. For additional details, please call (212) 769-5305.

An Education Department Public Program.

Celebrate China Month

The Chinese decorative arts of seal carving and paper cutting, the histories of some religious minorities in China, and traditional Chinese music, dance, and legends are featured in the weekend series of China Month celebrations.

The presentations will take place in the Leonhardt People Center, located on the second floor of the Museum and open from 1:00 to 4:30 on Saturdays and Sundays. Seating for the presentations, which are repeated throughout each afternoon, is on a first-come, first-served basis. The Museum has a pay-what-you-wish policy, but there is no additional charge for these programs. Short films also highlight each weekend. For additional details, call (212) 769-5305.

This program is made possi-

ble in part by grants to the Museum's Department of Education from the Helena Rubinstein Foundation, the Vincent Astor Foundation, and a gift from the family of Frederick H. Leonhardt.

May 2 and 3

Southern Lion Dances of China. Paul Lee demonstrates a traditional dance form derived from the martial arts.

The Chinese Jews. In this slide-illustrated presentation, Paul Sanlaçon recounts the history of Jews in China since their appearance in the country 1,000 years ago.

Chinese Paper Cutting. Chu Chen-Kuang discusses the history of this art, illustrating his presentation with slides and a demonstration.

May 9 and 10

Yueh Lung Shadow Theatre. Jo Humphrey uses colorful figures to illustrate this 2,000-year-old Chinese art.

The Chinese Muslims. Paul Sanlaçon traces the history of Chinese Muslims since their arrival over 1,000 years ago.

Marco Polo and Kubla Khon. Dr. Morris Rossabi presents a slide-talk about these vibrant historical figures.

May 16 and 17

Red Silk Dancers. Traditional and contemporary Chinese dances, including the splashing-water maiden dance.

The Guzheng. Chang Yuan Wang of the Chinese Ensemble of New York performs the music of this 21-string instrument and discusses its history.

Women in China: Changes and Continuity. Using slides, Sue Gronewald discusses the traditional and contemporary roles of Chinese women.

May 23 and 24

Classical Dance of China. Charley Chan performs and explains classical dance forms, including the Chinese sword dance.

Traditions in Chinese Music: The Pipo. Jane Zhengyin Xu of the Chinese Ensemble of New York demonstrates the music of the pipo, an expressive four-string instrument.

Seal Carving in China. Ching Yao Chu demonstrates this traditional Chinese art of stone carving.

May 30 and 31

Fire Plume World Story and Music Ensemble. In a blend of dramatic narration and music, Paula Chan Bing and Margaret Wolfson present tales drawn from Chinese oral traditions.

Chinese Musical Instruments. A presentation by Liu Xin Xin, including the erhu, a two-string violin.

Dance Movements and Styles of China. A lecture and demonstration by Lu Yu and members of Tsai Fung.

An Education Department Public Program.



The Red Silk Dancers appear on May 16 and 17.

Souvenir Booklet

Elephants Underground

Last March, wildlife biologist Ian Redmond introduced Museum audiences to the remarkable *Elephants Underground*, a group of African elephants that regularly journey beneath a dormant volcano to eat, sleep, and play. For Members who missed the program, or those who attended and would like a memento, a souvenir booklet is now available.

The booklet contains three articles by Redmond. The first feature discusses the Kenyan

pachyderms' subterranean forays, and the second feature examines the threat posed by ivory traders to African elephants and conservation considerations. The final article is a personal reminiscence of the late Dian Fossey and her work with the mountain gorillas of Rwanda.

To obtain your copy, send \$2.75 to Ian Redmond, Souvenir Booklet, P.O. Box 304, Annandale, VA 22003.

Films of China

Sunday, May 31

12:00 to 3:30 p.m.

Kaufmann Theater

Free

In conjunction with China Month, the Department of Education presents an afternoon of films about Chinese culture.

12:00 p.m. *Pointing the Chinese Figure.* A look at Chinese aesthetic values and their relationship to figure painting.

12:15 p.m. *Blending of Two Cultures.* A Chinese-American artist combines Chinese concepts with Western art styles.

1:00 p.m. *Silk Making in China.* The ancient art of silk making and its present-day practice.

1:15 p.m. *Stilt Dancers of the Long Bow.* The revival of stilt dancing in the village of Long Bow.

2:15 p.m. *To Taste of Hundred Herbs.* The art of healing, as practiced by a traditional Chinese doctor in the village of Long Bow.

This program is made possible in part by grants to the Museum's Department of Education from the Helena Rubinstein Foundation, the Vincent Astor Foundation, and a gift from the family of Frederick H. Leonhardt.

For additional details, please call (212) 769-5305.

An Education Department Public Program.

Museum Notes

Special Exhibitions and Highlights

The Chaco Phenomenon. in Gallery 3 through August 2. This exhibition explores the rise and fall of an ancient civilization centered in New Mexico's Chaco Canyon. Inhabitants of this desert city were the ancestors of modern-day Pueblo people, and their prehistoric culture was the focus of a complex ritual, social, and economic system for over 200 years. Artifacts excavated from the ruins of Chaco Canyon are featured, as well as reproductions of Chacoan architecture.

City of Light. in the Akeley Gallery. An exhibit of the work of a team of photographers from Harvard University who in 1985 traveled to India to document death and cremation in the holy city of Benares.

On Tap: New York City's Water Supply. Through August 2, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Programs and Tours

Museum Highlights
Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor,

which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 769-5700.

May is China Month at the **Leonhardt People Center.** This celebration features lectures, music and dance programs, and other special presentations. For further details, please see page 6, or call (212) 769-5305.

Children's Activities

Birthday Parties

Last year, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last two hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Sign up now for the only birthday celebration in town that includes a tour of the dinosaur halls, complete with a look

at a dinosaur mummy and a nest of dinosaur eggs. For reservations, please call (212) 769-5600.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

FACES is an anthropology magazine for children between the ages of 8 to 14. Each month it features a different theme, which is explored through stories, puzzles, games, pictures, and other imaginative activities. **FACES** is published ten times a year by Cobblestone Publishing, Inc., in cooperation with the Museum. Subscriptions are \$14.75 per year for Museum Members and \$16.50 for non-Members. (Add \$4 per year for foreign orders.) To start your subscription, send your order and payment to **FACES**, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Naturemax Information

Three films are being shown

on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. *The Dream Is Alive* is being held over by popular demand.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 769-5121 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Res-

taurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the lower level, near the subway entrance.

Reservations are recommended. Call (212) 769-5865 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. It will be available for most programs in the Auditorium and will be provided free of charge with the deposit of a driver's license or major credit card. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through June 29. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created espe-

cially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special, magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, May 16, and June 13. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Reservations by mail are recommended, and you may use the adjacent coupon. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024) and mail at least one week in advance. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are 10:00 a.m.

and noon, on Saturday, June 6, and Saturday, July 11. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out one month in advance; reservations, by mail only, are strongly recommended. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound in "Laser Genesis," on Friday and Saturday evenings. Featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel, this laser light show takes place at 7:30, 9:00, and 10:30 p.m. Call (212) 769-5921 for more information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

The Secret of the Cardboard Rocket. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' prices. There are no refunds or exchanges on tickets. Please indicate a first and second choice:

_____ Saturday, May 16 (noon)
_____ Saturday, June 13 (noon)

Number of adult Members' tickets at \$2.75: _____
Number of additional adults' tickets at \$3.75: _____
Number of children's tickets at \$1.50: _____
Total amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check payable to the American Museum-Hayden Planetarium and mail with a self-addressed, stamped envelope to: *Cardboard Rocket*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024. **All ticket orders must be received one week prior to show date. Orders cannot be processed without telephone number and self-addressed, stamped envelope.**

Sun

Mon

Tue

Wed

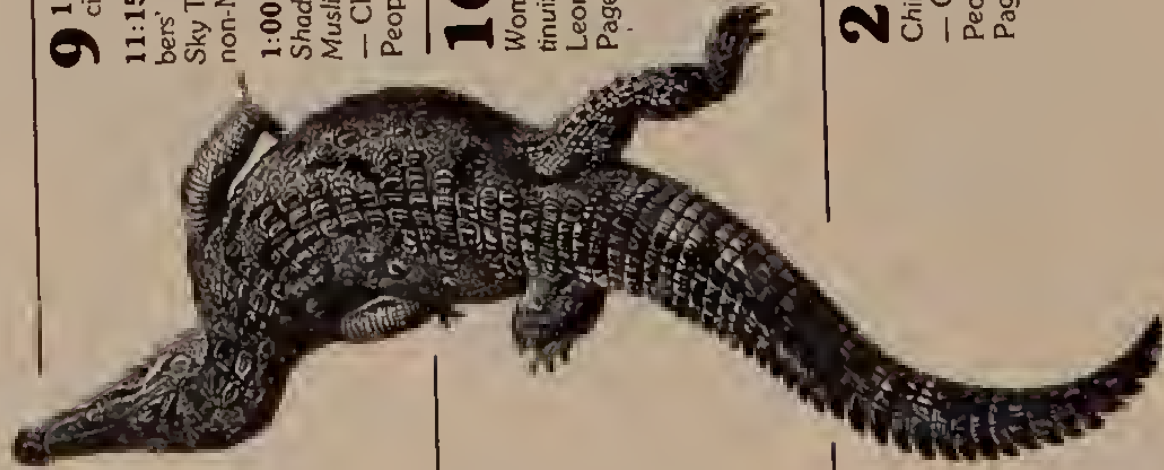
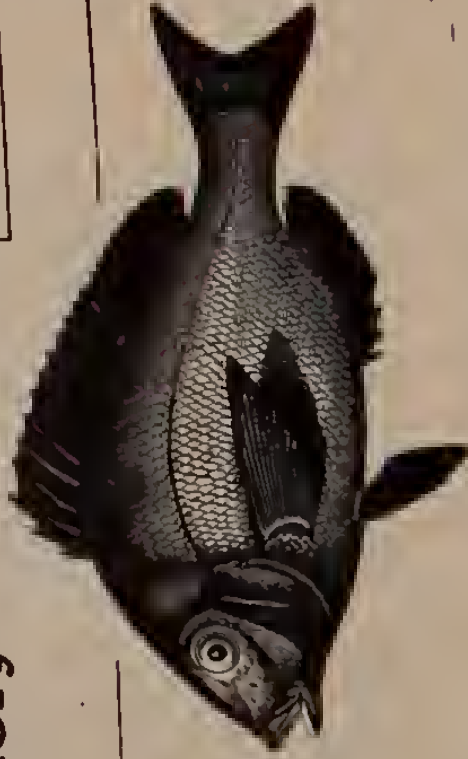
Thu

Fri

Sat

May 1987 American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.



3 11:30 a.m., 1:30 and 3:30 p.m. *The Rollickin' Dinosaur Revue*. Members' Family Program. Kaufmann Theater. \$3 and open only to Members.

1:00 to 4:30 p.m. Southern Lion Dances of China; *The Chinese Jews: Chinese Paper Cutting* — China Month at the Leonhardt People Center. Free. Page 6.

11

10 1:00 to 4:30 p.m. Yueh Lung Shadow Theatre; *The Chinese Muslims: Marco Polo and Kubla Khan* — China Month at the Leonhardt People Center. Free. Page 6.

2:00 p.m. *Maya Cave Painting*. Kaufmann Theater. Free. Page 6.

2:00 p.m. New York Shell Club. Room 419. Free.

17 10:30 a.m. to 2:30 p.m. Behind-the-Scenes Tour of the Department of Exhibition, open only to Participating, Donor, and Contributing Members, \$7, and tickets are required. Page 5

1:00 to 4:30 p.m. *Red Silk Dancers, The Guzheng: Women in China: Changes and Continuity* — China Month. Free. Page 6.

2:00 p.m. New York Paleontological Society. Room 426. Free.

24 1:00 to 4:30 p.m. *Classical Dance of China; Traditions in Chinese Music; Seal Carving in China* — China Month. Free. Page 6.

31 12:00 to 3:30 p.m. *Films of China*. Kaufmann Theater. Free. Page 6.

1:00 to 4:30 p.m. *Fire Plume World Story and Music Ensemble; Chinese Musical Instruments; Dance Movements and Styles of China* — China Month. Free. Page 6.

6 6:30 to 8:30 p.m. *An Introduction to Onigami*. First of six special onigami sessions for volunteers. For volunteer opportunities, please call (212) 769-5566.

7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

12 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

13 5:15 to 7:30 p.m. Behind-the-Scenes Tour of the Department of Exhibition, open only to Participating, Donor, and Contributing Members. \$7, and tickets are required. Page 5.

7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

19 8:00 p.m. New York Entomological Society. Room 129. Free.

20 7:00 p.m. *Evolution of Black Dance in America*. Main Auditorium. Second program in a three-part series on the history of African and African-American dance. Free. Page 2.

26 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

25 Memorial Day. The Museum is open.

27 7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

7:30 p.m. *Black Dance: From Traditional to Breakdance*. Main Auditorium. Free, and tickets are required. Page 2.

8:00 p.m. Met Grotto National Speleological Society. Room 129. Free.

7 7:00 and 9:00 p.m. *Celestial Rhythms*. Members' Concert. Planetarium Sky Theater. \$9 for Members, \$12 for non-Members. Page 6.

14 7:00 p.m. *Traditional Dance in African Society*. First program in a three-part series on the history of African and African-American dance. Main Auditorium. Free. Page 2.

21 7:30 p.m. *Castanets in Concert*. Main Auditorium. Members' Evening Program. \$5 for Members, \$8 for non-Members. Page 3.

16 1:00 to 4:30 p.m. *Red Silk Dancers; The Guzheng: Women in China: Changes and Continuity* — China Month at the Leonhardt People Center. Free. Page 6.

23 1:00 to 4:30 p.m. *Classical Dance of China; Traditions in Chinese Music; Seal Carving in China* — China Month at the Leonhardt People Center. Free. Page 6.

29 8:00 p.m. New York Microscopical Society. Room 419. Free.

30 1:00 to 4:30 p.m. *Fire Plume World Story and Music Ensemble; Chinese Musical Instruments; Dance Movements and Styles of China* — China Month at the Leonhardt People Center. Free. Page 6.

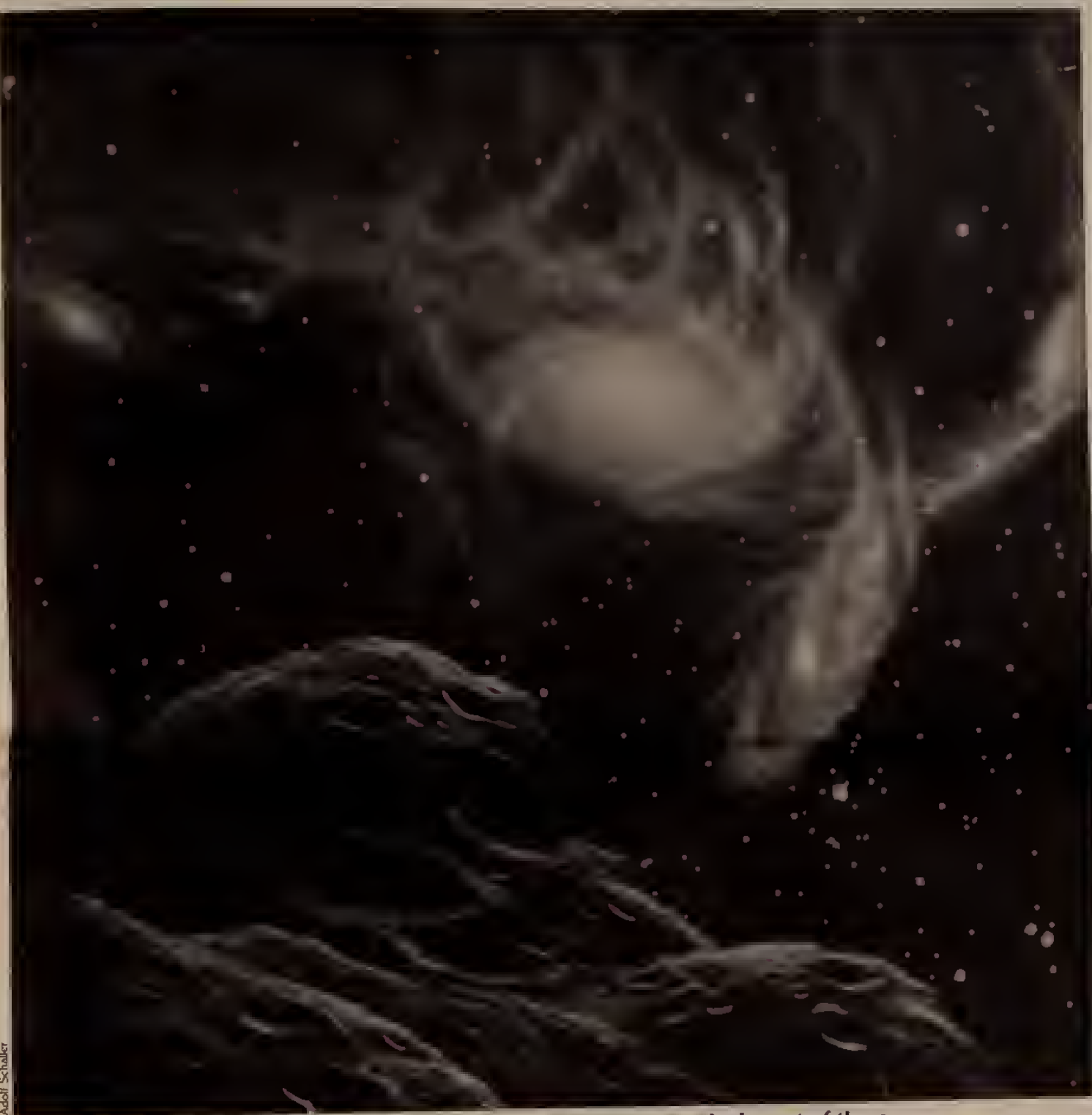
2:00 and 4:00 p.m. *Double or Nothing*, a program for the hearing impaired. Kaufmann Theater. Free. Page 2.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5000
Planetarium Information: (212) 769-5920
Naturmax Information: (212) 769-5121
Restaurant Reservations: (212) 769-5865

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 6 June 1987



*A waltz of doom in which gravity colls the tune: the largest of these
four black holes will eventually devour the others.*

The Invisible Universe

Tuesday, July 14

7:30 p.m.

Main Auditorium

\$3 for Members, \$5 for non-Members

There is far more to the universe than meets the eye, and astronomer Terence Dickinson will conduct Members on a tour that transcends even the reach of the most powerful telescope, into realms of space that are unexplored but not unknown. *The Invisible Universe* is a celestial excursion rooted in scientific knowledge and recent astronomical discoveries but rich in the imaginative appeal of science fiction.

This program will explore a host of intriguing, otherworldly phenomena. Black holes, those whirlpools of gravity — where did they come from, and what are they like on the inside? The spectacular explosions of supernovae — why do these cosmic time bombs explode, and

how does their detonation affect surrounding stars and galaxies? Mysterious quasars — why can they be seen at enormous distances even though the galaxies they inhabit are, by comparison, almost invisible? Present knowledge of astronomy renders these questions answerable.

In recent years, astronomers have discovered that already-distant galaxies are becoming even more remote and that the universe is expanding like an inflating balloon. Woven into the familiar universal fabric is an invisible component more massive than all the matter known to exist. Despite intensive investigation by an international army of astronomers and theorists, this invisible mass has remained inscrutable.

Dickinson will describe for Members the evidence supporting the existence of the invisible mass, offer possible solutions to its enigmatic nature, and theorize the consequences of each solution in this slide-illustrated program.

Terence Dickinson is one of Canada's foremost science journalists. He has written hundreds of articles for a variety of publications, including *Reader's Digest*, *Omni*, and the Canadian science journal *Equinox*. This program is presented in conjunction with the publication of his book *The Universe... and Beyond* (Camden House).

To register for *The Invisible Universe*, please use the June Members' programs coupon on page 3

Man and Nature

Dr. Garrett Hardin, a renowned authority on biology and ecology, discusses *Progress and Necessity* in the four-part series of Man and Nature Lectures.
Page 3

Into the Abyss

Members can go West and take the plunge at a private viewing of the newest Naturemax feature, *Grand Canyon: The Hidden Secrets*.
Page 2

???

Bring your natural history mysteries to a team of Museum experts on *Identification Day*.
Page 7

Talk Turkey

... and Israel and Armenia and other Middle Eastern cultures at this month's series of weekend celebrations at the Leonhardt People Center.
Page 6

A Tip of the Top Hat

A bygone hot spot is remembered with song and dance in *A Salute to the Harlem Opera House*.
Page 2

A Salute to the Harlem Opera House

Saturday, June 13
2:00 and 4:00 p.m.
Kaufmann Theater
Free



The triumphant finale of a Harlem Opera House revue.

The mecca of black leadership, entrepreneurship, religion, art, and entertainment, Harlem of the '20s and '30s was a symbol of opportunity and prosperity to blacks everywhere. Small businesses emerged, literary and artistic achievements flourished, and fortunes were made — truly, it was the heyday of Harlem.

World-famous showplaces blossomed in these golden years, introducing and spotlighting some of the best of black culture. One of these, the Harlem Opera House, was built by Oscar Hammerstein in 1889 and went on to become one of the premier showcases of black entertainment. Its venue included comedy sketches, films, blues, ragtime, and dance acts. Eubie Blake and Noble Cissile performed there, and it was there that a 16-year-old singing sensation named Ella Fitzgerald was discovered. The Harlem Opera House also featured the acclaimed amateur night, hosted by Ralph Cooper, before the tradition moved on to the Apollo. Many great entertainers performed in this theater for audiences from all walks of life.

A Salute to the Harlem Opera House will take a nostalgic look at this forgotten showplace and some of the many performers who dazzled and delighted audiences there from 1919 until its closing in 1938. Through lecture, film, vintage slides, and live performances, the Harlem Opera House will be remembered. Some of the participants in this program actually performed there:

Buster Brown, charter member of Cook and Brown and the Copesetics, will be the master of ceremonies.

Gretchen Ferguson, former cast member of the hit off-Broadway show "Mama, I Want to Sing," will perform songs popularized by Bessie Smith.

The Woodhall and Friedman Sisters will perform a tribute to the chorus-line acts.

Lord Burboge, former entertainer at the Harlem Opera House and singer with the Al Cobb Big Band, will salute the singers of the era.

Tina Prott, who has danced with Sammy Davis, Jr., Hines and Hines, and the Count Basie Band, will perform.

Rom Ramirez, composer of

"Lover Man," will lead the music ensemble.

Slides and films from the collection of Delilah Jackson, program consultant, will highlight personalities of the period. Ms. Jackson, a theater and dance historian who specializes in Harlem history, collects and preserves historical information, much of which would otherwise be lost.

The films featured in A Salute to the Harlem Opera House are "Tall, Tan, and Terrific," with Francine Everette; "Rocking and Rhythm," with dancer Bessie Dudley and the Duke Ellington Band; "King for a Day," with Bill Robinson and Tondeleya; and "The Jersey Bounce," featuring Edna Mae Harris.

Seating is on a first-come, first-served basis, and no tickets are necessary. This program is made possible in part by a gift from the Henry Nias Foundation. For further information, call (212) 769-5315.

An Education Department
Public Program.

Grand Canyon: The Hidden Secrets

Members' Private Viewing

Tuesday, July 7

6:00 and 8:00 p.m.

\$2.75 for adults, \$1.75 for children,
and open only to Participating, Donor,
and Contributing Members

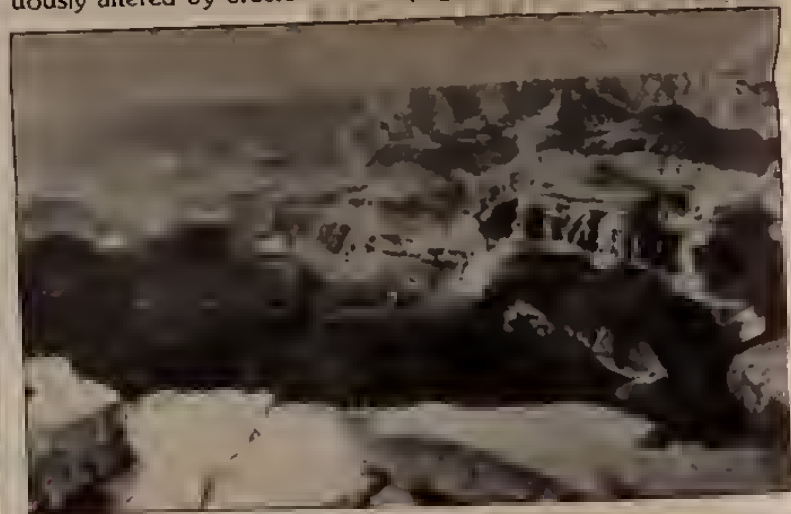
Adventure-minded Members are invited to explore the nation's most celebrated chasm at a private viewing of the newest Naturemax feature, Grand Canyon: The Hidden Secrets. With a screen ten times that of a conventional cinema, the components of the Naturemax film and sound system are matched to the vastness of the Canyon itself. This feature, like all of the Naturemax presentations, was shot with special IMAX camera equipment, which uses state-of-the-art technology to create images of incomparable clarity and impact.

Geologists, prospectors, and explorers of every description have searched the Grand Canyon for opportunity amidst its mystery and majesty. Grand Canyon: The Hidden Secrets offers audiences a historical look at this natural wonder. Until 1950 fewer than 150 people had ever seen the inner gorge. Today, 10,000 visitors explore the Canyon's rugged, ever-changing interior each year. The contours of its twisting 277 miles, carved centuries ago by the Colorado River, are continuously altered by erosion. Al-

though inanimate rock answers a cursory glance, the Canyon is alive with thousands of species — mammals, birds, reptiles, and amphibians.

The often-harsh Canyon environment varies from Mexican desert at the bottom to Arctic-Alpine in the peaks. These extreme temperatures proved a challenge to the filmmakers, along with occasional rattlesnakes and rough terrain. They traveled by horse, mule, and shank's mares, toting their equipment in backpacks or dropping it by helicopter onto the Canyon floor. The 70-mm IMAX film conveys a unique, "being there" sensation that brings viewers down the whitewater rapids of the Colorado River and bears them aloft at the red cliffs of Toroweep for a cinematic experience of unsurpassed realism.

In addition to the 33-minute Grand Canyon: The Hidden Secrets, the Members' private viewing will feature another new film, Chronos, an exploration of ancient civilizations. To register, please use the June Members' programs coupon on page 3.



Discover the hidden secrets.

The Dream Is Alive

(But Not for Long)

Viewing the images from space presented in The Dream Is Alive has been described by various astronauts involved in the filming as "the closest thing to being there." This popular Naturemax feature, which offers viewers a window seat aboard the space shuttle, will end its two-year run on Tuesday, June 30.

The Dream Is Alive features spectacular in-flight footage shot by 14 astronauts on three 1984 space shuttle missions. Projected on a screen 40 feet high and 66 feet wide, this historic film features perspectives of the galaxy as well as our planet below. Among the unusual

local points are the capture, repair, and redeployment of an ailing satellite, a panoramic view of the earth's rotation, and a "close-up" look at the boot of Italy.

A breathtaking sense of weightlessness is reproduced during a tour of the shuttle. From the flight desk, where the shuttle is piloted and the remote manipulator arm controlled, the tour moves to mid-deck, where the astronauts work and relax. An amusing glimpse of life in a zero-gravity environment is captured with the sight of the sleeping astronauts, their arms outstretched and floating, as they "lie" in their bedrolls.

Members receive a 40 percent discount at all shows. No reservations are necessary, and tickets can be purchased at the 77th Street lobby. Showtimes are Monday through Friday at 10:30 a.m. and 2:30 p.m.; Saturdays and Sundays at 12:30, 2:30, and 4:30; and Fridays and Saturdays (as part of a triple feature) at 7:30 p.m. Call (212) 769-5200 for additional information.

Beginning Wednesday, July 1, the Naturemax Theater will present Grand Canyon: The Hidden Secrets. See the adjacent article for information about a Members' private viewing.

ROTUNDA

Vol. 12, No. 6
June 1987

Henry H. Schulson — Manager of Membership Services
Donna Bell — Editor
Angela Soccadato — Designer
Rita Campon — Copy Editor
Peter Zelaya — Editorial Assistant
Alan Ternes — Editorial Adviser

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Printed by Waldon Press, Inc., New York.

The Eleventh Mack Lipkin Man and Nature Lectures Progress and Necessity

Speaker: Garrett Hardin

June 2, 4, 9, and 11
7:00 p.m.
Main Auditorium
Free for Members
\$10 for non-Members

Tuesday, June 2: Who's Afraid of the Reverend Malthus?
Thursday, June 4: The Tragedy of the Commons
Tuesday, June 9: Discriminating Altruisms
Thursday, June 11: Pushing Against the Limits

Dr. Garrett Hardin, professor emeritus of human ecology at the University of California at Santa Barbara, is a world-renowned ecologist, biologist, and author. In this series of lectures, he will explore the struggle between the human dream of limitless growth and the scientific search for the limiting principles that govern the world. He will provide an ecological perspective on how humans can best manage and utilize the Earth's finite natural resources.

Dr. Hardin is the author of a dozen books, including *Nature*

and *Man's Fate and Filters Against Folly: How to Survive Despite Economists, Ecologists, and the Merely Eloquent*. He is best known for his essay "The Tragedy of the Commons," which has been identified as a citation classic for being one of the most-cited papers in science and social science.

The Mack Lipkin Man and Nature Lectures were established by friends of Dr. Lipkin in recognition of his contributions to biomedical science and education. Each year they bring prominent scientists to the Museum to discuss their work

and its impact on the critical challenges facing humanity. Former lecturers have included Stephen Jay Gould, Lewis Thomas, and Margaret Mead.

The series is free for Members and \$10 for non-Members. Your membership card is your ticket of admission, and it will admit two people. Seating is on a first-come, first-served basis. Please call the Membership Office at (212) 769-5600 for further information.

Jane Goodall and the Chimpanzees of Gombe

Thursday, June 18
5:30 and 8:30 p.m.
Main Auditorium
\$10 for Members, \$15 for non-Members

SOLD OUT FROM MAY ROTUNDA

In 1960 she followed her childhood dream of studying animals in Africa to Gombe, Tanzania, where she remained to conduct what the World Wildlife Fund terms the longest unbroken field study of a group of animals in their habitat. Jane Goodall, the internationally renowned ethologist, arrives at the Museum this month to describe for Members her most recent studies of the chimpanzees of Gombe.

Dr. Goodall was the first to observe and record the complexities of chimp communities, from the close and affectionate bonds between chimp mothers and their offspring to the sophisticated cooperation chimps exhibit while hunting. Understanding chimps, she believes, helps us to understand ourselves better. Chimps are closer to humans than any other species, both in physiology — the circuitry of their brains, their immune responses, and the structure of their blood proteins and DNA — and in behavior.

Ethologists consider altruism rare among animals, and some deem it a trait exclusive to humans. Yet Dr. Goodall has recorded several instances in which one chimp has risked its life to save another. Mother

chimps, for example, readily jeopardize their lives to rescue an offspring. Chimps also exhibit other humanlike behavior in their acts of aggression; for the most part, however, they have peaceable, relaxed relationships, and the fights between members of the same community rarely last an entire minute.

The Jane Goodall Institute for Wildlife Research, Education, and Conservation was established in 1976 to ensure continuation of the study of chim-

panzees in Gombe and to support research on the great apes. A protégée of the famed paleontologist and archeologist Louis Leakey, Dr. Goodall is the recipient of numerous awards and has written several books. (See the related article on page 6.)

To register for *Jane Goodall and the Chimpanzees of Gombe*, please use the adjacent coupon. This lecture is presented in cooperation with the William M. Clements Foundation.



Courtesy of National Geographic Society

June Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *June Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Members' Private Viewing of Grand Canyon: The Hidden Secrets. Tuesday, July 7, 6:00 and 8:00 p.m. \$2.75 for adults, \$1.75 for children, and open only to Participating, Donor, and Contributing Members.

Please indicate a first and second choice of showtimes:

_____ 6:00 p.m. _____ 8:00 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.75: _____

Total amount enclosed for program: _____

The Invisible Universe. Tuesday, July 14, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Jane Goodall and the Chimpanzees of Gombe. \$10 for Members, \$15 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$15.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first and second choice of times:

Thursday, June 18 _____ 5:30 p.m. _____ 8:30 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$15: _____

Total amount enclosed for program: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Jane Goodall*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Carl Akeley: The Man Who Put Africa on Display

by Penelope Bodry-Sanders and Bryan R. Johnson



Akeley contemplates a specimen.



Artists painting the background for Museum exhibits in an idyllic setting.

It was cold, much colder than anyone would expect Africa to be. On the slope of Mount Kenya, near the line where the bamboo begins to grow, Carl Akeley stopped to rest and get warm. Putting his rifle down, he peered ahead into the quiet of the morning while he rubbed his hands to make them warm enough to shoot. The elephant bull he had been stalking since dawn was just ahead; he had determined it was the one he wanted and was now preparing to go in for the kill. Turning to his gunbearers, he asked for some steel-jacketed cartridges.

When he thought about it later, he couldn't explain just what it was that made him realize that the bull was charging him. Without any display of trunk lifting or trumpeting, which usually precedes an elephant attack, and with a silent speed that, for all of their size, they are capable of, the big bull was fast upon the hunter.

Since his first trip to Africa, nearly 15 years before, Akeley had felt it was inevitable that he would someday be charged by an elephant. He had thought about it often, wondering what he would do and how he could save himself. It was this near-obsessive concern, as well as a hefty measure of luck, that saved his life that fateful morning.

With no time either to bring up his rifle or to flee, Akeley met the elephant's charge head on. Grabbing a tusk with each hand, he swung himself up, away from the animal's forefeet and above the curling tip of his trunk. The bull, perhaps surprised by this tactic, slammed his head against the ground, trying to grind the hunter between the forest floor and the base of his trunk. If he had been able to bring his full force against Akeley's chest, nothing would have saved the man. As it was, the bull's tusks struck something deep in the soil, a rock or a root, which stopped them abruptly. Pulling back, the elephant lifted his trunk across Akeley's face, breaking the man's nose and tearing his cheek so that his teeth were exposed. Then the bull turned on Akeley's assistants, chasing them into the vast African forest.

The men working with Akeley were luckier than their employer. All of them escaped the bull's wrath and eventually worked their way back to the site of the attack, where they saw the mangled, bloody body of the hunter. To their eyes, he appeared to be dead. The assistants, Swahili Muhammadans and Kikuyu, could not touch a dead man; their religions would not allow it. Instead, they sent for Akeley's wife, Delia, who was

camped hours away on Mount Kenya.

It was late afternoon before the runner arrived in Delia's camp and announced the accident. She couldn't believe that her husband was really dead, and promised a reward to the first runner to find a white doctor. Meanwhile she prepared supplies for an emergency camp and, without waiting for morning to arrive, left with 20 porters to find Carl. Back on the mountain the Swahili and Kikuyu assistants kept watch over Akeley's body. As they huddled around a fire during a cold drizzle, Akeley began to groan. Amazed that he was alive, the men brought him closer to the fire, covered him with a blanket, and gave him brandy to sip.

By dawn, Delia had arrived in the camp, nearly 24 hours after the mauling had occurred. With the help of a Scottish medical officer who arrived the next day, she began to nurse Carl back to health. For the next three months, Carl and Delia stayed in camp as he regained his strength. With nothing to do but recuperate, Akeley began to think seriously about his life, his career and his prospects here in Africa.

Carl Ethan Akeley was born in the farm community of Clarendon, New York, in 1864. Inspired with a love of animals, he taught himself taxidermy when he was 13 years old. At 19 he apprenticed himself to Ward's Natural Science Establishment in Rochester, where he helped to mount the famous elephant Jumbo. He later moved to Milwaukee and spent eight years there further developing his talent as a taxidermist. Here he met Delia J. Denning, a young farm girl married to a barber in the city. She divorced her husband and married Carl in 1902. Together they worked on his projects, including a series of exhibits at the Field Museum in Chicago titled "The Four Seasons."

During this period in Milwaukee Akeley began to develop a new process of mounting museum specimens. Abandoning the old method of stuffing skins and trying to mold them to shape, he studied live animals to see how the skin fit over the bones, muscles and sinews. Working with a wooden core, he built up a clay reproduction of the inside of the animal. A mold was made of this, from which he cast a reinforced papier-mâché shell, over which the skin was stretched. Scientifically accurate and far more artistic in its approach, this radical new development was a sensation. Lifelike animal poses, combined with detailed backgrounds, made a far better impression upon the museum-goer than a stuffed skin in a glass case.

Recognized as an artist as well as a taxidermist, Akeley was admitted into the National Sculpture Society in 1912. Akeley felt sculpture was a sister art to taxidermy, as they both led to the appreciation of animals,

and the accuracy and beauty of his small animal bronzes bore this out.

A man of Akeley's energy and quick, inventive mind would never be satisfied to remain in a studio. It was in the field that he could best serve his arts, both to collect the finest specimens and to study living animals so that he could accurately represent them. His first field trip to Africa began in 1896 when he travelled to Somaliland with the naturalist Daniel Giraud Elliot to collect mammals for the Field Museum. Although by this time he was recognized as a leading scientific taxidermist, Akeley was a greenhorn in the bush. His inexperience resulted in ruined specimens and lost opportunities, but one mistake nearly cost him his life.

While hunting ostriches one afternoon, he came upon a fine specimen of warthog and shot it. Marking the spot, he left the warthog to continue stalking ostriches. When he returned later he found that the warthog was gone, obviously dragged into the brush by some predator. Angry at this loss of his specimen and seeing some movement in the bushes, he shot blindly. In an instant a female leopard, wounded in a hind foot by his shot, burst out of the brush in a full charge toward Akeley. He fired twice more, missing both times. A final shot just grazed the leopard's neck before she was upon him, knocking his rifle aside.

Fortunately for him, the wound in her hind foot prevented her from making an accurate leap for his throat. The leopard bit into his right arm as she bowled him over. Akeley tried to strangle her by grabbing her throat with his left hand. Each time he put pressure on her throat, she would release her hold slightly, enabling him to pull his arm back a few inches before she would clamp down once more. Finally, the cat weakened, and he was able to jam his right hand into her throat. Throwing himself on top of her, he knelt on her rib cage while he beat at her head with his free hand. As soon as she lost consciousness he freed his right hand, then finished her off with a knife.

This desperate struggle and the serious injuries he sustained from it did not lessen his newfound love for Africa. His heart was forever set on the continent, and his vision forever altered by its beauty. He knew he would return whenever he was able.

His next chance came in 1905 with a second expedition to collect elephants for the Field Museum. The specimens from this trip and the resulting mounted works so impressed the American Museum of Natural History in New York that they hired him in 1909 to make a similar collection for them. Once more he found himself in East Africa, this time with Delia.

Before the 1909 trip, Akeley had been invited to dine at the White House with President Theodore

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Roosevelt. Knowing the president was quite a sportsman, Akeley had convinced him that he should go on a hunting safari in Africa after he left politics. Now, on his third trip to Africa, Akeley and his party met up with Roosevelt's safari in Uganda. The pair traveled together for a short time before Akeley persuaded Roosevelt to shoot one of the elephants for the museum. That elephant later became one of a group that forms the centerpiece of Akeley's Hall of African Mammals in the American Museum of Natural History in New York City.

It was on this trip that Akeley was later attacked by the bull elephant on Mount Kenya. During the months of recuperation he had the opportunity to think about his work and his love for Africa. He decided that he wanted to make a monument to the continent to show others the land as he had come to know it. His plan was to create a hall in the American Museum of Natural History to display the diverse and rapidly disappearing wildlife in an artistic exhibit. It would give a comprehensive view of the topography of the land, from South Africa all the way to the north. Each diorama would show scenes from specific locations and would contain the animals from that place, using the best specimens he could find. It would fix forever the record of African wildlife.

His plan was quickly approved by the trustees of the American Museum of Natural History. But before Akeley was able to return to Africa to begin collecting for the proposed hall, a number of events intervened. The First World War broke out, making travel to Africa difficult and dangerous, and when the United States entered the war, Akeley devoted his full time to serving his country. His marriage to Delia had begun to fail, and they were soon separated.

Despite his absence from Africa itself, he was able to study and prepare for future expeditions. Gorillas had begun to figure largely in Akeley's life, and he studied every book and article published on their natural history and behavior. Regardless of their reputation for ferocity, Akeley began to feel that gorillas were almost human.

In 1921 he was back in Africa in what was then called the Belgian Congo, making a second expedition for the American Museum of Natural History. His purpose this trip was to collect specimens for the African Hall. Gorillas were high on his list; he wanted to study living gorillas and, if possible, film them.

Akeley spotted his first gorilla, almost by accident, while stalking through the mountain forests. Quoting another naturalist, Paul Du Chaillu, Akeley later wrote, "My feelings were really excited to a painful degree." The gorilla was sitting on a glade some distance from the hunter, and the ape and the man looked at each other for a long moment before the silverback disappeared and Akeley turned away, his rifle unfired.

The next of the animals Akeley came across was an old silverback male whom he dubbed "The Old Man of Mikenno," after the mountain on which he was collected. Despite his growing feeling of kinship with gorillas, science won out over sentiment, and Akeley had his first gorilla specimen.

As with all the animals he shot, Akeley took great care not to waste any of the information that could be gained from them. Before anything else was done, photographs and numerous measurements were taken. These records would be of invaluable assistance when the time came to mount the specimen back at the museum. In the case of the gorillas, Akeley also took casts of the hands and death masks. Next, the skins had to be removed. Keeping in mind that they would later be on display, Akeley took great care to make as few incisions as possible. The skins were then fleshed and salted.

All of this work had to be done as soon as possible after the animal was killed. In the blazing sun of the veld and the damp, oppressive heat of the jungle, a specimen would soon go bad. These same conditions did little for Akeley and his crew. The many hours of hard work involved in preserving a single specimen, combined with the effort of hunting and the diseases and infections they were subject to, were a great strain on the crew, particularly Akeley. Still, he persevered, working constantly to serve the best interests of science.

Although his permit allowed him to collect seven gorillas, Akeley stopped when he had five: the Old Man, a larger male, two females and a 4-year-old male. Nothing, he felt, would be served by shooting any more. Instead, Akeley turned to filming the gorillas, spending weeks on the forested slopes with the elusive animals.

Upon his return from Africa, Akeley began to make known his concern for the survival of gorillas. Writing articles and going on a lecture tour, he even addressed the New York State Assembly on their plight. His growing obsession with these animals can probably be best seen by his attitude toward the Old Man of Mikenno, his first specimen. The old silverback was mounted for Akeley's hall in a peaceful mountain scene, shown in a state of passive interest. Akeley even made a beautiful bronze of the animal. "I am really fonder of him than I am of myself," he wrote in a letter.

Wanting to do something more concrete than making speeches, he began work to have a sanctuary created for the gorillas' protection. After enlisting the aid of James Gustavus Whiteley, Belgian consul general, and Baron deCartier de Marchienne, Belgian ambassador to the United States, Akeley left for Belgium to convince the government there to set aside a part of the Congo as a reserve for animals, particularly the gorillas. Largely because of Akeley's efforts, the Parc National Albert was established in 1925.

By 1926, Akeley's plans for his hall had progressed

smoothly, and he began working on the backgrounds of the dioramas. Taking the artist William R. Leigh along, Akeley and his new wife, Mary Jobe, returned to Africa to find the proper settings for the lifelike displays he was creating in New York. After working for some time in East Africa, Akeley turned once more to the Congo and his beloved gorillas. He found, to his delight, that to enter the new Parc National Albert, his party needed special permission. His goal was to find the spot where he had shot the largest of the five gorillas, the lone male of Karisimbi, which he collected on his previous trip. He wanted Leigh to paint the vista of the mountains here. The view that Akeley loved so much would soon be memorialized in his hall as the background for the gorilla diorama.

Although in failing health, Akeley led the climb to this spot on the slope of Mount Mikenno. Ill with fever and dysentery, Akeley collapsed and soon died, not far from the spot that he considered the most beautiful in the world. He was buried on the mountain by Mary and a small band of his friends who were with him at the end. Before they left the site they sent for several tons of concrete and turned the grave into a memorial for the man who loved Africa.

A complex man of many talents, Carl Akeley is remembered today for his revolutionary developments in taxidermy. The hall he envisioned was finally opened in New York's American Museum of Natural History in 1936 as the Akeley Hall of African Mammals.

He is also remembered, particularly by those in the movie industry, for a camera he invented for use in the field. Not only did it revolutionize nature photography, but it has been found useful in making commercial films in Hollywood. His sculpture is also prized for its beauty.

The greatest of all his achievements, his greatest memorial, is that the mountain gorillas still walk the earth today. They are endangered — hardly more than 240 are left — and they are under constant pressure from poachers and human encroachment, but they still exist. If it had not been for Carl Akeley, they would probably have been extinct a long time ago.

(In 1979, poachers from Zaire broke through the concrete that covered Carl Akeley's grave and stole his bones.)

Penelope Bodry-Sanders is the American Museum of Natural History Department of Library Services Manager in Special Collections, which include film archives, photo collection, archives, and art and realia collection. She is currently working on a biography of Carl Akeley.

Bryan R. Johnson, a former acquisitions librarian at the Museum, is a full-time freelance writer residing in Blacksburg, Virginia.



Detail from the gorilla diorama. Akeley never saw the hall that bears his name; he died a decade before its completion.

Members' Book of the Month

The Chimpanzees of Gombe: Patterns of Behavior

by Jane Goodall
Harvard University Press
Publisher's price: \$30
Members' price: \$27



Chimps respond to calls from another group.

Figani was a shrewd and ruthless manipulator. By successful intimidation of Faben, his polio-stricken elder brother, he secured Faben's unswerving assistance in rising to the top of their community while still in his early 20s. The brothers were firmly supported by their aggressive mother, Flo. A celebrity in her own right, Flo's London Times obituary praised her contributions to science and her life of vigor and love. Flo's youngest son, Flint, was inconsolable at her loss and simply pined away until he died.

These are just a few of the personalities from the absorbing chronicle of Jane Goodall's 27 years at the remote Gombe Stream Research Center in Tanzania. *The Chimpanzees of Gombe* features an exceptionally wide appeal, embracing an audience of behavioral scientists in addition to nonscientific readers. This weighty, 673-page tome features many pages

of charts and data (which are easily skipped by the lay reader without loss of narrative) and scores of arrestingly beautiful photographs of creatures the author terms "next to *Homo sapiens*, the most fascinating and complex in the world today."

The chimpanzees' relationships with each other are discussed, as well as their hunting and feeding customs, the dominance hierarchy, their sexual behavior and social awareness, and numerous other aspects of Dr. Goodall's research. Whenever possible, she compares the behavior of the Gombe chimps with reports from other study sites, providing the reader with a comprehensive account of the behavior of the species as a whole.

Members can purchase *The Chimpanzees of Gombe: Patterns of Behavior* at the Museum Shop or order by mail with the adjacent coupon.

Members' Book Program

☐ YES, I would like to order *The Chimpanzees of Gombe* at the special Members' price of \$27 (regular price: \$30). Total amount enclosed (please add \$1.50 for shipping and handling): _____

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with discounts off the publishers' prices!

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check payable to the American Museum of Natural History and mail to: Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Celebrate Middle East Month

Mysteries of the exotic Middle East are unveiled this month at the Leonhardt People Center. Highlights of the weekend series of performances, talks, and demonstrations include dances from the harem, a discussion of the cultural aspects of Islamic painting, and a look at Kurdish fashion.

Presentations are repeated several times between 1:00 and 4:30 p.m. in the Leonhardt People Center, located on the second floor. Seating is limited and on a first-come, first-served basis, and programs are subject to change. These programs are made possible in part by a gift from the family of Frederick H. Leonhardt.

June 6 and 7

The Dances of Kurdistan, performed by members of the Kurdish Program Cultural Survival.

Glimpses of Turkey, a slide-talk by L.D. Frazier, featuring

historical and modern-day reflections.

Veiled Women, a slide-talk and demonstration by Khadija Al Nakla on the traditional and historical use of the veil in the Middle East.

June 13 and 14

Solo Dance of Armenian Women, a dance performance by Anahid Sofian.

Women and the Veil, a slide-talk by Paul Sanfaçon on the significance of the veil in Middle Eastern cultures.

Introduction to Western Islamic Cultures, a slide-illustrated overview by Virgil Bird.

June 20 and 21

Dances from the Harem, a performance by Khadija Al Nakla of dances from the women's quarters in the Middle East (June 20 only).

Islamic Pointing, a slide-talk by Paul Sanfaçon.

Kurdish Fashion, a demonstration and slide-talk by Anahid Akasheh on traditional clothing of Kurdish culture.

Israeli Dances, a performance of traditional Israeli dances by members of Parparim (June 21 only).

June 27 and 28

Yemenite Dances, a performance by Karen Katz and Daniel Pollack of Yemenite Jewish Dances (June 27 only).

Dance and Culture of Israel, a slide-talk by Nina Stein Wise.

Veiled Women, a slide-talk and demonstration by Khadija Al Nakla on traditional and historical use of the veil in the Middle East.

Raks Sharki, a Middle Eastern Oriental dance performance by MOROCCO (June 28 only).

Hannah Senesh, a dramatic portrait (June 27 only).

An Education Department Public Program.



Kurdish dancers perform on June 6 and 7.

Woodlore and Wildwood Wisdom

Wednesday, June 3

7:00 p.m.

Kaufmann Theater

\$3 for Members, \$5 for non-Members.

"That boy," his father used to say, "knows what's under every rock between here and town." Doug Elliott's fascination with the natural world has taken him far from his North Carolina mountain home, and in the course of his travels he has collected not only herbs and botanical knowledge but also a wealth of stories and lore that he will share with Members in *Woodlore and Wildwood Wisdom*.

Ballads and harmonica songs highlight this performance of some of Elliott's favorite songs, jokes, and tales. Ghosts, grouse, and groundhogs are among his subjects, along with possums, poaching, catfish, and creasy greens. These lively tales

take Members on a multifaceted cultural tour of America's back country, from Maine through the southern Appalachians and down into Louisiana Cajun country.

The taproot of Elliott's tales is the traditional wisdom of people whose lives are intimately connected to the natural world. His spirited stories — often recounted in regional dialects — bear an infectious enthusiasm that makes the outdoor world come alive for his listeners. Elliott has conducted lectures, workshops, and concert performances from Canada to the Caribbean.

For ticket information, please call the Membership Office at (212) 769-5600.



Howdy!

Museum Notes



Musk oxen in the Hall of North American Mammals.

Special Exhibitions and Highlights

The Chaco Phenomenon. In Gallery 3 through August 2. This exhibition explores the rise and fall of an ancient civilization centered in New Mexico's Chaco Canyon. Inhabitants of this desert city were the ancestors of modern-day Pueblo people, and their prehistoric culture was the focus of a complex ritual, social, and economic system for over 200 years. Artifacts excavated from the ruins of Chaco Canyon are featured, as well as reproductions of Chacoan architecture.

On Tap: New York City's Water Supply. Through August 2, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City.

Programs and Tours

Museum Highlights

Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 769-5700.

June is Middle East Month at the **Leonhardt People Center**. This celebration features lectures, music and dance programs, and other special presentations. For further details, please see page 6, or call (212) 769-5315.

Children's Activities

Birthday Parties

Last year, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since.

The party participants should be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last two hours and are held after 3:30 p.m. on weekdays and at 11:00

a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Young Members can choose one of three birthday party themes: the Dinosaur Party, featuring a tour of the dinosaur halls; the Safari Party, with hunts through the exhibition halls for lions, giraffes, and gorillas; or the Star Party, with a Planetarium show. For reservations, call (212) 769-5600.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include five animals. The center is open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. It is closed on Mondays and holidays.

In the **Discovery Room** children can touch natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed at the first-floor information desk. Open weekends from 12:00 to 4:30 p.m. Limited to ages 5 to 10.

FACES is an anthropology magazine for children between the ages of 8 to 14. Each month it features a different theme, which is explored through stories, puzzles, games, pictures, and other imaginative activities. FACES is published ten times a year by Cobblestone Publishing, Inc., in cooperation with the Museum. Subscriptions are \$14.75 per year for Museum Members and \$16.50 for non-Members. (Add \$4 per year for foreign orders.) To start your subscription, send your order and payment to FACES, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Naturemax Information

Three films are being shown on New York's largest movie screen: *On the Wing*, *Skyward*, and *Nomads of the Deep*. The *Dream Is Alive*, held over by popular demand, is in its final month.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening triple features.

Parking

Our lot, operated on a first-come, first-served basis, is open

from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

The **Museum Library**, which has one of the world's great natural history collections, is open for research from Monday through Friday between 11:00 a.m. and 4:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m. The Food Express has a non-smoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the lower level, near the subway entrance.

Reservations are recommended. Call (212) 769-5326 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

The Museum Shop offers an extensive selection of books, jewelry, international clothing, posters, and other unusual gifts. It is located on the first floor, near the 77th Street foyer, and open every day from 10:00 a.m. until 5:45 p.m., except for Wednesdays, when it is open until 7:45 p.m.

The Junior Shop, located in the lower level near the subway entrance, has children's natural history items, from telescopes and books to dinosaur kits. It is open every day from 10:00 a.m. to 4:45 p.m.

Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.

Identification Day

Saturday, June 6

1:00 to 5:00 p.m.

Dana Education Wing
(First floor)

Free

Resurrect those skeletons from your closet — or your coffee table or your desktop — and trot them over to the Museum for the ninth annual Identification Day. If you're boneless, bring your rocks, shells, insects, fossils, and other natural objects for identification by Museum experts.

The only event of its kind in New York City, Identification Day began in 1979 in response to the large number of requests from the public for information about items collected all over the world. A team of six scientists, headed by Sidney Horenstein of the Department of Invertebrates, will attempt to identify, analyze, and give the history, classification, and structure of objects put before them. Surprises have included wal-



rus teeth, a perfectly intact 375-million-year-old trilobite (an extinct cousin of the lobster), and a whale jawbone unearthed in a Bronx garden. (The proud owner, no Samson, brought in a photograph.)

No appraisals will be given, nor will the Museum identify gemstones.

For additional information, please call (212) 769-5305.

An Education Department Public Program.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through September 7. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special, magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, June 13, and at 11:00 a.m. on Saturday, July 18, and Saturday, August 8. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are 10:00 a.m. and noon, on Saturday, July 11, and Saturday, August 1. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out one month in advance; reservations, by mail only, are strongly recommended. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024) and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound in "Laser Genesis," on Friday and Saturday evenings. Featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel, this laser light show takes place at 7:30, 9:00, and 10:30 p.m. Call (212) 769-5921 for more information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

6 1:00 to 5:00 p.m. Identification Day. Dana Education Wing. Free. Page 7.
1:00 to 4:30 p.m. The Dances of Kurdistan; Glimpses of Turkey; Veiled Women — Middle East Month in the Leonhardt People Center. Free. Page 6.

4 7:00 p.m. The Tragedy of the Commons. Second of the four-part Man and Nature Lectures. Main Auditorium. Free for Members. Series tickets are \$10 for non-Members. Page 3.
 First-quarter moon.

3 7:00 p.m. Woodlore and Wildwood Wisdom. Members' Evening Program. Kaufmann Theater. \$3 for Members, \$5 for non-Members. Page 6.

2 7:00 p.m. Who's Afraid of the Reverend Malthus? First of the four-part Man and Nature Lectures. Main Auditorium. Free for Members. Series tickets are \$10 for non-Members. Page 3.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

13 1:00 to 4:30 p.m. Solo Dance of Armenian Women; Women and the Veil; Introduction to Western Islamic Cultures — Middle East Month at the Leonhardt People Center. Free. Page 6.
2:00 and 4:00 p.m. A Salute to the Harlem Opera House. Kaufmann Theater. Free. Page 2.

12 Moon at perigee.

11 7:00 p.m. Pushing Against the Limits. Last of the four-part Man and Nature Lectures. Main Auditorium. Free for Members. Series tickets are \$10 for non-Members. Page 3.
 Full moon.

10 7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

9 7:00 p.m. Discriminating Altruisms. Third of the four-part Man and Nature Lectures. Main Auditorium. Free for Members. Series tickets are \$10 for non-Members. Page 3.

8

7 1:00 to 4:30 p.m. The Dances of Kurdistan; Glimpses of Turkey; Veiled Women — Middle East Month in the Leonhardt People Center. Free. Page 6.

20 1:00 to 4:30 p.m. Dances from the Harem; Islamic Painting; Kurdish Fashion — Middle East Month at the Leonhardt People Center. Free. Page 6.

18 5:30 and 8:30 p.m. Jane Goodall and the Chimpanzees of Gombe. Members' Evening Program. Main Auditorium. \$10 for Members, \$15 for non-Members. Page 3.
 Last-quarter moon.

17

27 1:00 to 4:30 p.m. Yemenite Dances; Hannah Senesh; Veiled Women — Middle East Month at the Leonhardt People Center. Free. Page 6.
 Moon at apogee.

26 New moon.

25

24 7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

8:00 p.m. Met Grotto; National Speleological Society. Room 129. Free.



14 1:00 to 4:30 p.m. Solo Dance of Armenian Women; Women and the Veil; Introduction to Western Islamic Cultures — Middle East Month at the Leonhardt People Center. Free. Page 6.

21 1:00 to 4:30 p.m. Islamic Painting; Kurdish Fashion; Israeli Dance — Middle East Month at the Leonhardt People Center. Free. Page 6.
 Summer solstice.

28 1:00 to 4:30 p.m. Dance and Culture of Israel; Veiled Women; Raks Sharki — Middle East Month at the Leonhardt People Center. Free. Page 6.

30 Last chance to see *The Dream Is Alive, On the Wing, Skyward, and Nomads of the Deep* at the Naturemax Theater. Page 2.

Information, please

Membership Office: (212) 769-5600
 Museum Information: (212) 769-5100
 Planetarium Information: (212) 769-5920
 Naturemax Information: (212) 496-0900
 Restaurant Information: (212) 769-5326

June 1987
American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 7 July/August 1987



The Colorado River carves through Kaibab Plateau to create the celebrated canyon.

Grand Canyon: The Hidden Secrets

**Open to the General Public: Wednesday, July 1
Naturemax Theater**

The newest Naturemax feature, *Grand Canyon: The Hidden Secrets*, shows audiences natural treasures that tourists seldom see when they visit the famous chasm. The canyon's kaleidoscopic brilliance is portrayed as never before on New York City's largest movie screen. Viewers can savor the canyon's every detail with the 70-millimeter IMAX format, which projects the breathtaking vistas on a screen 40 feet high.

Most visitors to the Grand Canyon do not hike to its remote areas, observing the vast chasm only from the south rim. Although spectacular, this isolated perspective misses the hidden secrets within the inner gorge: colorful side canyons, concealed waterfalls, and diverse wildlife. For those who have never seen the canyon as well as those who didn't have the time or the stamina to explore it fully, the film offers a rare portrayal of the

mysteries beyond the picture-postcard prospects.

Grand Canyon: The Hidden Secrets also offers another type of perspective—a historical view of the canyon. It traces the relationships between humans and the canyon, beginning in 2000 B.C. with the earliest known contact and progressing to present-day appreciations of this natural wonder.

The film covers the adventures of the 1540 Coronado Expedition, mounted by conquistadores who sought the legendary lost cities of gold, and the nineteenth-century explorations of Major John Wesley Powell and his intrepid band, who were the first to enter the canyon's inner gorge. The re-creation of their expedition features an exciting white-water raft trip down the raging Colorado River. IMAX gives viewers the unique sensation of being aboard the

raft, experiencing all the rapid thrills of white-water rafting — except for getting soaked.

On Friday and Saturday evenings Naturemax offers an additional film, *Chronos*. This new movie uses time-lapse photography to portray the evolution of Western civilization, focusing on cities such as Calro, Paris, and Los Angeles. A film without words, *Chronos* features a soundtrack of synthesizer music that permits the many stunning images to speak for themselves in a visual symphony.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Museum Members receive a 40 percent discount on tickets. Please call (212) 496-0900 for group rates and showtimes.

Water We Going to Do?

The future of New York City's water supply, along with its past and present are considered in the Members' program *Rivers Beneath the Streets*.
Page 2

Latin Rhythms

The music of the Caribbean is alive and thrives in New York, and *Música Tradicional 1987* celebrates its Puerto Rican, Cuban, and Dominican roots.
Page 2

Bring the Kids

Members' children aged 3 through 9 can enjoy an artful mix of fact and fancy with the *Summer Workshops for Children*.
Page 6

Shish Kebob

The Ramzi El-Edlibi Dance Company's performance of "Shish Kebob" captures the flavor of the Middle East.
Page 3

Now You See It

The Invisible Universe takes Members on a slide-illustrated sojourn into deepest space. Astronomer Terence Dickinson discusses quasars, black holes, and the invisible mass that is causing the universe to expand.
Page 6

Música Tradicional

The Museum's Department of Education in cooperation with City Lore: The New York Center for Urban Folk Culture present *Música Tradicional 1987*, a festival of Puerto Rican, Cuban, and Dominican cultural expressions in New York City. This series features community-based performers who are dedicated to keeping alive their cultural heritage through traditional music.

Salsa, currently the most popular form of Latin music, is derived from the musical traditions featured in this series. Evolving directly from the popular Cuban style son, salsa also incorporates elements from the Puerto Rican bomba and plena, the complex rhythms of the Cuban rumba, the forms and styles of Puerto Rican jíbaro ("peasant") music, and the mode of the Dominican merengue. The uptempo, horn-driven result is salsa, and *Música Tradicional 1987* celebrates its equally irresistible roots.

Cuban Son and Dominican Traditional Music

**Wednesday, July 8
7:30 p.m.
Main Auditorium
Free**

The popularity of son among the working classes in turn-of-the-century Havana spread to all levels of Cuban society by the 1920s and to Puerto Rico and the United States by the 1930s. Through its synthesis of African- and Spanish-derived musical styles, son became a form of Cuban national music.

The typical son sound consists of three voices, string bass, tres (a guitarlike instrument), maracas, bongos, claves, trumpet, and guitar. Cuban Son will be performed by Son de la Loma, a group of Cubans and Puerto Ricans that formed in New York City in the early 1970s and developed a unique synthesis of son styles.

In their performance of *Dominican Traditional Music*, Los Amigos del Ritmo dispel the common notion that there is nothing to Dominican music but merengue. Dominican traditions include such rhythms as palos and congos, used in devotion to the saints and the dead; maboba, a drum rhythm from the coffee-producing region of San Cristobal; and gogo, a variation of Haiti's rara. These rhythms and their associated events reflect a blend of African music, Catholicism, and Spanish musical influences.

Merengue, the Dominican Republic's most popular music, embraces a variety of styles. Each form uses different instrumentation and reflects different degrees of syncretization between African- and Spanish-derived elements: merengue de

atabales, for example, employs three types of drums, while the more popular perico ripiao ensemble uses drums, guiro (a stringed instrument typically made from a gourd), accordion, and saxophone.

Música Jíbara

**Saturday, July 11
2:00 and 4:00 p.m.
Kaufmann Theater
Free**

Jíbaro is an indigenous term used to identify a person from the interior rural areas of Puerto Rico. Jíbaros are of primarily Spanish ancestry, and their Spanish-derived styles of music include aguinaldos (Christmas carols), danzas (court music), and various types of seises (six-couple dances).

A typical jíbaro ensemble consists of solo voice, guitar, maracas, guiro, and cuatro (a small 10-string, guitarlike instrument). In the Puerto Rican countryside, jíbaro music is everyday entertainment: in the cities, special occasions such as weddings, baptisms, and holidays are its primary settings. In New York City, jíbaro music found expression in the hometown social clubs formed in the 1940s; it was performed for informal entertainment as well as for special occasions.

Sexteto Criollo Puertorriqueño, the performers of *Música Jíbara*, formed in 1952 under the leadership of well-

known Puerto Rican guitarist Israel Bemios. The group is dedicated to the preservation of Puerto Rico's various Spanish-derived vocal and instrumental styles.

Cuatro-making Demonstrations

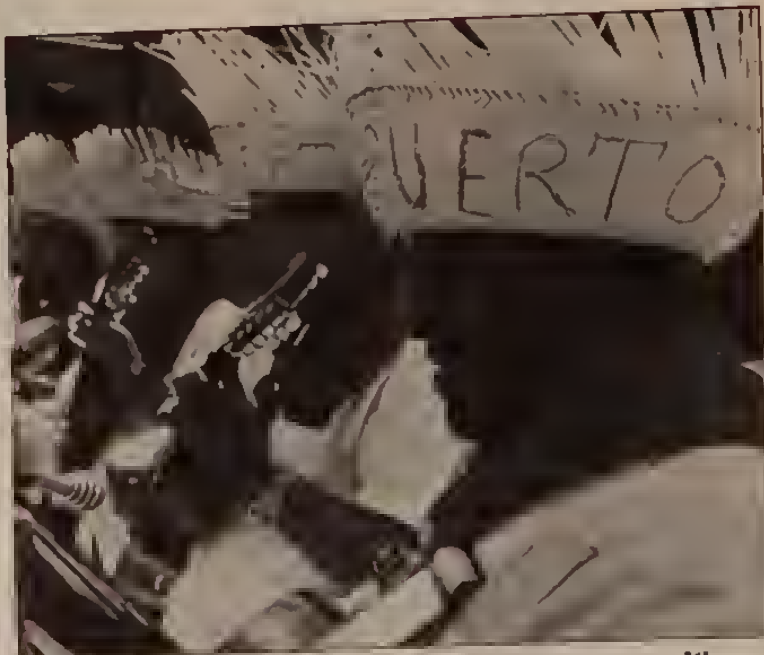
**Saturday, July 11
Blum Lecture Room
1:00 to 2:00 p.m. and
3:00 to 4:00 p.m.
Free**

This program is a demonstration by Antonio Ramirez of the delicate and complex art of making cuatros. A small 10-string instrument similar to the guitar, the cuatro is unique to Puerto Rico. It typifies jíbaro music and is a symbol of the island and rural country life.

A diemaker by trade, Mr. Ramirez is a self-taught maker of cuatros. As a youth in his native Puerto Rico he experimented with making cuatros, and with the patience, persistence, and care characteristic of traditional artists, he perfected his technique.

Seating is on a first-come, first-served basis. No tickets are necessary, but seating is limited. These programs are made possible in part by a gift from the William Randolph Hearst Foundation. For further information, call (212) 769-5315.

An Education Department Public Program.



Sexteto Criollo Puertorriqueño performs Música Jíbara.



Los Amigos del Ritmo play Dominican Traditional Music.

Rivers Beneath the Streets

**Tuesday, July 28
7:30 p.m.
Main Auditorium
Free for Members
\$4 for non-Members**

Remember the summer before last, when public fountains were as dry as the Dust Bowl and washing the car was virtually a hanging offense? During the 1985 drought, New York City residents temporarily reduced their daily water use by 200 million gallons—an impressive figure that pales only in comparison with the city's average daily use of 1.5 billion gallons.

With *Rivers Beneath the Streets*, Members need not wait until the well runs dry to appreciate their water. Speaker Sidney Horenstein will discuss the politics of water, the basic geology of the water-supply system, and future prospects for the system.

Although it is a renewable resource, the extent of the water supply depends on several factors: the amount of rain and snow, the rate of evaporation during and after precipitation, the amount of water that soaks into the ground, and how much of this groundwater reaches lakes and rivers. Once accumulated, most of New York's water travels by gravity from reservoirs to the city's faucets, flowing through aqueducts and subterranean channels to water mains that lead into each building. Water enters buildings under enough pressure to rise to the sixth floor without help; taller structures require pumps that raise the water to a tank on the roof for gravitational distribution throughout the building.

In addition to defining current delivery systems, Horenstein will outline the history of New York City's water supply. Be-

cause the island's rivers are too salty, Native Americans and Manhattan's first European settlers relied on surface water from springs, streams, and ponds. These narrow resources gave way to a system of increasing complexity, which now consists of three watersheds—the Croton, Catskill, and Delaware systems—that bring water from up to 125 miles away.

Immediately prior to *Rivers Beneath the Streets*, there will be a Members' farewell viewing of *On Top: New York City's Water Supply*. Currently in Gallery 1, the exhibition will close on Sunday, August 2. The Members' viewing on Tuesday, July 28, will take place between 6:00 and 7:30 p.m.

On Top: New York City's Water Supply features several items illustrative of *Rivers Beneath the Streets*: huge topographic maps trace the lengthy routes by which water moves from the three major aqueducts to New York City and surrounding communities, and video displays depict the flow from reservoirs to tunnels under the streets to rooftop tanks. Laboratory instruments for biological and chemical analysis show the ways water quality is maintained. A cutaway hydrant reveals the inside mechanism and its attachment to a water main, and a model of a water tank explains the internal workings of this familiar rooftop sight.

To register for *Rivers Beneath the Streets*, please use the summer Members' programs coupon on page 3.

ROTUNDA

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The Ramzi El-Edlibi Dance Company

Thursday, August 13
8:00 p.m.
Kaufmann Theater
\$8 for Members
\$12 for non-Members

An Arabian night of music and dance awaits Members with the appearance of the *Ramzi El-Edlibi Dance Company*. The magic of Oriental movement and spirited choreographic drama are the trademarks of this troupe. They combine traditional music and folklore with contemporary dance techniques for a program rich in Middle Eastern mystique.

The troupe's repertoire for this performance includes "Jerusalem," a gliding, spinning veil dance based on the Turkish rites of the whirling dervishes. In the stick dance "Egyptian Mood," placid movements lead to frenzied battles. Skillfully wielding sticks in slow, dream-like motions, male dancers shift with the quickening tempo to fierce combat, each dancer attempting to knock the stick from his fellow's hands. The women enter, executing a more affable, sinuous stick dance, and are joined by the entire troupe, who accompany themselves on drums.

Ravishingly costumed female dancers clasp hands for "The Syriac Line Dance." Men in black join them, and the mixed group performs a circle dance. "Shish Kebob" is a lively flirtation dance that both mocks and revels in the ritual showing-off between the sexes.

Musical accompaniment is performed on the oud, an instrument popular in Arabic and Turkish music. A pear-shaped,

short-necked instrument resembling the lute, the oud is played with an eagle's quill. Its tone is resonant, and it is a superb melody instrument.

Choreographer and artistic director Ramzi El-Edlibi formed his company in 1983. El-Edlibi has performed throughout Europe and the Middle East, and his extensive ballet training is evident in the choreography, which combines ballet's ele-

gance and attention to line with the life and energy of Middle Eastern music and dance. The company seeks to establish Oriental dance as a unique, advanced, and accepted discipline expressive of the culture, feeling, and flavor of the Middle East.

To register for the *Ramzi El-Edlibi Dance Company*, please use the summer Members' programs coupon.



Jack Mitchell

Sunset Walking Tours

Tuesday, August 18, and Wednesday, August 19
5:30 and 7:30 p.m.
\$7, and open only to Participating, Donor, and Contributing Members

Peacocks prowl its lawns, and upon its roof an archangel stands sentinel. At the Cathedral of Saint John the Divine, Members will hear the history of the magnificent church, which has been under construction for nearly a century and is still unfinished, as well as a geological assessment of its building stones. This year's *Sunset Walking Tours* explore the Upper West Side between the cathedral (Amsterdam Avenue and 112th Street) and Riverside Church (Riverside Drive and 122d Street).

Sidney Horenstein, senior scientific assistant in the Department of Invertebrates and urban geologist, conducts the annual Members' tours. He'll explain the history, geography, and geology of singular and



Who is buried in Grant's Tomb?

commonplace Upper West Side landmarks, including brownstones — what they're made of and why they sometimes fall apart.

Other highlights are views of the Harlem Flats and the geological fault on 125th Street, an examination of the building stones of Columbia University, and a history of Grant's Tomb. Riverside Park affords a perfect vantage point to learn about the origins of the Hudson River and the wooded cliffs of the Palisades. At Riverside Church, Horenstein will point out the ancient fossils embedded in the building's limestone and the formation of the ridge on which the church was built.

To register for the *Sunset Walking Tours*, please use the adjacent coupon.

Summer Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: \$ _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Summer Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Invisible Universe. Tuesday, July 14, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____

Rivers Beneath the Streets. Tuesday, July 28, 7:30 p.m. Free for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of tickets: _____

Ramzi El-Edlibi Dance Company. Thursday, August 13, 8:00 p.m. \$8 for Members, \$12 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$12.

Number of Members' tickets at \$8: _____
Number of additional tickets at \$12: _____
Total amount enclosed for program: _____

Sunset Walking Tours. Tuesday, August 18, and Wednesday, August 19, 5:30 and 7:30 p.m. \$7, and open only to Participating, Donor, and Contributing Members.

Please indicate a first, second, and third choice:

Tuesday, August 18 _____ 5:30 p.m. _____ 7:30 p.m.
Wednesday, August 19 _____ 5:30 p.m. _____ 7:30 p.m.

Number of tickets at \$7: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Natural History Film Archives Catalog

Department of Library Services
American Museum of Natural History
edited by Nina J. Root

Early in the twentieth century, when motion pictures were the latest in technological marvels, scientists at the American Museum of Natural History recognized the promise of film as a medium and were among the first to film their research and field work. Their bounteous legacy of film, neatly categorized and encapsulated in the recently published *Natural History Film Archives Catalog*, provides priceless records of Museum history and expeditions, of cultures and people now vanished or significantly changed, and of endangered and extinct species.

Motion-picture equipment was first taken into the field by Frank Chapman, a curator in Ornithology, in 1908, and by taxidermist and explorer Carl Akeley in 1909. By the 1920s cameras were regarded as essential field equipment. The Museum's film collection increased rapidly during the next two decades, and then declined during the monetary and wartime restrictions of the 1930s and 1940s.

The 1950s saw a resurgence in filmmaking, a high-

light of which was the "Adventure" television series. This three-year affiliation between the Museum and CBS-TV produced live shows that combined science and culture. The series featured Museum staff members and other scientists, personalities, and celebrities discussing natural phenomena. "Adventure" was the precursor to the sophisticated nature shows of today.

Ironically enough, the increasing popularity of television was a critical factor in the conclusion of the Museum's filmmaking enterprises, which ended in the 1960s. Although still used in educational and lecture programs, the film collections were no longer fully curated, and the old nitrate stock began to deteriorate.

A National Science Foundation grant in 1968 enabled the Library staff to convert the films from nitrate to safety base, and in 1984 the Library received further assistance with a two-year grant from the U.S. Department of Education Title II-C Program and the Exxon Foundation. Grant staff members Penelope Bodry-Sanders and William Byrne and librarians Diana Shih,

Nina Root, and Mary Genett began the restoration and cataloging of the 300 films featured in this volume. Assisted by other Library personnel, scientific staff, and volunteers in the research and writing, the project took two years to complete.

The catalog features a narrative of each film's content, locations, credits, and references to published or archival information about the film (and, when applicable, the expedition), as well as a detailed index.

The catalog, which may be borrowed from the Library's Reference Desk, is available for purchase at the Museum Shop (its price is \$67; Members receive a 10 percent discount) or can be ordered from Garland Publishing, Inc. (136 Madison Avenue, New York, NY 10016). Appointments for viewing films may be made through the Museum's Department of Library Services.

The photographs on these pages represent just a glimpse of the wealth of images within the Museum's archives.

The Central Asiatic Expeditions

The Central Asiatic Expeditions spanned a decade, consisting of six field trips undertaken between 1921 and 1930. Led by the enterprising young paleontologist Roy Chapman Andrews, the expedition's explorers hoped to discover the so-called missing link between apes and humans.

Although the link remains elusive, the explorers discovered a rich fossil graveyard. The paleontological finds pictured below are from the 1925 film *Fossils and Artifacts*. Prominent among them are the "perfect dozen" dinosaur eggs, discovered by George Olsen at the Flaming Cliffs of Shabarakh Usu in the Gobi Desert. These fossils were carefully packed in fabric and plaster of Paris so that they would not be damaged in transit; when the explorers ran out of padding, they used the hair from their molting caravan camels.

The camels' reluctant cooperation — as well as more serious expedition hardships — are documented in another film from the Central Asiatic Expeditions, *Maps, Staff, and Transportation*. Others from this series include *Fauna*, which films zoological specimens collected throughout Mongolia; *Mongols*, a record of everyday life in a Mongol camp (including yak milking, a camel race, and the construction of a yurt, or tent); and *Peking*, which presents the city (now Beijing) in the 1920s, alive with trolleys, ox carts, rickshaws, wheelbarrows, horsedrawn carriages, and cars.



Meshie, Child of a Chimpanzee

Henry Cushier Raven, Museum curator of comparative and human anatomy, bought the baby chimpanzee Meshie Mungut from some Cameroon tribesmen after they killed and ate her mother. She lived in the field with Dr. Raven for many months during a 1929 gorilla-collecting expedition, and afterward he brought her home to his family on Long Island to be raised with his children.

Dr. Raven filmed Meshie's exploits and accomplishments in 1932. Here Meshie holds Dr. Raven's youngest daughter, Mary. The chimpanzee's maternal instincts are evident in the film: Meshie gives Mary a bottle, holds her, and cleans the high chair after feeding her. The camera follows Meshie around the house as she bathes, shovels snow, and leads a parade of children on bicycles.

By 1934 Meshie had become extremely strong and unmanageable, and she was sold to the Brookfield Zoo in Chicago. Meshie died in 1937 after giving birth to a daughter, and her remains were sent to the Museum, where she can be seen in the Hall of Primates, sitting on a log in a contemplative posture.

Latuko

This movie, filmed during the Museum's Queeny African Expedition in 1950, was censored across the country upon its commercial release. The Hays Office cited frontal shots of male nudity and cruelty to animals in its condemnation of the film; "however," the Archives Catalog notes, "the only indecent aspect of the film is the ethnocentric narration that accompanies it."

This photograph of a *Latuko* advertisement is from the papers of the expedition leader, Edgar Monsanto Queeny. Because of the exploitative aspects of Queeny's movies, as demonstrated by this sensational ad, staff scientists recommended that the Museum's name be removed from some other Queeny projects.

Regardless of its attendant controversy, *Latuko* remains an important documentation of the Latuko (Lotuko) tribe of Sudan. The unrehearsed scenes, in which daily life is meticulously and beautifully filmed, are organized thematically around a boy's coming of age. Highlights include scenes of women with net bags tied to their waists while they fish, the first hunt of the season, and the magico-religious rites surrounding rainmaking.



To Lhasa and Shigatse

Charles Suydam Cutting (right) and Arthur Stannard Vernay (left) flank an unidentified Tibetan in this 1935 photo. The two Museum trustees mounted an expedition to Tibet to collect ethnological objects for the Museum and botanical specimens for England's Kew Gardens.

The Vernay-Cutting Expedition also produced *To Lhasa and Shigatse*, featuring footage of these two forbidden cities. The film portrays the natural beauty of the Himalayas and the surrounding valleys and offers a vivid portrait of the Tibetan people — including a congregation of 3,500 red lamas, dancers in tooled metal masks and winged headdresses, and the Tibetan prime minister in his garden. At Gyantse, Tibet, the explorers filmed scenes of everyday life: the stone and plaster houses; caravans of mules and yaks; and people carrying supplies in baskets on their backs. In a memorable sequence from a Gyantse monastery, a self-incarcerated monk reaches out with a gloved hand from a small opening in his cell to receive buttered tea.



Morden-Clark Asiatic Expedition

Colonel William James Morden rides a yak in this picture taken by his expedition partner, James L. Clark. In their 1926 journey across the Himalayas and the Karakorum Mountain Range to the Pamirs, a restricted Russian territory, Morden and Clark sought specimens of Marco Polo's sheep and ibex.

Their film portrays the many difficulties the pair encountered in crossing the Himalayas, not the least of which were the logistics and details involved in an expedition of this kind — negotiating equipment and specimens over arduous terrain in freezing weather and traveling via boats, camels, ponies, mules, and yaks, the acquisition of which was nearly impossible.

The explorers had planned to meet Roy Chapman Andrews in Hami (eastern Chinese Turkestan). Andrews decided not to keep the rendezvous because of political instability in Outer Mongolia; when Morden and Clark learned this, they decided to risk crossing Mongolia without proper credentials. Theirs was an unfortunate gamble: they were captured, charged as spies, and tortured by Mongol soldiers. Russian soldiers were instrumental in their eventual release, and the explorers fled across the Atlas Mountains to the Trans-Siberian Railroad.



Morden Expedition to Africa and Asia

The Shivethalyaung, a reclining Buddha at Pegu, Burma, 181 feet long and 46 feet tall, dwarfs the bystanders at the base of the column on the left.

This image is from the film *Burma*, a product of William James Morden's 1922–24 expedition to Africa and Asia. The quests undertaken by this Museum honorary fellow and field associate in mammalogy resulted in zoological and ethnographic records of enormous worth. The films of Morden's expeditions constitute the second largest collection in the Museum's archives.

Burma depicts the nation's people and their culture. It shows people in their daily activities; scenes of the Rangoon harbor, jammed with junks, boats, and barges; and the country's architecture and art, chiefly in the form of temples, statues, pagodas, and ruins.



**Simba, King of Beasts:
A Saga of the African Veldt**

Simbo, an American classic, was filmed during the 1924–28 Martin Johnson African Expedition. Filmmakers Martin and Osa Johnson set up flash pots that were triggered by animals making nocturnal visits to a water hole. The resulting stills, such as this picture of a lioness, were later incorporated into the film.

The Johnsons did most of their filming at Lake Paradise, near Mount Marsabit in northern Kenya. *Simbo* features well-photographed footage of people indigenous to the area, experiencing drought and celebrating rainfall, and the wildlife of the East African plains, including rhinoceroses and giraffes. An elephant behavior sequence climaxes with a stampede from a brushfire. The stampede was filmed with a camera specially designed by Carl Akeley for use in the field — it could be set up in less than a minute and its film changed in 30 seconds. Upon hearing of the havoc wreaked by marauding lions in Tanganyika (now Tanzania), the Johnsons relocated to film the final sequence of *Simbo*, a lion-spearing hunt by Kipsigi men.



The Invisible Universe

Tuesday, July 14

7:30 p.m.

Main Auditorium

\$3 for Members, \$5 for non-Members

Something other than ordinary stars is out there. It is more massive than all matter known to exist, yet its nature remains an unsolved riddle. Terence Dickinson, one of Canada's foremost science journalists, will discuss with Members one of the most profound discoveries in the history of science and current astronomy's major enigma: the universe's invisible mass, which may constitute 90 percent of the cosmos.

The starry swarms known as galaxies tend to cluster within gravity's grip. Upon examination of the clusters' visible mass, astronomers found less than one-thirtieth the amount of material needed to keep the cluster together. Without sufficient mass to generate a gravitational pull, the clusters should have dispersed long ago, leaving galaxies evenly spread across today's sky. Evidently, there is more here than meets the eye.

Dickinson will describe the evidence supporting the existence of the invisible mass and suggest explanations of its mys-

terious composition. He will preface his discussion with a summary of present knowledge of the stars, galaxies, and galactic superclusters, including recent findings about the origin and exact nature of quasars and the creation of black holes. Formed by huge, exploding stars, black holes represent the gravity of supernovae: atomic particles are furiously crushed into one another until, observes Dickinson, "like Alice in Wonderland's Cheshire cat, all that remains is the disembodied grin of gravity."

The recipient of numerous awards for his popular articles on astronomy, Dickinson draws on many years of experience in the classroom and the observatory. This program is presented in conjunction with the publication of his book *The Universe ... and Beyond* (Camden House).

To register for *The Invisible Universe*, please use the summer Members' programs coupon on page 3.



A massive black hole, born from a dying star.



Nebulosity in the constellation Cassiopeia.

Summer Workshops for Children

\$10, and open only to Members



Young Members can create their own shadow puppets at the Puppetry Workshop.

Kids can cruise the solar system, slither like snakes, and create and perform with shadow puppets at the Members' Summer Workshops for Children. The workshops' imaginative activities within the Museum and the Planetarium offer children amusement that's educational as well.

Sarah Germain, coordinator of Museum birthday party programs, puppeteer, and actress, will conduct the workshops. To register, please use the adjacent coupon.

Star Hunt

Ages 6 through 8
Wednesday, July 29
10:30 a.m. to 12:30 p.m.

The mission begins with team assignments, and the young explorers search through the Planetarium for the answers to outer-space mysteries. Next, they view *The Secret of the Cardboard Rocket*, a sky show designed especially for kids, and construct their own cardboard rockets. A brief glimpse behind the scenes, led by a member of the Planetarium staff, shows participants how sky shows are made.

Puppetry

Ages 7 through 9
Thursday, August 6
1:00 to 3:00 p.m.

Kids get acquainted with shadow puppets by looking at the Museum's collections, on display in the halls of Pacific Peoples and Asian Peoples. A spell of storytelling, featuring folk tales of Southeast Asia and other cultures, introduces some of the stock characters from shadow plays. The children then make their own shadow puppets and rehearse a play that parents can attend at the workshop's conclusion.

Summer Workshops for Children. \$10, and open only to Members.

Your name: _____

Your child's name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Workshop(s): _____

Number of tickets
at \$10 each:

Creative Movement (August 4): _____

Star Hunt (July 29): _____

Puppetry (August 6): _____

Total amount enclosed for program: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Summer Workshops for Children, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Creative Movement

Ages 3 through 5, with adult
(No charge for adults)
Tuesday, August 4
1:00 to 3:00 p.m.

This program, designed for preschoolers accompanied by an adult, introduces the ways in which animals move and shows participants how to imitate movements from the natural world. After exploring Museum halls to look at animals in their habitats, the children improvise costumes from paper streamers and perform to recorded music of bird calls, jungle environment sounds, African drums, and the sounds of whales. The program concludes with storytelling, dramatized by movement.

Margaret Mead Film Festival 1987

51 anthropological films, featuring 44
premieres and filmmakers from 17 nations

Monday-Thursday, September 14-17

Screenings from 6:30-10:00 p.m.
\$4 per evening for Members
\$5 per evening for non-Members

The complete printed program will appear in the
September issue of *Rotunda*.

For information, call (212) 769-5305.



Our God the Condor premieres on September 14.

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through September 7. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, Jupiter's moons, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space in search of the greatest wonders of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday and Sunday at 1:00, 2:00, 3:00, and 4:00 p.m. Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special, magical friend for a tour of the planets. *Cardboard Rocket* will be shown at 11:00 a.m. on Saturday, July 18, and Saturday, August 8. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are 10:00 a.m. and noon on Saturday, August 1, and at noon on Saturday, September 12. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024) and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a distinctive and dazzling experience of sight and sound in "Laser Genesis," featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday evenings. Call (212) 769-5921 for showtimes and information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Museum Notes

Special Exhibitions and Highlights

The Chaco Phenomenon. in Gallery 3 through August 2. This exhibition explores the rise and fall of an ancient civilization centered in New Mexico's Chaco Canyon. Inhabitants of this desert city were the ancestors of modern-day Pueblo people, and their prehistoric culture was the locus of a complex ritual, social, and economic system for over 200 years. Artifacts excavated from the ruins of Chaco Canyon are featured, as well as reproductions of Chacoan architecture.

On Tap: New York City's Water Supply. Through August 2, in Gallery 1. This exhibition examines the complex system of reservoirs, aqueducts, and pipes that deliver remarkably pure water to New York City. See page 2 for details of a Members' private viewing and special program.

Ladies in the Field: The Museum's Unsung Explorers, through October 26, in the Library Gallery. Photographs, diaries, published monographs, and mementos chronicle the contributions of women, usually wives of curators, to the development of the Museum.

The Brazilian Princess, the world's largest cut gem, is on display in the Roosevelt Rotunda. The 21,005-carat topaz was a gift to the Museum from an anonymous donor.

The Giant Panda Exhibit, also in the Roosevelt Rotunda, coincides with the residency of Yong Yong and Ling Ling at the Bronx Zoo.

Architecture for Dinosaurs, which opens in the Akeley Gallery on Thursday, August 6, commemorates the construction of the Museum.

Programs and Tours

Museum Highlights

Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. These free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, which is located just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

Discovery Tours are exciting and unusual journeys to exotic lands in the company of Museum staff members. For additional information, write to Discovery Tours at the Museum or call (212) 769-5700.

Children's Activities

Birthday Parties

Last year, the Membership Office introduced a birthday party program for Members' children, and the Museum has been celebrating ever since. The party participants should

be between 5 and 10 years old, and the total group should be no fewer than 10 and no greater than 20. The parties last two hours and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.)

Young Members can choose one of three birthday party themes: the Dinosaur Party, featuring a tour of the dinosaur halls; the Safari Party, with hunts through the exhibition halls for lions, giraffes, and gorillas; or the Star Party, with a Planetarium show. For reservations, call (212) 769-5600.

The Natural Science Center introduces young people to the wildlife and geology of New York City. Some exhibits include live animals. The center is open Tuesday through Friday, from 10:30 a.m. to 12:30 p.m. and from 2:00 to 4:30 p.m., and on Saturdays from 1:00 to 4:30 p.m. It is closed on Sundays and Mondays, on Independence Day, and for the entire month of September.

The Discovery Room is closed from July 1 through September 30.

FACES is an anthropology magazine for children between the ages of 8 to 14. Each month it features a different theme, which is explored through stories, puzzles, games, pictures, and other imaginative activities. **FACES** is published ten times a year by Cobblestone Publishing, Inc., in cooperation with the Museum. Subscriptions are \$14.75 per year for Museum Members and \$16.50 for non-Members. (Add \$4 per year for foreign orders.) To start your subscription, send your order and payment to **FACES**, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Naturemax Information

Grand Canyon: The Hidden Secrets premieres July 1 on New York's largest movie screen. See page 1 for details.

Chronos is a nonverbal film that portrays the evolution of Western civilization with time-lapse photography to a score of synthesizer music. The 6:00 and 7:30 p.m. showings of *The Grand Canyon*, on Fridays and Saturdays only, co-feature *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. Call (212) 496-0900 for the current movie schedule and other information. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

Parking

Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street be-

tween Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, and Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

The **Museum Library**, which has one of the world's great natural history collections, is open for research from Monday through Friday between 11:00 a.m. and 4:00 p.m., and until 8:30 p.m. on Wednesday.

Food Express Hours. Daily, from 11:00 a.m. to 4:45 p.m. The Food Express has a nonsmoking section.

American Museum Restaurant. Lunch: Monday through Friday, 11:00 a.m. to 4:00 p.m. Tea: Daily, 4:00 to 5:00 p.m. Dinner: Wednesday, Friday, and Saturday, 5:00 to 7:30 p.m. Brunch: Weekends, 11:00 a.m. to 4:00 p.m.

Members receive a 10 percent discount. The restaurant is located in the lower level, near the subway entrance. Reservations are recommended. Call (212) 769-5326 for reservations.

Lion's Lair. Enjoy refreshments with the animals in one of the exhibition halls. Wednesdays: 3:30 to 7:00 p.m. Saturdays, Sundays, and most holidays: noon to 5:00 p.m.

The Museum Shop offers an extensive selection of books, jewelry, international clothing, posters, and other unusual gifts. It is located on the first floor, near the 77th Street lobby, and open every day from 10:00 a.m. until 5:45 p.m., except for Wednesdays, when it is open until 7:45 p.m.

The Junior Shop, located in the lower level near the subway entrance, has children's natural history items, from telescopes and books to dinosaur kits. It is open every day from 10:00 a.m. to 4:45 p.m.


Coat Checking. Daily from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

New System for the Hearing Impaired. The Museum has installed a new infrared listening system for the hearing impaired in the Main Auditorium. The new system consists of wireless headsets that provide high-quality sound for people who suffer from hearing loss. The system was made possible in part by a generous grant from the Sergei S. Zlinkoff Fund for Education and Research.

Southwestern Research Station. Members have visiting privileges. For information and a fee schedule, write to: Resident Director, Southwestern Research Station, Portal, AZ 85632.


| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|---|-----|-----|--|
| | | | 1 <i>Grand Canyon: The Hidden Secrets</i> opens at the Naturemax Theater. Page 1. | 2 | 3 | 4 Independence Day. The Museum is open. First-quarter moon. |

July 1987

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|--|----|---|--|--|--|---|
|  | | | | | | |
| | | 7 6:00 and 8:00 p.m. <i>Grand Canyon: The Hidden Secrets</i> and <i>Chronos</i> . Members' Private Viewing at the Naturemax Theater. \$2.75 for adults, \$1.75 for children, and open only to Participating, Donor, and Contributing Members. SOLD OUT from June Rounda. | 8 7:30 p.m. <i>Cuban Son</i> and <i>Dominican Traditional Music</i> . Main Auditorium. Free. Page 2. | 9 | 10 Full moon. | 11 1:00 and 3:00 p.m. <i>Cuatro-making Demonstrations</i> . Blum Lecture Room. Free. Page 2. 2:00 and 4:00 p.m. <i>Música Jibara</i> . Kaufmann Theater. Free. Page 2. Moon at perigee. |
| | | 14 7:30 p.m. <i>The Invisible Universe</i> . Members' Evening Program. Main Auditorium. \$3 for Members, \$5 for non-Members. Page 6. | 15 | 16 | <div> Evening Hours The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m., and the American Museum Restaurant is open till 7:30 p.m. </div> | |
| | | | | | | |
| | 21 | 22 7:00 p.m. <i>Met Grotto</i> . National Speleological Society. Room 319. Free. | 23 | 24 | 25 New moon, at apogee. | |
| 26 | | 28 6:00 to 7:30 p.m. Members' Private Viewing of <i>On Tap: New York City's Water Supply</i> . Gallery 1. Free. Page 2. 7:30 p.m. <i>Rivers Beneath the Streets</i> . Members' Evening Program. Main Auditorium. Free for Members, \$4 for non-Members. Page 2. | 29 10:30 a.m. to 12:30 p.m. <i>Star Hunt</i> , a Summer Workshop for Children. \$10, and open only to Members. Page 6. | <div> Two New Movies on the Big Screen Every Friday and Saturday evening the Naturemax Theater presents double-feature showings of <i>Grand Canyon: The Hidden Secrets</i> and <i>Chronos</i>. Showtimes are at 6:00 and 7:30 p.m., and Members receive a 40 percent discount on admission. </div> | | |

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|-----|-----|
| | | | | | | 1 |

August 1987

| | | | | | | |
|--|---|---|---|--|---|--------------------|
| 2 <i>The Chaco Phenomenon</i> , in Gallery 3, closes today. <i>On Tap: New York City's Water Supply</i> , in Gallery 1, closes today. | 3 | 4 1:00 to 3:00 p.m. <i>Creative Movement</i> , a Summer Workshop for Children. \$10, and open only to Members. Page 6. | 5 | 6 1:00 to 3:00 p.m. <i>Puppetry</i> , a Summer Workshop for Children. \$10, and open only to Members. Page 6. <i>Architecture for Dinosaurs</i> , a commemoration of the building of the American Museum, opens in the Akeley Gallery. | 7 | 8 Moon at perigee. |
| 9 Full moon. | <div> Information, please Membership Office: (212) 769-5600 Museum Information: (212) 769-5100 Planetarium Information: (212) 769-5920 Naturemax Information: (212) 496-0900 Restaurant Information: (212) 769-5326 Department of Education: (212) 769-5310 </div> | | | 13 8:00 p.m. <i>Ramzi El-Edlibi Dance Company</i> . Members' Evening Program. Kaufmann Theater. \$8 for Members, \$12 for non-Members. Page 3. |  | |
| 16 Last-quarter moon. | 17 | 18 5:30 and 7:30 p.m. <i>Sunset Walking Tours</i> , highlighting geological and historical Upper West Side landmarks. \$7, and open only to Participating, Donor, and Contributing Members. Page 3. | 19 5:30 and 7:30 p.m. <i>Sunset Walking Tours</i> , highlighting geological and historical Upper West Side landmarks. \$7, and open only to Participating, Donor, and Contributing Members. Page 3. | 20 | 21 Moon at apogee. | 22 |
| 23 | 24 New moon. | 25 | 26 7:00 p.m. <i>Met Grotto</i> . National Speleological Society. Room 319. Free. | <div> The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors. </div> | | |
| 30 | 31 First-quarter moon. | | | | | |

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 8 September 1987



© New York Zoological Society Photo

Project Snow Leopard

Tuesday, September 29

Main Auditorium

7:30 p.m.

\$4 for Members, \$8 for non-Members

In a Members' program featuring breathtaking slides and absorbing commentary, wildlife biologist Rodney Jackson describes the mission that took him halfway around the world: tracking the elusive snow leopard through the Himalayas of western Nepal.

From base camps at altitudes of 10,000 feet or more, Jackson and his field associates conducted the most comprehensive study of snow leopards — the rarest and least-known of the world's great cats — ever undertaken. Between 1982 and 1985, Jackson trapped five leopards, put radio collars on them, and tracked them as they led their daily lives. Adopting a nomadic lifestyle similar to that of his subjects, Jackson pursued the leopards through cliffs made dangerous

by fusillades of falling rocks and deep snow. His study revealed significant data about the cats' solitary nature, the elaborate system of scent marking and ground scraping they use to find and avoid each other, and their staggered use of shared territory.

The leopards are ideally suited to their environment: their well-developed chests and massive forepaws help them scale the Himalayas' rocky slopes, and their yard-long tails help them maintain their balance as they leap from rock to rock. They eat and hunt alone — primarily in ridges and ravines, where mountain sheep and goats congregate — and seek each other out only to mate.

Jackson's study is vital to the Nepalese government, which is preparing a con-

servation and management plan to save the snow leopard. Ironically, it is the snow leopard's natural camouflage — its luxuriant smoke gray coat, sprinkled with patterns of black spots as distinctive to the bearer as fingerprints are to a human — that attracts the humans who threaten the animal's survival. Although in many parts of Nepal it's illegal to trap the cats, the hunting continues: a coat fashioned from snow leopard pelts can fetch up to 60,000 black-market dollars.

Members will hear about dramatic encounters between the leopards and researchers as well as some brand-new information about the rare cats' habits and ecology. To register for *Project Snow Leopard*, please use the September Members' programs coupon on page 3.

Margaret Mead Film Festival

Four evenings of premiering anthropological films from 17 nations mark the Festival's eleventh year.
Pages 7-10

The Final Frontier

Two new Sky Shows premiere at the Planetarium this month, and a magical reception awaits Members attending the private viewing of *Space Telescope* and *Cosmic Illusions*.
Page 2

A Matter of Courses

Going back to school this month isn't necessarily kids' stuff. The Department of Education offers adult courses in geology, film, world cultures, and a host of other subjects with the *Fall 1987 Lecture Series* (pages 4-6) as well as *Workshops for Young People* (page 11), and *Community Workshops* (page 13).

Bee A-buzz

In *Jack's Big Bug Show*, young Members enter a giant beehive for the inside story. This close-up of the insect world is honeycombed with fun.
Page 3

Sankofa Music

Kimati Dinizulu and his Kotoko Society use traditional instruments from a variety of African cultures to perform *Sankofa Music*. This free program will take place in the Main Auditorium on Wednesday, September 30, at 7:30 p.m. For further information, please call the Department of Education at (212) 769-5315. This program is made possible in part by a gift from the Grumman Corporation.

Planetarium Double Feature

Cosmic Illusions and Space Telescope

Planetarium Sky Theater
Open to general public: Thursday, September 10

Members' private viewing: Thursday, October 8
6:00 and 8:00 p.m.
\$2.75 for adults and \$1.50 for children



Is it a UFO or a grand deception? Cosmic Illusions, the new Planetarium Sky Show, will tell.

Like a magician, nature performs its own sleight of hand: the sun blazes overhead when it's not really there, one quasar becomes a pair, and the stars quickly change their color. These magic tricks are among the surprises of *Cosmic Illusions*, which also features the story of the Amazing Disappearing Martians and the secrets behind many UFO pictures.

Space Telescope describes a device so sensitive that from New York City, it could spot a firefly at the distance of Sydney,

Australia. Within the next 18 months, NASA is scheduled to launch just such a device into space, where it will scan alien atmospheres, search out new solar systems, and provide clues to the birth and the ultimate fate of the universe.

Live magic tricks are in store for Members attending the private viewing of the new double feature. Tom Ogden, a magician of international renown, will perform before each show on Thursday, October 8. Admission to the Members' private viewing is \$2.75 for adults and

\$1.50 for children. To register, please see the coupon on page 3.

The current Planetarium Sky Show, *The Seven Wonders of the Universe*, will close on Monday, September 7. There will be no Sky Show on September 8 and 9, while the installation of the new show is in progress. (On these two days, there will be no admission fee for the Planetarium's two floors of exhibits.) For showtimes and details of other Planetarium shows, please see "Happenings at the Hayden" on page 15.

La Crystal: The Musical Cutting Edge

Tuesday, October 20
7:00 p.m.

Planetarium Sky Theater
\$5 for Members, \$8 for non-Members

The Hayden Planetarium presents the latest in its series of Members' concerts under the stars, featuring a unique instrument known as *La Crystal*. Michel Deneuve of Paris will perform works by Mozart, J. S. Bach, and Erik Satie on an instrument made almost entirely of glass. When *La Crystal* is stroked with moistened fingers, it vibrates with tones similar to those of a stringed instrument. The vibrations are transferred to

metal rods and transmitted to resonators, producing melodies of haunting beauty.

Accompanying the music will be the Planetarium's unique array of vistas from outer space and laser visuals plus a new special effect, a live TV projection of the musician performing against the starry sky.

To register for *La Crystal*, please use the September Members' programs coupon on page 3.



Classical music of a crystalline quality.

Volunteers

vol-un-teers (völ' on tirz') n.

1. people who enter or offer to enter into any service of their own free will.

2. individuals who contribute to the Museum's ongoing research and education as well as to their personal satisfaction.

Join the staff of 500 strong

who share their time and talents. If you're interested, please call the Volunteer Office at (212) 769-5566 for an application.

Origami Special Sessions

The Friends of The Origami Center of America, which resides autonomously here in the Museum, offers *Special Sessions* throughout the fall on selected Saturday and Sunday afternoons. Instruction at each session is independent of all other sessions and at varying

levels of sophistication. All sessions, from September 26 through mid-December, will be held in the Museum.

Class size is limited, admission is through pre-registration only, and a fee will be charged. For a *Special Sessions* brochure, please send a self-

addressed no. 10 business envelope with two first-class stamps to: Friends of the Origami Center of America, Room FS3, 15 West 77th Street, New York, NY 10024-5192. Registration will be conducted on a first-come, first-served basis.

ROTUNDA

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A Flea in Your Ear

Sunday, September 27
1:30 and 3:30 p.m. (both shows for families)
Kaufmann Theater
Free and open only to Members

Jack is back to bug you with a lively Members' family program. Geared toward children between the ages of 4 and 12, Jack's Big Bug Show is an audience participation program that takes a larger-than-life look at the insect world. An insect safari opens the show, as big bug hunter Jack Branagan conducts a search for the world's largest bug. The discovery of lovable Leroy, an eight-foot insect puppet with antennae, compound eyes,

wings, and stinger spiracles, leads to a discussion of insect anatomy that's full of fun and surprises. The on-stage hatching of an egg and emergence of a caterpillar, along with vivid slides of the life cycle of the monarch butterfly, illustrate the process of metamorphosis. Jack explains how the majority of insects play an important part in the balance of the ecosystem, describing the ways in which helpful insects are used to curb

the spread of harmful ones. Branagan, a beekeeper himself, will also bring a giant hive (without the bees) for Members to inspect. A former elementary school teacher, Jack Branagan entertains his young audiences while educating them. Members may recall his popular program from last fall, *The Ice Age and Its Mammoth Hunters*. To register for Jack's Big Bug Show, please use the adjacent coupon.

Members' Tour of the Month

The Eskimo: Life and Art

Free and open only to Participating, Donor, and Contributing Members

It's bleak and bitter to an outsider. But to a native, the harsh surroundings abounded in materials for housing, weapons, tools, and clothing. The Eskimo respected their environment and believed it to be populated by spirits whose bounty they enjoyed. To keep in tune with the spirit world, the Eskimo transformed common items of utility into objects of grace and beauty.

The glorification of nature through art is the theme of the October Members' Tour of the Month, *The Eskimo: Life and Art*. The tour is presented in conjunction with the coming exhibition *Ancient Eskimo Ivories of the Bering Strait* (opening in the Naturemax Gallery on Friday, October 9), which features numerous prehistoric ivories of outstanding sculptural quality and complexity.

The tour begins at the northern limit of the Pacific Ocean near the Arctic Circle, by way of a diorama in the Hall of Oceanic Birds that depicts the craggy cliffs of the Bering Strait. From there, the tour proceeds to the Hall of Ocean Life for a look at the walrus, seal, and polar bear, which are among the animals that the Eskimo hunted and reproduced in their art.

In the Hall of Eskimos, Members can observe a traditional culture that existed in relative isolation until the early twentieth century. Kayaks, harpoons, and models of Eskimo houses are among the Hall's many features, including a stunning display of Eskimo apparel. Fashioned from the skins of seal and caribou, the clothing is styled for aesthetic appeal as well as practicality.

The tour concludes in the exhibition *Ancient Eskimo Ivories of the Bering Strait*. In this distinctive art form, engraved designs and relief carvings often represent interrelationships of living things with the spirit world. Knives, needle cases, and snow goggles are just a few of the richly ornamented ivories on display.

The tours are conducted by professionally trained volunteer Museum Highlights Tour guides, and each tour lasts ap-

proximately one hour. To register, please use the adjacent coupon. This tour is not recommended for children under 12.



"I Am the Walrus" in Ocean Life.

Members' Tour of the Month: Eskimo Life and Art.

Free and open only to Participating, Donor, and Contributing Members.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first, second, and third choice of tours, if possible:

| | | | |
|----------------------|-------|-------|-------|
| Sun., Oct. 11 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 14 (p.m.) | 6:30 | 7:00 | 7:30 |
| Sat., Oct. 17 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 21 (p.m.) | 2:30 | 6:30 | 7:30 |
| Sat., Oct. 24 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Oct. 25 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 28 (p.m.) | 6:30 | 7:00 | 7:30 |

Number of people: _____

Please mail with a self-addressed, stamped envelope to: Members' Tour, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Please note: registration closes on September 28.

September Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: \$ _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: September Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Jack's Big Bug Show. Sunday, September 27. 1:30 and 3:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3. Please indicate a first and second choice of times, if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of tickets: _____

Project Snow Leopard. Tuesday, September 29, 7:30 p.m. \$4 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Members' Private Viewing of Cosmic Illusions and Space Telescope. Thursday, October 8, 6:00 and 8:00 p.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 8:00 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

La Crystal. Tuesday, October 20, 7:00 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Colors of the Rainbow. Sunday, October 18, 1:00 and 3:00 p.m. \$2.50 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times, if possible:

_____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____

Number of non-Members' tickets at \$5: _____

Total amount enclosed for program: _____

Ghost Stories. Friday, October 30, 7:30 p.m. (for adults), and Saturday, October 31, 1:00 and 3:00 p.m. (for families). \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of Saturday showtimes, if possible:

_____ 7:30 p.m., Friday, October 30 (for adults)
_____ 1:00 p.m., Saturday, October 31 (for families)
_____ 3:00 p.m., Saturday, October 31 (for families)

Number of Members' tickets at \$3: _____

Number of non-Members' tickets at \$5: _____

Total amount enclosed for program: _____

Fall 1987 Lecture Series

The Glory of Carthage

Six Monday evenings, starting Oct. 19
7:30-9:00 p.m.

\$40 (\$36 for Members)

Oct. 19 — **CARTHAGE: MOSAIC OF ANCIENT TUNISIA.** **David Soren**, professor of classics and classical archeology at the University of Arizona, presents an overview of the special exhibition for which he is guest curator, *Carthage: A Mosaic of Ancient Tunisia*. Slides illustrate elements of Punic life and culture, as exemplified by statuary, jewelry, and mosaics. Ancient beliefs in magic, spirits, and the cult of Baal provide the backdrop.

Oct. 26 — **MOSAICS AT CARTHAGE.** Among the glories of ancient Carthage are the mosaic pavements that adorned public and private buildings. They were viewed not as isolated works of art but as an integral part of the architecture. In this slide lecture, **Margaret Alexander**, professor of art history at the University of Iowa, compares Carthaginian style with mosaic pieces from other parts of the Mediterranean world.

Nov. 2 — **THE MARITIME EMPIRE.** Originally a colony of Tyre, Carthage was one of several Phoenician maritime outposts in the West. In this slide lecture, **Robert R. Steglitz**, professor of Hebraic studies at Rutgers University, discusses how Carthaginian navigators and sailors conducted sea explorations and trade expeditions from Lebanon to Britain.

Nov. 9 — **SLAVERY IN ANCIENT CARTHAGE.** Carthage relied upon slavery for a major part of its work force. During the time of the Republic, the power of a master over a slave was unrestricted, but under more humanitarian rulers the system changed. **Richard Jensen**, professor of classics at the University of Arizona, uses slides to illustrate the historical pattern of this widespread practice.

*Nov. 16 — **THE MOSAICS OF THE MUSÉE DE BARDO.** **Dr. Aicha Ben Abed**, conservator and director of the Musée de Bardo in Tunis, outlines the history of its magnificent collections from Carthage and examines their scientific and historical importance. The mosaics, many of which have never before been seen outside of Tunisia, form the centerpiece for the special exhibition now on loan to the Museum. This program is richly illustrated with slides.

Nov. 23 — **THE EARLY CHRISTIAN CHURCH.** During the period of the Carthaginian twilight, this Romanized city became an area of Christian conversion. The list of distinguished Carthaginians of this period includes the Christian apologist Terullian and Saint Cyprian, the bishop of Carthage. **Elaine Pagels**, professor of religion, Princeton University, presents a case study of a 22-year-old Roman woman, Perpetue, who defiantly converted and was martyred in the Carthage amphitheater.

* For subscribers to this series, a private preview of *Carthage: A Mosaic of Ancient Tunisia* is scheduled for Nov. 16 at 5:45 p.m.

The Carthage series is supported in part by a grant from the National Endowment for the Humanities.

Eskimo Arts and Culture

Four Thursday evenings, starting Oct. 22

7:00 p.m.-8:30 p.m.

\$30 (\$27 for Members)

Oct. 22 — **ANCIENT IVORIES OF THE BERING STRAIT.** Since the early twentieth century, ancient Eskimo (Inuit) ivory carvings have been found in the Bering Strait area off Alaska. Sites on Saint Lawrence Island, Punuk Island, the Seward Peninsula, and Point Hope have revealed an elegant art that has existed since the fourth century B.C. This slide-illustrated lecture is presented by **Allen Wardwell**, director of the Isamu Noguchi Garden Museum in New York and guest curator of the exhibition *Ancient Eskimo Ivories of the Bering Strait*.

Oct. 29 — **ART AND IDEOLOGY IN WESTERN ALASKAN ESKIMO CULTURE.** Using nineteenth-century historical accounts and artifacts, this slide-illustrated lecture by **William Fitzhugh**, curator of Arctic anthropology at the Smithsonian Institution, re-



Medusa, one of the vivid Carthaginian mosaics.

constructs the ways of life and belief systems of the ancient Bering Sea cultures. Fitzhugh explores the cultures' continuities and the significance of Eskimo art's flamboyant style.

Nov. 5 — **WESTERN ALASKAN PREHISTORY.**

Edwin Hall, professor of anthropology, State University of New York at Brockport, discusses the current thinking on coastal Alaskan prehistory, which dates back some 5,000 years. The unique way of life of prehistoric Alaskans, based on sea and land hunting, illustrates human adaptation to extremes of environment and isolation.

Nov. 12 — **ALASKA'S BURIED CULTURAL HERITAGE.** Inuit people, archeologists, and collectors have had some misunderstandings about each other's activities. **Aron Crowell**, scientific researcher, Department of Anthropology, National Museum of Natural History, looks at those disagreements in a slide-illustrated case study of the role of Inuit art on Saint Lawrence Island and Kodiak Island.

Israeli Society Today

Three Tuesday evenings, starting Oct. 20

7:00-8:30 p.m.

\$20 (\$18 for Members)

Tension, interdependence, and cooperation all characterize the complex relationships of Israeli peoples. The current situation, which has been shaped by war, religious differences, and cultural attitudes, is the focus of this series, moving from images of division to the ways in which the society is attempting to reconcile its differences.

Oct. 20 — **Asher Arian**, professor in political science at the Graduate Center/CUNY and Tel Aviv University, gives an overview of the historical and cultural background of Israeli society.

Oct. 27 — **David Shipler**, Middle East correspondent for the *New York Times* and winner of the 1987 Pulitzer Prize for his book *Arabs and Jews: Wounded Spirits in the Promised Land*, reports on Israeli society today.



Dougga, a Roman site in Tunisia.

Nov. 10 — A dialogue featuring two members of an Arab-Jewish cooperative village, Neve Shalom, in Israel. **Joseph Montville**, research director for the Center for the Study of Foreign Affairs at the State Department's Foreign Service Institute, moderates the discussion.

This series is presented in cooperation with the New Israel Fund, an Israeli-American foundation that promotes cooperative projects for the betterment of that nation.

Human Sexuality: Male/Female Relations

Four Thursday evenings, starting Oct. 22
7:00-8:30 p.m.
\$30 (\$27 for Members)

These slide-illustrated lectures are presented by **Helen Fisher**, an associate in the Department of Anthropology. Dr. Fisher is the author of numerous books and articles, including *The Sex Contact*, a study of gender and culture.

Oct. 22 — **HUMAN SEXUALITY**. Marriage, divorce, and adultery around the world; comparing human courting behavior, infatuation, and sexual attachment.
Oct. 29 — **ORIGIN OF THE FAMILY**. The evolution of monogamy and other forms of family life from origins more than two million years ago on the grasslands of Africa.

Nov. 5 — **WOMEN, MEN, AND POWER**. This lecture examines power relationships in other primates and male/female relationships in egalitarian cultures to explain the evolution of the double standard.

Nov. 12 — **FUTURE SEX**. The Industrial Revolution and recent historical events have had indelible consequences for modern relationships between the sexes. This final lecture looks at modern trends in biotechnology and social life and makes some predictions about the future of the family.

Dinosaurs: New Views

Three Tuesday evenings, starting Oct. 20
7:00-8:30 p.m.
\$20 (\$18 for Members)

Oct. 20 — **DINOSAURS AT THE MUSEUM**. Recent interest in dinosaurs has been stimulated by new discoveries, and existing exhibitions are being reexamined under a brighter light. **Dr. Edwin H. Colbert**, curator of vertebrate paleontology at the Museum of Northern Arizona, and former chairman of the Department of Vertebrate Paleontology at the American Museum, presents an illustrated lecture on the Museum's dinosaur collections.

Oct. 27 — **DINOSAURS: SCIENCE OR SCIENCE FICTION?** We have been fine-tuning our beliefs about dinosaurs for 150 years, based on new discoveries such as preserved skeletons, skin imprints, footprints, and even dinosaur eggs. We have learned where they lived, what they looked like, and why they became extinct—depending upon whose theory we've heard. But what about the color of a dinosaur? Speculation on the answer to this and other questions can help provide breakthroughs and fire the imagination. What are the theories? How did they develop? **Eugene Gaffney**, curator in the Department of Paleontology, addresses these questions.

Nov. 10 — **DINOSAURS: THE STEGOSAURUS**. In this slide-illustrated lecture, paleontologist and artist **Stephen Czerkas** shows the process by which the physical appearance of dinosaurs is scientifically re-created from fossilized skeletal remains. Focusing on the Stegosaurus, Mr. Czerkas, who has several works on display in the current exhibition *Dinosaurs Past and Present*, tells how the scientific and popular visions of these unique creatures are shaped.

What's New in Geology

Five Monday evenings, starting Oct. 19
7:00-8:30 p.m.
\$35 (\$31.50 for Members)

Keep up with the latest information in the geological sciences — it often takes years for new discoveries to make their way into textbooks and popular articles. This illustrated lecture series presents new interpretations that show how recent discoveries have changed the way we think about our planet. **Sidney S. Horenstein** is senior scientific assistant in the Department of Invertebrates.

Oct. 19 — **HOW CONTINENTS DRIFT: PLATE TECTONICS**.

Oct. 26 — **EARTHQUAKES, VOLCANIC ERUPTIONS, AND OTHER NATURAL DISASTERS**.

Nov. 2 — **BEYOND THE EARTH: PLANETARY GEOLOGY**.

Nov. 9 — **EVOLUTION, FOSSILS, AND EXTINCTION**.

Nov. 16 — **LANDSCAPES: THEIR ORIGIN AND DEVELOPMENT**.

The World of Islam

Six Monday evenings, starting Oct. 19
7:00-8:30 p.m.

or

Six Tuesday afternoons, starting Oct. 20
2:30-4:00 p.m.

\$40 (\$36 for Members)

Paul J. Sanfaçon, lecturer in anthropology at the Museum, discusses the role of Islam in the history of the Mediterranean world and the Middle East. His slide-talks cover the Five Pillars, the role of Ayatollahs and other men of knowledge, and the Islamic system of education. Included are discussions of Jews and other minorities in Muslim lands, relations between nomadic and sedentary peoples, and daily life.

1. **BEGINNINGS AND SPREAD OF ISLAM** — a world religion from Morocco to East Asia.
2. **NOMADS AND TOWN DWELLERS** — urban-rural relations and the "Islamic" city.
3. **SURRENDER TO ALLAH** — general principles of Islam.
4. **MEN AND WOMEN IN MUSLIM SOCIETIES** — stereotypes and reality.
5. **ISLAM EDUCATION** — history and comparisons with Judaic and Christian education.
6. **THE COLONIAL PERIOD AND TODAY** — British, French, and American spheres of influence.



Kenneth A. Chambers

Discover Alaskan wildlife.

Alaska: Giant of the North

Four Monday afternoons, starting Oct. 19
2:30-4:00 p.m.

or

Four Monday evenings, starting Oct. 19
7:00-8:30 p.m.

\$30 (\$27 for Members)

A place of wild beauty and vast distances, Alaska is a land where bald eagles soar above misty rain forests, wolves hunt herds of caribou across rolling tundra, and enormous bears fish for salmon. It is a land of contrasts: of huge moose and tiny, delicate wildflowers, smoking volcanoes and awesome glaciers, majestic mountain ranges and deep fjords — a land at once rugged and yet incredibly fragile.

Although this slide-illustrated lecture series focuses on the spectacular wilderness areas and their animal and plant inhabitants, it also covers aspects of Alaskan history and politics, the state's swiftly changing economy, and the life styles of its native peoples.

Kenneth A. Chambers, author of *A Country Lover's Guide to Wildlife*, is lecturer in zoology at the Museum and has led all of the Museum's Alaskan wildlife tours. Oct. 19 — **SOUTH-EASTERN ALASKA**. Russian occupation; gold fever; Juneau and other coastal townships; and magnificent Glacier Bay.

Oct. 26 — **SOUTH-WESTERN ALASKA**. Bears and the Brooks River; Valley of Ten Thousand Smokes; cliff-nesting birds; the Pribilof Aleuts; and the saga of the fur seals.

Nov. 2 — **SOUTH-CENTRAL ALASKA**. The renowned wildlife and plants of scenic Denali National Park; Anchorage; Fairbanks; and the Alaskan railroad.

Nov. 9 — **ARCTIC ALASKA**. Exploring in the eastern Brooks Range and along the Arctic coastal plain; Inuit people today.

History and Romance: Films from the Archives

Five Thursday evenings, starting Oct. 22
7:00-8:30 p.m.

\$35 (\$31.50 for Members)

"Welcome to the world of history, mystery and romance . . ." Early factual films were thus introduced in movie houses, and many of the early filmmakers were from the American Museum. This series will examine those pioneer movie makers and their relationships with the Museum. These lectures are presented by **Penelope Bodry-Sanders**, manager of Special Collections in the Museum's Library.

Oct. 22 — **MARTIN and OSA JOHNSON**, cinematographers. *Simba, King of Beasts: A Saga of the African Veldt*, c. 1928, b/w, sound (titles), 1 hr. 16 min.

Oct. 29 — **ROY CHAPMAN ANDREWS and J.B. SHACKELFORD**, cinematographers. *Central Asiatic Expedition Films: Fossils and Artifacts*, 1922-28, b/w, silent (titles), 19 min.; *Mongols* 1922-28, b/w, silent (titles), 29 min.; *Peking*, 1922-28, b/w, silent, 7 min.

Nov. 5 — **WILLIAM JAMES MORDEN and HEREFORD TYNES COWLING**, cinematographers.

Morden's Expedition to Africa and Asia, 1922-24: *Africa*, b/w, silent, 52 min. (excerpts); *Beyond the Vale of Kashmir*, 1922-24, b/w, silent, 50 min. (excerpts); *Burma Blues from a Buzzing Orient*, 1922-24, b/w, silent (titles), 10 min.; *Ceylon*, 1922-24, b/w (tinted stock), silent, 34 min. (excerpts).

Nov. 12 — **W. DOUGLAS BURDEN and MARCEL LE PICARD**, cinematographers. *Silent Enemy*, c. 1930, b/w, sound (titles), 1 hr., 7 min. The theme of this classic is the Obijbwa Indians' struggle for survival.

Nov. 19 — **CARL ETHAN AKELEY**, cinematographer. *Carl and Mary in Africa*, Eastman-Pomeroy-Akeley Expedition, 1926, b/w, silent, 7 min.; *Military Drill of Kikuyu Tribes*, 1909, b/w, silent, 33 min. (excerpts); *Meandering in Africa*, 1921 Gorilla Expedition, b/w, silent (titles), 39 min.



AKLEY

Akeley, Meandering in Africa.

Anthropology on Film

Four Tuesday afternoons, starting Oct. 20
2:30-4:30 p.m.

or

Four Tuesday evenings, starting Oct. 20
7:00-9:00 p.m.

\$30 (\$27 for Members)

Malcolm Arth, anthropologist and chairman of the Margaret Mead Film Festival, presents films illuminating our understanding of society and human behavior. Following screenings, Dr. Arth is sometimes joined by the filmmakers for lively discussion. To take advantage of works now being completed, some selections are not announced until the series begins.

Oct. 20 — **LAU**. 1986. (55 mins.) Director: Leslie Woodhead. A Pacific Solomon Island society confronts the issue of whether its traditional patterns of culture will vanish.

SECOND FILM TO BE ANNOUNCED.

Oct. 27 — **PASSION: TRUST**. 1987. (25 mins.) Director: Olivier Koning. A Dutch couple in love with each other — and with danger.

GATES OF HEAVEN. 1977. (90 mins.) Director: Errol Morris. Acclaimed by film critics as one of the greatest documentaries of all time. A look at this life — and the afterlife — in America.
 Nov. 10 — NEW FILMS ON ESKIMO CULTURE. 1987. (60 mins. and 20 mins.) Directors: Sarah Elder and Leonard Kamerling. These filmmakers, renowned for the sensitivity and beauty of their documentaries on Yupik Eskimo culture, have two brand-new, still-untitled works. One looks at Eskimo dance as it reflects the people's view of the world; the shorter film finds an elder reminiscing about his youth.
 Nov. 17 — FILM AND GUEST TO BE ANNOUNCED.

Ikebana: The Art of Flower Arranging

Four Monday evenings, starting Oct. 19
 7:00–9:30 p.m.
 \$90 (materials included)
 Limited to 20 persons

Judith S. Hata, artist and floral designer, presents a workshop on the techniques, history, and art of Ikebana. This 1,200-year-old Japanese art of flower arranging has spread to all parts of the world. The series stresses the rules of Ikebana, but arrangements are limited only by the creative urge. Students make use of a range of materials, from flowers, leaves, and nuts to stone and even (for the avant-garde) old automobile parts.

Origami: Introduction to Paper Folding

Six Monday evenings, starting Oct. 19
 7:00–8:30 p.m.
 \$75 (materials included)
 Limited to 20 persons

Origami is the Japanese word for the centuries-old art of folding single sheets of paper to create almost anything imaginable without using scissors or paste. Participants learn many traditional origami bases and become familiar with the maneuvers and terminology of the art. Among the models taught are a butterfly, strawberry, dove, panda, and frog. The instructor, **Michael Shall**, provides step-by-step diagrams that he designed together with his teacher, Alice Gray.



Medieval bestiaries beckon.

Beasts of the Middle Ages

Four Thursday evenings, starting Oct. 22
 7:00–8:30 p.m.
 \$30 (\$27 for Members)

Medieval Europeans lived in a world where they felt themselves to be — and indeed were — at the mercy of nature. How did they perceive domestic, wild, and labeled beasts? Was the whale a monster? Was the louse related to the dragon? Why did thirteenth-century bishops abhor hawks and monkeys?

Looking at medieval writing and art, this series examines the Middle Ages and offers occasional comparisons with the contemporary world. Presented by **Marie A. Lawrence**, senior scientific assistant in the Department of Mammalogy.

Oct. 22 — WORLD VIEW OF MEDIEVAL EUROPE-ANS. Biblical beasts.
 Oct. 29 — BEASTS OF MANOR AND HUNT
 Nov. 5 — BEASTS OF HERALDRY AND WAR
 Nov. 12 — BESTIARIES

Photography in the Field

Four Tuesday evenings, starting Oct. 20
 7:00–8:30 p.m.
 \$30 (\$27 for Members)

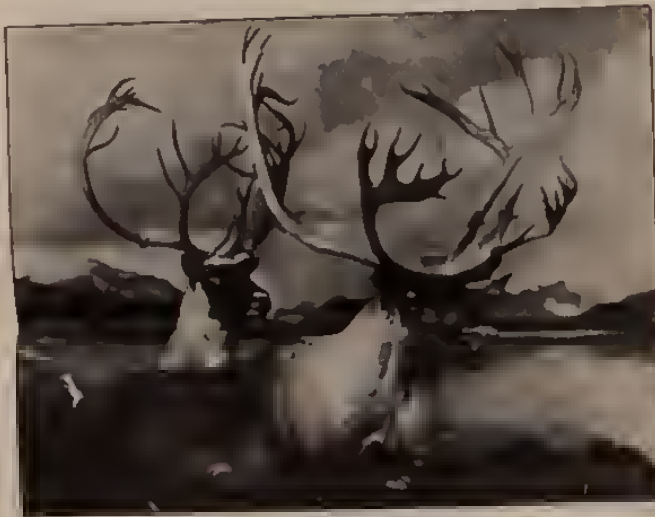
Richard P. Sheridan, head of the Museum's Photography Studio, presents a four-part lecture series on the evolution of in-the-field photography since the 1830s. The lectures are illustrated with slides and film, and images from the Museum's photographic collection depict film/camera technologies and their applications.

Oct. 20 — THE BEGINNINGS OF PHOTOGRAPHY. The discoveries of light-sensitive materials and strategies developed to exploit them. New technologies and new directions.

Oct. 27 — CAPTURING THE IMAGE. The evolution of film and camera technology (direct positives, glass plates, nitrates, lantern slides, albumen prints, and paper negatives).

Nov. 10 — EARLY TECHNIQUES. In the field with Akeley, Dossiter, Curtis, Wannamaker, and others. How early images were used in the design of museum exhibits.

Nov. 17 — THE FINAL IMAGE. Techniques for creating a "good" image. Approaches to archival preservation.



Learn to draw caribou.



Sketch Museum bison.

Animal Drawing

Eight Monday evenings, starting Oct. 19
 7:00–9:00 p.m.
 \$95 (materials not included)
 Limited to 25 persons

Join a Museum artist to sketch a variety of subjects, such as gazelles on the African plains and timber wolves in the snowbound north. After the Museum has closed to the public, students draw from the famed habitat groups as well as mounted specimens. **Stephen C. Quinn**, senior principal preparator-artist in the Department of Exhibition, discusses drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant, whether beginner or experienced artist.

The following exhibition halls serve as studios: the Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and Hall of Ocean Life.

Wild Flowers of the Northeast

Five Tuesday afternoons, starting Oct. 20
 2:30–4:00 p.m.

or
 Five Thursday evenings, starting Oct. 22
 7:00–8:30 p.m.
 \$35 (\$31.50 for Members)

Thousands of species of wild flowers are native to the varied landscape of the northeastern United States. Some are common, others are very restricted in range, and some function with unusual adaptations. All are a part of the web of life — carnivorous bog plants, Arctic creepers on windswept mountaintops, and ornate woodland orchids. These and a selection of wild flowers from the forests, meadows, pine barrens, and wetlands will be discussed in this series of slide-illustrated lectures. **William Schiller** is lecturer in botany at the Museum.

1. ANATOMY OF A WILD FLOWER — basic structure, family, and environment.
2. MOUNTAINTOP AND BOREAL WILD FLOWERS — above timberline and in the evergreen woodland below.
3. WILD FLOWERS OF MOIST WOODLAND — spring and fall flowers.
4. WILD FLOWERS OF DRY ENVIRONMENTS — pine barrens and seashores.
5. WILD FLOWERS OF THE WETLANDS — bogs, marshes, and swamps.

Spring 1988 Field Trips

For a field trip itinerary and application, call (212) 769-5310.

Weekend for Bird Enthusiasts

May 14 and 15
 Limited to 36 adults

Two-day bus trip covering wooded areas near New York City, and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen.

Weekend in Geology

May 21 and 22
 Limited to 36 adults

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain, there are visits to Sandy Hook and the Highlands of the Navesink. Collecting stops are made enroute. The group is accommodated overnight near Parsippany.

DEPARTMENT OF EDUCATION Fall 1987 Lecture Series

I would like to register for the following course(s): _____

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Daytime phone: _____

Membership category: _____

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Fall 1987 Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Margaret Mead Film Festival 1987



Threat. Tuesday, Auditorium, 7:45 p.m.

American Museum of Natural History

Central Park West at 79th Street

Monday–Thursday, Sept. 14–17

Screenings 6:30 to 10:00 p.m.

★ 51 FILMS ★ 44 PREMIERES ★ FILMMAKERS FROM 17 NATIONS

DISCUSSIONS BY FILMMAKERS/ANTHROPOLOGISTS

Admission: \$5 per evening (\$4 for Members)

Ticket sales start at 5:00 p.m. daily.





No Advance Sales

Seating is on a first-come, first-served basis.



Entering its second decade, the Festival is a continuing tribute to Margaret Mead and her role in visual anthropology and public education.

For information, call (212) 769-5305.



Monday, September 14

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|--|--|---|
| MYTH 6:30 <input type="checkbox"/> The Hero's Journey: The World of Joseph Campbell 1987. William Free and Janelle Balnicke. (58 mins.) A thinking man for all seasons, a visionary of our time.  Our God the Condor 8:00 <input type="checkbox"/> Our God the Condor 1987. Paul Yule and Andy Hamies. (30 mins.) Peruvian Indians revive a spectacular ceremonial encounter between condor and bull. Premiere. 8:45 <input type="checkbox"/> The Diary of a Dry Season: The Tyi Wara 1987. Jean-Paul Colleyn. (40 mins.) A Minyanka festival in Mali evokes the Tyi Wara, a mythological beast. Premiere. 9:40 <input type="checkbox"/> Uluru: An Anangu Story 1986. Dave Roberts. (57 mins.) Aborigines, tourists, and the government of Australia caught in a symbolic conflict. Premiere. | SEARCH FOR SELF 6:30 <input type="checkbox"/> Alter Ego: Letters from a Doctor in Africa 1986. Hillie Molenaar and Joop van Wijk. (43 mins.) Witches and doctors, spirits and gods — a Dutch psychiatrist heads a mental health hospital in Guinea-Bissau. Premiere. 7:30 <input type="checkbox"/> What is a Jew to You? 1986. Aviva Ziegler. (50 mins.) A Jewish filmmaker in Australia looks at self and family to answer the question. Premiere. 8:35 <input type="checkbox"/> Link-Up Diary 1987. David MacDougall. (87 mins.) Australian Aborigines separated from their families in childhood are reunited. Premiere.  Link-Up Diary | AFRICAN SPIRIT 6:30 <input type="checkbox"/> Hail Umbanda 1986. José Araujo. (45 mins.) Spirit healing in a growing Afro-Brazilian religious movement. Premiere.  Hail Umbanda 7:30 <input type="checkbox"/> Songs of the Adventurers 1987. Gei Zantzing. (47 mins.) Basotho mine workers from neighboring Lesotho compose eloquent autobiographical songs based on their experiences in South Africa. Premiere. 8:30 <input type="checkbox"/> The Two Rivers 1985. Mark Newman. (58 mins.) A black South African writer takes us behind the scenes of his Venda homeland. 9:45 <input type="checkbox"/> Repeat: Hail Umbanda. | TWO COMMUNITIES 6:30 <input type="checkbox"/> Caught in a Web 1986. Toni de Bromhead. (70 mins.) A tale of two towns in Britain and France. Premiere.  Caught in a Web 8:00 <input type="checkbox"/> The Bharvad Predicament 1987. Jayasinhji Jhala and Roger Sandall. (50 mins.) Hindu cattle keepers and farmers in conflict over land and water. Premiere. 9:05 <input type="checkbox"/> Repeat: Caught in a Web. |



Tuesday, September 15

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|--|--|---|
| WORLDS IN COLLISION 6:30 <input type="checkbox"/> Classified People 1987. Yolande Zauberman. (60 mins.) A 91-year-old South African man separated from his children by an absurd racial classification system. Premiere. 7:45 <input type="checkbox"/> Threat 1987. Stefan Jarl. (72 mins.) Chernobyl and the Lapp people; an apocalyptic present. Premiere.  Threat 9:15 <input type="checkbox"/> Radio Bikini 1987. Robert Stone. (57 mins.) The loss of innocence as the world entered the nuclear age. Premiere. | DIARY OF A MAASAI VILLAGE The first New York screening of a series of remarkable films on the Maasai people by British anthropologist Melissa Llewelyn-Davies. A continuing saga as the lives of people in one village unfold over a seven-week period. Premiere. 6:30 <input type="checkbox"/> The Prophet's Family 1984. (50 mins.) An 80-year-old Maasai prophet, his wives and his people. 7:25 <input type="checkbox"/> Two Ways of Justice 1984. (52 mins.) A son of the prophet is jailed and the family takes action. 8:45 <input type="checkbox"/> Two Journeys 1984. (50 mins.) The journeys of a bride and groom as two families are linked by marriage. 9:40 <input type="checkbox"/> Nine Cows and an Ox 1984. (44 mins.) Ceremonies follow the marriage, and other things get resolved. | MALE AND FEMALE 6:30 <input type="checkbox"/> Daughters of the Midnight Sun 1986. Ylva Floreman and Peter Ostlund. (40 mins.) Lapp women in Sweden speak about their changing lives. Premiere. 7:25 <input type="checkbox"/> Asian Heart 1985. Bodil Trier and Malene Ravn. (38 mins.) European men contract brokers to find Asian wives. Premiere. 8:20 <input type="checkbox"/> No Longer Silent 1986. Laurette Deschamps. (57 mins.) Women of India raise their voices against exploitation of their sex.  No Longer Silent 9:35 <input type="checkbox"/> Repeat: Daughters of the Midnight Sun. | CULTURE CONFLICT 6:30 <input type="checkbox"/> Ma'Loul Celebrates Its Destruction 1986. Michel Khleifi. (30 mins.) Palestinian families revisit their old village site. Premiere. 7:15 <input type="checkbox"/> White Justice 1986. Morgané Laliberté and Françoise Wera. (57 mins.) Inuit custom and Canadian law meet in the far North. Premiere. 8:30 <input type="checkbox"/> Repeat: Ma'Loul Celebrates Its Destruction. 9:15 <input type="checkbox"/> Repeat: White Justice. |

Wednesday, September 16

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|--|--|--|
| LIFE AND DEATH 6:30 <input type="checkbox"/> The Diary of a Dry Season: Minyanka Funerals 1987. Jean-Paul Colleyn. (45 mins.) The Minyanka people of Mali balance joy with grief in their funeral ceremonies. Premiere. 7:35 <input type="checkbox"/> Hoxsey: The Quack Who Cured Cancer 1987. Ken Ausubel. (100 mins.) An alternative treatment for a life-threatening illness threatens the establishment. Premiere. 9:30 <input type="checkbox"/> Some Babies Die 1985. Martyn Langdon Down. (54 mins.) A counseling team helps families in Australia overcome their loss in a unique way. Premiere. | CULTURAL CONTINUITY 6:30 <input type="checkbox"/> Survival of a Small City 1986. Pablo Frasconi and Nancy Salzer. (65 mins.) Gentrification divides a coastal Connecticut community. Premiere. 7:50 <input type="checkbox"/> Xochimilco 1987. Eduardo Maldonado. (90 mins.) Mexico City's famous floating gardens, an oasis of Indian culture within the metropolis. Premiere.  The Basques of Santazi 9:30 <input type="checkbox"/> The Basques of Santazi 1987. Leslie Woodhead. (52 mins.) French Basques struggle against the loss of their culture. Premiere. | PORTRAITS 6:30 <input type="checkbox"/> Mara'acame 1982. Juan Francisco Urusti. (47 mins.) A Mexican Huichol healer, singer, and interpreter of peyote dreams. Premiere. 7:30 <input type="checkbox"/> Passion: Recollections 1987. Olivier Koning. (25 mins.) A Dutch natural history museum curator with a calling. Premiere. 8:00 <input type="checkbox"/> Passion: Crossroads 1987. Olivier Koning. (25 mins.) A Dutch Roman Catholic priest charms a skeptical filmmaker as they talk about faith. Premiere. 8:45 <input type="checkbox"/> In Africa for a Spell 1986. Ilan Flammer. (60 mins.) A West African psychiatrist and a local healer compare notes. Premiere. 10:00 <input type="checkbox"/> Repeat: Mara'acame. | TEENAGE 6:30 <input type="checkbox"/> Chela 1986. Lars Palmgren, Goran Gester, and Lars Bildt. (48 mins.) The political awakening of a 16-year-old girl in Chile. Premiere. 7:35 <input type="checkbox"/> Stephanie 1986. Peggy Stem. (58 mins.) An American girl's dreams and disappointments as she journeys through adolescence.  Stephanie 8:50 <input type="checkbox"/> Repeat: Chela. 9:45 <input type="checkbox"/> Repeat: Stephanie. |

Thursday, September 17

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|---|--|---|
| FAITH 6:30 <input type="checkbox"/> The Earth Is Our Mother 1987. Peter Elsass. (50 mins.) Indians of Colombia defend their ways against missionary proselytizing. Premiere. 7:35 <input type="checkbox"/> Born Again 1987. James Ault and Michael Camerini. (89 mins.) Lust, love, and leadership in a Moral Majority community. Premiere. 9:25 <input type="checkbox"/> In Her Own Time 1986. Lynne Littman. (60 mins.) Anthropologist Barbara Myerhoff began studying orthodox Jews but ended looking inward. Premiere.  In Her Own Time | RELIGIOUS LIFE AND COMMUNITY 6:30 <input type="checkbox"/> A Tibetan New Year 1987. Jon Jerstad. (40 mins.) A Tibetan Buddhist monastery celebrates the New Year high in the Himalayas. Premiere. 7:20 <input type="checkbox"/> Depending on Heaven: The Grasslands 1987. Peter Entell. (28 mins.) A nomadic Mongolian family moves across the Central Asian landscape. Premiere. 8:00 <input type="checkbox"/> Cuyagua: The Saint with Two Faces 1987. Paul Henley. (56 mins.) A Venezuelan village holds a women's festival celebrating the sacred and profane. Premiere. 9:10 <input type="checkbox"/> Hamar Herdsman and His Song 1987. Jean Lydall and Ivo Strecker. (46 mins.) An Ethiopian people's male initiation ceremony. Premiere. 10:05 <input type="checkbox"/> First Moon 1987. Richard Gordon and Carma Hinton. (30 mins.) New Year celebrations in the Chinese village of Long Bow. Premiere. | FAMILIES 6:30 <input type="checkbox"/> The Fair at Dharamtalla 1984. Shape Film Collective. (60 mins.) Families of acrobats, healers, and snake charmers at a market in India. Premiere.  The Fair at Dharamtalla 7:45 <input type="checkbox"/> Kicking High . . . In the Golden Years 1986. Grania Gurievitch. (58 mins.) Music and dance, pathos and pleasure, and a bit of advice from senior citizens. Premiere. 9:00 <input type="checkbox"/> Chuck Solomon: Coming of Age 1986. Wendy Dallas and Marc Huestis. (60 mins.) A theater director with AIDS shares a special gift from his community and family. | CULTURAL IDENTITY 6:30 <input type="checkbox"/> Navajo Talking Picture 1986. Arlene Bowman. (40 mins.) A Navajo filmmaker attempts to rediscover her cultural heritage. 7:25 <input type="checkbox"/> Yuki Shimoda: Asian American Actor 1986. John Esaki. (30 mins.) A Japanese-American actor's life reflects his society. 8:10 <input type="checkbox"/> El Sebou 1986. Fadwa El Guindi. (27 mins.) A seventh-day naming ritual following the birth of Egyptian children. Premiere. 8:55 <input type="checkbox"/> Banderani 1987. Jeanine Moret. (30 mins.) Cooperation and exchange in a Bolivian Quechua-speaking village. Premiere. 9:35 <input type="checkbox"/> Repeat: Navajo Talking Picture. |



Hoxsey: The Quack Who Cured Cancer. Wednesday, Auditorium, 7:35 p.m.

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Asian Heart, Tuesday
Banderani, Thursday
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Born Again, Thursday
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Chela, Wednesday
Chuck Solomon: Coming of Age, Thursday
Classified People, Tuesday
Cuyagua: The Saint with Two Faces, Thursday
Daughters of the Midnight Sun, Tuesday
Depending on Heaven: The Grasslands, Thursday
The Diary of a Dry Season: The Tyi Wara, Monday
The Diary of a Dry Season: Minyanka Funerals, Wednesday
The Earth Is Our Mother, Thursday
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First Moon, Thursday
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Mara'acame, Wednesday
Navajo Talking Picture, Thursday
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No Longer Silent, Tuesday
Our God the Condor, Monday
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Passion: Recollections, Wednesday
The Prophet's Family, Tuesday
Radio Bikini, Tuesday
Some Babies Die, Wednesday
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Survival of a Small City, Wednesday
Threat, Tuesday
A Tibetan New Year, Thursday
Two Journeys, Tuesday
Two Ways of Justice, Tuesday
The Two Rivers, Monday
Uluru: An Anangu Story, Monday
What is a Jew to You?, Monday
White Justice, Tuesday
Xochimilco, Wednesday
Yuki Shimoda: Asian American Actor, Thursday

Margaret Mead Film Festival 1987

Honorary Chairperson
 Mary Catherine Bateson

Festival Chairperson
 Malcolm Arth

Programming Committee
 Malcolm Arth
 Nathaniel Johnson
 Jonathan Stack

This Department of Education public program is made possible in part by a grant from the New York State Council on the Arts.



Classified People. Tuesday, Auditorium, 6:30 p.m.

Workshops for Young People



Leapin' Lizards introduces children to the world of reptiles.

SUNDAY COURSES

Through the Eyes of a Child: Introducing the Museum

5- or 6-year-olds with one adult
Two Sundays
Section A: Oct. 18 and 25;
10:15-11:45 a.m.
or
Section B: Nov. 8 and 15;
10:15-11:45 a.m.
Fee: \$25 (\$23 for Members)

A Museum educator introduces you and a child to the excitement of the Museum. Minerals, plant and animal specimens, and beautiful objects offer children a broader perspective on the world around them. Presented by Marjorie M. Ransom of the Education Department.

Nature Activities for the Very Young

Grades 1 and 2
Four Sundays; Oct. 18, 25,
Nov. 1, and 8
Section A: 10:15-11:15 a.m.
or
Section B: 11:30 a.m.-
12:30 p.m.
Fee: \$25 (\$23 for Members)

Children participate in fall nature activities, from growing seeds to learning about different kinds of leaves. They explore the nature of New York City in the Alexander M. White Natural Science Center; visit there with Sam, a talking starling; and view the exhibition halls. Taught by Mary Croft, early childhood specialist.

Feeding the Birds

Grades 1 and 2
Two Sundays; Oct. 18 and 25;
10:30 a.m.-12:30 p.m.
Fee: \$15 (\$13 for Members)

Bring your window to life during lean winter months with a bird feeder. Learn which seed feeders are best and what birds to expect. Participants will make a bird feeder and go to the exhibition halls to become familiar with the local birds. Presented by Frances Smith of the Education Department.

All About You

Grades 6, 7, and 8
Five Sundays; Oct. 15, Nov. 1,
8, 15, and 22;
10:30 a.m.-noon
Fee: \$30 (\$28 for Members)

Take your blood pressure, listen to your heartbeat, see how blood flows, and "tune" in your senses; through these and other activities, students learn how their bodies work and acquire a better understanding of their anatomy and physiology. Taught by Dr. Betty Faber, entomologist.

In Search of Human Origins

Grades 5 and 6
Two Sundays; Nov. 1 and 8;
2:00-3:30 p.m.
Fee: \$15 (\$13 for Members)

Trace our ancestors through time and observe the evidence scientists use to put together a picture of human origins. Using several Museum exhibition halls, students explore physical

anthropology and human cultural development. Presented by Anita Steinhart, lecturer in anthropology.

SATURDAY WORKSHOPS

Students should bring a bag lunch.

Origami

Grades 5 and 6
Oct. 24; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Origami is a Japanese word for the centuries-old art of folding single sheets of paper, without scissors or paste, to create objects. This introductory workshop teaches participants how to fold a sailboat, a butterfly, and a strawberry, as well as figures decided upon by the students. Presented by Michael Shall, professional paper folder and volunteer origami specialist at the Museum.

Masks from Around the World

Grades 3 and 4
Oct. 31; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Masks play important roles in people's lives: some are used for fun or theater, others for religious ceremonies. In this program, Museum exhibition halls are used to demonstrate how masks are used in different cul-

tures, and students create their own masks. Presented by Shelly Richter, instructor in arts and crafts.

Masks from Around the World

Grades 1 and 2
Nov. 21; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

See the description above for Masks from Around the World. Presented by Blair Durant of the Education Department.

Birding for Beginners

Grades 6, 7, and 8, with one adult
Oct. 31; 10:30 a.m.-1:30 p.m.
Fee: \$15 per child and \$15 per adult (\$13 each for Members)
A parent must enroll along with the child.

The perfect way to begin bird watching. Study skins and mounted specimens, and a talk in the Museum exhibition halls are followed by a short field walk into nearby Central Park. A limited number of binoculars are provided, but those who have their own are encouraged to bring them. Presented by Lisa Breslow of the Education Department.

Dinosaurs

Grades 3 and 4
Nov. 7; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Explore the world of dinosaurs through the Museum's famous collection and through film. Discover what foods dinosaurs ate and what their environment looked like. Participants create their own little dinosaur dioramas. Presented by Alison Loerke of the Education Department.

Leapin' Lizards

Grades 4 and 5
Nov. 7; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Learn how amphibians and reptiles live, what and how they eat, their methods of locomotion, how colors and patterns protect them, and how they reproduce. Through slides, tapes,

and activities in the Hall of Reptiles and Amphibians, students gain an understanding of these fascinating animals. Presented by Carol Townsend of the Department of Herpetology.

Learn to Weave

Grades 7 and 8
Nov. 14; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Learn the basic techniques of simple loom weaving and the origins of woven fabric. Participants build a simple loom and explore simple stitches. Use of yarn, ribbon, fabric, and other materials is demonstrated. Presented by Stephanie Fogel, instructor in arts and crafts and former volunteer at the Museum.

The Hidden Mineral World

Grades 5 and 6
Nov. 14; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Which mineral do you use every time you turn on or off a light switch? What causes some eye makeup to sparkle? Minerals play an essential role in our everyday lives, from the foods we eat to the tools we use. Students explore the world of minerals through the Museum's exhibition halls, games, and hands-on activities. Presented by Alison Loerke of the Education Department.

Native American Games and Crafts

Grades 3 and 4
Nov. 21; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)

Students learn about Native Americans by playing the toss and catch game and the double ball game. They also learn about other elements of Native American life with a visit to the Eastern Woodlands and Plains Indians Halls. Includes a field trip across the street to Central Park to look at plants. Presented by Rob Bernstein, instructor at the New York Botanical Garden.

An Education Department Public Program.

DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____
(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy

Eight Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 1
Instructor: Dr. Engelbrektson
or
Eight Wednesdays, beginning Sept. 30; 6:30-8:40 p.m. Classroom 1
Instructor: Dr. Bartol
Fee: \$80 (\$72 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include the earth as a planet, the moon, the solar system and sun, the stars, the Milky Way and galaxies, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Stars, Constellations, and Legends

Five Tuesdays, beginning Sept. 29; 6:30-8:10 p.m. 5ky Theater
Instructor: Mr. Beyer
Fee: \$60 (\$54 for Members)

An introduction to the lore of the sky. Using the Zeiss projector in the 5ky Theater, this course identifies the prominent stars, constellations, and other objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated. No prerequisites.

How to Use a Telescope

Eight Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 3
Instructor: Mr. Storch
Fee: \$80 (\$72 for Members)

An introduction to the selection and use of a small amateur telescope. Topics include basic optics of telescopes, equatorial and altazimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other aids for observation. No previous knowledge of astronomy is assumed. This course is particularly recommended for those considering the purchase of a telescope.

Understanding the Sky

Six Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 2
Instructor: Mr. Lovi
Fee: \$70 (\$63 for Members)

Why do things occur in the sky the way they do? Why does the length of the day change during the year? What is the midnight sun, and where and when can it be seen? What determines the visibility of the moon and planets? In this new course, we will discuss these and other topics, both in the classroom and in the Sky Theater, where the amazing capabilities of our Zeiss projector will re-create and explain these "heavenly happenings." After taking this course, you will be able to enjoy and appreciate the ever-changing sky show by merely stepping outside your door.

Science in History

Eight Wednesdays, beginning Sept. 30; 6:30-8:40 p.m. Classroom 2
Instructor: Mr. Andersen
Fee: \$80 (\$72 for Members)

Science is an important reason that Western civilization is different from other civilizations on this planet. What are the roots of science? How has science advanced so quickly in just a short span of time? Only four centuries passed between Copernicus and the atomic age — between the scientific revolution that began with the abstract notion that the earth was not in the center of the universe and the present, when scientific policy might affect all life on the planet.

ASTRONOMY: INTERMEDIATE COURSES

Survey of the Planets

Eight Thursdays, beginning Oct. 1; 6:30-8:40 p.m. Classroom 1
Instructor: Ms. Jackson
Fee: \$80 (\$72 for Members)

Information supplied by spacecraft in the past several years has made the planets an exciting subject for scientific study. This course will introduce the planets both as parts of the entire structure of the solar system and as individual bodies. Topics include structure, composition, weather, rings, and

satellite systems of the various planets. Images from the many planetary spacecraft will be used to complement the class lectures and discussions. Prerequisite: *Introduction to Astronomy* is recommended but not required.

METEOROLOGY

Weather and Climate

Eight Thursdays, beginning Oct. 1; 6:30-8:40 p.m. Classroom 2
Instructor: Mr. Rao
Fee: \$80 (\$72 for Members)

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

AVIATION

Ground School for Private and Commercial Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning Sept. 29; 6:30-8:40 p.m. Classroom 3
Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotters, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, federal aviation regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning Oct. 13; 6:30-8:40 p.m. Classroom 3
Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters

Eight Tuesdays, beginning Sept. 29; 6:30-9:00 p.m. Classroom 2
Instructor: Dr. Hess
Fee: \$105 (\$94.50 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

NAVIGATION: INTERMEDIATE COURSES

Introduction to Celestial Navigation

Eight Tuesdays, beginning Sept. 29; 6:30-9:00 p.m. Classroom 1
Instructor: Prof. Pamham
Fee: \$105 (\$94.50 for Members)

For those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

FOR FAMILIES

The courses listed below are intended for the family, so that parents and children may learn together about astronomy and the space age. The courses may be taken by children aged 10 years and over without a parent if desired; however, much of the subject matter may not be appropriate for children under the age of 8. The tuitions are per

person. For additional information about the family courses, please write to the address appearing on the coupon or call (212) 769-5900 (Monday through Friday, 9:30 a.m. - 4:30 p.m.).

Introduction to the Sky

Ten Saturdays, beginning Sept. 26; 9:30-10:20 a.m. Sky Theater
Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

Meeting in the Sky Theater, this course discusses and illustrates the various stars and constellations, some of their lore, and some of the many interesting objects found in the sky.

The Solar System

Ten Saturdays, beginning Sept. 26; 10:30-11:20 a.m. Classroom 1
Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

This course includes a brief overview of historical astronomy and considers the many theories concerning the origin of the solar system, as well as the geology of the planets and their satellites, including the earth and the moon. Additional topics include meteors and meteorites, asteroids, lunar phases, tides, eclipses, and the star of our solar system — the sun. This course, together with *Stars, Black Holes, and Galaxies*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Stars, Black Holes, and Galaxies

Ten Saturdays, beginning Sept. 26; 11:30 a.m. - 12:20 p.m. Classroom 1
Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

Topics include the evolution of the cosmos, star types, life cycles of stars, nebulae, black holes, galaxies, and quasars. Methods and instruments used by astronomers to collect their information will be emphasized. This course, with *The Solar System*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note: only Participating, Donor, and Contributing Members are entitled to the Members' discount.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Home phone: _____

Office phone: _____

Membership category: _____

Please mail this coupon with a stamped, self-addressed envelope and your check payable to the American Museum-Hayden Planetarium to: Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024-5192. Registration by mail is strongly recommended. For additional information, call (212) 769-5900, Mon.-Fri., 9:30 a.m.-4:30 p.m.

Community Workshops

This month and next, the Department of Education presents a series of participatory programs whose theme is cultural expression through traditional crafts, music, and dance. Some of these workshops are exclusively for adults, and some are designed for the combined participation of adults and children aged 8 and older.

FOR ADULTS

African Batik

Instructor: Selina Ahoklui
Two Saturdays, Sept. 12 and 19; 1:30–5:30 p.m.
Fee: \$25

Batik is a textile tradition throughout West Africa. This workshop introduces the historical background and technique of authentic adire art. Complete a batik of your own, using parafin and commercial dyes.

Chiapas Maya Weaving

Instructor: Maruka Campos
Two Saturdays, Sept. 12 and 19; 11:00–5:30 p.m.
Fee: \$25

An introduction to the culture of the Maya and the ancient technique of backstrap weaving. Participants learn to make a *faja*, the traditional sash worn by Maya women.

Calabash Art: The Shekere

Instructor: Madeleine Yayodele Nelson
Three Saturdays, Oct. 10, 17, and 24; 12:00–2:00 p.m.
Fee: \$25

Learn how to make a *shekere*, a musical instrument made from a gourd and beads or shells. The *shekere*'s traditional uses will also be discussed.

Introduction to African Drum-making

Instructor: Kobla Mensa Dente
Four Sundays, Sept. 13, 20, 27, and Oct. 4; 11:00 a.m.–1:00 p.m.
Fee: \$25

Learn how to make a traditional African drum — the heartbeat of African music — used in ceremonies, rituals, and festivals.

Advanced African Drum-making

Instructor: Kobla Mensa Dente
Five Sundays, Sept. 13, 20, 27, and Oct. 4 and 11; 1:30–4:30 p.m.
Fee: \$35

This workshop is for those with prior drum-making (carving) experience or those who have taken previous classes with Mr. Dente.

Afro-Caribbean Dance

Instructor: Pat Hall Smith
Three Sundays, Sept. 13, 20, and 27; 11:00 a.m.–1:00 p.m.
Fee: \$20

An introduction to Caribbean culture through dance. Dance to drum rhythms and learn movements and relationships of the musical rhythm to the dances and songs.

Rhythms of the Senegambia

Instructor: Obara Wali Rahman and Company, with a guest artist from Senegal
Three Sundays, Oct. 4, 11, and 18; 12:00–2:00 p.m.
Fee: \$20

An introduction to the culture of the Senegambia and its relationship to drumming and dance traditions. Learn basic movements and social dances that express the experience of the Senegambians.

Beadwork of Cameroon I

Instructor: Carmen Lowe
Saturday, Oct. 17; 11:00 a.m.–5:00 p.m.
Fee: \$25

Discover the rich heritage of Cameroon artisans and view their traditional and contemporary beadwork techniques. Use these techniques to design and complete a project of your own.

Beadwork of Cameroon II

Instructor: Carmen Lowe
Sunday, Oct. 18; 11:00 a.m.–5:00 p.m.
Fee: \$25

This workshop, for participants who have completed Beadwork of Cameroon I, introduces the technique of sculptured beadwork using cloth. Cameroon I or prior beadwork experience is a prerequisite.

Tap Dance

Instructor: Charles "Cookie" Cook, assisted by Mickey Davidson
Three Saturdays, Sept. 12, 19, and 26; 11:00 a.m.–1:00 p.m.
Fee: \$20

Learn traditional tap choruses to great jazz standards like "Take the A Train," "A Night in Tunisia," and others from one of the tap dance masters. This workshop is funded in part by a grant to Mr. Cook from the National Endowment for the Arts and the New York Foundation for the Arts Fellowship.

FOR ADULTS OR YOUNGSTERS

Minimum age: 8 years

Puerto Rican Maskmaking

Instructor: Josephine Monter
Four Sundays, Sept. 13, 20, 27, and Oct. 4; 11:00 a.m.–4:00 p.m.
Fee: \$25

In Puerto Rico, masks are used in many celebrations. Participants will create colorful papier-mâché masks inspired by these celebrations and derived from African, Spanish, and Taino Indian roots.

Taino Indian Art

Instructor: Miguel Paz
Three Sundays, Sept. 13, 20, and 27; 2:30–4:30 p.m.
Fee: \$20

Learn about Taino Indian culture through art, and create facsimiles of pre-Columbian Taino Indian wooden art pieces.

The Art of Puppetry

Instructor: Schroeder Cherry
Three Saturdays, Sept. 12, 19, and 26; 11:00 a.m.–1:00 p.m.
Fee: \$25

Create individual puppets, discover how they reflect our culture, and perform in a class presentation.

To register, please use the adjacent coupon (workshops fill quickly, so please mail early). For further information, call (212) 769-5315. These programs are made possible in part by a gift from the William R. Hearst Foundation.

An Education Department Public Program.



Masks conceal identity, transform personality, and ward off evil.

DEPARTMENT OF EDUCATION Community Workshops

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime telephone: _____

I would like to register for the following workshop(s):

| | |
|---|------------------------------------|
| African Batik (\$25): _____ | Afro-Caribbean Dance (\$20): _____ |
| Maya Weaving (\$25): _____ | Beadwork I (\$25): _____ |
| Calabash Arts (\$25): _____ | Beadwork II (\$25): _____ |
| Drum-making I (\$25): _____ | Puerto Rican Masks (\$25): _____ |
| Drum-making II (\$35): _____ | Taino Indian Art (\$20): _____ |
| Tap Dance (\$20): _____ | Puppetry (\$20): _____ |
| Rhythms of the Senegambia (\$20): _____ | |

Total amount enclosed: _____

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Community Workshops, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Colors of the Rainbow

Sunday, October 18
1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50 for Members, \$5 for non-Members

Follow the Rainbow Road Dancers to a Members' family program of prismatic delights. *Colors of the Rainbow*, an educational dance program geared toward children between 5 and 12 years old, features modern dance and theater pieces and a dazzling array of music, costumes, and special effects that is sure to please both young Members and Members who are young at heart.

The evolution of life on our planet, from sea-dwelling invertebrates to humankind, is traced in the dance "Origins." Inspired by some of the Museum's exhibits, "Origins" depicts the rise and fall of the dinosaur as well as the emergence of fish, birds,

and fellow mammals that are with us still.

A lone fisherman's relationship with sea creatures is the subject of "Water Dance," which is performed to music by Raffi, a popular children's songwriter and player. "Dots and Dashes," a modern dance, depicts round and straight shapes.

"Colors," which features jazz music and recited prose, focuses on rainbows, the spectrum, the creation of new colors through a mixture of primaries, and the relationship of color to mood. This story-theater dance explains the perception of color by evoking life in a world without color and its vivid transfor-

mation through the work of a wizard.

The Rainbow Road Dancers — Nadine Grisar, Teri Schenk, and Diana Tanzosh — have been performing together since 1981. Their imaginative presentations have captured the fancy of numerous school and community groups throughout the Greater New York area as well as audiences at Central and Prospect parks and here at the Museum.

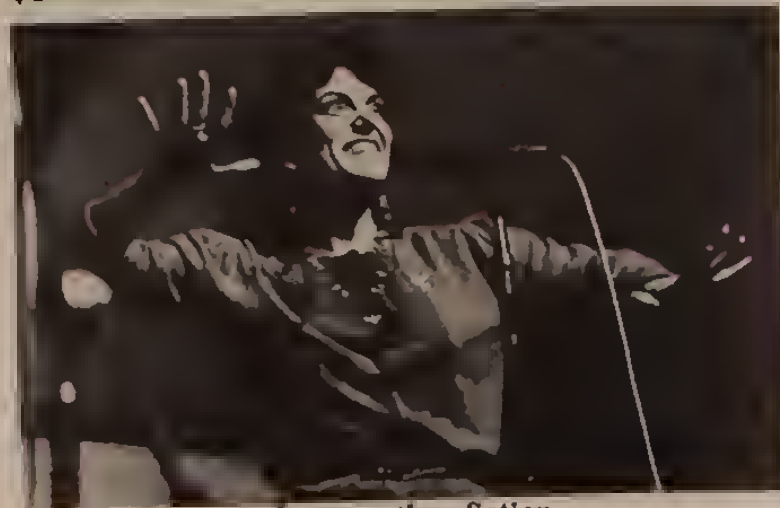
The performance is 45 minutes long and encourages audience participation. To register for *Colors of the Rainbow*, please use the September Members' programs coupon on page 3.



"Origins," a dance inspired by Museum exhibits.

Ghost Stories

Friday, October 30 (for adults)
7:30 p.m.
Saturday, October 31 (for families
with children aged 7 and older)
1:00 and 3:00 p.m.
Kaufmann Theater
\$3 for Members, \$5 for non-Members



Stranger than fiction

Storyteller Laura Simms returns to the Museum next month to enchant Members young and old with *Ghost Stories*. In an all-new program about restless spirits, magic, and witchcraft, Simms recounts events from the eerie and uncanny worlds of fairy tales and myth and the New York subway. The stories, she declares, are all true — or could be.

The Friday evening program for adults features a Tibetan story of a talking corpse that was told to Simms by a Buddhist Lama, a Russian fairy tale about the Mother of Death, and the North African epic of *Buffalo* Panther Woman. Saturday's

program, for children aged 7 and older, promises spooky fun.

Simms is one of America's foremost performers of international folklore and true-life stories. She has appeared throughout the United States, Canada, Europe and the South Pacific, interpreting oral traditions of ancient cultures for audiences of all ages. Her programs are a Halloween tradition at the Museum, where they have enthralled sold-out audiences for the past six years.

To register for *Ghost Stories*, please use the September Members' programs coupon on page 3.

Birthday Parties at the Museum

The restless young explorer, the budding paleontologist, the future astronaut — what do they have in common? Custom-made birthday parties at the Museum, that's what. The Membership Office has three different kinds of parties, designed for dinosaur lovers, safari-goers, and the starry-eyed.

A round of dinosaur trivia pursuit or of the dinosaur skeleton game begins — what else? — the Dinosaur Parties. Party-goers also see the dinosaur mummy and a nest of dinosaur eggs, touch a dinosaur tooth, and make fossils of their own. The parties are highlighted by a trip to the dinosaur halls, which star *Tyrannosaurus*, the dinosaur king, and his consortium of prehistoric pals, including the horny-headed *Triceratops* and the armor-backed *Stegosaurus*.

Children get the feeling of the Safari Parties by touching a warhog tusk and an ostrich egg. The partyers then enter safari territory — the halls of African Mammals and Man in Africa — to search for elephants, gorillas, and rhinoceroses and to learn about the different ways in which people have adapted to the African environment. After

the safari, each child makes an African animal mask.

Party-goers reach for the sky at the Star Parties, which feature a screening of a Planetarium show. Afterward, the children tour the Planetarium's exhibition halls, then return to the party room to make a flying saucer or a cardboard rocket, hold a meteorite, and play musical planets. We are also developing a program in conjunction with the new Naturemax feature *Grand Canyon: The Hidden Secrets*.

The parties are geared toward 5- to 10-year-olds. There can be a minimum of 10 children and a maximum of 20 children. The parties last for two hours, and the price — \$195, plus \$10 per child — includes all materials, room decorations, a special favor bag (with a month's complimentary membership pass), ice cream, and juice. Cake is not included, and lunch or dinner is extra. The parties are held on weekends at either 11:00 a.m. or 2:30 p.m. and on Wednesdays and Fridays after 4:00 p.m.

Please call (212) 769-5600 for reservations. We are now booking for November 1987 through January 1988.

Museum Notes

Special Exhibitions and Highlights

For panda fanciers who'd like a closer look, *The Giant Panda Exhibit* in the Roosevelt Rotunda offers an ideal view. The mounted pandas, which have been among the Museum's collections since the early 1900s, appear on an open platform in natural habitat settings.

The world's largest cut gem, *The Brazilian Princess*, is also on display in the Roosevelt Rotunda. Approximately the size of an automobile headlight, the pale blue topaz tips the scales at 21,005 carats.

The Museum was founded in 1869, its cornerstone laid in 1874, and its first structure was completed in 1877. Its construction was a task that required the combined skills of Hercules and Croesus. *Architecture for Dinosaurs*, in the Akeley Gallery, is a pictorial history of an epic feat.

The Library Gallery features a salute to the *Ladies in the Field: The Museum's Unsung Explorers*. Photographs, diaries, published monographs, and mementos chronicle the contributions of women to the development of the Museum.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday,

Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600. Parking is not free during the Margaret Mead Film Festival.

Coat Checking. Daily, from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

Gifts Galore. Books, jewelry, and international clothing are just a few of the delightful souvenirs available at the Museum Shop. Located on the first floor near the 77th Street foyer, the Museum Shop is open every day from 10:00 a.m. to 5:00 p.m. and till 7:45 p.m. on Wednesdays. Children's natural history items are available in the Junior Shop, located in the lower level near the subway entrance and open every day from 10:00 a.m. to 4:45 p.m.

The Museum Library. One of the world's great natural history collections, the Library is on the fourth floor near the Hall of Earth History and open for research from Monday through Friday, 11:00 a.m. to 4:00 p.m. and till 9:00 p.m. on Wednesday.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of

whitewater rafting along with early explorers in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

Let's Eat

The Food Express, located on the lower level near the subway entrance, offers cafeteria-style service daily from 11:00 a.m. to 4:45 p.m.

For a more leisurely meal, go next door to the American Museum Restaurant, which serves lunch from 11:00 a.m. to 4:00 p.m., Monday through Friday, and dinner on Wednesday, Friday, and Saturday from 5:00 to 7:30 p.m. The restaurant also serves tea from 4:00 to 5:00 p.m. every day, and Saturday and Sunday brunch from 11:00 a.m. to 4:00 p.m. Members receive a 10 percent discount. Reservations, which are suggested, can be made by calling (212) 874-3436.

Cocktails can be had on Wednesday in the *Lion's Lair*, from 3:30 to 7:30 p.m., and on Saturday and Sunday from noon to 5:00 p.m. There is no admission fee for the cash bar, which is located on the first floor in the Hall of Ocean Life.

Miss the Mead? Here's a second chance

\$4 for Members, \$5 for non-Members
Prices are per program



Our God the Condor

The Margaret Mead Film Festival repeats five of this year's premiering films in a post-Festival weekend. Ticket sales start at noon on the date of the showing.

For further information, please call (212) 769-5305.

Saturday, September 19 Linder Theater

Program A: 1:00 p.m.: *Born Again*

Program B: 3:00 p.m.: *What Is a Jew to You?*
Our God the Condor

Program A: 5:00 p.m.: *Born Again*

Program B: 7:00 p.m.: *What Is a Jew to You?*
Our God the Condor

Sunday, September 20 Kaufmann Theater

Program C: 1:00 p.m.: *Threat*
Daughters of the Midnight Sun

Program A: 3:00 p.m.: *Born Again*

Program C: 5:00 p.m.: *Threat*
Daughters of the Midnight Sun

Program A

Fundamentalist Christians remain little understood, despite their reshaping of our social and political landscape. *Born Again*, by James Ault and Michael Camerini, is an intimate portrait of a Moral Majority community in Massachusetts. The pastor struggles in the face of household dissent and teenage rebellion to minister to the "sin-sickness" of his flock. (89 mins.) USA

Program B

Australian filmmaker Aviva Ziegler turned the camera on herself to answer questions of ethnic identity in *What Is a Jew to You?* The result is not an anguished search, but rather a wry look at some of the confusions and paradoxes that can be part of being Jewish. (50 mins.) Australia

In *Our God the Condor*, Andy Harries and Paul Yule ascended to the Peruvian Andes among the Quechua Indians of Cuzco to film the symbolic reenactment of the Spanish-Indian struggle. Tied to the back of a bull, a giant condor enters into mythological confrontation in this spectacular struggle for identity. (30 mins.) Great Britain

Program C

The Lapp (Sami) people, who are dependent upon reindeer herding, have lived in northern Scandinavia since ancient times. In April 1986, fallout from the Chernobyl nuclear accident contaminated a significant portion of their herds. *Threat*, by Swedish filmmaker Stephan Jarl, is a compelling examination of this ecological and cultural catastrophe. (72 mins.) Sweden

Daughters of the Midnight Sun, by Peter Östlund and Ylva Floreman, provides another insight into Lapp (Sami) culture before Chernobyl through a group of young women. Their nomadic life belongs to the past, but for a few weeks each summer they return to the mountains to live as before. (40 mins.) Sweden

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through September 7. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space to the greatest wonders of the universe.

The double feature of *Cosmic Illusions* and *Space Telescope* premieres on September 10. See page 2 for details.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 1:00, 2:00, 3:00, and 4:00 p.m., and Sunday at 1:00, 2:00, 3:00, and 4:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special, magical friend for a tour of the planets. *Cardboard Rocket* will be shown at 11:00 a.m. on September 19, and at noon on October 17. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

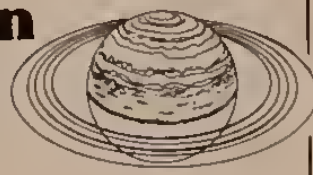
Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on October 10 and November 7. Admission for Participating, Do-

nor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in "Laser Genesis," featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission is \$6 per show. Call (212) 769-5921 for further information.



Sun

Mon

Tue

Wed

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Fri

Sat

September 1987

1

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Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free
outside NY State: (800) 462-8687



7 Last chance to see *The Seven Wonders of the Universe* at the Hayden Planetarium.

Full moon.

8 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

9 7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

10 1:30 p.m. The double feature *Space Telescope* and *Cosmic Illusions* premieres at the Hayden Planetarium Sky Theater. See page 2 for details of a Members' private viewing.

12 Community Workshops, offered by the Department of Education, begin. Page 13.

14 6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10.

Last-quarter moon.

15 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4.

6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Pages 7-10.

7:15 p.m. Lapidary and Gem Society. Room 319. Free.

16 6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10.

17 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4.

6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10.

Moon at apogee.

19 1:00 p.m. Margaret Mead Film Festival (repeats). Linder Theater. \$4 for Members, \$5 for non-Members. Page 15.

20 1:00 p.m. Margaret Mead Film Festival (repeats). Kaufmann Theater. \$4 for Members, \$5 for non-Members. Page 15.

2:00 p.m. New York Paleontological Society. Room 419. Free.

22 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4. Members on the "Sail Polynesia" Discovery Tour arrive at the Tuamotu Archipelago.

Autumnal equinox.

24

26 Origami Special Sessions, offered by the Friends of The Origami Center of America, begin. Page 2.

Members on the "Sail Polynesia" Discovery Tour explore the island of Nuku Hiva in the Marquesas Islands, immortalized by Herman Melville in his novel *Typee*.



New moon.

28 Courses for Stargazers at the Hayden Planetarium begin. Page 12.

27 1:30 and 3:30 p.m. Jack's Big Bug Show. Members' Family Program. Kaufmann Theater. Free and open only to Members. Tickets required. Page 3.

30 7:30 p.m. Sankofa Music. Kimati Dinizulu and his Kotoko Society use traditional instruments and techniques in a performance of African-derived music. Main Auditorium. Free.

First-quarter moon.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 9 October 1987



The new exhibition in Gallery 1 portrays the changing views on dinosaur behavior. Although initially supposed to be lumbering, slow-witted creatures, recent discoveries indicate that some dinosaurs were swift and socially cooperative.

Dinosaurs Past and Present

Exhibition opens Friday, October 9
Gallery 1

Their mouths watering around a fearful armament of teeth, the hungry Tyrannosaurs are locked in a standoff. Having formed a protective circle around their young, the Triceratops present a united front of bony frills and fierce horns. This image by illustrator Mark Hallett is among the 140 paintings, drawings, sculptures, and models in the new exhibition *Dinosaurs Past and Present*, which chronicles the 125-year history of scientific and artistic collaboration. The exhibition also addresses ever-intriguing questions about how dinosaurs really looked and behaved.

Using careful comparative studies and a series of associated bones, paleontologists can re-create the skeletal form of a long-extinct species. They can determine the animal's size and arrangement of muscles by the size of the bones and their interrelationship. But beyond the flesh is a puzzle indeed: scales, feathers, fur, or hair? And in what color patterns? Artists, in close collaboration with paleontologists, interpret the outer aspect. Organized by the Los Angeles County Museum of Natural History, *Dinosaurs Past and Present* features some of the earliest attempts at realistic portrayals of

dinosaurs in their natural habitat as well as modern-day interpretations, such as the gouache illustration above and Stephen Czerkas's 20-foot sculpture of an *Allosaurus*. A savage carnivore with saberlike teeth, *Allosaurus* had hinged, snakelike jaws that were well suited to consumption of huge hunks of meat or entire small animals. This agile dinosaur walked on two powerful legs with its heavy tail stretched out behind for balance. Czerkas's life-sized sculpture shows details of *Allosaurus*'s skin. The exhibition will be on display through January 3.

Junior Science

Children observe exciting experiments and even conduct a few of their own in the Members' program *Chemistry for Kids*.
Page 6

Africa Month

Africon Art: Origins and Progressions, a three-part lecture series, and *The Africon Review*, a musical performance, complement the weekend series of programs celebrating Africa Month at the Leonhardt People Center.
Page 4

Something Fishy

Incredible as it seems, aquatic creatures can be desert-dwellers. Ichthyologist Michael Smith describes for Members his study of *Desert Fish* — where they came from and how they survive in their harsh environment.
Page 3

Mead Festival Highlights

Musicians, dancers, and artists of many cultures are profiled in the film series *Art and Artisans*. This traveling program of features from past Margaret Mead Film Festivals premieres next month at the Museum.
Page 2

Members' Preview

Before the doors open to the general public, Members will explore Gallery 3's rich profusion of mosaics, bronzes, and jewelry in a special preview of the new exhibition *Carthage: A Mosaic of Ancient Tunisia*.
Page 6

Art and Artisans

Film Program and Symposium Celebrating the Margaret Mead Film Festival

Saturday, November 7, and
Sunday, November 8
Kaufmann Theater
Free



Stilt Dancers of Long Bow Village

The American Federation of Arts has organized a traveling exhibition of films from past Margaret Mead Film Festivals on the theme *Art and Artisans*. To celebrate the start of a national tour of the exhibition, eleven select works will be presented over one weekend.

In conjunction with the Saturday program, there will also be a symposium on filming music and dance, featuring a panel of filmmakers and anthropologists. Seating for these programs is on a first-come, first-served basis. For further information, please call (212) 769-5305.

Saturday, November 7 Program I: Music and Dance in Society 12:00 p.m.

Learning to Dance in Bali, by Gregory Bateson and Margaret Mead. 1937, 7 mins.

Songs of the Badius, by Gei Zantinger. 1986, 33 mins. Mu-

sic, dance, and life on the Cape Verde Islands.

Mountain Music of Peru, by John Cohen. 1984, 60 mins. 2:00 p.m.

Symposium on Filming Music and Dance. Guests: John Cohen, Gei Zantinger. Moderator: Malcolm Arth.

Sunday, November 8 Program II: Reviving Ancient Traditions 12:00 p.m.

Stilt Dancers of Long Bow Village, by Richard Gordon and Carma Hinton. 1980, 27 mins. A festival in China is revived after years of being banned during the Cultural Revolution.

Our God the Condor, by Andy Hamies and Paul Yule. 1987, 30 mins. A spectacular Peruvian ceremony.

Joe David: Spirit of the Mask, by Jennifer Hodge and Robert Lund. 1984, 24 mins. The work of a Northwest Coast native artist.

Program III: Portraits of the Individual Artist 2:00 p.m.

Steady as She Goes, by Robert Fresco. 1981, 26 mins. A ship model maker plies his art.

Imaginerio, by Jorge Preloran. 1971, 60 mins. A Renaissance man of the Argentine altiplano.

Program IV: Women and Cultural Continuity 4:00 p.m.

Sabina Sanchez and the Art of Embroidery, by Judith Bronowski and Robert Grant. 1976, 20 mins. A remarkable grandmother.

Munni, by Ray Owens, Ron Hess, and Cheryl Graff. 1983, 28 mins. A young girl in India learns the traditional arts.

Quilts in Women's Lives: Six Portraits, by Pat Ferrero. 1980, 28 mins. Meaning is in the eye of the beholder — as is beauty.

An Education Department Public Program.

Wanted: Highlights Tour Guides

Everyone who has ever followed the orange flag of a Museum Highlights Tour has walked away with a fresh store of fascinating information. Perhaps you've taken a tour and marveled at your volunteer tour guide's extensive knowledge of the Museum's exhibits and their history. If you sincerely wish to be as well versed as a Museum Highlights Tour Guide and would like to share your knowl-

edge with others — you can! To qualify, volunteers undergo intensive training. After qualifying, guides regularly conduct tours: weekend guides three times a month and weekday guides once each week.

Before you apply, take a Museum Highlights Tour and see what it's like. If you're interested, call the Volunteer Office at (212) 769-5566 and ask for an application form.

Music Under the Stars

Tuesday, October 20
7:00 p.m.

Planetarium Sky Theater

\$5 for Members, \$8 for non-Members

This month's concert at the Hayden Planetarium, featuring Michel Deneuve of Paris, will serenade Members under the stars. Deneuve will perform works by Mozart, J.S. Bach, and Erik Satie on a unique instrument called *La Crystal*, which vibrates with tones similar to those of a violin at the touch of moistened fingers. The instrument's metal rods conduct the vibrations to resonators, producing melodies of unearthly beauty.

Deneuve has performed with *La Crystal* in European planetariums, and this concert marks his U.S. planetarium debut. The Hayden Planetarium's unique array of outer-space vistas and laser visuals will accompany the music, along with a new special effect: a live TV projection of the musician performing against the starry sky.

To register for *La Crystal*, please use the October Members' programs coupon on page 3.

Double Your Pleasure

Members' Private Viewing

On Thursday, October 8, Participating, Donor, and Contributing Members can attend a private viewing of the Planetarium's current double feature, *The Space Telescope: New Eyes on the Universe* and *Cosmic Illusions*. The Members' private viewing will feature the special addition of a brief magic show. For further details of these new Sky Shows, please see "Happenings at the Hayden" on page 7.

Showtimes for the private viewing are at 6:00 and 8:00 p.m., and admission is \$2.75 for adults and \$1.50 for children. For ticket information, please call the Membership Office at (212) 769-5600.



The Space Telescope

ROTUNDA

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Every Witch Way

Friday, October 30 (for adults)

7:30 p.m.

Saturday, October 31 (for families with children aged 7 and older)

1:00 and 3:00 p.m.

Kaufmann Theater

\$3 for Members, \$5 for non-Members

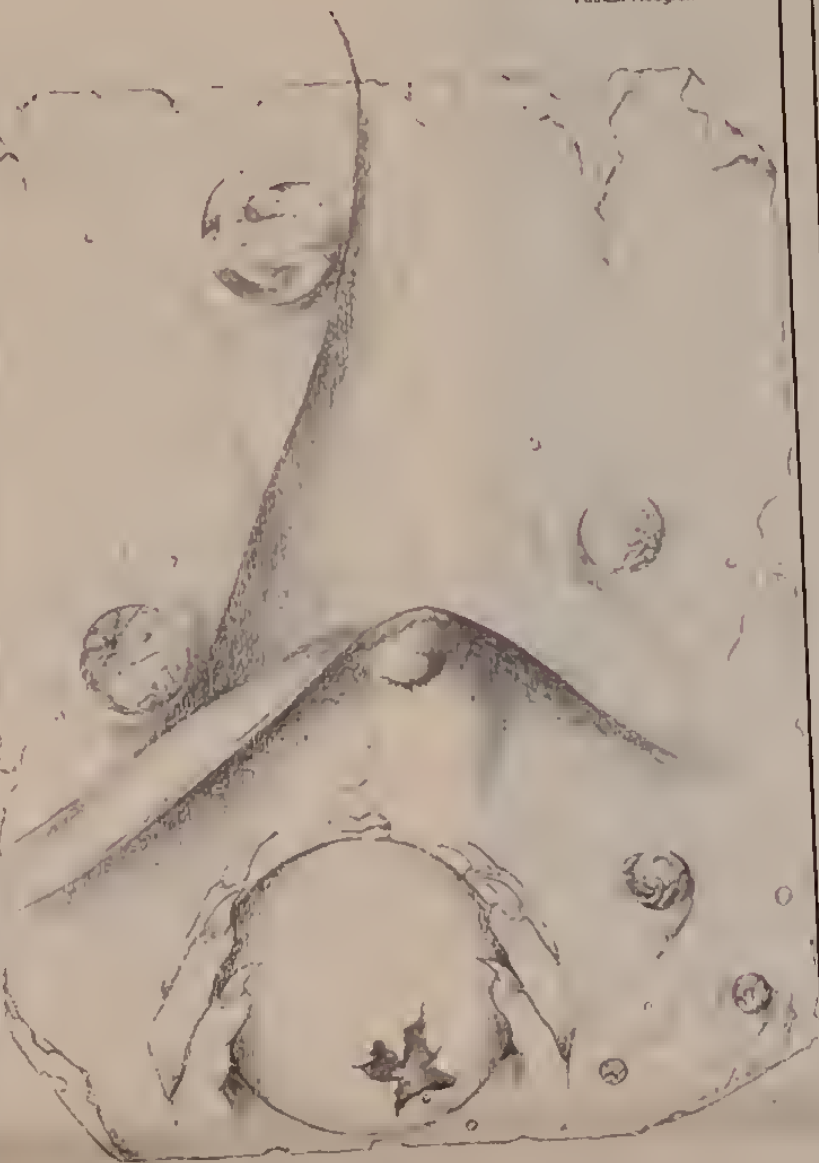
Patricia Hodgson

"You'll wake up in the morning and feel extremely thirsty, and you'll go to have some water, but you won't be able to drink from the glass because your lips will be so dry and tight. When you look in the mirror, you'll see that your lips are curled up and your nose has grown all the way out to your chin. Suddenly, you'll feel your shoulders creeping way up to your ears. . . ."

Members experiencing any of the symptoms described above, beware! You've been bewitched. For those not yet spellbound, Laura Simms's performance of *Ghost Stories* guarantees to get you ready for Halloween.

An acclaimed performer of international folklore and true-life stories, Simms has presented popular storytelling programs at the Museum for the past six years. Epic, myth, and fairy tale — taught to Simms by Tibetan Buddhist lamas, Maori elders, and Native American storytellers — are among her bailiwick, along with the eerie edge of everyday life.

Friday night's program is for adult audiences, and the Saturday shows are geared toward children aged 7 and older. To register for *Ghost Stories*, please use the October Members' programs coupon.



Visionary tales to astonish and delight

Desert Fish

Tuesday, November 17

Main Auditorium

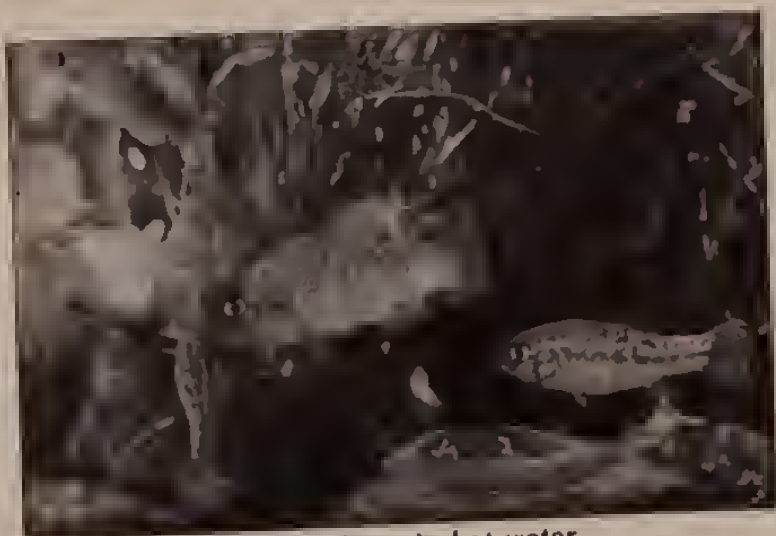
7:30 p.m.

Free for Members, \$5 for non-Members

For the past 10 years, Michael Smith has studied fish that inhabit one of the harshest places in the world: the deserts of North America. Although a desert is one of the last places you might expect to find a fish, almost 150 species of fish exist in some of North America's most arid regions.

During his field work, Dr. Smith has observed a pupfish in Death Valley that survives in water with a salinity of up to 2½ times greater than that of seawater — the highest salinity level tolerated by any vertebrate in nature. He has also encountered an entire species that dwells in a body of water no bigger than a bedroom, fish that inhabit water with an average temperature of 113 degrees Fahrenheit, and fish with a reproductive cycle that's triggered by sudden changes in their environment.

Dr. Smith is the Kalbfleisch Assistant Curator in the Department of Ichthyology. His discussion of the fascinating



These fish are in hot water.

lives of these fish will be accompanied by a rich assortment of slides, and he'll describe the incredible and often bizarre physical and behavioral characteristics that enable the fish to survive in their extreme environments.

Using clues from the fossil record, the present marine environment, and his own observations of the fish, Dr. Smith answers the perplexing question

of how these creatures arrived in their unlikely desert habitat. His explanation is a surprising one, and it contradicts the assumptions of many evolutionary biologists. Dr. Smith will also discuss recent field work in the Dominican Republic that may further illuminate his findings.

To register for Desert Fish, please use the October Members' programs coupon.

October Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: October Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

La Crystal. Tuesday, October 20, 7:00 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Colors of the Rainbow. Sunday, October 18, 1:00 and 3:00 p.m. \$2.50 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times.

_____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Ghost Stories. Friday, October 30, 7:30 p.m. (for adults), and Saturday, October 31, 1:00 and 3:00 p.m. (for families). \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of Saturday showtimes, if possible:

_____ 7:30 p.m., Friday, October 30 (for adults)

_____ 1:00 p.m., Saturday, October 31 (for families)

_____ 3:00 p.m., Saturday, October 31 (for families)

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Members' Preview of *Corthoge: A Mosole of Ancient Tunisia*. Sunday, November 22, 10:00 a.m.—4:00 p.m. Free and open only to Participating, Donor, and Contributing Members. Indicate a first and second choice of times, if possible:

_____ 10:00 a.m.—12:00 p.m. _____ 12:00—2:00 p.m. _____ 2:00—4:00 p.m.

Number of tickets: _____

Chemistry for Kids. Sunday, November 15, 1:00 and 3:00 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times, if possible:

_____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Desert Fish. Tuesday, November 17, 7:30 p.m. Free for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$5.

Number of tickets: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

African Art: Origins and Progressions

The Department of Education, in association with the Arts and Entertainment Alliance, presents a three-part program on African art and its influences on twentieth-century art in the Americas. Seating for these free presentations is limited and on a first-come, first-served basis. This program is made possible in part by a gift from the William R. Hearst Foundation. For information, call (212) 769-5315.

Perspectives on Ancient African Art

Wednesday, October 7
7:00 p.m.
Kaufmann Theater

Lecturer:
Dr. Rosalind R. Jeffries

This initial program offers a comparison of African art's ancient and modern aesthetics and cosmological concerns. Rosalind Jeffries, art historian and curator of education at the Center for African Art in New York City, uses slides of exhibits in the Museum's Hall of Man in Africa and in the Center for African Art to illustrate cross-cultural distinctions in artistic taste. The art of Nigeria, Zaire, and the Ivory Coast reflects the concepts and values of each people. Dr. Jeffries compares visual and literary symbols with viewpoints of contemporary artists and writers such as Romare Bearden and James Baldwin.

Neo-African Art: A New Movement in Contemporary Sculpture

Wednesday, October 14
7:00 p.m.
Kaufmann Theater

Lecturer:
Dr. George Preston

The sculptors of neo-African art inherited the styles of tribal Africa. Although stated in late twentieth-century visual vocabularies and materials, their work is based on structural principles of traditional African sculpture. Dr. Preston, who is with the Department of Art at the City College of New York, explores the ways in which the makers of



West African ancestral figure

neo-African art have synthesized an intellectual understanding of classical African art with a personal embrace of spiritism. In his slide-illustrated lecture, Dr. Preston examines the works of several contemporary artists from Brazil, the Caribbean, and the United States.

African Influence on Contemporary Art

Wednesday, October 21
7:00 p.m.
Kaufmann Theater

Panel Discussion
Several artists of the early twentieth century — including Picasso, Derain, and Matisse — incorporated elements of African art into their works. The final program of this series exam-

ines the expression of African influence by contemporary black artists. Is their work a conscious translation of African artistic values, or is it the result of ancient cultural retentions?

A panel of accomplished artists discusses the impact of African art on their individual development and styles and on contemporary black art in the Americas. The discussion will be moderated by Deidre Bibby, arts collection manager and head of the arts and artifact section of the Schomburg Center for Research in Black Culture. Panelists include painter and educator Charles Searles and Yoruba sculptor Lamidi Fakeye.

An Education Department
Public Program.

Field Class in Bird Identification in Central Park

Tuesdays and Thursdays, 7:00–9:00 a.m.
October 1, 6, 8, 13, and 15

Join naturalist Stephen C. Quinn in a series of morning field walks specifically designed to observe the fall migration of birds through Central Park. Participants will learn about field marks, habitat, behavior, and

song as a means of species identification.

The fee for this program is \$4, to be paid each morning before the walk starts (there is no preregistration). Classes meet across the street from the

Museum, on the northeast corner of Central Park West at 77th Street. For further information, please call (212) 769-5310.

An Education Department
Public Program.

The African Review

Wednesday, October 28
Main Auditorium
7:30 p.m.
Free

An exciting look at the music and dance of Africa, *The African Review* showcases ancient and modern aspects of diverse ethnic groups. Featured performers are Ensemble Afriq, an African orchestra; the African Folkloric Dancers; the Sabar Ak Ru Afriq Dance Theater; and Kayraba, an authentic West African dance company. Regionally varied and often contrasting traditions come to life on stage.

This program is made possible in part by a gift from the William R. Hearst Foundation and is cosponsored by the New York State Office of Parks, Recreation, and Historic Preservation. Seating is on a first-come, first-served basis. For further information, please call (212) 769-5315.

An Education Department
Public Program.

Celebrate Africa Month

1:00 to 4:30 p.m.
Leonhardt People Center
Free

This month, the weekend demonstrations and performances at the Leonhardt People Center celebrate African cultures. Presentations are repeated several times each afternoon, and seating is limited and on a first-come, first-served basis. For further information about these programs, which are made possible by gifts from the Frederick H. Leonhardt and William Randolph Hearst Foundations, call (212) 769-5315.

October 3 and 4

Dances of the Mandinka. Kayraba, an authentic West African dance company, performs music and dance from Senegal and Gambia.

Marionettes: Performance Objects of Ritual and Myth. Puppeteer and collector Schroeder Cherry displays authentic African marionettes and discusses their role in society (October 3 only).

Geles. Selina Akua Ahoklui demonstrates the uses of this head wrap and discusses its cultural significance (October 4 only).

The Silent Mainstay of the African Family. Charlotte Ami Amezor illustrates the structure and maintenance of family and community life in African societies.

October 10 and 11

African Masquerade. MFOA (Message from Our Ancestors) explores masquerades and their role in the secret societies of Chakaba, Egunoko, and Koumpos of the ancient Mali Empire.

Yoruba Musical Instruments. Solomon Ilori discusses and demonstrates the function of instruments in Yoruba society, emphasizing the *dundun*, *ganga*, *kannogo*, and *sabara* (talking drums).

African Folk Culture. Kwame Nkrumah performs stories and songs that have been passed down from generation to generation.



African mask

October 17 and 18

Music of Change. David Pleasant's Multi-Ethnic African Music Ensemble performs music that expresses goals of social and political reform.

Roles of Women. Sonia Kelly explores roles of women in African societies, examining the influences of urbanization on traditional life styles.

Apartheid and its Neighbors. Rob Jones, projects director at the American Committee on Africa, discusses current developments in South Africa and the effects of apartheid on neighboring countries.

October 24 and 25

Ghanaian Highlife Music. Kimati Dinizulu and Company demonstrate styles of highlife music from traditional to contemporary.

West African Sign Painting. In this slide-illustrated presentation, Christine Kristen explores the phenomenon of hand-painted signs in Ghana and Nigeria.

The African Marketplace. Selina Akua Ahoklui discusses the social and economic significance of the market in African culture.

An Education Department
Public Program.

Ancient Eskimo Ivories of the Bering Strait

Exhibition opens Friday, October 9
Naturemax Gallery

More than 160 historical ivories, remarkable for their sculptural quality, engraved designs, and relief carvings, are on display in the new exhibition *Ancient Eskimo Ivories of the Bering Strait*. The ivories date from between 300 B.C. and A.D. 1200 and were discovered within the past 60 years along the shores of the Bering Strait area of Saint Lawrence Island, the Chukchi Peninsula, the Seward Peninsula, and Point Hope.

Most of the ivories are closely related to the everyday life of the ancient Eskimo; for example, the sea mammals that the Eskimo hunted as their major source of sustenance are prominently represented among the ivories. Also on display are ornamented harpoon fittings, such as heads, foreshafts, counterweights, and socket pieces; implements such as scrapers and handles of pails, knives, and adzes; toggles, needle cases, and snow goggles. About half of the ivories are human and animal figures that may have been used for ceremonial purposes.

Originally off white, some of the artifacts took on shades of yellow, brown, and black from many years of burial. They are carved primarily from walrus

ivory and bear incised decorations of flowing curvilinear patterns and parallel, dotted, or spurred lines. Many of these stylized patterns depict animals and appear to represent interrelationships of living things with the spirit world.

The Bering Sea Eskimo believed that every element of their environment — for example, the sea, the sun, and the walrus — was represented by a spirit that demanded proper treatment and respect. Implements used to kill and prepare animals were beautifully designed in order to appease the animals' spirits and encourage them to return and repopulate the waters.

The ivories in the exhibition are from more than 40 public and private collections in England, Denmark, France, and the United States and include items from the Museum's own collection. The exhibition, which will be on display until January 3, was organized by the American Federation of Arts (a merging of the Art Museum Association of America and the American Federation of Arts). It was made possible by a grant from Exxon Corporation with additional assistance from the National Endowment for the Arts.



Harpoon counterweight of walrus ivory

Everything Old Is New Again

Fall 1987
Lecture Series

Ancient societies are spotlighted in two new Museum exhibitions, and the Department of Education is offering specially designed programs among their Fall 1987 Lecture Series that have been organized in conjunction with the new exhibitions.

"The Glory of Carthage" examines the coming exhibition *Carthage: A Mosaic of Ancient Tunisia*. Subscribers to this six-part series will attend a private preview of the exhibition before it is opened to the general public. The four-part series "Eskimo Arts and Culture" explores *Ancient Eskimo Ivories of the Bering Strait*, which opens this month in the Naturemax Gallery.

For a complete schedule of other courses — including programs on geology, film, and human sexuality — see the September issue of *Rotunda*, or call (212) 769-5310

An Education Department Public Program.

Members' Tour of the Month

Dinosaurs Past and Present

Free and open only to Participating, Donor, and Contributing Members

Long before we, the people — or any other form of human government — the reptiles ruled. How the once-dominant dinosaurs lived and died has been a target of study and speculation for well over a century. Members can learn about the experts' changing concepts of the Mesozoic world with guided tours of the exhibition *Dinosaurs Past and Present*.

The tours begin with a look at some of the re-creations of the paleontological past on permanent display at the Museum, including the work of artist Charles R. Knight. Knight's work was commissioned at the turn of the century by Henry Fairfield Osborn, founder of the Department of Vertebrate Paleontology and the Museum's fourth president. Widely acknowledged as the father of American paleontology, Professor Osborn transformed the

Museum's fossil collection from a meager selection intended solely for scientific eyes into an exciting and educational display that has been a favorite of Museum-goers for generations. Members will hear how Knight and Osborn worked together to recapture the age of dinosaurs.

The collaboration of artist and paleontologist is the subject of Gallery 1's current exhibition, *Dinosaurs Past and Present*. The second part of the Members' tour will examine the modern-day interpretations of dinosaur ecology and behavior presented in the exhibition. Many of the paintings, sculptures, and models on display were inspired by new discoveries that have shattered traditional theories about dinosaurs.

For example, a pastel by Doug Henderson depicts a migrating herd of *Maiasaura*, the duck-billed dinosaurs. Per-

haps because of their association with present-day reptiles, dinosaurs were once thought to be sluggish, antisocial creatures that were indifferent to their young. But that supposition was proved inaccurate by the recent discovery of the remains of *Maiasaura* ("good mother lizard") near the nests of their young. Henderson worked with paleontologist Jack Horner, who found large numbers of bones of *Maiasaura* in a single deposit of volcanic ash and theorized that they belonged to a herd of animals that met a catastrophic end.

The tours last approximately one hour and are not recommended for children younger than 12. Museum Highlights Tour Guides, volunteers who have been professionally trained, conduct all tours. To register, please use the adjacent coupon.

Members' Tour of the Month: Dinosaurs Past and Present. Free and open only to Participating, Donor, and Contributing Members.

Please indicate a first, second, and third choice of times:

| | | |
|--------------------|------------------|------------------|
| Wednesday, Nov. 4 | _____ 6:30 p.m. | _____ 7:30 p.m. |
| Friday, Nov. 6 | _____ 2:30 p.m. | |
| Saturday, Nov. 7 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Sunday, Nov. 8 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, Nov. 11 | _____ 6:30 p.m. | _____ 7:30 p.m. |
| Sunday, Nov. 15 | _____ 10:30 a.m. | _____ 11:30 a.m. |
| Wednesday, Nov. 18 | _____ 6:30 p.m. | _____ 7:30 p.m. |
| Saturday, Nov. 21 | _____ 10:30 a.m. | _____ 11:30 a.m. |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *Dinosaurs Past and Present*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Please note: registration closes on October 26.**

Carthage Is Coming

Members' preview of the new exhibition
Carthage: A Mosaic of Ancient Tunisia
Sunday, November 22
10:00 a.m.—4:00 p.m., Gallery 3
Free and open only to Participating, Donor,
and Contributing Members

The most comprehensive view of ancient Tunisian life and culture ever exhibited in the United States arrives at the Museum next month.

Carthage: A Mosaic of Ancient Tunisia depicts the region as a center of culture, history, and art — a role that has only recently been established after 15 years of international excavations in the area. Enormous brightly colored mosaics, outstanding Roman bronzes, and a collection of rare Punic jewelry are among the lavish display items, many of which have not yet been under public gaze.

Please use the October Members' programs coupon on page 3 to register for the preview on Sunday, November 22.

In conjunction with the Members' preview, there will also be a preview of a 30-minute video by David Soren, the curator of

the exhibition. The video features outstanding footage of Berber life today and visits the archeological sites in Tunisia where the exhibition's treasures were found.

Carthage: A Mosaic of Ancient Tunisia was produced by the American Museum in cooperation with the Tunisian National Institute of Archaeology and Art, the Musée National du Bardo of Tunis, and the Tunisian Museums of Sfax and Sousse, Carthage, El Jem, and Nabeul. The exhibition was supported in part by a grant from the National Endowment for the Humanities and an indemnity from the Federal Council on the Arts and Humanities. After its premiere at the American Museum, the exhibition will embark on a national tour.



A brilliant mosaic from the new exhibition

The Rainbow Road Dancers

Sunday, October 18
1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50 for Members
\$5 for non-Members

With a dazzling display of music, costumes, and special effects, the Rainbow Road Dancers arrive at the Museum this month to present *Colors of the Rainbow*, a vivid program of educational dance. Geared toward children between the ages of 5 and 12, this Members' family program features a colorful combination of modern dance and theater pieces.

The dancers' repertoire includes "Origins," a piece that was inspired by some of the Museum's exhibits. It traces the evolution of life on our planet, from sea-dwelling invertebrates to humankind. In "Colors," a story-theater dance accompanied by jazz and recited prose, the dancers explore rainbows, the spectrum, the creation of new colors through a mixture of primaries, and the relationship of color to mood.

The troupe members — Nadine Grisar, Temi Schenk, and Diana Tanzosh — have been performing their imaginative programs since 1981. They have danced for numerous school and community groups throughout the Greater New York area as well as at Central and Prospect parks and here at the Museum.

The program is 45 minutes long and encourages audience participation. To register for *Colors of the Rainbow*, please use the October Members' programs coupon on page 3.



The dancers impersonate fish, birds, and mammals in "Origins."

Chemistry for Kids

Sunday, November 15
1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50 for Members
\$5 for non-Members

Watch as an ordinary banana, made rigid and as strong as a hammer, drives a nail into wood. See a living rose become as brittle as glass and shatter upon impact with a table. These and other colorful experiments and activities featured in *Chemistry for Kids* will introduce young Members to the mystery of chemistry.

Geared toward children between the ages of 5 and 12, this special program is presented in conjunction with National Chemistry Day. Safe, easy-to-understand experiments illustrate the workings of common phenomena such as how fireflies produce their glow. Nylon is manufactured on stage, and "water" changes color on command from the audience. The program encourages audience participation, and children will perform simple experiments of their own in the Blum Lecture Room.

Chemistry for Kids will be presented by Dr. Patricia Ann Redden, professor of chemistry and departmental chairman at Saint Peter's College in Jersey City. In addition to many years of teaching experience at all grade levels, Dr. Redden has frequently presented workshops on elementary school science teaching and often addresses high school and college science classes in the New York area.

To register for *Chemistry for Kids*, please use the October Members' programs coupon on page 3.

Museum Notes



Architecture for Dinosaurs in the Akeley Gallery

Special Exhibitions and Highlights

Dinosaurs Past and Present, a history of dinosaur art, opens in Gallery 1 on Friday, October 9. See page 1 for details of the exhibition and page 5 for information on Members' guided tours.

Ancient Eskimo Ivories of the Bering Strait, which features the exquisitely carved ivories of Inuit peoples, opens in the Naturemax Gallery on Friday, October 9. See page 5 for details.

For panda fanciers who'd like a closer look, *The Giant Panda Exhibit* in the Roosevelt Rotunda offers an ideal view. The mounted pandas, which have been in the Museum's collections since the early 1900s, appear on an open platform in natural habitat settings.

The world's largest cut gem, *The Brazilian Princess*, is also on display in the Roosevelt Rotunda. Approximately the size of an automobile headlight, the pale blue topaz tips the scales at 21,005 carats.

The Museum was founded in 1869, its cornerstone laid in 1874, and its first structure was completed in 1877. Its construction was a task that required the combined skills of Hercules and Croesus. *Architecture for Dinosaurs*, in the Akeley Gallery, is a pictorial history of an epic feat.

The Library Gallery features a salute to the *Ladies in the Field*: The Museum's *Unsung Explorers*. Photographs, diaries, published monographs, and mementos chronicle the contributions of women to the development of the Museum. The exhibition will close on Monday, October 26.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:00 p.m. and till 7:45 p.m. on Wednesdays.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m. and till 8:30 p.m. on Wednesday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of whitewater rafting along with early explorers in the current Naturemax Theater presentation, *Grand Canyon: The Hidden*

Secrets. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a whitewater raft ride through the Grand Canyon. Children between the ages of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

Happenings at the Hayden

Sky Shows

The Hayden Planetarium has a new double-feature Sky Show that will be presented through November 22.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the *Amazing Disappearing Martians* and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920. Please see page 2 for details of a Members' private viewing.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, October 17, and at noon on Saturday, November

14. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on Saturday, November 7, and at noon on Saturday, December 5. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*, featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission is \$5 for Members and \$6 for non-Members per show. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun

Mon

October 1987

American Museum of Natural History

Tue

Wed

Thu

Fri

Sat

4 1:00 to 4:30 p.m. Dances of the Mandinka; Geles; The Silent Mainslay of the African Family. Africa Month at the Leonhardt People Center. Free. Page 4.

11 1:00 to 4:30 p.m. African Masquerade; Yoruba Musical Instruments; African Folk Culture. Africa Month at the Leonhardt People Center. Free. Page 4.

Members on the Discovery Tours "African Hinterlands Safari" visit the magnificent Victoria Falls, where the Zambezi River thunders over mile-wide basalt cliffs.

18 1:00 to 4:30 p.m. Music of Change; Roles of Women; Apartheid and its Neighbors. Africa Month at the Leonhardt People Center. Free. Page 4.

1:00 and 3:00 p.m. Colors of the Rainbow. Members' Family Program. Kaufmann Theater. \$2.50 for Members, \$5 for non-Members. Page 6.

2:00 p.m. New York Paleontological Society. Room 419. Free.

25 1:00 to 4:30 p.m. Ghanaian Highlife Music; West African Sign Painting: The African Marketplace. Africa Month at the Leonhardt People Center. Free. Page 4.

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The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

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Carthage, page 6

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

6 7:00 to 9:00 a.m. Bird Walks in Central Park. \$4. Page 4.

Full moon.

7 7:00 p.m. Perspectives on Ancient African Art, a lecture by Dr. Rosalind Jeffries. Kaufmann Theater. Free. Page 4.

7:45 p.m. Amateur Astronomers Association. Main Auditorium. Free.

13 7:00 to 9:00 a.m. Bird Walks in Central Park. \$4. Page 4.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

14 7:00 p.m. Neo-African Art: A New Movement in Contemporary Sculpture. a lecture by Dr. George Preston. Kaufmann Theater. Free. Page 4.

7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

Last-quarter moon.

20 7:00 p.m. La Crystal. Members' Concert. Planetarium Sky Theater. \$5 for Members. \$8 for non-Members. Page 2.

The American Museum Restaurant is open for dinner prior to La Crystal. Call (212) 874-3436 for reservations.

27 8:00 p.m. Linnaean Society of New York. Leonhardt People Center. Free.

28 7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

7:15 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

7:30 p.m. The African Review, performance of traditional and contemporary African music and dance. Main Auditorium. Free. Page 4.

8 7:00 to 9:00 a.m. Bird Walks in Central Park. \$4. Page 4.

6:00 and 8:00 p.m. Members' Private Viewing of Cosmic Illusions and The Space Telescope: Eyes on the Universe. Planetarium Sky Theater. \$2.75 for adults, \$1.50 for children. Page 2.

15 7:00 to 9:00 a.m. Bird Walks in Central Park. \$4. Page 4.

Members on the Discovery Tours "African Hinterlands Safari" view the 2,000-year-old cave paintings at Tsolidilo Hills, home of the last true San (Bushmen).

New moon.

21 7:00 p.m. African Influence on Contemporary Art, a panel discussion. Kaufmann Theater. Free. Page 4.

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Ivories, page 5

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m., and the American Museum Restaurant is open till 7:30 p.m.

3 1:00 to 4:30 p.m. Dances of the Mandinka; Marionettes; Performance Objects of Ritual and Myth; The Silent Mainslay of the African Family. Africa Month at the Leonhardt People Center. Free. Page 4.

Moon at perigee.

10 1:00 to 4:30 p.m. African Masquerade; Yoruba Musical Instruments; African Folk Culture. Africa Month at the Leonhardt People Center. Free. Page 4.

9 Ancient Eskimo Ivories of the Bering Strait opens in the Naturemax Gallery. Page 5.

Dinosaurs Past and Present opens in Gallery 1. Page 1.

17 1:00 to 4:30 p.m. Music of Change; Roles of Women; Apartheid and its Neighbors. Africa Month at the Leonhardt People Center. Free. Page 4.

24 1:00 to 4:30 p.m.

Ghanaian Highlife Music; West African Sign Painting: The African Marketplace. Africa Month at the Leonhardt People Center. Free. Page 4.

31 1:00 and 3:00 p.m. Ghost Stories. Members' Family Program. Kaufmann Theater. \$3 for Members, \$5 for non-Members. Page 3.

1:00 to 4:30 p.m. From Cuban Son to Latin Jazz; Sacred Taino Icons; Pre-Columbian Taino Legends. The start of Caribbean Month at the Leonhardt People Center. Free.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 10 November 1987



Machito, pictured here in a 1950 performance, is profiled during Caribbean Month.

Latin Rhythms

The distinctive music of the Caribbean is highlighted in the Department of Education's celebration of Caribbean Month. In addition to the following film and performance programs, there is a variety of events each weekend at the Leonhardt People Center (see page 6 for details).

Seating for these free programs is on a first-come, first-served basis. For further information, call (212) 769-5315. These programs are made possible in part by a gift from the William R. Hearst Foundation.

An Education Department Public Program.

Machito: A Latin Jazz Legacy

**Sunday, November 1
1:00 and 3:00 p.m.
Linder Theater**

This 1985 documentary film commemorates the career of Frank (Machito) Grillo, who — accompanied by his Afro-Cuban musicians — fused big-band jazz and Cuban rhythms to create modern Latin jazz. Through interviews with Machito and other legendary figures such as Tito Puente, Dizzy Gillespie, and Ray Barreto, the film traces the history of Latin jazz. It captures the golden era of the forties and fifties with archival footage of performances at the Cotton Club, the Palladium, and the Village Gate. *Machito: A Latin Jazz Legacy* was directed by Carlos Ortiz and is 58 minutes long.

Africa in Puerto Rico

**Through Dance, Music, and Poetry Performed by Ensemble Soninke
Sunday, November 1
2:00 and 4:00 p.m.
Kaufmann Theater**

The poetry of Luis Palés Matos, first of the Afro-Puerto Rican poets, captures the essence of the African cultural experience in the Caribbean. His colorful and rhythmic work describes the experience of slavery and colonization. The recitation of his poetry, with *bomba* and *plena* rhythms, re-creates the African experience.

Guest artists include Montego Joe, Sylvia Del Villard, and Rolando Rosado.

Carnival in Trinidad

**Sunday, November 22
2:00 and 4:00 p.m.
Kaufmann Theater**

The Trinidad-Tobago Carnival, one of the great folk festivals of the Western world, features masqueraders, calypso singing, and dancing to the rhythms of steel drums. This program of steel band music by the Pan Rebels, with costumes and dance performances sponsored by Tropical Splendor Art and Cultural Association of the U.S.A., re-creates some of the excitement and character of carnival.

Desert Fish

How these aquatic creatures came to their unusual habitat and why they stay there are described in a fascinating Members' program.
Page 3

Shop Around

The Museum's shops offer a splendid variety of items that can fill the gaps in your holiday gift list. And with the gift of Membership and the Members' Book Program, wrapping up your shopping can be as easy as clipping a coupon.
Page 5

T. rex Goes to Hollywood

Members can see some of the prehistoric greats in action with next month's program, *Fantasy Dinosaurs of the Movies*.
Page 2

Sneak Preview

Members can explore the new exhibition *Carthage: A Mosaic of Ancient Tunisia* before it opens to the general public.
Page 3

Moonlight Melodies

Under the starry canopy of the Hayden Planetarium, the tradition of *Holiday Concerts* continues next month with performances by the Ensemble for Early Music.
Page 4

Native American Film Festival

Saturday, December 12
10:30 a.m. to 6:00 p.m.
Kaufmann Theater
Free

Contemporary Indian life throughout the Americas — with several fascinating glimpses into the past — is the locus of the fifth Native American Film and Video Festival. Arranged by the Museum of the American Indian, the program features recent documentary films about American Indians and Inuit (Eskimo) peoples.

A Peruvian Indian villager who became one of his country's most renowned photographers is the subject of *Martin Chambi*, by Paul Yule and Andy Hamies. Chambi's images recorded Peruvian society, both Indian and non-Indian, over many decades. Differing interpretations of Indian culture — those of outsiders and those of community members — are examined in another look at life in the Peruvian Andes, John Cohen's *Chogelo*.

Navajo Talking Picture, by Navajo filmmaker Arlene Bowman, is a reflective probe into the filmmaker's own experience. Susan Fanshel's *A Weave of Time* observes Navajo life through several generations of one family. Portraits of contemporary communities include the



Martin Chambi, a Peruvian Indian photographer

premiere of *On the Life of the Ikoods*. Produced by Mexico's Instituto Nacional Indigenista, this movie documents a film workshop organized for the women of Coaxaca and incorporates one of its films. *The Earth Is Our Mother*, by Danish filmmaker Peter Elsass, looks at the impact of Christian missionizing on two groups of Indian people of Colombia. Contemporary North American Indian life is documented by the film *Foster Child*, directed by *On Cardinal*. *Butte Baby*, a white filmmaker records his search for

his Metis identity and family roots.

The festival is sponsored by the American Museum's Department of Education in cooperation with the Museum of the American Indian. Seating is on a first-come, first-served basis, so Members are advised to arrive early to avoid disappointment. For a complete schedule, call the Museum of the American Indian at (212) 283-2420 or the Department of Education at (212) 769-S30S.

An Education Department Public Program.

The Solution Is at Hand

Sunday, November 15
1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50 for Members, \$5 for non-Members

SOLD OUT FROM OCTOBER ISSUE

Lemon juice and vinegar are transformed from ordinary kitchen staples into the keys to chemical wizardry at *Chemistry for Kids*, a Members' program for children between the ages of 5 and 12.

The program begins in the Kaufmann Theater, where Dr. Patricia Ann Redden demonstrates how fireflies produce their glow, manufactures nylon on stage, and performs other vivid experiments. Participants learn some of the scientific principles behind common household products. They can use their new knowledge to propel a boat, to hide and reveal secret messages, and to identify if household products are acids or bases. Under supervision of chemists and chemistry

teachers, young Members then conduct safe, easy-to-understand experiments in the Blum Lecture Room.

Dr. Redden, who is a professor of chemistry and departmental chairman at Saint Peter's College in Jersey City, has had many years of teaching experience at all grade levels and frequently addresses high school and college science classes in the New York area. *Chemistry for Kids* is presented in conjunction with the American Chemical Society's observance of National Chemistry Day, an event intended to heighten public awareness of the importance of chemistry. To register, please use the November Members' programs coupon on page 3.

Fantasy Dinosaurs of the Movies

Tuesday, December 8
6:30 and 8:30 p.m.
Main Auditorium
\$5, and open only to Members

Their fossilized remains, artfully reconstructed to convey their awesome size, are housed in museums like ours. Illustrations in books depict the way they might have looked when they were still clothed in flesh. And on the movie screen, all aspects of these long-vanished creatures were represented. Now, with *Fantasy Dinosaurs of the Movies*, Members can view the different and imaginative ways in which dinosaurs have been resurrected.

Prehistoric animals have been featured in motion pictures since the earliest days of the medium; as far back as the early 1900s, filmmakers brought extinct creatures to cinematic life. In this program, Donald F. Glut offers an informal history of prehistoric animals in film and the special-effects techniques used in their recreation.

The program features clips from numerous motion pictures, some of which are rare. It includes the early silent classics *Gertie the Dinosaur* and *The Dinosaur and the Missing Link*, as well as some famous talkies — *One Million B.C.* and *King Kong* — and more recent pictures such as *Gorgo*, *Godzilla*



Godzilla in pursuit of the Smog Monster

us. the Smog Monster, *Boby*, *Secret of the Lost Legend*, and many others.

Donald F. Glut is the author of numerous books, including *The Dinosaur Dictionary* and *The Dinosaur Scrapbook*. He has presented *Fantasy Dinosaurs of the Movies* at several museums across the country, from the Los Angeles Museum

of Natural History to the Museum of Science in Boston.

This program is presented in conjunction with the special exhibition in Gallery 1, *Dinosaurs Past and Present*. The exhibition will remain open until 8:30 on the evening of the program. To register, please use the November Members' programs coupon on page 3.

ROTUNDA

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Fish in Hot Water

Tuesday, November 17
Main Auditorium
7:30 p.m.
Free for Members, \$5 for non-Members

One of these phrases is not an incongruous combination — can you determine which? Cruel kindness. Hasty leisure. Desert fish.

That's right: *Desert Fish*. Unlikely as it sounds, nearly 150 species of fish dwell in some of the harshest regions of North America. Michael Smith, who has studied these amazing creatures for 10 years, will describe for Members the unusual physical and chemical characteristics that enable the fish to survive in their demanding habitat.

In the course of his field work, Dr. Smith has observed a pupfish in Death Valley that survives in water whose salinity is sometimes 2½ times greater than that of seawater — the highest salinity level tolerated by any vertebrate in nature. He has also encountered an entire species that lives in a body of water no bigger than a bedroom, fish that inhabit water with an average temperature of 113 degrees Fahrenheit, and fish with a reproductive cycle that's triggered by sudden changes in their environment.

Dr. Smith is the Kalbfleisch Assistant Curator in the Department of Ichthyology. His discussion of these astonishing



Mole Cyprinodon of an undescribed species

fish will be accompanied by his collection of vivid slides, and he will offer his theories on how the fish arrived in such an improbable environment. Clues from the fossil record, observations on the present marine environment, and his own studies support Dr. Smith's surprising explanation, which contradicts the

assumptions of many evolutionary biologists. Dr. Smith will also discuss recent field work in the Dominican Republic that may further illuminate his findings.

To register for *Desert Fish*, please use the November Members' programs coupon on this page.

Carthage: A Mosaic of Ancient Tunisia

Members' preview of a new exhibition
Sunday, November 22
10:00 a.m. to 4:00 p.m.
Gallery 3
Free and open only to Participating, Donor, and Contributing Members

Carthage: A Mosaic of Ancient Tunisia documents a civilization that saw a succession of cultures from 800 B.C. to the sixth century A.D. — from Carthaginian prehistory to its destruction by Rome, its rebirth and subsequent integration with the Roman Empire, and its twilight.

In the English-speaking world, Greece and Rome are better known as centers of ancient culture, history, and art. After 15 years of international excavations, the distinctive art forms of ancient Tunisia are assembled for the most comprehensive view of life and culture in this region ever exhibited in the United States. Artifacts on display include bronze and marble statues; a long-buried treasure of gold coins; a 1,700-year-old death mask; jewelry that includes amulets, gold rings, and a necklace of precious stones; and breathtaking mosaics of many colors.

In conjunction with the Members' preview, there will be a preview in the Linder Theater of a 30-minute video called "Carthage: A Mirage of Antiquity," created by the guest curator of the exhibition, David Soren. This video features outstanding



Amphitheater of El Jem

footage of Berber life today and visits the archeological sites in Tunisia where the exhibition's treasures were found.

Carthage: A Mosaic of Ancient Tunisia was produced by the American Museum in cooperation with the Tunisian National Institute of Archaeology and Art, the Musée National du Bardo of Tunis, and the museums of Sfax, Sousse,

Carthage, El Jem, and Nabeul in Tunisia. The exhibition is supported in part by a grant from the National Endowment for the Humanities. After its premiere at the American Museum, the exhibition will embark on a national tour.

To register for the exhibition preview, please use the November Members' coupon on this page.

November Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *November Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Desert Fish. Tuesday, November 17, 7:30 p.m. Free for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$5.

Number of tickets: _____

Members' Preview of Carthage: A Mosaic of Ancient Tunisia. Sunday, November 22, 10:00 a.m.-4:00 p.m. Free and open only to Participating, Donor, and Contributing Members. Indicate a first and second choice of times, if possible.

____ 10:00 a.m.-12:00 p.m. ____ 12:00-2:00 p.m. ____ 2:00-4:00 p.m.
Number of tickets: _____

Origami Workshops. Sunday, December 6, 10:30 and 11:30 a.m., and 2:00, 3:00, and 4:00 p.m. Free and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

____ 10:30 a.m. ____ 11:30 a.m. ____ 2:00 p.m.
____ 3:00 p.m. ____ 4:00 p.m.

Number of tickets for *Young Children's Workshop* (children must be accompanied by an adult): _____

Number of tickets for *Beginners' Workshop*: _____

Number of tickets for *Intermediate Workshop*: _____

Fantasy Dinosaurs of the Movies. Tuesday, December 8, 6:30 and 8:30 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8. Please indicate a first and second choice of times, if possible:

____ 6:30 p.m. ____ 8:30 p.m.
Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

The Museum, Inside and Out. Wednesday, December 9, 3:00 and 6:00 p.m. \$7, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

____ 3:00 p.m. ____ 6:00 p.m.
Number of tickets at \$7: _____
Total amount enclosed for program: _____

Holiday Concerts. Wednesday, December 16, and Thursday, December 17, 7:00 and 9:00 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$12. Please indicate a first, second, and third choice of times, if possible.

Wednesday, Dec. 16 ____ 7:00 p.m. ____ 9:00 p.m.
Thursday, Dec. 17 ____ 7:00 p.m. ____ 9:00 p.m.
Number of Members' tickets at \$8: _____
Number of additional tickets at \$12: _____
Total amount enclosed for program: _____

Holiday Concerts at the Planetarium

Wednesday, December 16,
and Thursday, December 17
7:00 and 9:00 p.m.
Planetarium Sky Theater
\$8 for Members, \$12 for non-Members



Director Renz with hurdy-gurdy

The Ensemble for Early Music will perform music of the Renaissance at this year's Holiday Concerts for Members at the Planetarium. The ensemble, which is known for blending sound scholarship with imaginative insight, performs its repertoire of sacred and secular pieces with the same instruments and voice techniques used in the Renaissance. The concerts will be accompanied by the Planetarium's vast array of special effects, including visuals of the planets, swirling nebulae, panoramas of medieval scenes, and spectacular laser light patterns.

The program features music from the twelfth to sixteenth centuries, including Arabic-influenced Italian dance music, gloriously mystical motets, and Elizabethan lute songs. *Cue* magazine has described the ensemble's performance as "a

scintillatingly selected, beautifully performed evening by an absolutely top-flight group of specialists in early music. . . . Drop everything and go."

Ensemble-in-residence at the Cathedral of Saint John the Divine and regular performers at the Cloisters, the Ensemble for Early Music is under the direction of harpsichordist and conductor Frederick Renz. A former member of the celebrated New York Pro Musica Antiqua, Renz is now the director of the Early Music Foundation of New York. The ensemble has toured extensively throughout the United States, South America, Europe, and the Middle East.

To register for Holiday Concerts, please use the November Members' programs coupon on page 3. Concerts at the Planetarium usually sell out one month in advance, so please place your orders early.



The Ensemble for Early Music

Origami Workshops

Sunday, December 6
10:30 and 11:30 a.m., and 2:00, 3:00, and 4:00 p.m.

School Lunch Rooms

Free and open only to Participating, Donor, and Contributing Members



AMNH, model by John Montroll

You'll see this shiny Triceratops under the branches of the fifteenth annual Origami Holiday Tree, which goes on display in the Roosevelt Rotunda on Monday, November 23.

Next month, Members of all ages can learn to fold paper into beautiful origami models at the Members' annual Origami Workshops. To register, please use the November Members' programs coupon on page 3.

Young Children's Workshops (ages 4-6). Kids may make swans, jumping frogs, candy canes, purses, and sailboats.

Beginners' Workshops (ages 6 and older). All participants will fold a whale, and then teachers will select from other models, including blow-up bunny rabbits, jumping frogs, butterflies, star baskets, and snapping dragons.

Intermediate Workshops (ages 6 and older; anyone who knows how to fold the flapping bird qualifies for this class). All participants will learn how to fold the angelfish and, time permitting, another intermediate fold.

All workshops are taught by Museum volunteers and members of The Friends of The Origami Center of America, the same people who help fold models for our Origami Holiday Tree each year. At the conclusion of the workshops, which have been organized by origami specialists Alice Gray and Michael Shall, all Members will receive origami paper and an origami workbook.



AMNH, model by Pamela Crawford

The Natural History of Natural History: The Museum, Inside and Out

Wednesday, December 9
3:00 and 6:00 p.m.

#7, and open only to Participating, Donor, and Contributing Members

Members can join urban geologist Sidney Horenstein for a look at the Museum as they've never seen it before — the fossils entombed in the walls, the U.S. Geological Survey bench mark at the 77th Street entrance, the bronze friezes that had a live bear for a model. These and many other fascinating details of the intentions and materials behind the Museum's design and construction are the focus of a special

Members' tour.

The three-part tour begins with a walk around the Museum's exterior to observe its geology, geography, and varieties of architectural style. Inside the Theodore Roosevelt Memorial on Central Park West, Horenstein points out the rich profusion of masonry materials, including stones with fossils from Portugal, Britain, Italy, and Missouri. *Architecture for Dinosaurs*, the current exhibi-

tion in the Akeley Gallery, concludes the tour with a historical overview of the Museum's construction.

Horenstein, who is senior scientific assistant in the Department of Invertebrates, frequently conducts popular Members' programs, such as last summer's walking tours of the Upper West Side. To register for *The Museum, Inside and Out*, please use the November Members' coupon on page 3.

Holiday Gift Hunting at the Museum's Shops

Whether you're a past master at finding the perfect gift or an absolute coward about shopping, the end of your holiday scramble is closer than you might think. From the fun and the fanciful to the exotic and the scholarly, the Museum Shop promises something to satisfy even the most impossible people on your gift list.

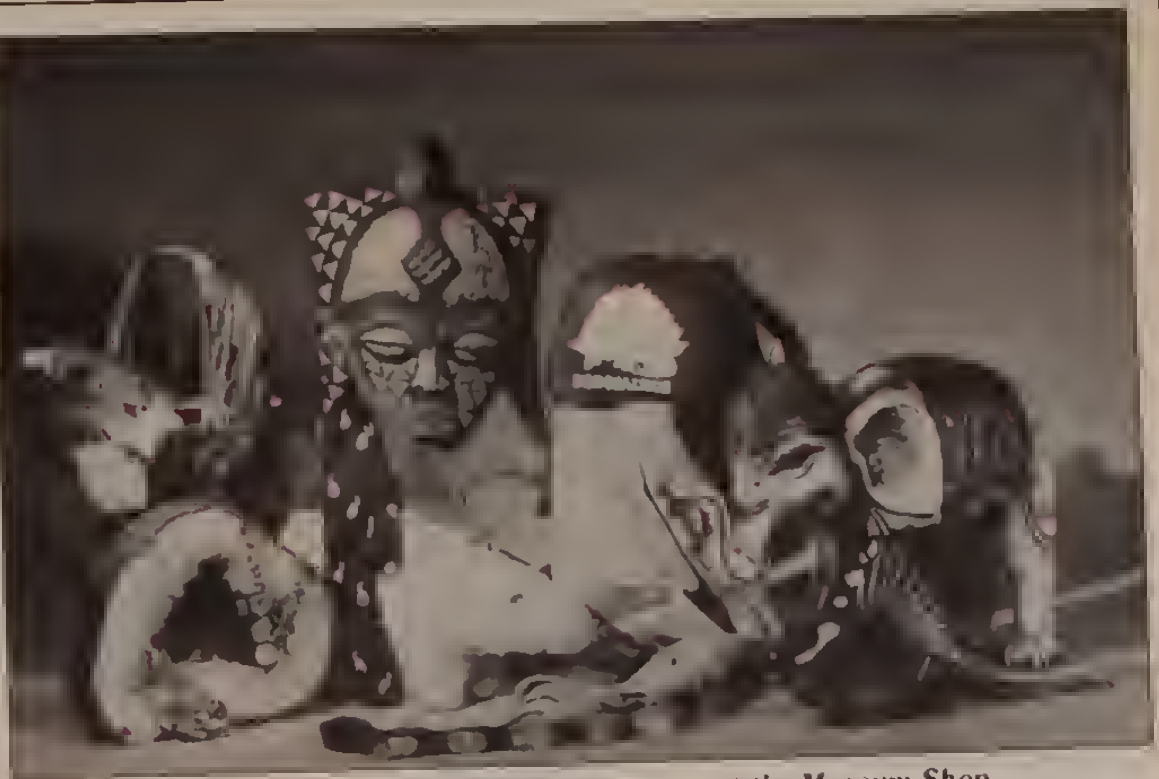
Dinosaurs of all shapes and sizes dwell along one of the shop's walls, including a particularly lovable stuffed one that's 2½ feet long (\$35), a flying piñata from Mexico (\$10), and glow-in-the-dark dinosaurs for restless sleepers (\$9).

Nearby is a trove of natural treasures — dazzling minerals that range from a modest piece of pyrite from Peru (\$5) to an opulent piece of Brazilian amethyst (\$162.50). There are handsome lidded boxes of marble (\$62.50 and \$80), decorative paperweight cubes (\$56.25

and \$26.25), bookends (\$50 to \$125), and quartz crystals (\$5 to \$500).

If you're looking for a gift to bring calm to the frenetic pace of urban life, consider the shop's record collection, which features recordings of bird songs, a country stream, and dawn and dusk in the Okefenokee Swamp. For a really faraway ambiance, try the music of Senegal, Morocco, Peru, or Ghana (Records range from \$5.95 to \$26.50 for a double album.)

For the little ones on your list, stop by the Junior Shop, where brimming bins offer ideal stocking stuffers. A kid could populate a private zoo with the rubber models of mammals and reptiles (\$1.50 to \$3.74). Colorful, appealing paperback books on a wide variety of subjects can be had for a few dollars each. Children like to come to the Junior Shop to pick out inex-



These are just a few of the exotic items at the Museum Shop.

pensive gifts for their parents, too.

If you should require a snack, stop by the Planetarium's Gift Shop. Among their exciting array of outer-space goodies, you can pick up a package of astronaut ice cream (the real thing!) for \$1.52. It's freeze-dried and

tastes like candy.

The Museum Shop is located on the first floor, near the Great Canoe, at the 77th Street lobby. It's open every day from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesdays. The Junior Shop, located on the lower level near the subway en-

trance, is open every day from 10:00 a.m. to 4:45 p.m. The Planetarium Gift Shop, located on the first floor of the Planetarium, is open Monday through Friday from 1:30 to 4:45 p.m., Saturday from 10:00 a.m. to 5:30 p.m., and Sunday from 12:00 to 5:30 p.m.

Gift Memberships: Save 30 Percent!

As a special holiday bonus, Members can give gift memberships at 30 percent off our regular membership rates: only \$30 for a Participating Membership and \$14 for an Associate Membership. All Members receive *Natural History* magazine, free Museum admission, and discounts galore. Associate Membership is perfect for individuals and people who live outside the New York area. Participating Membership is ideally suited to families and anyone who wants to take part in all of our exciting programs.

Take care of your gift orders today. Just use this coupon to place your order, or save time by calling our toll-free number: 1-800-234-5252. Once we receive your order, we will announce your gift with a beautiful gift card.

☐ YES! A gift of Membership is a wonderful idea. Please enroll the following as:

_____ a \$14 Associate Member _____ a \$30 Participating Member

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

This Membership is a gift from:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

_____ Enclosed is my check payable to the American Museum of Natural History.

_____ Please bill me after the holidays.

Mail this coupon to Gift Membership, Membership Office, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192.

Members' Book Program

Hours of enjoyment await you and those on your holiday gift list. The 1988 catalog of the Members' Book Program offers a multitude of selections, all available to Members at substantial discounts off the publishers' prices.

For a bright perspective on the new year, consider the Museum's 1988 calendar, *John Gould's Exotic Birds*. Brilliant color reproductions of some of the most unusual birds in the world are featured in these 12 lithographs by nineteenth-century artist and ornithologist John Gould.

The catalog to the Museum's new exhibition, *Carthage: A Mosaic of Ancient Tunisia*, offers a tantalizing glimpse of a civilization's turbulent history. The book traces Carthage's development, from the arrival of the legendary Queen Dido in the ninth or eighth century B.C. to Tunisia's independence in this century. It features gorgeous illustrations of artifacts and objects — elegant jewelry, cinerary urns for children sacrificed in the Tophet before the Punic Wars, and artwork that reflects the pantheon of deities and the early history of Christianity.

An insider's view of the expeditions, discoveries, and scientists behind the greatest natural history collection ever assembled is featured in *Dinosaurs in the Attic: An Excursion into the American Museum of Natural History*. Another armchair tour of the Museum is available with two new natural history videos hosted by actor Cliff Robertson: *Abundant Waters*, a voyage through the Hall of Ocean Life, and *Brightest Africa*, an exploration of the Akeley Hall of African Mammals.

The catalog features books of true-life adventure — *Tent Life in Siberia*, a thrilling account of a jinxed 1860s effort to telegraphically link America and Europe — as well as garden-variety discovery, such as *The New American Landscape Gardener's* techniques for revealing the hidden potential in your backyard. Chili Dip and Hopi Corn Stew are a couple of great recipes from the *Southwest Indian Cookbook*, which serves up some culture too; *Acid Rain* offers accurate information on a controversial topic; and *The Worlds of a Maasai Warrior: An Autobiography* tells the compelling story of growing up in Maasailand and going away to Europe and America.

Children's books are also available through the Members'

Book Program. Among the evocative and educational titles are *How Do Ants Know When You're Having A Picnic?*, *Mufaro's Beautiful Daughters: An African Tale*, and *The Evolution Book*, which explores life on earth from the Great Ice Age to the present through observations, experiments, and projects.

Also among the children's selections is *FACES*, an anthropology magazine for 8- to 14-year-olds. Published ten times annually, *FACES* explores a different theme every month through stories, illustrations, and crafts.

To order *John Gould's Exotic Birds*, information about *FACES*, and the free Members' Book Program catalog, please use the adjacent coupon

Members' Book Program

☐ YES, I would like to order _____ copies of *John Gould's Exotic Birds*, the Museum's 1988 calendar, at \$8.95 each

_____ Total amount enclosed (please add \$1.50 for shipping and handling).

☐ Please send me the free book catalog featuring 100 books in all areas of natural history and anthropology, with special discounts off the publishers' prices

☐ Please send me information about *FACES*, the children's anthropology magazine.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail to Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Celebrate Caribbean Month



Yoruba cult figure

Drop the November doldrums with this month's series of free lectures, performances, and demonstrations at the Leonhardt People Center.

Presentations are repeated several times between 1:00 and 4:00 p.m. Seating is limited and on a first-come, first-served basis. For further information, call (212) 769-5315. These programs are made possible in part by the generosity of the family of Frederick H. Leonhardt and by a gift from the William R. Hearst Foundation.

See page 1 for details of other Caribbean Month programs.

October 31 and November 1

From Cuban Son to Latin Jazz. Marco Rizo and his Latin Jazz Quartet perform musical selections that show the development of modern Latin jazz.

Sacred Taino Icons. Rafael Colon Morales uses slides to illustrate the significance of images in pre-Columbian Taino stone collars, ceremonial stools, and cemies (stylized representations of Taino deities).

Pre-Columbian Taino Legends. Myrna Nieves Colon recounts legends that reflect the Taino philosophy and cosmology.

November 7 and 8

Música Jibara. Israel Bemios y Grupo Criollo Puertorriqueño perform jibara music, a musical tradition of Spanish ancestry played in the Puerto Rican countryside during special occasions.

Altars in Afro-Caribbean Religions. Marie Guiardinu and Juan Boza describe the functions of altars in Afro-Caribbean santería and spiritu-

alism in an illustrated lecture.

November 14 and 15

Dominican Traditional Music. By performing merengue, palos, congo, maboba, and gaga rhythms, Los Amigos del Ritmo demonstrate the degrees of syncretism of African- and Spanish-derived musical elements in the Dominican Republic.

African Religions in the Caribbean. Dr. Sheila Walker gives a slide-illustrated talk on African religious manifestations in various Caribbean cultures.

European Social Dance in the Caribbean. Dr. Morton Marks uses audio recordings in a discussion of the transformation of nineteenth-century European social dances such as the quadrille and mazurka.

November 21 and 22

Afro-Caribbean Dance. Essence and the Aura Ensemble perform to the rhythms of music and dance from Haiti, Cuba, and Trinidad.

Fiesta of Loiza Aldea. Sylvia Del Villard uses slides to discuss the significance of masquerades in the three-day Spanish-African-derived festival of Loiza Aldea in Puerto Rico.

The Art of Carnival Costume Design. Calvin Ramirez demonstrates the techniques and skills of designing carnival costumes (November 21 only).

Carnival Costume Decoration. Randy Brewster demonstrates the competitive art of costume decoration in carnival (November 22 only).

An Education Department Public Program.

African Influence in the New World



Yoruba ivory heads

Religion, ethnobotany, and language are the subjects of three lectures this month that examine African influence in the New World. Seating for these free programs is limited and on a first-come, first-served basis. For further information, call (212) 769-5315. These programs are made possible in part by a gift from the William R. Hearst Foundation.

Traditional African Rituals in New Lands

Wednesday, Nov. 4
7:00 p.m.

Kaufmann Theater
Lecturer:
Dr. Sheila Walker

Languages of Afro-Cuban Faiths

Wednesday, Nov. 18
7:00 p.m.

Kaufmann Theater
Lecturer:
Dr. Isabel Castellanos

Ethnobotany and the Afro-Cuban "Science of the Concrete"

Wednesday, Nov. 25
7:00 p.m.

Kaufmann Theater
Lecturer:
Dr. Morton Marks

During the colonial era, the Portuguese prohibited their slaves in Brazil from practicing their traditional religions and forced them to convert to Christianity. But the religion of once-enslaved Africans continues to thrive in Brazil today, as is shown by this slide-illustrated lecture, which examines two ceremonies in Afro-Brazilian religion.

In an attempt to hasten assimilation of Africans into their church, the clergy created Afro-Catholic sisterhoods and brotherhoods dedicated to specific saints. The Africans, however, perceived similarities between the Catholic saints and some of their traditional spiritual beings, and they began to use statues of the saints to represent African deities and to worship them on the saints' feast days. The annual Feast of Good Death (the symbolic death and ascension to heaven of the Virgin Mary), held in Cachoeira, Bahia, is the best extant example of this mixture of beliefs.

The program will analyze the ceremony for Yemanjá, a water orisha (deity) of the Yoruba people of Nigeria and Benin, which shows how the traditional worship of orishas has been preserved. It will also explore a Candomblé ceremony whose juxtapositioning of worship of a Yoruba orisha with a Catholic ceremony for the Virgin Mary indicates the complexity of Afro-Brazilian faith.

Dr. Sheila S. Walker, anthropologist and faculty member in the Department of Afro-American studies at the University of California, Berkeley, is currently a scholar-in-residence at the Schomburg Center for Research in Black Culture of the New York Public Library.

Afro-Cuban cults trace their origins to the religious practices of African slaves brought to Cuba. Through a complex process, both African and European elements combined in the formation of the religious sects that are a significant part of Afro-Cuban life. As in most rituals, the use of a special language is of primary importance. This lecture explores the four principal languages used in Afro-Cuban religious rites: Lecumí, Congo, Abakua, and Bozal. The role of Spanish is also discussed.

Linguistic communication with the supernatural can be achieved through prayers, greetings, sacrificial offerings, and trance speech. Although these activities are a basis of the Afro-Cuban belief system, language is only one of many symbolic systems in ritual interaction. In sacrifices, for example, the possessed individual uses a special language that is identified sometimes with the divinities and sometimes with the donor; it is always, however, a vehicle of communication between gods and men.

The use of metaphoric speech is also very important in the everyday life of the Afro-Cuban community and can be observed in taunts (puyas), proverbs, and certain insults. In ritual events, words and actions are inextricably bound.

Dr. Isabel Castellanos, linguist and faculty member in the Department of Modern Languages at the Florida International University, has published extensively on the role of African languages in Afro-Caribbean religions.

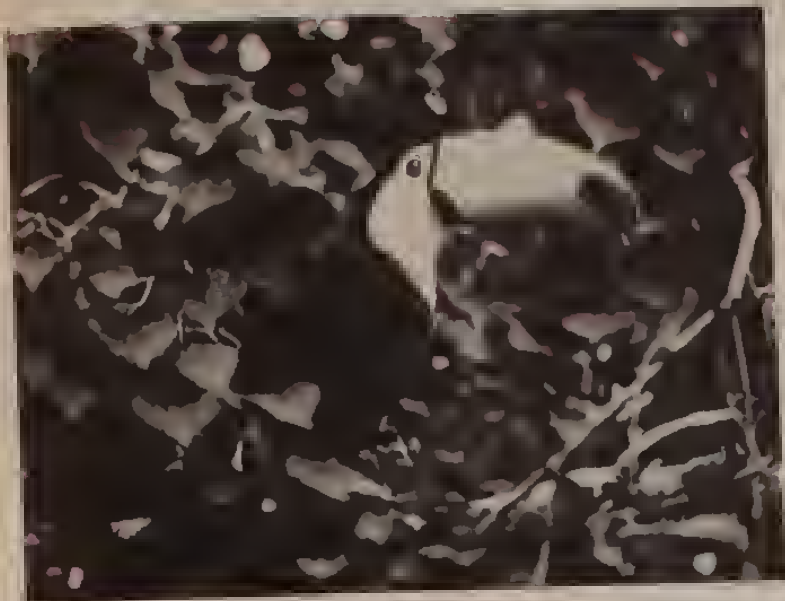
An Education Department Public Program.

Although many readers approach Lydia Cabrera's *El Monte*, published in 1954, as literature or as ethnography, it may also be interpreted as ethnobotany or even ethnopharmacology. The book's second half contains descriptions of more than 550 plants used magically and/or medicinally in Afro-Cuban religion and is one of the most complete sources of information on any New World botanical system.

Recent research in ethnobotany suggests that the Yoruba term *ashe* (the power to make things happen) may be the Afro-Cuban way of referring to a plant's chemical constituents as well as to its magico-medicinal properties. Afro-Cuban *osainistas* (herbalists) and their "science of the concrete" knew plant classification by characteristics attributed to orishas as well as by the plants' ritual applications and curative powers. Intuitively, the *osainistas* discovered the chemical constituents of the orishas' *ewe* (leaves) and their effects on human physiology, and these discoveries are embedded in the symbolic associations and myths that link the orishas with elements of the natural world. In their exploration and classification of the Cuban forests and savannas, *osainistas* were undoubtedly guided by the relationship that existed between the plants' properties and the attributes by which they identified orishas. This lecture is an exploration of the logic that underlies the *osainistas'* grouping of plants.

Dr. Morton Marks is an anthropologist and researcher on African religions.

Discovery Tours presents Amazon Wildlife Adventure



This November and next February, Discovery Tours conducts a seven-day program to the Peruvian Amazon with a five-day extension to view Inca archeological sites. The Museum's travel department offers a unique opportunity to explore the Amazon region in the company of a staff expert who specializes in ornithology and tropical ecology. Participants will discover the stunning diversity of flora and fauna in the lush forests bordering the Amazon, gliding through its tributaries to explore the rain-forest canopy of this ecosystem.

Over 4,000 species of birds dwell within the Amazon, as well as three-toed sloths, caimans, and giant tree frogs. During last February's Discovery Tours trip, participants sighted more than 250 birds — including yellow-billed terns, tropical screech owls, great potos, parrots, vultures, and the vermilion flycatcher — along with Amazon dolphins, saddle-backed tamarins, and several species of bats.

The adventure begins in Peru among the ribermos (river people) of Iquitos. The ribermos live in thatched-roof dwellings and travel by dugout canoes. The tour participants adapt to local

custom, traveling by canoe down the Amazon to Napo, the largest of all Peruvian tributaries, where they are accommodated in rustic jungle lodges and enjoy fresh Peruvian-style meals cooked over an open hearth.

Here, fascinating activities abound: observe colonies of rare hoatzins — pheasant-sized birds that walk on all fours, climb trees, and swim under water to escape danger. Hike through remote jungle passages to an isolated lake for rare views of wildlife and to fish for piranha. Visit a Yagua Indian village, deep in the jungle. A post-tour excursion to the Inca sites of Cuzco, Pisac, and spectacular Machu Picchu — where you can explore ancient fortresses, palaces, and ruins — is also available.

The special Amazon Wildlife Tour is limited to 30 adventurous participants. The basic tour price, including round-trip airfare from Miami, is \$1,695; the optional post-tour excursion is \$595.

For further information, contact Discovery Tours at the Museum at (212) 769-5700. Callers from outside of New York State can dial 800-462-8687.

Museum Notes

Special Exhibitions and Highlights

Changing concepts of how the dinosaurs really looked and behaved are chronicled through paintings, drawings, sculptures, and models in Gallery 1's current exhibition. *Dinosaurs Past and Present* is a history of the 125-year collaboration between scientists and artists in the portrayal of dinosaurs in their natural habitat. Through January 3.

Ancient Eskimo Ivories of the Bering Strait features more than 160 historical artifacts that are remarkable for their sculptural quality, engraved designs, and relief carvings. Many of the display items, which are carved primarily from walrus ivory, depict human and animal figures that appear to represent interrelationships of living things with the spirit world. In the Naturemax Gallery, through January 3.

The World's Oldest Turtle, a plastic reconstruction of a large fossil turtle, is on display in the Roosevelt Rotunda.

The Museum was founded in 1869, its cornerstone laid in 1874, and its first structure was completed in 1877. Its construction was a task that required the combined skills of Hercules and Croesus. *Architecture for Dinosaurs*, in the Akeley Gallery, is a pictorial history of an epic feat.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:00 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *The Hidden Secrets*. New York City's

largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

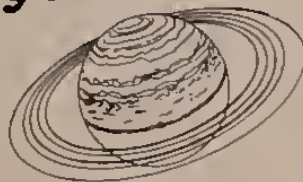
The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the age of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

Happenings at the Hayden



Sky Shows

The Hayden Planetarium has a new double-feature Sky Show that will be presented through November 22.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the Amazing Disappearing Martians and reveals the secrets behind many UFO sightings. NASA is scheduled to launch

a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

What led the Wise Men to Bethlehem — a special star, a comet, a meteor, or something else? *The Star of Christmas*, from November 25 through January 3, is the story of how historians, theologians, linguists, and astronomers worked together to unravel an ancient mystery.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, November 14, and at noon on Saturday, December 12. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on Saturday, January 2, and at noon on Saturday, February 6. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance, reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn. *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*, featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun

1 1:00 to 4:00 p.m. From Cuban Son to Latin Jazz: Sacred Taino Icons: Pre-Columbian Taino Legends. Caribbean Month at the Leonhardt People Center. Free. Page 6.

1:00 and 3:00 p.m. Machito: A Latin Jazz Legacy. Linder Theater. Free. Page 1.

2:00 and 4:00 p.m. Africa in Puerto Rico through Dance, Music, and Poetry. Kaufmann Theater. Free. Page 1.

8 12:00 p.m. Art and Artisans. Film program celebrating the Margaret Mead Film Festival. Kaufmann Theater. Free. For information, call (212) 769-5305.

1:00 to 4:00 p.m. Musica Jibara; Altars in Afro-Caribbean Religions. Caribbean Month in the Leonhardt People Center. Free. Page 6.

2:00 p.m. New York Shell Club. Room 419. Free.

15 1:00 and 3:00 p.m. Chemistry for Kids. Members' Family Program. Kaufmann Theater. \$2.50 for Members, \$5 for non-Members. Page 2. **SOLD OUT.**

1:00 to 4:00 p.m. Dominican Traditional Music: African Religions in the Caribbean; European Social Dance in the Caribbean. Caribbean Month at the Leonhardt People Center.

2:00 p.m. New York Paleontological Society. Room 419. Free.

Mon

2

Tue

3

Two New Movies on the Big Screen

Every Friday and Saturday evening the Naturemax Theater presents double feature showings of Grand Canyon: The Hidden Secrets and Chronos. Showtimes are at 6:00 and 7:30 p.m., and Members receive a 40 percent discount on admission.



10 8:00 p.m. Linnaean Society of New York. Leonhardt People Center. Free.

17 7:30 p.m. Desert Fish. Members' Evening Program. Main Auditorium. Free for Members, \$5 for non-Members. Page 3.

18 7:00 p.m. Languages of Afro-Cuban Faiths. a lecture given by Dr. Isabel Castellanos. Kaufmann Theater. Free. Page 6.

7:00 p.m. Met Grotto. National Speleological Society. Room 319. Free.

7:15 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

24 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

Moon at perigee.

Wed

4 7:00 p.m. Traditional African Rituals in New Lands, a lecture by Dr. Sheila S. Walker. Kaufmann Theater. Free. Page 6.

7:45 p.m. Amateur Astronomers Association. Dr. H. A. Pamham, speaker: "Navigating by the Stars." Main Auditorium. Free.

Thu

5 Full moon.

6 7:00 p.m. New York Microscopical Society. Room 419. Free.

12 Moon at apogee.

13 Last-quarter moon.

11 Veterans' Day. 7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m., thanks to a generous grant from Mobil The American Museum Restaurant is open till 7:30 p.m.



21 1:00 to 4:00 p.m. Afro-Caribbean Dance: Fiesta of Loiza Aldea. The Art of Carnival Costume Design. Caribbean Month at the Leonhardt People Center. Free. Page 6.

This weekend is the last chance to see Cosmic Illusions and The Space Telescope at the Hayden Planetarium. New moon.

28 The Leonhardt People Center is closed.

26 Thanksgiving Day. The Museum is closed.

27 First-quarter moon.



The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

29 The Leonhardt People Center is closed.

30

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-S920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700, toll-free outside NY State: (800) 462-8687

November 1987
American Museum
of Natural History

DOTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 12, No. 11 December 1987



"The Lady of Carthage," a mosaic on loan from the Carthage Museum, is from the fifth or sixth century A.D. Her frontal pose and wide-eyed gaze reflect the Byzantine influence on an art form that the ancient Carthaginians invented and developed with extraordinary skill. Multicolored stones, highlighted with blue and emerald green glass, form an image at once serene and mysterious. Although her identity is still uncertain, recent excavations in Tunisia tell us much about the world in which the Lady of Carthage lived.

Carthage: A Mosaic of Ancient Tunisia

Exhibition opens Wednesday, December 2
Gallery 3

Razed to the roots by Roman conquerors in 146 B.C., the vanquished city never died. From its founding by Phoenicians in about 850 B.C., Carthage endured a phenomenal series of setbacks and triumphs. Once the head of a powerful commercial empire, the city surmounted its fiery destruction and colonization by Rome to become a thriving center of artistic achievement.

The distinctive art forms of this ancient North African city, along with its political and cultural significance, are documented in the new exhibition *Carthage: A Mosaic of Ancient Tunisia*. The most comprehensive view of life in this region ever displayed in the United States, the exhibition explores the succession of Carthaginian cultures,

dating from 800 B.C. to the sixth century A.D. Treasures on display include bronze and marble statues of figures both real and mythological, as well as lavish jewelry and ornaments and enormous polychrome mosaics that depict hunting scenes, feasts, and gladiatorial conquests.

All of the exhibition's features were lent by Tunisian museums, and some artifacts from current excavations have never before been seen by the public. Among the items on display are cremation urns, a cache of hundreds of gold coins, a death mask molded from the face of a Berber of the second century A.D., and a makeup box with a shell containing 2,000-year-old rouge.

Carthage: A Mosaic of Ancient Tunisia was produced by the

American Museum in cooperation with the Tunisian National Institute of Archaeology and Art, the Musée National du Bardo of Tunis, and the Tunisian museums of Sfax, Sousse, Carthage, El Jem, and Nabeul. The exhibition is supported in part by a grant from the National Endowment for the Humanities and an indemnity from the Federal Council on the Arts and Humanities. After its premiere at the American Museum, the exhibition will embark on a national tour.

Special programs organized in conjunction with the new exhibition include a symposium on Carthaginian society, the showing of a classic film, and Members' guided tours. Please see page 9 for further details.

Meet the Beetles

Next month, a behind-the-scenes tour will give Members an insider's view of the collections and ongoing research in the Department of Entomology.
Page 5

Kwanzaa

Performances of music and dance, along with special workshops and lectures, highlight the Museum's observance of Kwanzaa, a festival of cultural reaffirmation for black Americans.
Page 2

Heaven on Earth

The Hayden Planetarium's Courses for *Stargazers* bring the skies within your grasp with a series of classes in astronomy, aviation, and navigation that range in levels from basic to advanced.
Page 10

Sci-Fi Faves

Godzilla and King Kong are a couple of the stars of *Fantasy Dinosaurs of the Movies*, a Members' program that spotlights the role of prehistoric creatures in the movies.
Page 4

Holiday Concerts

Music of the Renaissance, as performed by the Ensemble for Early Music, will be accompanied by a dazzling array of special effects in the annual *Holiday Concerts* at the Hayden Planetarium.
Page 4

Celebrate Kwanzaa

Sunday, December 27, Monday, December 28,
and Wednesday, December 30
See below for specific events, times, and locations
Free (some programs require tickets)

The ideal forum for exploring cultural roots, Kwanzaa is a seven-day celebration that recognizes Americans of African ancestry as products of two worlds. The Museum's Department of Education, in cooperation with the New York Urban Coalition, Inc., offers a series of programs that explore the origins, principles, and practices of Kwanzaa.

From the first celebration by seven people in 1966, Kwanzaa has blossomed into a national holiday observed by some 13 million Americans. Founded by Dr. Maulana Karenga, a professor of black studies and a cultural nationalist, Kwanzaa is neither a transported African holiday nor a substitute for Christmas. "Although Kwanzaa has some historical roots in Africa," Dr. Karenga explained, "it is essentially a product of the particular social conditions and self-determined needs of the African-American people."

Transcending religion and politics, the seven-day holiday is based on seven fundamental principles: unity, self-determination, collective work and responsibility, cooperative economics, purpose, creativity, and faith. The series of lectures, workshops, performances, and demonstrations at the Museum illustrates the sense of common purpose and spiritual unity promoted by Kwanzaa.

Seed Day

Sunday, December 27

* **Huggy Bean and the Origins of her Magical Kente Cloth.** 2:00 and 4:00 p.m. Kaufmann Theater. Dramatized children's musical journey that recounts the origins and significance of the Kente cloth. Children and elders are transported to Ghana to experience African folklore and traditions.

* **Harlem Renaissance.** 1:00 and 3:00 p.m. Linder Theater. Schroeder Cheny and his puppets talk about noted personalities of the Harlem Renaissance. Langston Hughes, Zora Neale Hurston, Eubie Blake, and others are remembered in this enchanting presentation.

* **African Playtime.** 1:00, 2:00, 3:00, and 4:00 p.m. Blum Lecture Room. Participants hear and create stories and play traditional games. Presented by Selina Akua Ahoklui.

A Touch of Folklore and More. 1:30, 2:30, and 3:30 p.m. Leonhardt People Center. Senegalese festival dances.

African Games. 1:00, 2:00, 3:00, and 4:00 p.m. Terrace I. Amadoma Bediako demonstrates the role and function of games in African society.

Rites of Passage. 1:00, 2:00, 3:00, and 4:00 p.m. Terrace II. Slide-illustrated talk on rites of passage in contemporary African-American cultures.

* **Stenciling.** 1:00, 2:00, 3:00, and 4:00 p.m. Calder Lab. Quassia Tukufo teaches



Meet "Huggy Bean" on December 27

an ancient African tradition of cloth design in an exciting workshop.

Elders Day

Monday, December 28

* **Caribbean Jump-Up.** 2:00 and 4:00 p.m. Kaufmann Theater. Tropical Splendor Art and Cultural Association of U.S.A. re-creates the excitement and festive mood of Caribbean carnival with steel band music, calypso music and dance, and colorful costumes.

* **African Folk Music.** 1:00 and 3:00 p.m. Linder Theater. Akyene Baako (First Drum) Highlife Band performs the music of Africa. The ensemble leads a participatory program on African recreational music with folk and folk-inspired songs.

* **Caribbean Folktales.** 1:00, 2:00, 3:00, and 4:00 p.m. Blum Lecture Room. Cheryl Byron and Company take the audience on an African journey through dramatized musical presentations of African, African-American, and Caribbean folktales.

Afro-Puerto Rican Dance, Music, and Poetry. 1:30, 2:30, and 3:30 p.m. Leonhardt People Center. Ensemble Soninke performs traditional Afro-Puerto Rican music and dance of bomba and plena.

Ritual/Ceremonial Clothing. 1:00, 2:00, 3:00, and 4:00 p.m. Terrace I. Suquan Diop displays African costuming and discusses its role and significance in ceremonies and rituals of African societies.

Kwanzaa Culinary Feast. 1:00, 2:00, 3:00, and 4:00 p.m. Terrace II. In a slide-illustrated presentation, Charles Williams shows traditional Kwanzaa menus that capture the seven principles.

* **Tie-Dye.** 1:00, 2:00, 3:00, and 4:00 p.m. Calder Lab. Carmen Lowe teaches the West African technique of tie-dye in this hands-on miniworkshop.

* **These Kwanzaa programs require tickets. Starting at 11:00 a.m. on the day of the program, free tickets will be distributed on a first-come, first-served basis at the first-floor Kaufmann Theater ticket booth. No more than two tickets per adult in line.**

Regeneration Night
Wednesday, December 30
Main Auditorium
7:30 p.m.

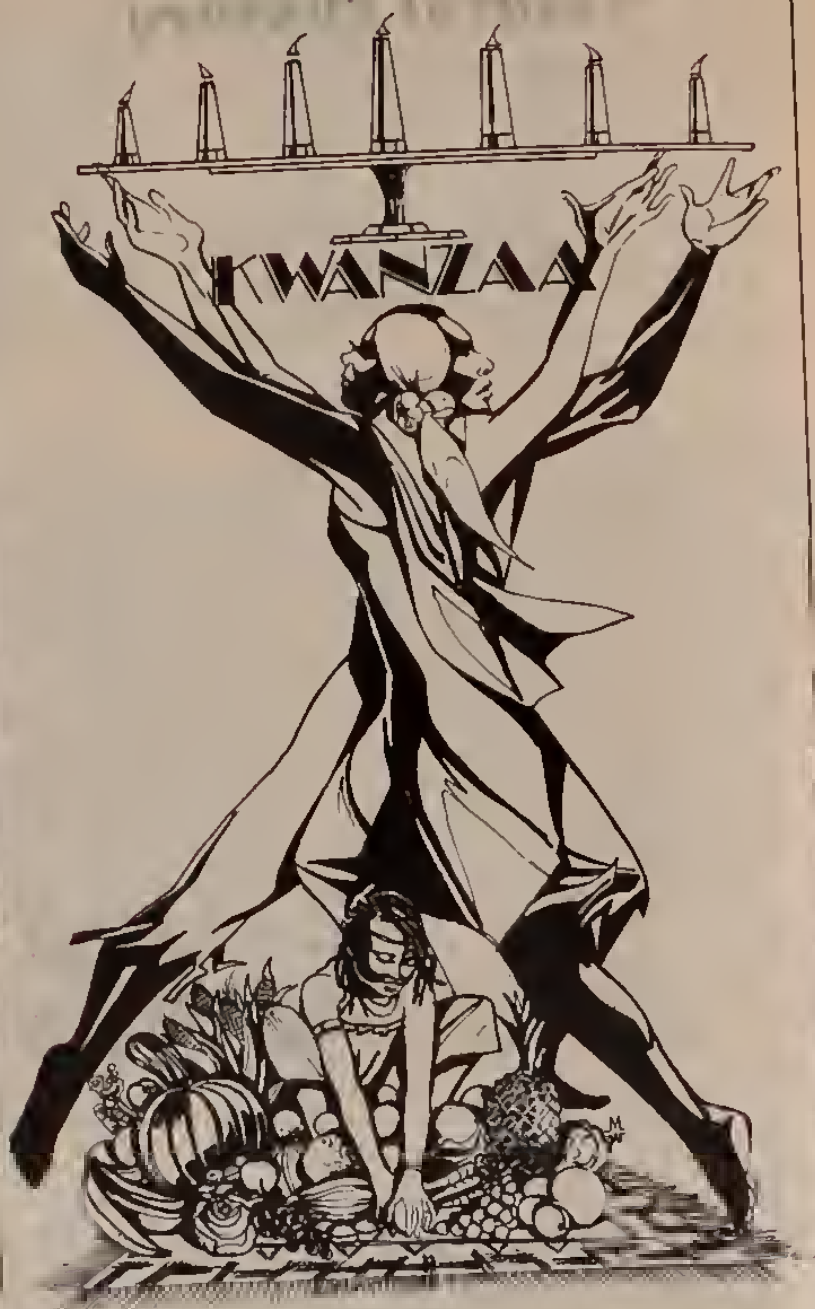
A festive rite of passage in which the accomplished elders of the community hand down the symbols of achievement into the hands of concerned youth.

Music of Two Worlds. Through music, song, and dance, Montego Joe and Company demonstrate how African-Americans have retained and drawn upon African creative expression to form unique styles of music and dance.

Nguzo Saba Dance Extravaganza. Forces of Nature Dancers and Drummers perform dramatic and energetic choreography to the seven principles of Kwanzaa.

For free tickets to the Regeneration Night program, send a self-addressed, stamped envelope by December 15 to: Department of Education, Community Programs, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. No more than two tickets per request.

For further information about the Museum's celebration of Kwanzaa, call the Department of Education at (212) 769-5315. These programs are made possible in part by a gift from the Samuel and May Rudin Foundation.
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The Natural History of Natural History

SOLD OUT
from November
issue



This view of the Museum is from *Architecture for Dinosaurs*, a current exhibition that's featured in the Members' tours.

Observe the 100-million-year-old clam fossils in the Portuguese limestone of the Roosevelt Rotunda and discover the intentions and materials behind the Museum's design and construction.

On Wednesday, December 9, urban geologist Sidney Horenstein conducts special Members' tours that look at the Museum's geology, geography, and varieties of architectural style.

The tours take place at 3:00 and 6:00 p.m. and are open only to Participating, Donor, and Contributing Members. Tickets are \$7. For registration information, call (212) 769-5600.

The Shoestring Players

Sunday, January 31

1:00 and 3:00 p.m.

Kaufmann Theater

\$4 for Members, \$6 for non-Members



In an energetic Members' family program, actors metamorphose into animals — and into caves and castles and numerous other creatures and objects. *The Shoestring Players*, unfettered by sets or props, present a unique form of theater that relies on the shared imagination of the actors and the audience. In a performance of four folktales from around the world, the players combine adventure, humor, and drama in a style that appeals to all age groups.

In "The Magic Pasta Pot," an

Italian version of "The Sorcerer's Apprentice," Big Anthony steals the pot and finds he's bitten off quite literally more than he can chew. A French winemaker who's mistaken for a physician must use his wits to save his skin in "The Make-Believe Doctor." "The People Who Could Fly," a story from the old South, concerns the rescue of a boy sold into slavery. And a farcical anecdote from Ghana is the basis of "Talk," the tale of a village of people who can't keep quiet.

The Shoestring Players are

under the artistic direction of Joseph Hart, associate professor of theater arts and master teacher of creative dramatics. The New Jersey-based troupe has performed in schools and museums throughout the Greater New York area. Each performance is one hour long and includes an intermission piece in which the actors and audience accompany each other on a creative dramatics adventure.

To register for *The Shoestring Players*, please use the adjacent coupon.

December Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *December Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Holiday Concerts. Wednesday, December 16, and Thursday, December 17, 7:00 and 9:00 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$12. Please indicate a first, second, and third choice of times, if possible:

| | | |
|--------------------|-----------------|-----------------|
| Wednesday, Dec. 16 | _____ 7:00 p.m. | _____ 9:00 p.m. |
| Thursday, Dec. 17 | _____ 7:00 p.m. | _____ 9:00 p.m. |

Number of Members' tickets at \$8: _____
Number of additional tickets at \$12: _____
Total amount enclosed for program: _____

Fantasy Dinosaurs of the Movies. Tuesday, December 8, 6:30 and 8:30 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8. Please indicate a first and second choice of times, if possible:

_____ 6:30 p.m. _____ 8:30 p.m.

Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

The Shoestring Players. Sunday, January 31, 1:00 and 3:00 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first and second choice of times, if possible:

_____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$4: _____
Number of additional tickets at \$6: _____
Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Fantasy Dinosaurs of the Movies

Tuesday, December 8
6:30 and 8:30 p.m.
Main Auditorium
\$5, and open only to Members



Dinosaurs live and breathe again on the movie screen, an apt medium for their colossal dimensions and reputations. Since the earliest days of motion pictures, filmmakers have shared their audiences' enthusiasm and curiosity about prehistoric creatures. *Fantasy Dinosaurs of the Movies* offers Members an informal history of prehistoric animals on film and the special effects used for their cinematic rebirth.

Clips from numerous motion pictures, including the early silent classics *Gertie the Dinosaur* and *The Dinosaur and the Missing Link*, are featured, along with clips from some famous talkies — *One Million B.C.* and *King Kong* — and from more recent pictures, such as *Gorgo*,

Godzilla vs. the Smog Monster, *Baby*, *Secret of the Lost Legend*, and many others.

Donald F. Glut, a writer and creative consultant, will narrate the program and answer questions from the audience afterward. The author of numerous books, including *The Dinosaur Dictionary* and *The Dinosaur Scrapbook*, Glut has presented *Fantasy Dinosaurs of the Movies* at several museums across the country.

This program is presented in conjunction with the special exhibition in Gallery 1, *Dinosaurs Past and Present*. The exhibition will remain open until 8:30 on the evening of the program. To register, please use the December Members' programs coupon on page 3.

Native American Film Festival

Saturday, December 12
10:30 a.m. to 6:00 p.m.
Kaufmann Theater
Free

Contemporary Indian life throughout the Americas — with fascinating glimpses into the past — is the focus of the fifth annual *Native American Film and Video Festival*. The festival features seven recent documentaries, including *Martin Chambi*, a biography of the renowned Peruvian photographer; *The Earth Is Our Mother*, an examination of Christian

missionizing among the Indian people of Colombia; and *Nava-jo Talking Picture*, a Navajo filmmaker's probe of her cultural heritage.

This program is sponsored by the Museum's Department of Education in cooperation with the Museum of the American Indian. For a complete schedule, call the Museum of the American Indian at (212)

283-2420 or the Department of Education at (212) 769-5305. This program is supported in part by a grant from the Helena Rubinstein Foundation. Seating is limited and on a first-come, first-served basis.

**An Education Department
Public Program.**

Family Films

Tuesday, December 29
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
Free, and open only to Members
(Your membership card will admit you and your guests)

A Members' family program offers a look at animals in action with a special holiday series of short films.

Camels are the focus of *Isy Boukir*, an artfully filmed observation of their physique, locomotion, and group interactions. The *Village Voice* declared, "You see these animals, you almost feel them, their flesh, their strength, their sense of their

own community." (16 mins.)

Providence intervenes when a child from a poor family is sent to sell his pet for slaughter in *Zlateh the Goat*. This dramatization of an Isaac Singer story was filmed on location in rural Czechoslovakia. (20 mins.)

Natural sound and guitar music are the sole accompaniment to *Impala*, a portrait of these creatures and their habitat.

Viewers observe a face-off between a couple of bucks, a pair of impalas grooming each other, and these animals' reactions to the appearance of their predators. (11 mins.)

Your membership card is your ticket of admission, and it will admit you and your guests. Seating is on a first-come, first-served basis.

Holiday Concerts at the Planetarium

Wednesday, December 16, and Thursday, December 17
7:00 and 9:00 p.m.
Planetarium Sky Theater
\$8 for Members, \$12 for non-Members

"Drop everything and go," urged *Cue* magazine in its review of a performance by the Ensemble for Early Music. Members have the opportunity to do just that when the celebrated ensemble performs Renaissance music at the Planetarium's annual *Holiday Concerts*.

Swirling nebulae, moonrises, and laser visuals, as well as panoramas of medieval scenes, are among the special effects accompanying the music. The

ensemble re-creates a Renaissance ambience by using authentic instruments and voice techniques. The concert will feature sacred and secular pieces from the twelfth to sixteenth century — including dance music from Italy, motets, and Elizabethan lute songs.

Ensemble-in-residence at the Cathedral of Saint John the Divine and regular performers at the Cloisters, the ensemble is under the direction of

harpichordist and conductor Frederick Renz. A former member of the New York Pro Musica Antiqua, Renz is now the director of the Early Music Foundation of New York. The highly acclaimed ensemble has toured extensively throughout the United States, South America, Europe, and the Middle East.

To register for *Holiday Concerts*, please use the December Members' programs coupon on page 3.

Carnival of the Animals

Sunday, December 13
2:00 p.m.
Kaufmann Theater
Free

In a program designed for young people, the Bloomingdale Chamber Orchestra performs the Saint-Saëns classic *Carnival of the Animals*. Under the direction of Martin Rutishauser, the orchestra plays a repertoire of young people's

favorites, including works by composers Dimitry Kabalevsky and Ralph Vaughn Williams. This program marks the orchestra's sixth appearance at the Museum.

Seating is limited and on a first-come, first-served basis.

This program is supported in part by a grant from the Helena Rubinstein Foundation. For information, call (212) 769-5305.

**An Education Department
Public Program.**

Three Generations

Wednesday, December 2
7:30 p.m.
Kaufmann Theater
Free

Actor John S. Patterson performs *Three Generations*, a dramatic retrospective of black poetry over the past century. Patterson, who has performed his one-man shows throughout the United States, delivers excerpts from three of his most popular programs.

"Dunbar: Lyrics of Love, Laughter, and Politics" features the work of Paul Dunbar, the first black American poet to achieve widespread recognition within his lifetime. The son of former slaves, Dunbar is noted for his use of black dialect in his poetry.

Like many another blues master, Langston Hughes was a native of Mississippi. Selections from "The Dream Keeper Speaks: The World of Langston Hughes" portray the poet's enduring contribution to American literature — the introduction of the blues idiom. Using deceptively simplistic terms that

mimic ordinary street talk, Hughes wrote highly stylized, deeply moving verse that integrates music, protest, and social commentary.

The pioneering work of Dunbar and Hughes is brought up to date with highlights from "Hoodoo Revelations: A Conjure of Black Prose and Poetry." Patterson performs poetry from the sixties to the present, including the works of James Baldwin, Alice Walker, and other poets for an exultant display of contemporary American life from the perspective of black American writers.

Seating for *Three Generations* is limited and on a first-come, first-served basis. This program is made possible in part by a gift from the Samuel and May Rudin Foundation. For information, call (212) 769-5315.

An Education Department Public Program.

Participating, Donor, and Contributing Members are invited to a

Behind-the-Scenes Tour of the Department of Entomology

Wednesday, January 20, and Sunday, January 24
\$9, and open only to Participating, Donor, and Contributing Members

The Department of Entomology has over 16 million specimens in its collection, accounting for nearly half of all the specimens in the Museum's care.

Members are invited to view a sampling of this outstanding collection in a special behind-the-scenes tour of the department. The tour will visit collection areas and research offices that are never open to the general public. Members will learn how insects are collected in the field and prepared for the Museum's collections. Scientists from the department will explain their research on a variety of projects ranging from a comprehensive study of rove beetles, which exist on every continent except Antarctica, to the nesting biology of one of the world's largest known bees.

The tour will conclude with complimentary coffee, tea, and cider in the Audubon Gallery. To register for the tour, please use the adjacent coupon. Early registration is advised for the limited number of places.

Behind-the-Scenes Tour of the Department of Entomology. \$9, and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Wednesday, January 20, between 5:15 and 6:15 p.m.
_____ Wednesday, January 20, between 6:30 and 7:30 p.m.
_____ Sunday, January 24, between 10:30 a.m. and noon
_____ Sunday, January 24, between 1:00 p.m. and 2:30 p.m.

Number of tickets at \$9 each: _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Poetic Visions

Wednesday, December 9
7:30 p.m.
Kaufmann Theater
Free

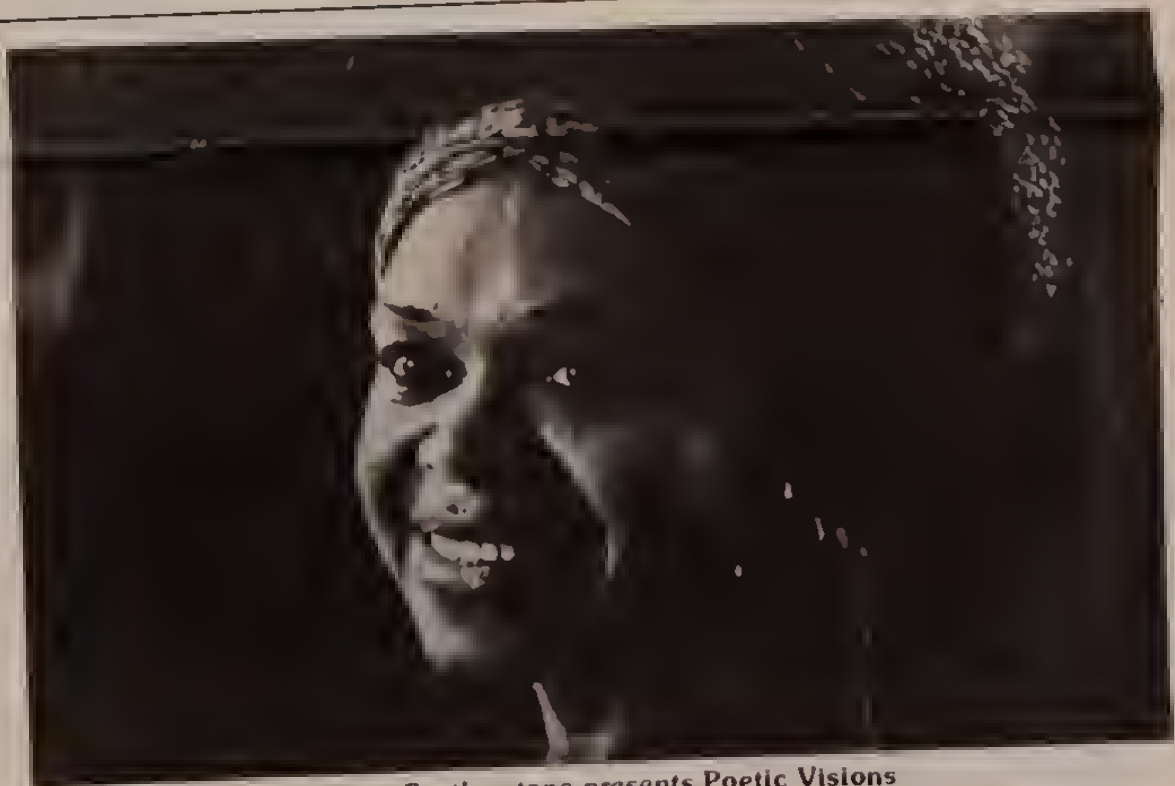
The words of James Weldon Johnson, Langston Hughes, Imamu Baraka, and other black American writers are personified in *Poetic Visions*, a versatile and dynamic performance by actress Joanna Featherstone.

From her Broadway debut in "The Great White Hope" to "Imagination," her nationally televised educational program for children, Featherstone has won wide critical acclaim for her work. *Poetic Visions* features

the musical and dance accompaniment of performers Ahmed Abdullah, Mickey Davidson, and Kobla Mensa Dente.

Seating for this program is limited and on a first-come, first-served basis. This program is made possible in part by a gift from the Samuel and May Rudin Foundation. For further information, call (212) 769-5315.

An Education Department Public Program.



Joanna Featherstone presents *Poetic Visions*

FACES Magazine

What are muffatees? (Woolen fingerless gloves worn in early nineteenth-century New England.) What did eastern Europeans use to build shelters during the Ice Age? (They constructed huts from the bones of mammoths.)

Intriguing facts like these appear each month in *FACES*, a magazine about people. Although its subscribers are between the ages of 8 and 14, *FACES* appeals to the anthropologist in everyone — even adults can appreciate its imagi-

native and educational features. Each issue of the magazine, published ten times a year in cooperation with the Museum, focuses on a single theme that is developed through articles, games, photographs, stories, and pictures. Kids get a global and historical perspective on activities — keeping warm in cold climates, moving to new places, eating, and dancing — and profiles of cultural groups like the Pueblo Indians, the Asante of West Africa, and the Maya. The fun begins with the mag-

azine's cover, an eye-catching picture announcing the issue's theme. Readers are encouraged to share their thoughts and make suggestions for upcoming issues. Look around you. What are people doing? What are people wearing? What you see could be the theme of a future issue of *FACES*, the magazine about people.

Members receive a special discount on subscriptions to *FACES*. To place your order, please use the adjacent coupon.

FACES: The Magazine About People

☐ Yes! I want my child to have a year of *FACES*.

_____ \$15.95 (Members) _____ \$17.95 (non-Members)

Child's name: _____

Address: _____

City: _____ State: _____ Zip: _____

Your name: _____

Your address: _____

City: _____ State: _____ Zip: _____

Please make your check or money order payable to *FACES* (add \$4 for foreign orders) and mail with this coupon to: *FACES*, Dept. 722, 20 Grove Street, Peterborough, NH 03458

Year in Review

Each year, the Museum hosts about 2.5 million visitors. Many of them come to admire the permanent exhibits — the peerless dinosaur displays, the awesome arc of the 94-foot blue whale — as well as temporary exhibitions such as those of earlier this year, *The Chaco Phenomenon* and *On Tap: New York City's Water Supply*. Other visitors are attracted by the year-round series of educational and entertaining programs offered by the Department of Education, the Hayden Planetarium, and the Membership Office.

What visitors to the Museum don't see, however, is sometimes even more intriguing than the actual exhibi-

tions. Behind the doors marked "Not Open to the Public," fascinating studies in the anthropological, mineralogical, and zoological sciences are carried out by a staff of 200 scientists and assistants. They work with a collection of 36 million specimens, preserving them and sharing them with the worldwide scientific community. Some of these specimens were acquired as gifts, exchanges, and purchases in the course of the Museum's 118-year history, and others are the fruits of scientific expeditions conducted under the Museum's auspices. Along with care of the collections and planning new exhibits, each of the Museum's scientific departments

conducts in-house and field research that covers every corner of the globe, comprising subjects as diverse as current Asian family rituals and the evolutionary history of long-extinct shelled cephalopods. The following profiles of ongoing studies offer just a glimpse of the range and variety of the continuing research at the Museum.

If you would like to read more about the Museum's research, we would be glad to send you our 1987 Annual Report. Call (212) 769-5600 for your complimentary copy.

VERTEBRATE PALEONTOLOGY

Research that ended 50 years ago was resumed in September by Curator Richard Tedford and a team of American and Chinese colleagues in east-central China. The Museum's large collection of fossils from the Chinese province of Shanxi was acquired during the 1930s, but subsequent political difficulties in China made it impossible to continue work there. In recent years, however, the Chinese have re-established contact with scientists at the Museum to jointly make use of the collections in New York and China.

Tedford and his co-workers are seeking a paleontological Rosetta Stone, a key to establishing the order of the kinds of animals that existed in eastern Asia over the past 1.5 to 7 million years. They re-collected and restudied the geological and paleontological evidence from Yushe, a county in the province of Shanxi, attempting to re-evaluate the faunal record. They used new field methods such as screen washing and paleomagnetic stratigraphy to augment existing knowledge of the animals, their succession, and the faunal changes recorded in ancient stream and lake deposits exposed there.

Considerable faunal change took place during the 5½-million-year span represented by the deposits, ranging from animals that are barely recognizable as precursors of modern fauna in the older rocks to animals much like today's horses, rhinoceros, deer, pigs, and wolves in the youngest part of the succession. Since the Museum's specimens from this area are mostly larger mammals, the party focused on collecting rodents and insectivores — shrews, mice, rats, and squirrels. The group processed three tons of rock during their five weeks in the field, and from the surface gatherings, a substantial micromammal record is indicated.



Deep canyons in a highly dissected plateau in Yushe County, Shanxi Province, China, expose the fossil-bearing deposits investigated by the American Museum and Chinese team.

Richard Tedford



A matchmade bride and groom pose for a formal portrait with the relatives of both families.

Horner Williams

ANTHROPOLOGY

Anthropologists and Korean Confucians agree that a society's observance of traditional rites offers a significant reflection of cultural values — changes in ritual form and content are a comment on larger social processes. Since 1976 Assistant Curator Laurel Kendall has researched the role of women in contemporary and traditional Korean society, and this year she continued her study of contemporary wedding practices.

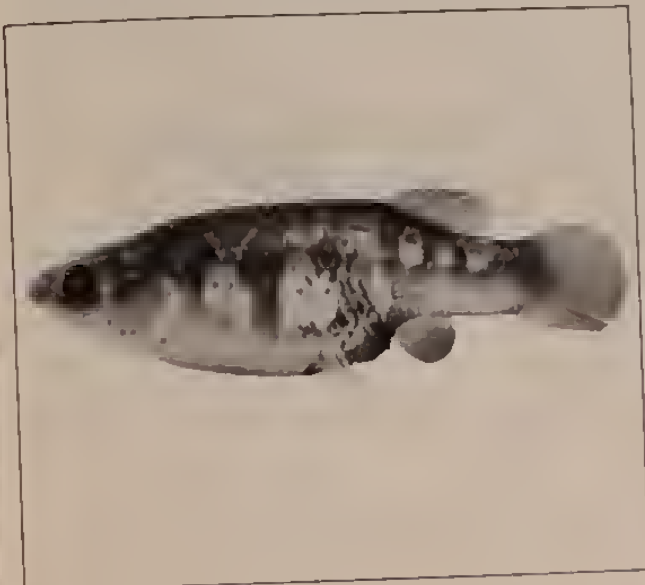
Rather than employ a questionnaire-style survey, Kendall sought in-depth interviews with people she met at commercial wedding halls. Many of these marriages were arranged through the assistance of a matchmaker. Although consulting a matchmaker might seem a custom more common to rural, less-educated classes, members of the urban upper-middle class tend to be more cautious in their approach to marriage and are far likelier to enlist a matchmaker's services.

During her most recent field trip, the matchmaker's role became a focus of the study, and Kendall talked to several amateur matchmakers, discussing their perceptions of the rewards and drawbacks of their work. Their position in society bears a correlation to that of Korean shamans, another area of Kendall's research. Both occupations are performed by women who are regarded by society with ambivalence: shamans and matchmakers are respected as individuals with an uncanny ability to assess a situation, and both are invested with a tremendous responsibility for the good or ill fortune that subsequently befalls their clients; however, both acquire personal gain through their activities, and consequently they are subject to suspicions of manipulation and deceit. Perhaps their most significant correlation is that both perform important and necessary roles as mediators, the shaman between human and spirit and the matchmaker between the otherwise unknown families of potential brides and grooms.

ICHTHYOLOGY

Although fishes are usually thought of as egg-laying animals, several groups of fishes have independently evolved viviparity — the ability to give birth to fully developed, free-swimming juveniles. One such group, the live-bearing topminnows of Central Mexico, is the subject of research by Assistant Curator Michael L. Smith.

The evolution of viviparity is an intriguing problem because it involves mechanisms that are unusual for fishes and thus regarded as evolutionary novelties. Embryos of the Mexican live-bearers increase their weight more than 100 times while still retained in the mother's body, thereby showing that they absorb more nutrients than are supplied by their yolk sacs. This is accomplished by means of a unique placentalike structure. Unlike the placenta of mammals (which develops from the mother), the placenta of the Mexican live-bearers develops from the embryo. By comparing the growth of the placental ribbons in embryos of different species, Smith has learned that they are an outgrowth of the embryonic gut. Although the embryonic placenta is a novel organ, its evolution can be understood as a simple increase in the rate of growth of the lower intestine.



ENTOMOLOGY

Curator Randall T. Schuh studies true bugs, a group that comprises such descriptively named insects as bed bugs, electric light bugs, and stink bugs. The true bug pictured below is from a group of 50 species that are found throughout North America; this particular species lives on pine trees in the southeastern United States.

In their investigations of true bugs, Schuh and his associates try to identify what plants the bugs eat and their distribution as well as methods of recognizing a particular species. In their mature stages, many true bugs resemble ants and are often found in the same places. Most species are associated with plants, although several are predatory. They feed by sucking the juices from plants and animals and are recognizable by their distinctive mouth parts and by the glands on the thorax that emit an acrid chemical. Their study demands a microscope, since the smallest of true bugs are less than a millimeter long.



MINERAL SCIENCES

Curator George E. Harlow made two trips to Guatemala this summer to collect the mineral jadeite (pictured above in the boulder), which he has been studying since 1984.

The mineral forms through a complex set of chemical reactions at faults, or fractures in the earth's crust, in a rarely preserved environment of high pressure and low temperature. The time and temperature history of the rocks containing jadeite are useful data in interpreting why the mineral forms under these particular circumstances and how its formation relates to processes within the earth.

Harlow has been examining artifacts of Maya jade to determine whether they are of the same source as Guatemala jade. The cross-fertilization of fields within the Museum provides an ideal opportunity for the pursuit of interrelated studies like this one, which relates the minutia of mineralogy and petrology to other areas such as plate tectonics and archeology.



INVERTEBRATES

These fossil mollusks are known as ammonites, marine animals that became extinct at approximately the same time as the dinosaurs, some 65 million years ago. Cousins to the squid and octopus, the ammonites' closest living relative is the pearly nautilus.

Associate Curator Neil H. Landman concentrates on the systematics, life history, and evolution of ammonites (especially scaphites — particular kinds of ammonites). He and his colleagues investigate the internal structure of scaphites — counting chambers within the shell, examining finer structures using a scanning electron microscope — to determine similarities and differences among species. Some species persisted for millions of years, whereas others are relatively short-lived. Close study of scaphites, based on their distribution in time (within a framework of millions of years) and space (North America), assists in the determination of their evolutionary patterns. Landman is currently studying the species diversity and geographic distribution of these scaphites at a time shortly before (geologically speaking) their worldwide extinction.

ORNITHOLOGY

The casual birdwatcher focuses on external characteristics as a means of species identification — the patterns and colors of a bird's plumage, for example. Because features like coloration can change rapidly over time, more conservative criteria are needed in the determination of relationships between species.

Wesley E. Lanyon, Lamont Curator of Birds, focuses on internal morphology to determine common ancestry between birds that often show no external resemblance. In his study of the tyrant flycatchers, the largest family of birds in the New World, Lanyon uses two anatomical complexes — the cranium and the syrinx (the sound-producing organ) — to determine the limits of genera and to reconstruct phylogenies.

The challenge of this research lies in the detection of errors and discrepancies in the traditional interpretations of higher-level flycatcher relationships: some of the flycatchers' presumed relatives are found to belong to other groups completely.



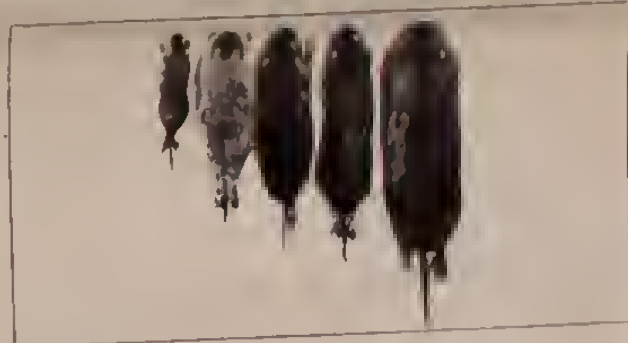
HERPETOLOGY

In certain lizard communities, there are absolutely no males. The checkered whiptail lizard pictured above represents a unisexual (all-female) species. The unfertilized eggs bulging beneath its skin will yield clones, offspring that are genetically identical to the female that laid them.

Curator Charles J. Cole continued his research on unisexual whiptail lizards in the southwestern United States and northern Mexico. In addition to field studies and a morphological approach that includes studies of chromosomes, Cole and his co-workers use molecular biology, with an emphasis on biochemical genetics. In addition, they have investigated proposed differences between the origin of unisexual lizards of North and South America. After a multidisciplinary comparison of populations from both continents, they were able to conclude that basically the same historical process occurs in both temperate and tropical zones.

The thrust of their work is to determine, first of all, whether specific lizards are really unisexual. (Most species of whiptail lizards are bisexual; their populations include both sexes, and they reproduce by fertilized eggs.) Once it is established that the lizards are indeed unisexual, the focus shifts to their manner of reproduction. Other considerations include their genetics, evolutionary history, and their taxonomic classification.

Ancestry of the unisexual lizards involved the hybridization of two bisexual ancestral species, an event that has occurred on several occasions in different lineages. Environmental changes introduced two different species to the same locality, a male and female hybridized, and among their offspring was at least one hybrid female capable of laying unfertilized eggs and perpetuating a clone. The data indicate there was an instantaneous loss of the requirement of sperm for reproduction in these hybrids.



MAMMALOLOGY

Working in the northern lowlands and southwestern highlands, Curator Sydney Anderson continued his survey of the mammals of Bolivia. The project, which began in 1980, is rooted in a 1963 expedition. Specimens already among the Museum's collections from that expedition and subsequent field trips form the basis of current studies.

The Bolivian mammals are lesser-known than the mammals of other South American countries. Research ranges from attempting to answer basic questions about the number and location of extant species to more complex subjects such as the nature of relationships between the species that live in the Andes and those of the lowlands. Subsidiary projects have arisen from the overall survey, in which new species are described and genera clarified.



15th Annual Origami Holiday Tree

On display in the Roosevelt Rotunda
Through January 6

You can't miss it. Twenty-five feet high and dazzling from top to bottom with thousands of silver stars and a brilliant array of ornaments, the Origami Holiday Tree is a wondrous sight.

Each of the natural history models that adorns the tree was folded from paper that's innocent of paste or scissors. The real marvel of origami is more than the pleasing product itself — the ancient art has become a medium for international goodwill and generosity.

"All you have to do is want to fold. Anyone can do it," says Michael Shall, professional paper folder and designer of the Holiday Tree. "Our volunteers range in age from 5 to 90, and they're people from every background imaginable. Origami is practiced all over the world. Although the word is Japanese — *ori* means folding, *kami* means paper — the art originated in China, where temple fans were folded from paper to preserve ritual fires."

But what has origami to do with the American Museum of Natural History?

"It's a matter of time," Michael explains. "In the Museum, we have volunteers who give us their time. And it's a great exchange: origami brings people into the Museum, we give lessons, and some volunteers go on to help in other areas of the Museum. Our volunteers dedicate hours of their lives to learning and improving their folds, and they sometimes create new ones. The amount of volunteer time contributed toward the tree over the past 15 years has got to be in the neighborhood of a quarter of a million hours."

Probably no one outside of the Department of Entomology was aware of the Museum's first Origami Tree, a modest three-footer decorated with folded paper insects by Alice Gray, an entomologist and (at that time) a novice in the art. Its success inspired Alice to dream of something more ambitious — nothing she couldn't do by herself, of course; perhaps a six-footer for the information desk in the Rotunda.

Alice chanced to mention this idea within earshot of Mrs. Constantine Sidamon Eristoff, whom she knew only casually. Until she received a request from the administration for some samples of origami, Alice had no clue that Mrs. Eristoff was chairwoman of the exhibition committee. Dispatch of the samples was soon followed by the intelligence that the tree would be 25 feet high. Since it was no job for one pair of hands, Alice enlisted the help of anybody who could hold a piece of paper and was willing

to learn. That huge tree was somehow dressed in time.

"Little by little, the design has changed," muses Alice, who has been with the Museum for almost 50 years. "We started by making 20 of each figure, and we made them the same size — big. Now we make six of each figure, in three or four sizes, with the smaller ones at the top and the bigger ones at the bottom. We hope that this way you can see one of each figure from any angle. We use only natural history subjects — mineral crystals, stars, icicles, plants, and mostly animals. People sometimes question me on our use of mythological creatures," Alice observes, with a hint of slyness. "I tell them, 'oh, that's part of anthropology.'"

"The tree," Michael stresses, "is a teaching tree. The models are of varied complexity — kids who have learned a few simple folds in school can point to the tree and say, 'I can do *that* and *that* one.' People who have more experience folding can point to the more elaborate models and say the same thing. The idea is that anyone can come to the tree and find origami accessible. That's why we have a Museum volunteer at the teaching table by the tree during all Museum hours while the tree is on display. Try it once — you can get hooked for life."

The Department of Library Services

There is a museum within the Museum, a great natural history collection inside of a greater collection. Writers, scholars, and specialists from all over the world come here for the variety of resources available in the Department of Library Services. Its extraordinary breadth comprises 115,500 titles and 245,500 volumes of periodicals. If the figures alone don't seem staggering, consider the range of its holdings — from molds of authentic leaves for the painstakingly accurate recreation of foliage for a gorilla exhibit to autographed letters by such famous people as "Boss" Tweed, Theodore Roosevelt, J.P. Morgan, and others.

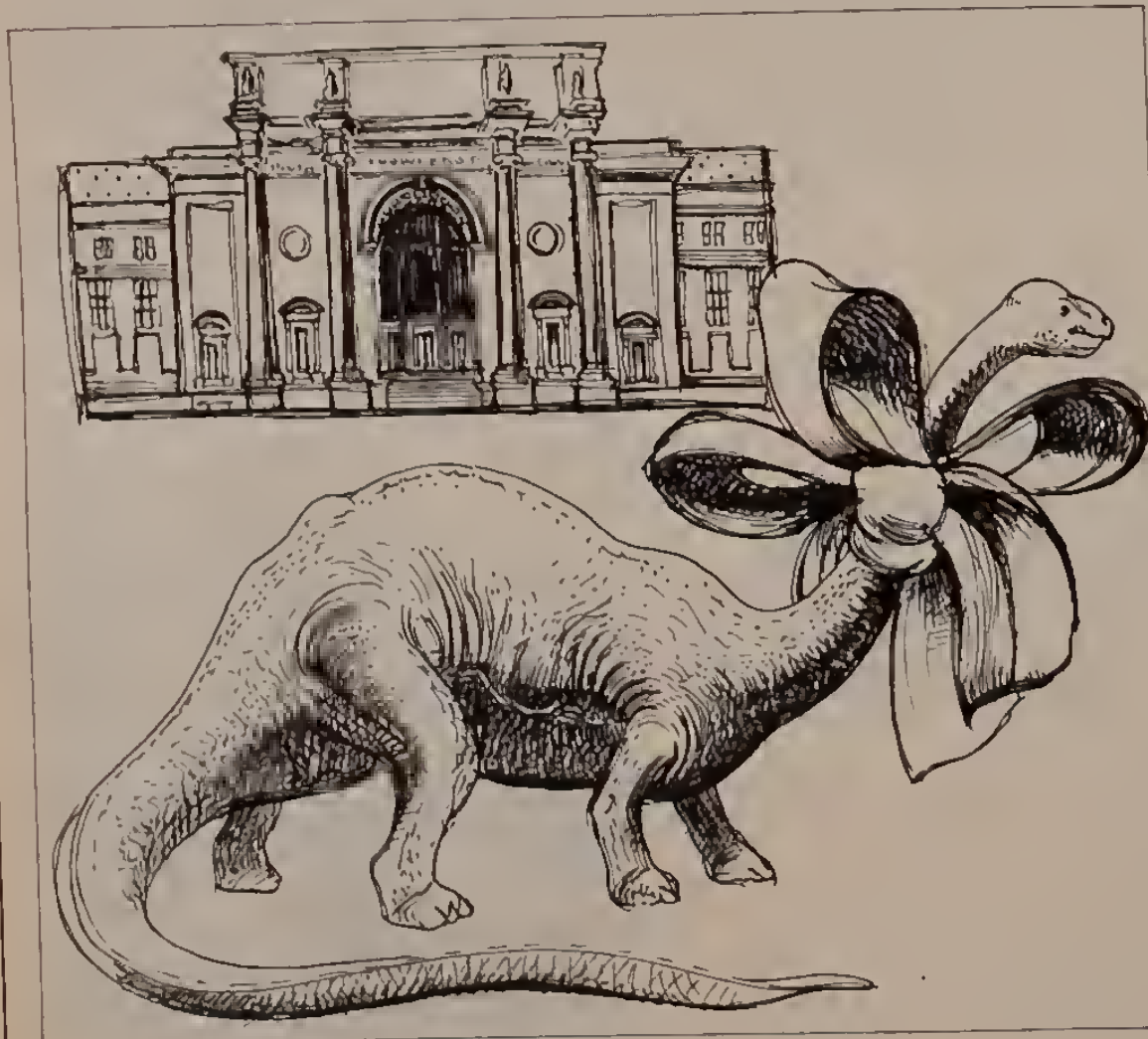
In addition to its general collection of books and magazines, the Library has five categories of special collections: rare books and manuscripts, photographs, films, Museum archives, and art and realia. The serial collection is the unique product of a century-long exchange with institutions around the world. Most of the world's languages are represented in

this collection of scientific literature, whose numerous subjects include mammalogy, geology, conchology, and museology.

The richness of the Library's materials allows a many-faceted approach to research. For a study of a Museum-sponsored expedition, for example, a researcher who comes to the Library might review its scientific aspects, examine related realia such as diaries and journals, and view films created by the explorers. In this fashion, the expedition's spirit and soul are recaptured.

We are pleased to announce that the Library has recently extended its hours to accommodate those who would like to use it on weekends and in the evening. The Library is open Monday through Friday from 11:00 a.m. to 4:00 p.m. and until 8:30 p.m. on Wednesday. On Saturday, the Library is open from 10:00 a.m. to 3:00 p.m. (Materials from Special Collections are available only by appointment on Wednesday evenings and Saturday; materials from the Rare Book Room are unavailable at those times.)

The Gift of Membership



Members can share their delight in the Museum by giving the gift of membership — at 30 percent off the regular membership rates. Our special holiday gift rates for Members are \$28 for a Participating Membership and \$14 for an Associate Membership.

All Members receive *Natural History* magazine, free Museum admission, and discounts galore. Associate Membership is

more suitable for people who live outside of the New York area, and Participating Membership is ideal for families and those who wish to take part in our year-round programs.

You can use the adjacent coupon to place your order, or save time by calling our toll-free number: 1-800-234-5252. Upon receipt of your order, we will announce your gift with a holiday greeting card.

☐ YES! A gift of Membership is a wonderful idea. Please enroll the following as:

— a \$14 Associate Member — a \$28 Participating Member

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

This Membership is a gift from:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

☐ Enclosed is my check payable to the American Museum of Natural History.

☐ Please bill me after the holidays.

Mail this coupon to Gift Membership, Membership Office, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192.

CARTHAGE

A Mosaic of Ancient Tunisia

Members' Tour of the Month

Free and open only to Participating, Donor, and Contributing Members

Next month, Members can take guided tours of the stunning new exhibit *Carthage: A Mosaic of Ancient Tunisia*. The tours will be conducted by Museum Highlights Tour Guides, volunteers who have been professionally trained. The tours last approximately one hour and are not recommended for young children. To register, please use the coupon.



At the center of "The Young Wrestlers Mosaic" is a crown and two palm branches, which will be awarded to the victor.

Members' Tour of the Month: Carthage. Free and open only to Participating, Donor, and Contributing Members.

Please indicate a first, second, and third choice of times:

| | | | |
|------------------------|-------|-------|-------|
| Wed., Jan. 6 (p.m.) | 6:30 | 7:00 | 7:30 |
| Sun., Jan. 10 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Jan. 13 (p.m.) | 6:30 | 7:00 | 7:30 |
| Sat., Jan. 16 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Jan. 17 (a.m.) | 10:30 | 11:00 | 11:30 |
| Thurs., Jan. 21 (p.m.) | 2:30 | | |
| Wed., Jan. 27 (p.m.) | 6:30 | 7:00 | 7:30 |
| Sat., Jan. 30 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Jan. 31 (a.m.) | 10:30 | 11:00 | 11:30 |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Carthage Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Please note: registration closes on December 23.**

Carthage is the highlight of the

Group Package Tour

An activity that's interesting and exciting for each individual in a big group can be a pretty tall order. If your organization is looking for an outing that's guaranteed to offer something for everyone, why not come to Carthage?

A retrospective of this ancient North African city is as near as the Museum's Gallery 3 (see page 1 for details of the exhibition). If the colorful mosaics, jewelry, and other artifacts of the Museum's newest exhibition fail to enchant every member of your party, there remains a worldwide range of creatures and cultures on permanent display.

The tour package is priced at \$19.50 per person and includes admission, a guided tour, lunch, and screenings of current Naturemax and Planetarium features (a tour with dinner is also available). To make reservations, contact Paula Cohen of Restaurant Associates at (212) 642-1510. One free escort per bus is available.

Views of Carthage

In conjunction with the new exhibition in Gallery 3 (see page 1 for details), the Department of Education offers a pair of programs this month that explore the realities and legends of that ancient culture.

Seating is limited and on a first-come, first-served basis. These programs are supported in part by a grant from the National Endowment for the Humanities. For additional information, call (212) 769-5305.

Carthage and the Mediterranean World:

A Symposium
Saturday, December 5
2:00 p.m.—4:00 p.m.
Kaufmann Theater
Free

Themes and artifacts from the new exhibition *Carthage: A Mosaic of Ancient Tunisia* are the focus of a symposium that examines the city's early cultural background, its social life, and its international role.

Symposium panelists include Mhamed Fantar, director of the

Tunisian Archaeological Institute, Aicha Ben Abed, conservator and director of the Musée du Bardo, and Shelby Brown, professor of classics at Dartmouth College. The discussion will be moderated by David Soren, professor of classical archeology at the University of Arizona and guest curator for the exhibition.

Hannibal: General of Carthage

Tuesday, December 22
2:00 p.m.
Kaufmann Theater
Free

The life and exploits of the

most famous military leader of Carthage and his struggle to conquer Rome are portrayed in *Hannibal*. This 1960 film classic stars Victor Mature, Rita Gam, and Gabriele Ferzetti (running time: 103 mins.).

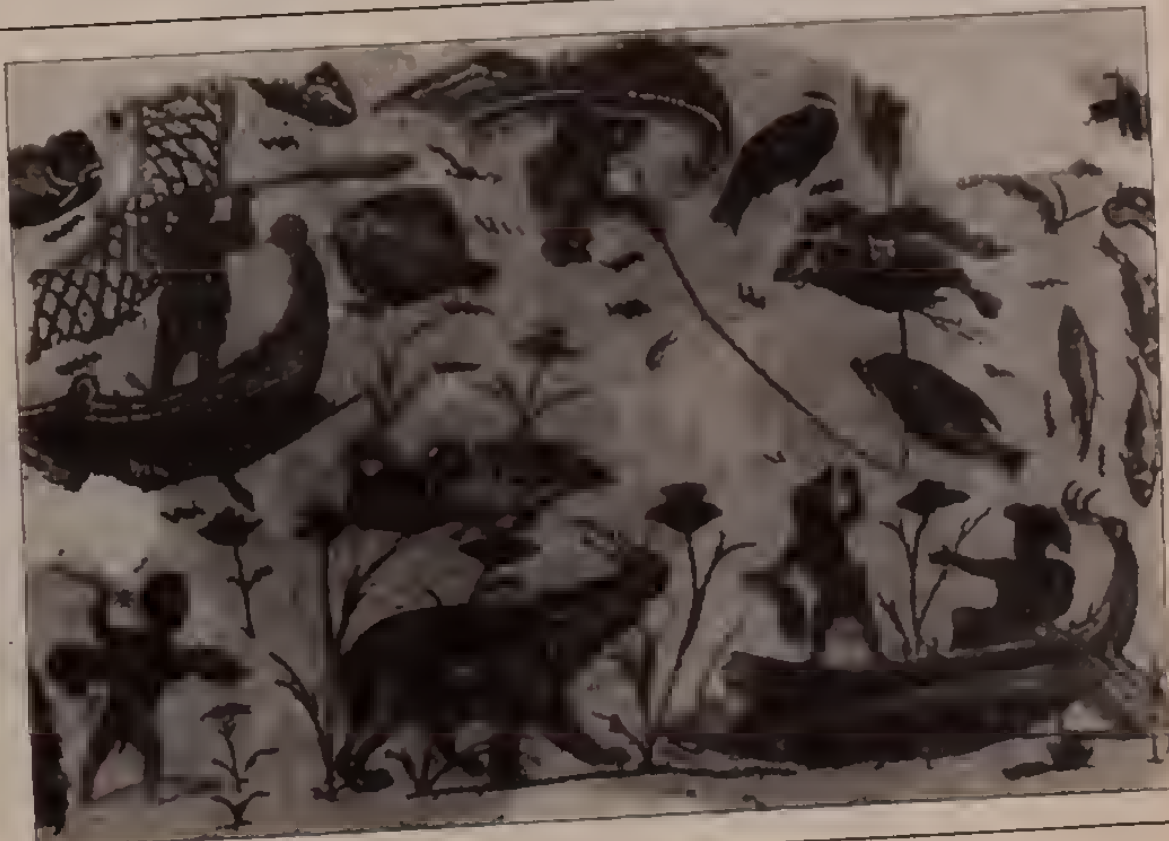
David Soren, professor of classical archeology at the University of Arizona and guest curator for the exhibition *Carthage: A Mosaic of Ancient Tunisia*, introduces the film and discusses facts and fictions in this portrayal of the legendary hero and his city.

An Education Department Public Program.

Read All About It

Carthage: A Mosaic of Ancient Tunisia, edited by Aicha Ben Abed Ben Khader and David Soren, is a lovely remembrance of a historic exhibition. Richly illustrated with photos of over 100 artifacts and objects, the book traces the city's tumultuous history from prehistoric times to the present. It's a vivid keepsake for those who have seen the exhibition as well as an enthralling armchair tour for those who haven't.

It is available at the Museum Shop and through the Members' Book Program. The Members' price is \$28, a discount of 20 percent. To order, call 1-800-234-5252.



Courses for Stargazers



Hayden Planetarium

ASTRONOMY: BASIC COURSES

Class 1 Mrs. Jackson
Introduction to Astronomy
Eight Thursdays, beginning Jan. 7; 6:30-8:40 p.m.
Fee: \$80 (\$72 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include Earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Life Beyond Earth — The Search for Life in the Cosmos

Eight Mondays, beginning Jan. 4; 6:30-8:40 p.m.
Fee: \$80 (\$72 for Members)

This course examines why many scientists believe there is intelligent life elsewhere in the universe. Topics include stellar evolution, theories of planet formation and development, origin of life, intelligence, problems of communications, and current investigations.

Charting the Cosmos

Five Thursdays, beginning Jan. 7; 6:30-8:40 p.m.
Fee: \$60 (\$54 for Members)

How do astronomers map the universe? This course will explore some of the interesting and unusual aspects of the "geography" of the heavens. Starting with the lore of the earliest constellations and star names, the course covers the increasingly sophisticated techniques by which the innumerable celestial objects have been pinpointed. Students will see how the astronomer has, since the last century, conquered the "third dimension" of space and gauged the distance to stars, clusters, and nebulae — all the way to the most remote galaxies and quasars at the fringes of creation.

Frontiers in Astronomy and Space Science

Eight Wednesdays, beginning Jan. 20; 6:30-8:40 p.m.

Fee: \$80 (\$72 for Members)

Astronomy and space science, along with physics, their parent science, are among the fastest-moving fields of investigation today. We will discuss many of the most important and exciting discoveries of the day, from revolutions in planetary astronomy to the recent supernova to changing thoughts on the fundamental structure of the universe.

ASTRONOMY: INTERMEDIATE COURSES

The Star Guide to Night Sky Objects

Five Tuesdays, beginning Jan. 5; 6:30-8:10 p.m.
Fee: \$60 (\$54 for Members)

The brightest stars in the night sky will be used as celestial reference points guiding an exploration of stars, star clusters, nebulae, and other exceptional features of skies throughout the year. Meeting in the Sky Theater, the class will examine the characteristics and nature of these celestial objects. Stars, Constellations, and Legends is suggested as a prerequisite for this course.

Cosmology

Eight Tuesdays, beginning Jan. 5; 6:30-8:40 p.m.
Fee: \$80 (\$72 for Members)

Cosmology is the study of the large-scale structure of the universe, its origin and evolution, as well as its relationship to atoms, planets, stars, and galaxies. This course will present the study of the universe from the perspective of modern astronomy and particle physics. The presentation of concepts and discoveries will be interpreted with some quantitative discussion that assumes a knowledge of high school algebra and the fundamentals of physics (to be reviewed in class). The philosophical interpretations of modern cosmology, including the controversial anthropic principle, will also be reviewed and discussed.

AVIATION

Ground School for Private and Commercial Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning

Jan. 5; 6:30-8:40 p.m.
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotters, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, federal aviation regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning Jan. 19; 6:30-8:40 p.m.
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION

Navigation in Coastal Waters

Eight Wednesdays, beginning Jan. 6; 6:30-9:00 p.m.
Fee: \$105 (\$94.50 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

Electronic Navigation and Communications

Eight Mondays, beginning Jan. 4; 6:30-8:40 p.m.
Fee: \$80 (\$72 for Members)

This is a basic course for those interested in learning about marine electronic navigation and communications. The course examines the types of electronic equipment used in navigation and communications, including VHF-FM, single-sideband transceivers, radio direction finders, OMNI Systems, hyperbolic navigation

systems, Loran, Omega, Decca, fathometers, echo sounders, and radar. No prerequisites.

Introduction to Celestial Navigation

Ten Mondays, beginning Jan. 4; 6:30-9:00 p.m.
Fee: \$105 (\$94.50 for Members)

This intermediate course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

TIMEKEEPING

Intellectual Toys and Mechanical Jewels: An Informal History of Timekeeping Since the Renaissance

Five Tuesdays, beginning Jan. 5; 6:30-8:40 p.m.
Fee: \$60 (\$54 for Members)

This course will survey the development of mechanical timekeepers and related scientific instruments from 1500 to 1900. Using developments in astronomy and science as a historical context, we will discuss the astrolabe and scientific instruments of the Renaissance, the contemporary literature of popular science, sundials and hour systems based on celestial events, and the technical and decorative development of clocks and watches.

FOR FAMILIES

The courses listed below are intended for the family, so that parents and children may learn together about astronomy and the space age. The courses may be taken by children 10 years and older without a parent if desired; however, much of the subject matter may not be appropriate for children under the

age of 8. The tuition fees are per person. For additional information about family courses, please write to the address appearing on the coupon or call (212) 769-5900 (Monday through Friday, 9:30 a.m.-4:30 p.m.).

Introduction to the Sky

Ten Saturdays, beginning Jan. 9; 9:30-10:20 a.m.
Fee: \$35 (\$31.50 for Members)

Meeting in the Sky Theater, this course discusses and illustrates the various stars and constellations, some of their fore, and several of the many interesting objects found in the sky.

The Solar System

Ten Saturdays, beginning Jan. 9; 10:30-11:20 a.m.
Fee: \$35 (\$31.50 for Members)

This course includes a brief overview of historical astronomy and considers the many theories on the origin of the solar system, as well as the geology of the planets and their satellites, including Earth and the moon. Other topics include meteors and meteorites, asteroids, lunar phases, tides, eclipses, and the star of our solar system — the sun. This course, together with *Stars, Black Holes, and Galaxies*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Stars, Black Holes, and Galaxies

Ten Saturdays, beginning Jan. 9; 11:30 a.m.-12:20 p.m.
Fee: \$35 (\$31.50 for Members)

Topics include the evolution of the cosmos, the different types of stars and their life cycles, nebulae, black holes, galaxies, and quasars. Methods and instruments used by astronomers to collect information will be emphasized. This course, together with *The Solar System*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note that discount prices apply only to Participating, Donor, and Contributing Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Home phone: _____

Office phone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: Courses for Stargazers, Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, 9:30 a.m.-4:30 p.m.

Museum Notes

Special Exhibitions and Highlights

Carthage: A Mosaic of Ancient Tunisia opens in Gallery 3 this month. See page 1 for details and page 9 for special programs organized in conjunction with this exhibition, which will be on display through May 1.

Don't miss the *Origami Holiday Tree*, on display in the Roosevelt Rotunda. See page 8 for the story of this 15-year-old Museum tradition.

Changing concepts of how the dinosaurs really looked and behaved are chronicled in Gallery 1's current exhibition, *Dinosaurs Past and Present*. Through January 3.

Ancient Eskimo Ivories of the Bering Strait features more than 160 historical artifacts that are remarkable for their sculptural quality, engraved designs, and relief carvings. In the Naturemax Gallery, through January 3.

The World's Oldest Turtle, a plastic reconstruction of a large fossil turtle, is on display in the Roosevelt Rotunda.

The Museum's construction was a task that required the combined skills of Hercules and Croesus. *Architecture for Dinosaurs*, in the Akeley Gallery, is a pictorial history of an epic feat. Through December 13.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:00 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the age of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

Happenings at the Hayden

Sky Shows

What led the Wise Men to Bethlehem — a special star, a comet, a meteor, or something else? *The Star of Christmas*, from November 25 through January 3, is the story of how historians, theologians, linguists, and astronomers worked together to unravel an ancient mystery.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.



"The Star of Christmas"

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, December 12, and at noon on Saturday, January 9. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers.

Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on Saturday, January 2, and at noon on Saturday, February 6. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn. *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*, featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Dinosaurs Past and Present

Gallery 1
Through January 3



"Awakening of Hunger" is among the numerous paintings, drawings, sculptures, and models currently on display in Gallery 1.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

6 10:30 and 11:30 a.m., and 2:00, 3:00, and 4:00 p.m.

Origami Workshops. School Lunch Rooms. Free, and open only to Participating, Donor, and Contributing Members. For information, call (212) 769-5600.

1:00 to 4:00 p.m. Winter Celebrations at the Leonhardt People Center. See Dec. 5.

13 1:00 to 4:00 p.m. Winter Celebrations at the Leonhardt People Center. See Dec. 12.

2:00 p.m. New York Shell Club. Room 419. Free.
2:00 p.m. Carnival of the Animals. Kaufmann Theater. Free. Page 4.

Last day to see *Architecture for Dinosaurs* in the Akeley Gallery.



20 2:00 p.m. New York Paleontological Society. Room 419. Free.

2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free.

The Leonhardt People Center is closed.

New moon.

27 The Museum celebrates Kwanzaa. See page 2 for details of programs throughout the Museum.

First-quarter moon.

28 The Museum celebrates Kwanzaa. See page 2 for details of programs throughout the Museum.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors



8 6:30 and 8:30 p.m. *Fantasy Dinosaurs of the Movies*. Members' Evening Program. Main Auditorium. \$5, and open only to Members. Page 4.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

9 3:00 and 6:00 p.m. *The Natural History of Natural History*. \$7, and open only to Members. SOLD OUT.

7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

7:30 p.m. *Poetic Visions*. Kaufmann Theater. Free. Page 5.

16 7:00 and 9:00 p.m. *Holiday Concerts at the Planetarium*. \$8 for Members, \$12 for non-Members. Page 4.

Hanukah.

15 8:00 p.m. New York Entomological Society. Room 323. Free.

23 7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

22 2:00 p.m. *Hannibal, General of Carthage*, a film. Kaufmann Theater. Free. Page 9.

Winter solstice. Moon at perigee.

29 11:00 a.m., 1:00 and 3:00 p.m. *Family Films*. Members' Program. Kaufmann Theater. Free, and open only to Members. Page 4.

30 7:30 p.m. *Regeneration Night*, part of the Museum's observance of Kwanzaa. Main Auditorium. Free. Page 2.

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m., thanks to a generous grant from Mobil. The American Museum Restaurant is open till 7:30 p.m.

10 Moon at apogee.



12 10:30 a.m. to 6:00 p.m. *Native American Film Festival*. Kaufmann Theater. Free. Page 4.

1:00 to 4:00 p.m. Winter Celebrations at the Leonhardt People Center. These free presentations are repeated throughout the afternoon: *The Little Rabbit Dancers*; *Winter Coyote Tales*; and *Hunkakan Oayake*.

17 7:00 and 9:00 p.m. Holiday Concerts at the Planetarium. \$8 for Members, \$12 for non-Members. Page 4.

19 2:00 p.m. New York Herpetological Society. Room 323. Free.

The Leonhardt People Center is closed.

25 Christmas Day. The Museum is closed.

26 The Leonhardt People Center is closed. (The Museum is open from 10:00 a.m. to 9:00 p.m.)



December 1987 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 1 January 1988



The upcoming flight of Galileo to Jupiter is discussed in Space Futures.

Space Futures

January 26, February 2, and February 9
7:30 p.m.

Main Auditorium

\$15 for Members, \$20 for non-Members

The original rockets and apparatus designed by Robert H. Goddard, the father of modern rocketry, were first publicly exhibited at the Museum in 1948. Three years later, the Planetarium sponsored the nation's first public symposium on space travel. In 1988, the Museum will continue its unique tradition in the examination of the future of space exploration with a three-part series organized in cooperation with the Institute of Aeronautics and Astronautics.

On Tuesday, January 26, Dr. Tobias Owen will discuss *The Exploration of the Solar System: Past Triumphs, Future Prospects*. This program will examine discoveries of the past 25 years: a satellite with active, tidally driven volcanoes and one with an atmosphere thicker than our own; the magnificent ring system of Saturn; the geology of the moons of Uranus; and several other intriguing finds.

Dr. Owen will also take a look at future

space exploration, especially the Voyager 2 contact with Neptune and the Soviet Union's missions to Mars. A professor of astronomy at the State University of New York, Dr. Owen has participated in numerous NASA missions and advisory committees.

Astronomers will see 10 times farther into space than ever before with *The Space Telescope*, an extraordinary device that Ray Villard will discuss on Tuesday, February 2. Within the next year, NASA is scheduled to launch the 12-ton Hubble Space Telescope — the largest single payload ever to be carried into space by the shuttle. Designed to remain in orbit for 15 years, the telescope will transcend the handicaps of cloud cover, city lights, and the earth's atmosphere to probe nebulae, investigate the atmospheric conditions of other planets, and help unlock clues about the stellar birthing process.

A public information officer at the

Space Telescope Science Institute at Johns Hopkins University in Baltimore, speaker Ray Villard has been active in astronomy education efforts for over a decade.

On Tuesday, February 9, Dr. Robert L. Forward will describe current and near-future propulsion systems for probes and manned flights to the stars in *The Feasibility of Interstellar Flight*. He'll introduce two promising new propulsion methods, antimatter and beamed power, which use lasers or microwaves and ships with sails of light-reflecting material or wire mesh. A science consultant specializing in advanced space propulsion, Dr. Forward is a leader in physics and engineering research on new energy sources for breakthroughs in space power and propulsion.

Tickets for individual lectures are available at a price of \$7 for Members and \$10 for non-Members. To register, please see the coupon on page 3.

Richard Leakey and the Black Skull

A preeminent figure in paleoanthropology will appear at the Museum next month with the story of a startling new fossil find in the Members' program *An Evening with Richard Leakey*.

Page 2

Real Class

The Department of Education's Spring Afternoon and Evening Lecture Series features distinguished speakers on a wide variety of subjects including world mythology, Native American life in Greater New York, and the ancient kingdom of Babylon.

Pages 5-8

New President

Educator George D. Langdon, Jr., will become the Museum's chief executive in July.

Page 10

The Cradle Will Rock

Sing-alongs, hum-alongs, and rock-alongs will be among the participatory activities of *Lullabies from the Heart*, a Valentine's Day look at the loving language of lullabies.

Page 3

Blacks and the Media

This three-part series of panel discussions is highlighted by film clips and live performances.

Page 4

Richard Leakey and the Black Skull

Thursday, February 25
6:00 and 8:30 p.m.
Main Auditorium
\$10 for Members
\$15 for non-Members



After a repose of 2.5 million years, it was catapulted from the dirt of a gully in northern Kenya to the center of scholarly enthusiasm and debate. The combination of primitive and advanced features exhibited by *The Black Skull* represents a classic example of mosaic evolution. Next month, paleoanthropologist Richard Leakey will discuss with Members one of the most significant early humanlike fossils to be found in many years as well as other recent discoveries.

Leakey is at the forefront of a sophisticated science that seeks to reconstruct the context of early human life and the stages of its evolution. His studies, and

those of his celebrated parents, include excavations that extend over much of East Africa and back several million years to the emergence of early humans. Among the Leakeys' accomplishments are proof of the African origins of humankind, evidence of early human toolmakers, and discovery of fossil footprints showing that human ancestors walked upright long before they made tools.

The Black Skull — so called because the manganese-rich soil of its burial ground tinted the skull a blue-black color — has features that are a mixture of the primitive (an apelike jaw and small braincase) and the more highly evolved (huge mo-

lars). Its teeth indicate that it belonged to an early hominid, a member of the primate family of humanlike creatures.

The skull's role in the evolution of hominids is a source of controversy among paleoanthropologists. Although it has no bearing on the recent ancestry of modern humans, its finding suggests changes in the evolutionary tree of the human family.

Leakey will describe the significance of *The Black Skull* within the context of other archaeological discoveries and discuss his recent work in the field. To register, please use the January Members' programs coupon on page 3.

CARTHAGE A Mosaic of Ancient Tunisia



This funerary stele dates from the second century A.D. and is among the items on display in the Gallery 3 exhibition.

ROTUNDA

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The Shoestring Players

Sunday, January 31
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$4 for Members
\$6 for non-Members

No sets and no props — *The Shoestring Players* rely upon the audience's imaginative participation. This Members' family program of innovative children's theater features original adaptations of folktales from around the world in which the players themselves become the scenery, the sound effects, and a host of animal and human characters. Children are enthralled by the actors' use of imagery and sound and by the magic of something being created right before their eyes.

The performance appeals to all age groups, with four stories that are filled with humor and adventure. Each story presents thought-provoking situations in which the hero uses his wits to save his skin. In a story from the old South, "The People Who Could Fly," a boy who's kidnapped and sold into slavery effects his own salvation. "The Magic Pasta Pot," an Italian version of "The Sorcerer's Apprentice," looks at the consequences of covetousness and theft. A story by Molière is the basis for "The Make-Believe Doctor," in which a vintner masquerades as a physician, and a witty anecdote from Ghana is the inspiration for "Talk," the tale of an entire village of people who simply don't know when to shut up.

The Shoestring Players are under the artistic direction of Joseph Hart, associate professor of theater arts and master teacher of creative dramatics. The New Jersey-based troupe



has performed in schools and museums throughout the Greater New York area. Each performance is one hour long and includes an intermission piece in which the actors and audience accompany each other

on a creative dramatics adventure, a five-minute journey around the world.

To register for *The Shoestring Players*, please use the January Members' programs coupon.

January Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *January Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The Shoestring Players. Sunday, January 31, 11:00 a.m., 1:00 and 3:00 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first and second choice of times, if possible:

_____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Space Futures. January 26, February 2, and February 9, 7:30 p.m. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are at the non-Members' price. (Individual lecture tickets are available at a price of \$7 for Members and \$10 for non-Members. If you wish to order individual tickets, please specify the program date.)

SERIES TICKETS (for all three programs)

Number of Members' tickets at \$15: _____

Number of additional tickets at \$20: _____

Total amount enclosed for program: \$ _____

Richard Leakey. Thursday, February 25, 6:00 and 8:30 p.m. \$10 for Members, \$15 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$15. Please indicate a choice of times, if possible:

_____ 6:00 p.m. _____ 8:30 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$15: _____

Total amount enclosed for program: _____

Lullabies from the Heart. Sunday, February 14, 11:00 a.m. and 1:30 p.m. \$2.50 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times, if possible:

_____ 11:00 a.m. _____ 1:30 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Rockaby Baby

Sunday, February 14
11:00 a.m. and 1:30 p.m.
Kaufmann Theater
\$2.50 for Members
\$5 for non-Members

Yawning will be encouraged at a Members' family program that might just lull you to sleep. *Lullabies from the Heart* looks at lullabies from around the world, including Hispanic, African, and Asian traditions.

The program is organized by poet and folklorist Julia Lebentritt, whose "Project Lullaby" involves research among lullaby singers from a cross-

section of New York City's ethnic communities. Since 1981 she has interviewed parents and children about bedtime rituals and recorded their interactions. Lebentritt has analyzed and interpreted what lullabies mean to people of different cultures. Singers from the project will be featured in the program.

Lullabies from the Heart is appropriate for all age groups,

and audience participation will be encouraged with sing-alongs, hum-alongs, rock-alongs, and finger games. In keeping with the occasion of Valentine's Day, love songs will be the program's theme, and children can make natural history valentines before and after each program.

To register, please use the adjacent coupon.

Sir Francis Drake and the Age of Discovery

The illustrations at right are among the earliest European images of the Americas on display at the Pierpont Morgan Library. Members of the American Museum are invited by special arrangement with the Morgan Library to view *Sir Francis Drake and the Age of Discovery* at a discounted admission of \$1 per person. (The usual contribution is \$3.)

This exhibition, on display from January 15 through May 1, marks the first major public presentation of an all-but-unknown illustrated volume called the Drake Manuscript. Over 200 captioned watercolors of the plants, animals, and people of the New World are featured in this fascinating document, which is thought to have been created by an anonymous French artist who accompanied Drake on his voyages to the New World from 1577-87.

The Drake Manuscript was clearly intended to be more than simply a sampling of exotic flora, fauna, and cultures. Drake's purpose was not only to capture Spanish-American treasure but also to establish a foothold in a part of the world already claimed by Spain. His chances for success depended on a thorough knowledge of how to survive in this territory — which plants, animals, and people could be used to advantage and which were to be avoided.

Your membership card will admit you and your family at the discount rate to the exhibition, which includes a number of maps, books, and drawings related to Drake, his voyages, and natural history studies from the sixteenth century. A 20-page illustrated brochure about the Drake Manuscript is available free of charge to all visitors, and a 30-minute recorded slide lecture about the exhibition is shown daily (Tuesday through Saturday at 12:15 p.m.; Sunday at 1:15 p.m.). Guided tours of the exhibition are available by appointment and at no additional charge. Please call (212) 685-0008, ext. 352, for an appointment or for further information. *Sir Francis Drake and the Age of Discovery* is made possible by J.P. Morgan & Co. Incorporated.

The Pierpont Morgan Library is located at 29 East 36th Street (at Madison Avenue), New York, NY 10016. Hours are Tuesday through Saturday, 10:30 a.m. to 5:00 p.m. and Sunday from 1:00 to 5:00 p.m. Closed Mondays and holidays.



The Pierpont Morgan Library



The Pierpont Morgan Library



The Pierpont Morgan Library

In the News, on the Radio, on TV: Blacks and the Media

Three Wednesdays
January 20 and 27, and February 3
7:30 p.m.
Main Auditorium
Free (tickets required)



"The Cosby Show" will be one of the subjects of a special program on February 3.

A review of the past, a survey of the present, and forecasts for the future are offered in *Blacks and the Media*. Film clips highlight this three-part series of panel discussions presented by the Department of Education in conjunction with the American Federation of Television and Radio Artists.

For free tickets, send a stamped, self-addressed envelope to the Department of Education, American Museum of Natural History, 79th Street and Central Park West, New York, NY 10024-5192. Please mail by January 10. For further information, call (212) 769-5315.

Blacks and the News Media: The Spiralling of the Nation's Conscience. Where Are We Now? Wednesday, January 20

This program salutes the accomplishments of Dr. Martin Luther King, Jr., and examines

the impact of the emerging medium of television on the conscience of the nation and the world.

Black Music: From the Underground Struggle to National Mobilization Wednesday, January 27

Live performances highlight this exploration of musical genres from gospel, blues, and jazz to the freedom songs of the 1960s and current popular music. Video and film segments will also be shown and discussed.

Images of a People: How Television Views Blacks and How Blacks View Themselves Wednesday, February 3

A historical look at blacks on television, with an eye toward the future.

An Education Department Public Program.

The Department of Education Presents

Spring Afternoon and Evening Lecture Series

Asimov, Crosby, and Norberg-Hodge: The Global Community

Three Tuesday evenings, starting Feb. 16
7:00-8:30 p.m.
Fee: \$25 (\$22.50 for Members)

This three-lecture series addresses contemporary views and perceptions of world society. The speakers will discuss the role of disease as a shaper of human society, the impact of development on traditional societies, and the nature of modern technology and its future.

Feb. 16 — DISEASE AND THE GLOBAL COMMUNITY. **Alfred W. Crosby, Jr.**, is professor of American Studies at the University of Texas and the author of *Epidemic and Peace, 1918* and *Ecological Imperialism: The Biological Expansion of Europe*.

Feb. 23 — CRISIS AND HOPE IN THE HIMALAYAS. **Helena Norberg-Hodge** is the director of the Ladakh Project, a program of ecological and social development within the traditional Tibetan ways of life.

Mar. 8 — SCIENCE AND TECHNOLOGY: WHAT WE WON'T DO. **Isaac Asimov**, noted biochemist and science-fiction writer, is the author of more than 335 books and the recipient of many awards in both science and literature.

Kingdom of Babylon

Three Monday evenings, starting Feb. 22
7:00-8:30 p.m.
\$25 (\$22.50 for Members)

The mysteries of Babylon have intrigued imaginations for centuries. The Ishtar Gate and the Great Temple of Marduk are relics of a once-powerful metropolis that stood on the right bank of the Euphrates River. This slide-illustrated series examines the complex workings of the early city-state whose sixth-dynasty ruler, Hammurabi, was destined to reshape the ancient world.

Feb. 22 — THE GREATNESS THAT WAS BABYLON. **William W. Hallo**, Yale University, curator of the Babylonian collection.

Feb. 29 — ART AND ARCHITECTURE. **Trudy S. Kawami**, professor in the Middle East studies program at Fordham University.

Mar. 7 — THE JEWS OF ANCIENT BABYLON. **David Sperling**, professor of Bible studies at Hebrew Union College.

From the Amazon to the Andes

Four Thursday evenings, starting Apr. 14
7:00-8:30 p.m.
\$30 (\$27 for Members)

The focus of this lecture series is on the tribal peoples who have traditionally inhabited the areas from the lush tropical forests of the Amazonian basin to the barren slopes of the Andean mountains. The series shows how the customs and behavior of these hunter/gatherers have been portrayed and explores the impact of interactions with anthropologists and other social scientists on native peoples.

Apr. 14 — AMAZONIAN PEOPLES. **Robert Carmelro** is curator of South American ethnology in the Anthropology Department.

Apr. 21 — THE YANOMAMO INDIANS: A QUARTER-CENTURY OF STUDY. **Napoleon A. Chagnon** is professor of anthropology at the University of California, Santa Barbara.

*Apr. 27 — (Wednesday) Private preview of the soon-to-be opened *Hall of South American Peoples*.

Apr. 28 — SHAMANISM IN THE UPPER AMAZON. **Michael Harner** is president of the Foundation for Shamanistic Studies and former professor of anthropology at the New School for Social Research.

May 5 — THE ANDEAN MUSIC TRADITION. **John Cohen**, professor at SUNY-Purchase, is an ethnomusicologist and filmmaker.

*For subscribers to this series, there will be a private preview of the soon-to-be-opened *Hall of South American Peoples* on Wednesday, Apr. 27, from 6:00 to 8:00 p.m.



From blowguns and sorcery to folklore and legend, the slide-illustrated series *From the Amazon to the Andes* offers a glimpse of past and present.

Art and Mythology

Four Monday evenings, starting Apr. 4
7:00-8:30 p.m.
\$30 (\$27 for Members)

Apr. 4 — **ART AND MYTHIC VISION.** Art can be viewed as a "magical casement" for interior viewing, amplifying archetypes, and a guide to inward forms of knowledge. Illustrated with examples from around the world and the collections from the Metropolitan Museum of Art, this lecture explores the connected worlds of myth, art, and the imagination. **James B. Spann** is a lecturer in art history at the Metropolitan Museum of Art.

Apr. 11 — **MYTHOLOGY OF HEAVENLY ASCENT.** The theme of the *Miraj Nameh*, the mystical ascent of Muhammad into heaven, has had influence outside the context of Middle Eastern religion. In literature and folklore reaching from medieval Iran to the Spanish courts, the *Miraj* brings together mythology, history, and art. This slide-illustrated lecture is presented by **Virgil Bird**, a lecturer in art history at Baruch College, CUNY, and formerly of the Islamic Department at the Metropolitan Museum of Art.

Apr. 18 — **THE AGE OF ARTHUR.** For over 1,000 years, King Arthur has been the subject of legend and chronicle. In recent years, historians and archeologists have collected evidence suggesting that a "real" Arthur may have actually existed. **Janice B. Klein**, archeologist and staff member of the University Museum at the University of Pennsylvania, examines the wide range of literary works, including the Welsh Triads and Anglo-Norman epics relating to the legendary king. In addition, the archeological evidence for late- and post-Roman Britain are examined for sites identified with King Arthur, such as the one at South Cadbury (Camelot).

Apr. 25 — **MYTHS AND MOUNTAINS OF CHINA.** Exploring the mysterious mountains, deserts, and oases of the ancient Silk Route in relation to the mythology of the people, **Edwin Bernbaum** describes his recent travels and research in western China. The ruined city of Khocho in the Turfan Depression, the art treasures and early texts of Tunhuang, and Khotan, the source of jade for ancient China, are the focal points of numerous myths and legends. Dr. Bernbaum received his doctorate in Asian studies from the University of California at Berkeley.

Anthropology on Film

Four Monday evenings, starting Feb. 22
7:00-9:00 p.m.
\$30 for Members (\$27 for non-Members)

Malcolm Arth, anthropologist and one of the programmers for the annual Margaret Mead Film Festival, presents films selected for their beauty as well as their ability to illuminate our understanding of human behavior. Dr. Arth is sometimes joined by the filmmakers for a lively exchange with the audience following a screening. To take advantage of new works still being completed, most films are not selected until shortly before the series begins. Those who register will be sent a more complete listing before the series starts.

Feb. 22 — **TO BE ANNOUNCED.**

Feb. 29 — **THE KAYAPO.** 1987. Director, Michael Beckham (58 mins.) The Kayapo live in the Brazilian Amazon rain forest and the filmmaking team follows traditional patterns as well as their rapidly changing lives.

SECOND SHORT FILM TO BE ANNOUNCED.

Mar. 7 — **RIGHTS AND REACTIONS.** 1987. Producer, Phil Zwickler (56 mins.) Relationships between the straight and gay communities in New York City were strained during the long struggle for passage of a civil rights bill. This documentary captures the moment and reveals much more about both worlds.

Mar. 14 — **TO BE ANNOUNCED.**

Gems and Crystals

Six Thursday evenings, starting Feb. 18
7:00-8:30 p.m.
\$40 (\$36 for Members)

Members of the Department of Mineral Sciences discuss gems, their origins and characteristics, history, aesthetic and scientific values. This is not a course in gem identification or recognition, but is intended to enhance gem appreciation and understanding.

These lectures are presented by **Dr. George E. Harlow**, curator, **Dr. Demetrius Pohl**, assistant curator, and **Joseph Peters**, senior scientific assistant, all from the Department of Mineral Sciences.

Feb. 18 — **WHAT IS A GEM?** An introduction to gemology, definitions of minerals and gems, terminology problems, misuse of gem terms, synthetic gems, gem recognition, appraisals, etc.

Feb. 25 — **DIAMONDS:** Exploration and the history of diamonds, properties, synthetics, and famous stones.

*Mar. 1 — **(Tuesday)** Private preview of *Tiffany: 150 Years*.

Mar. 3 — **EMERALDS AND OTHER GEM BERYLS.**

Mar. 10 — **TOURMALINES AND GEM PEGMATITES:** Mainly on tourmalines from southern California and gem pegmatites of Afghanistan and other localities.

Mar. 17 — **QUARTZ, OPAL, AND A POTPOURRI OF COLORED STONES.**

Mar. 24 — **JADES:** Origin and characteristics of different kinds of jades, their history and carvings, and important geological implications.

*For subscribers to this series, there will be a private preview of the exhibit *Tiffany: 150 Years* on Tuesday, Mar. 1, from 6:00 to 8:00 p.m.



Art and Mythology explores the linking of history, legend, and art.



Gems and Crystals



AMNH



AMNH

Exploring American Wilderness Areas, starting on February 22, focuses on the flora and fauna of North American national parks and wildlife preserves.



AMNH

Quartz is one of the subjects of the series on Gems and Crystals.

Diet, Health, and Nutrition: Koala, Panda, and Okapi

Four Tuesday evenings, starting Feb. 16
7:00-8:30 p.m.
\$30 (\$27 for Members)

How do proboscis monkeys and pandas stay healthy on a diet of leaves? What about wombats? When devising diets for zoo animals, which factors are most important? **Ellen Dierenfeld**, nutritionist for the New York Zoological Society, describes the fascinating field of diet and digestive physiology in these exotic animals. In this illustrated series, learn about current research in animal nutrition from Dr. Dierenfeld's laboratory work at the Bronx Zoo's Animal Health Center and her experiences in the forests of Zaire where she assists field biologists in the study of the elusive okapi.

Feb. 16 — **BROWSING BASICS.** Nutrients, knowledge, and needs (what's important, what we know, what we need to learn).

Feb. 23 — **"MY! WHAT BIG TEETH YOU HAVE!"** And other carnivore characteristics.

Mar. 1 — **HERBIVORE HABITS.** Ruminants and non-ruminants.

Mar. 8 — **FINICKY FEEDERS AND OTHER DIFFICULT CRITTERS.** Koala and panda care, hungry hummers, and anteaters.

Exploring American Wilderness Areas

Five Monday afternoons, starting Feb. 22
2:30-4:00 p.m.

or

Five Monday evenings, starting Feb. 22
7:00-8:30 p.m.
\$35 (\$31.50 for Members)

Much of the remaining scenic grandeur and wildlife of the United States and Canada is restricted to federally preserved areas such as national parks, monuments, and wildlife refuges. With rich color slides, this series introduces some of the most beautiful and diverse of these regions. Emphasis is on plant and animal life, their conservation and ecological significance.

Kenneth A. Chambers is lecturer in zoology at the Museum and author of *A Country Lover's Guide to Wildlife*.

Feb. 22 — **GEYSER BASINS TO MANGROVE SWAMPS.** Yellowstone and Grand Teton National Parks; plant and animal life in subtropical Everglades.

Feb. 29 — **DESERT WILDLIFE IN NEW MEXICO AND ARIZONA.** Chiricahua, White Sands, and Carlsbad Caverns.

Mar. 7 — **WILDLIFE OF THE NEW YORK ADIRONDACKS.**

Mar. 14 — **WILD FLOWERS AND BIG GAME:** Wild flower spectacular on Mt. Rainier; big game in the Canadian Rockies.

Mar. 21 — **LAND OF THE TREMBLING EARTH:** Okefenokee National Wildlife Refuge.

Mushrooms, Mosses, and Ferns

Five Monday afternoons, starting Feb. 22
2:30-4:00 p.m.

or

Five Thursday evenings, starting Feb. 18
7:00-8:30 p.m.
\$35 (\$31.50 for Members)

About a third of all plants — including giant conifers and kelps, tiny mosses and filamentous seaweeds — reproduce without ever bearing flowers. Among them are some of the choicest edible plants as well as some of the deadliest, and many of them play key roles in the web of life. This series of slide-illustrated lectures introduces diverse living plants: mushrooms, mosses, and ferns of forest floors and meadows; lichens of rocky and sandy places; algae at the edge of the sea; and conifers. Identification and ecology of northeastern United States species is stressed. This lecture series will be conducted by **William Schiller**, lecturer in botany at the Museum.

1. THE VEGETABLE HOUSING PROBLEM.
2. SEaweeds GREAT AND SMALL.
3. MUSHROOMS AND LICHENS.
4. MOSSES, FERNS, AND OTHER PRIMITIVE PLANTS.
5. CONIFERS. The vegetable skyscrapers.

Bats: Creatures of the Night

Four Tuesday evenings, starting Feb. 16
7:00-8:30 p.m.
\$30 (\$27 for Members)

Nearly a fourth of the world's mammal species are bats, highly adaptable creatures around which there is a great deal of fantasy. In a series of slide- and film-illustrated talks, **Tim McCarthy**, research associate in the Department of Mammalogy, discusses environmental relationships, behavior, and biology of these intriguing mammals.

Feb. 16 — CREATURES OF THE NIGHT.

Feb. 23 — SOCIETY AND REPRODUCTION.

Mar. 1 — BAT LIFE AND TROPICAL DIVERSITY.

Mar. 8 — VAMPIRE RESEARCH.



Native New Yorkers

Native New Yorkers: Indians of the Metropolitan Region

Five Thursday evenings, starting Feb. 18
7:00-8:30 p.m.
\$35 (\$31.50 for Members)

The history and culture of Native American life in Greater New York dates from 11,000 years ago. This slide-illustrated series examines Indian life during pre-historic times, the colonial period, and the modern era. Particular emphasis is placed upon the effects of European colonization on Indian people in this region during the seventeenth century.

Robert S. Grumet, ethnologist, lecturer, and senior historic preservation specialist for the New Jersey Heritage Association, presents this slide-illustrated series.

Feb. 18 — HUNTING AND GATHERING IN NEW YORK: 11,000 B.C.

Feb. 25 — WOODLAND VILLAGE LIFE 1,000 YEARS AGO.

Mar. 3 — INDIAN LIFE AND COLONIAL SETTLEMENT: 1626-1758.

Mar. 10 — DISPOSSESSION AND DISPERSAL: 1758-1832.

Mar. 17 — AN ENDURING PEOPLE: 1832 TO THE PRESENT.

Animal Drawing

Seven Tuesday evenings, starting Feb. 16
7:00-9:00 p.m.
\$85 (materials not included)
Limited to 25 persons

Join a Museum artist to sketch subjects such as gazelles on the African plains and timber wolves in the snowbound North. After the Museum has closed to the public, students draw from the famed habitat groups as well as individual mounted specimens. **Stephen C. Quinn**, senior principal preparator-artist in the Department of Exhibition, discusses drawing techniques, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant whether beginner or experienced artist.

The following exhibition halls serve as studios: the Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and Hall of Ocean Life.



Museum models for Animal Drawing

Travel Photography

Six Thursday evenings, starting Feb. 18
7:00-9:00 p.m.
\$80
Limited to 22 persons

Designed for the traveler who wants to photographically record peoples and places, near and far. The course covers the role of travel photography, the special problems related to photographing while traveling, basics of camera technology and lighting, proper exposure, selection and use of equipment, and how to see photographically. **Willa Zakin**, a professional photographer trained in anthropology, presents lectures, slides, and class demonstrations of lighting and camera mechanics. Weekly assignments will be followed by a class critique.

For a weekend field trip itinerary and application, call (212) 769-5310.

Weekend Whale Watch off Cape Cod

Friday-Sunday, May 20-22
Limited to 45 persons

A weekend of whale watching off the rich feeding grounds of Stellwagon Bank, near Cape Cod, where several species of whales are commonly seen at close range. Our search for these magnificent creatures involves three 4-hour whale cruises by private charter from Provincetown. In addition to the marine biologists aboard the boat, two Museum staff members will accompany the group: **Alison Loerke** from the Department of Education and **Stephen C. Quinn**, naturalist, who will assist in identifying the many species of coastal birds.

Other features of the weekend include optional guided nature walks along the dune and marsh areas of the Cape Cod National Seashore, exploring historic Provincetown, an evening marine mammal slide talk by **Dr. Charles "Stormy" Mayo**, and a stop at the reconstructed whaling port of Mystic, Connecticut. Cost includes transportation, two nights accommodations, meals, and lectures.

Weekend for Bird Enthusiasts

May 14 and 15
Limited to 36 adults

Two-day bus trip covering wooded areas near New York City, and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen. **Harold S. Feinberg**, senior scientific assistant in the Department of Invertebrates, leads this field study tour.

Weekend in Geology

May 21 and 22
Limited to 36 adults

Two-day bus trip to survey the geology of the region between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain, there are visits to Sandy Hook and the Highlands of the Navesink. Collecting stops are made en route. The group is accommodated overnight near Parsippany.

Dr. Demetrius Pohl, assistant curator in the Department of Mineral Sciences, and **Dr. Christine Carlson**, professor of geology at Hunter College, head this field study tour.

Registration

Please use the adjacent coupon for advance registration. Advance registration is requested, but registration will be accepted on the opening night if the course is not filled. No single lecture tickets are sold, and there are no refunds. Children are not admitted to lectures, workshops, or field trips.

For further information, call (212) 769-5310.

DEPARTMENT OF EDUCATION Afternoon and Evening Lecture Series

I enclose a stamped, self-addressed envelope and a check (or money order) payable to the American Museum of Natural History in the amount of: \$_____

Mail to: Afternoon and Evening Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

NOTE: Registration will be delayed if daytime phone number and self-addressed, stamped envelope are missing. Participating, Donor, and Contributing Members are entitled to a 10 percent discount on any course that does not have limited enrollment. Associate Members are not eligible for the discount.

Please Print

Course: _____

Day: _____ Hour: _____

Course: _____

Day: _____ Hour: _____

Name (last): _____ (first) _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Celebrate India Month

Throughout the month of January, the cultural traditions of India are explored in a weekend series of performances, demonstrations, and talks. Please see the calendar on page 12 for details.

All presentations will take place in the Leonhardt People Center, which is located on the second floor of the Museum and open from 1:00 to 4:30 p.m. on Saturdays and Sundays. The presentations are repeated throughout each afternoon, and seating is on a first-come, first-served basis. Short films also highlight each weekend. For additional details, call (212) 769-5183.

This program is made possible in part by a gift from the family of Frederick H. Leonhardt.

An Education Department Public Program.



Man weaving Kashmir shawl, a subject of Traditional Textiles on January 30 and 31.



Programs on January 9 and 10 look at traditional Indian dress.

Behind-the-Scenes Tour of the Department of Entomology

Wednesday, January 20, or Sunday, January 24
\$9, and open only to Participating, Donor, and Contributing Members

So small and seemingly similar, the diminutive creatures of the insect world are surprisingly diverse and complex. This month's behind-the-scenes tour offers a close-up view through the eyes of experts at bugs, bees, and beetles.

At least three-quarters of the

1 million known animal species are insects, and about half of the Museum's 36 million specimens (including the world's largest collection of spiders) are in the care of the Department of Entomology. Scientists from the department will describe their research, the techniques they

use to collect specimens in the field, and their methods of preparing the specimens for study.

Insect fossils are an increasingly important part of the Museum's collection, and Members will learn about the range of insects that are pre-

served in amber and other matrices. Insect behavior will be described, including the nesting biology of bees and the evolution of warning coloration and host/plant associations in the tropics of the New World. The tour will also provide Members with a glimpse of the Museum's

outstanding collections of beetles and spiders.

The tour will conclude with complimentary coffee, tea, and cider in the Audubon Gallery. To register for the tour, please use the adjacent coupon. Early registration is advised for the limited number of places.



Louie Sothir

Behind-the-Scenes Tour of the Department of Entomology. \$9, and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- _____ Wednesday, January 20, between 5:15 and 6:15 p.m.
- _____ Wednesday, January 20, between 6:30 and 7:30 p.m.
- _____ Sunday, January 24, between 10:30 a.m. and noon
- _____ Sunday, January 24, between 1:00 p.m. and 2:30 p.m.

Number of tickets at \$9 each: _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Stars Underfoot at the Planetarium

For a new perspective on the universe, try looking down instead of up. The burnished glow beneath the feet of visitors to the Hayden Planetarium radiates from the 300 celestial bod-

ies of cast bronze that are embedded in the pavement.

As part of a renovation program to restore the Planetarium's Art Deco design, sculptor Michele Oka Doner created the

pieces in her SoHo studio and installed them—50 at a time—while the concrete was being poured. Each of the bronzes is a foot or two in diameter and represents an aspect of astronomy:

spirals, symbolizing the spinning motion of galaxies; comets, illustrating direction and movement in space; and twinkling stars, the most familiar of outer-space vistas.

The creation of the celestial plaza was made possible through generous support to the Museum from the Helena Rubinstein Foundation and the Reed Foundation.



New Museum President

The ninth president in the Museum's 119-year history will take office in July. The Museum's board of trustees has named educator George D. Langdon, Jr., as chief executive.

Langdon is currently the president of Colgate University in Hamilton, New York. A historian, he specializes in the politics and economic development of the American colonial period and has taught at Yale, the California Institute of Technology, and Vassar College. He has served as Colgate's president since 1978 and holds a bachelor's degree from Harvard College, a master's degree from Amherst College, and a doctorate from Yale University.

Langdon will be the first sala-

ried president in the Museum's history. The museum's current president, Robert G. Goellet, is to become chairman of the board of trustees. Director Thomas D. Nicholson will continue as chief operating officer, overseeing the Museum's collections, exhibitions, programs, and research.

"The American Museum of Natural History is a priceless resource for New York City and for the nation," Langdon observed. "All of us who care about the Museum and its future will be challenged to sustain and increase its many contributions to our understanding of natural history. I look forward to taking up my duties at the Museum in the summer of 1988."



George D. Langdon, Jr.

Museum Notes

Special Exhibitions and Highlights

Carthage: A Mosaic of Ancient Tunisia depicts a civilization's successive cultures between 800 B.C. and the sixth century A.D. Bronze and marble statues, lavish jewelry, and enormous pictorial mosaics are among the distinctive art forms on display in the most comprehensive view of ancient life in this region ever exhibited in the United States. In Gallery 3 through May 1.

The World's Oldest Turtle, a plastic reconstruction of a large fossil turtle, is on display in the Roosevelt Rotunda.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sun-

day after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* feature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby

near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Mon-

day and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the age of 5

and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.



Naturemax view from Grand Canyon: *The Hidden Secrets*

Happenings at the Hayden

Sky Shows

What led the Wise Men to Bethlehem — a special star, a comet, a meteor, or something else? *The Star of Christmas*, through January 3, is the story of an ancient mystery.

On Tuesday, January 5, the double-feature Sky Show of *Cosmic Illusions* and *The Space Telescope* resumes.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the Amazing Disappearing Martians and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for

clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting new program, two

young children build a cardboard rocket in their backyard and blast off one night with a special magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, January 9, and at noon on Saturday, February 13. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on Saturday, March 5 and at noon on Saturday, April 9. Admission

for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn. *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*, featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel.

This laser light show takes

place through January 30 on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information. Please note, there will be no shows on Friday, January 1.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

January 1988

American Museum of Natural History

3 1:00 to 4:30 p.m. Dance Traditions of the Hindu Temple; Classical Kamatic Music; Kerala. India Month at the Leonhardt People Center. Free.

Last chance to see Ancient Eskimo Ivories of the Bering Strait in the Naturemax Gallery, Dinosaurs Past and Present in Gallery 1, and The Star of Christmas at the Hayden Planetarium.

10 1:00 to 4:30 p.m. Kathak Dance; Stone Observatories of Sawai Jai Singh; Traditional Dress — the Sari. India Month at the Leonhardt People Center. Free.

2:00 p.m. New York Shell Club. Room 419. Free.

17 1:00 to 4:30 p.m. Dances of the Festival of Lights; Ancient Block Printing; The Tikka. India Month at the Leonhardt People Center. Free.

2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free.

2:00 p.m. New York Paleontological Society. Room 419. Free.

24 10:30 a.m. Behind-the-Scenes Tours of the Department of Entomology. \$9. tickets required. Members only. Page 9.

1:00 to 4:30 p.m. Traditional Bamboo Flute: Bharatanatyam — Mysore Tradition; Bridal Dresses and Customs. India Month.

31 1:00 and 3:00 p.m. The Shoestring Players. Members' Family Program. Kaufmann Theater. \$4 for Members, \$6 for non-Members. Page 3.

31st (cont'd)

1:00 to 4:30 p.m. Classical Dances of India; Moguls of India; Traditional Textiles. India Month at the Leonhardt People Center. Free.

25

18 Martin Luther King, Jr., Day. The Museum is open.

26 7:30 p.m. The Exploration of the Solar System: Past Triumphs, Future Prospects. Main Auditorium. See page 1 for details.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

13

12 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

5



6 7:45 p.m. Amateur Astronomers Association. Dr. James Powell, speaker: "Antimatter and Interstellar Flight." Kaufmann Theater. Free.

Last chance to see the Origami Holiday Tree in the Roosevelt Rotunda.

8

7 7:00 p.m. New York Microscopical Society. Room 419. Free.



16 1:00 to 4:30 p.m. Dance of the Festival of Lights; Ancient Block Printing; The Tikka. India Month at the Leonhardt People Center. Free.

9 11:00 a.m. New York Map Society. Room 319. Free.

1:00 to 4:30 p.m. Kathak Dance; Stone Observatories of Sawai Jai Singh; Traditional Dress — the Sari. India Month at the Leonhardt People Center. Free.

21

20 5:15 p.m. Behind-the-Scenes Tours of the Department of Entomology. \$9, and tickets are required. Members only. Page 9.

7:30 p.m. Blacks and the News Media — The Spiralling of the Nation's Conscience: Where Are We Now? Part 1 of a 3-part series. Main Auditorium. Free. Tickets required. Page 4.

22

23 1:00 to 4:30 p.m. Mohini Attam — Dances of an Entertainer; Traditional Bamboo Flute; Bridal Dresses and Customs. India Month at the Leonhardt People Center. Free.

28

27 7:30 p.m. Black Underground Struggle to National Mobilization. Part 2 of a 3-part series. Main Auditorium. Free, and tickets are required. Page 4.

29

30 1:00 to 4:30 p.m. Classical Dances of India; Moguls of India; Traditional Textiles. India Month at the Leonhardt People Center. Free.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts. National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 2 February 1988



*These festively appareled women are residents of Ladakh, an isolated region in northern India. The program *Crisis and Hope in the Himalayas* examines the devastating effects of tourism on Ladakh and proposes solutions for maintaining the area's cultural identity.*

The Global Community Lectures by Asimov, Crosby, and Norberg-Hodge

Three Tuesday evenings, starting February 16
7:00–8:30 p.m.

Main Auditorium

Series tickets: \$22.50 for Members, \$25 for non-Members
(No individual lecture tickets will be sold)

Among the many insightful programs offered by the Department of Education's Spring Afternoon and Evening Lecture Series is *The Global Community*, a three-part program that examines the impact of disease on human society, the influence of economic growth and development on cultural integrity, and the effects of modern technology. On February 16, Alfred W. Crosby, Jr., presents *Disease and the Global Community*; on February 23, Helena Norberg-Hodge describes *Crisis and Hope in the Himalayas*; and on March 8, Isaac Asimov discusses *Science and Technology: What We Won't Do*.

A keen observer of society's behavior and attitude toward computers and other sophisticated forms of instrumenta-

tion, educator and author Isaac Asimov will explain his perceptions of our present and future uses of technological advances.

In *Crisis and Hope in the Himalayas*, Helena Norberg-Hodge will discuss efforts to simultaneously protect and develop Ladakh, a region in northern India, that is one of the purest remaining examples of Tibetan Buddhist culture. For over 2,000 years, the people of Ladakh led a peaceful, self-sufficient existence in an inhospitable environment. In the decade since Ladakh was opened to tourism, its inhabitants have been subject to hitherto unknown pressures — pollution, inflation, and a loss of self-reliance and cultural identity. Norberg-Hodge will describe the Ladakh Project,

a program to improve the residents' standard of living without sacrificing their cultural heritage.

Speaker Alfred W. Crosby, Jr., will offer a historical view of the significance of disease in societies around the world, including his theories of ecological imperialism, in *Disease and the Global Community*. Crosby is a professor in American studies at the University of Texas and the author of *Epidemic and Peace*, 1918, and *Ecological Imperialism: The Biological Expansion of Europe*.

For further information about these and other lectures, please see the January issue of *Rotunda* or call (212) 769-5310.

An Education Department Public Program.

Black History Month

The Department of Education salutes the cultural achievements of black Americans with a month-long series of lectures and performances.

Page 6

Winter Wonderland

The voices of whales, wolves, and dolphins sing along with the *Paul Winter Consort* in a Members' Planetarium concert.

Page 2

Dinosaur Delight

In an all new show of skills and songs, young Members join popular entertainer Mike Weilbacher in a humorous and educational search for *Dinosaurs Dead or Alive*.

Page 4

In Time of Plague

A new exhibition in the Akeley Gallery offers a historical view of human responses to the spread of epidemic disease.

Page 5

The Sandman Cometh

Lullabies from the Heart is a Valentine's Day look at the words and music of an intimate tradition. This Members' family program features performances of sleepy-time songs from all around the world.

Page 2

Richard Leakey

The celebrated paleoanthropologist presents a Members' program that explores early human life and the stages of its evolution.

Page 3

Lullabies from the Heart

Sunday, February 14

11:00 a.m. and 1:30 p.m.

Kaufmann Theater

\$2.50 for Members, \$5 for non-Members

On Valentine's Day, a Members' family program will celebrate the rhythms and images of lullabies of the world. *Lullabies from the Heart* re-enacts the calming sounds, rhythmic routines, and rocking motions used worldwide to promote patterns of sleep, health, and growth.

The program is hosted by poet Julia Leventritt, who is the founder and director of the New York City Lullabies Project and Song Bank. She is also a folklife consultant and teacher of ARTS (Art Resources for Teachers and Students), a resource center in the Chinese and Hispanic communities on the Lower East Side of Manhattan. *Lullabies from the Heart* features various

performers from the Lullabies Project:

Ivanka Kuziw-Zayac, mother of two, sings lullabies she learned from her Ukrainian-born mother and grandmother and plays the bandura, a traditional Ukrainian instrument.

Master storyteller/singer Delores McCullough is well known to Brooklyn audiences for her library lullabies program. She is from Gainsborough, Georgia, and Afro-American roots inspire her songs.

Atsuko Yuma is a mother, dancer/singer, and a maker of costumes and masks. Her homeland is in the high mountains of north Hokkaido, Japan, and she sings traditional and

original Japanese lullabies. Singer/guitarist Máximo Pantoja of Cataño, Puerto Rico, learned canciones de cuna and other children's songs from his musical family.

Lullabies from the Heart is appropriate for all age groups and features a variety of participatory activities, including sing-alongs, hum-alongs, rock-alongs, action rhymes, and chants. Before and after the program, children will have the opportunity to make natural history valentines in the Blum Lecture Room.

To register for *Lullabies from the Heart*, please use the February Members' programs coupon on page 3.



Karen Kertan



Martha Cropper City, Lore

Paul Winter Consort

Thursday, March 24

6:30 and 9:00 p.m.

Planetarium Sky Theater

\$16 for Members, \$20 for non-Members



Condon, Andrew

Paul Winter at the Grand Canyon

The return of spring will coincide with the return of the Paul Winter Consort for another Members' concert at the Planetarium. Winter's musical idiom, which reflects his own diverse experience in jazz, symphonic, and ethnic musical traditions, transcends categorization. His renowned soprano sax sound, combined with the virtuosic and rhythmic music of the Paul Winter Consort, provides an inspiring musical experience that has enthralled audiences in thousands of performances throughout the United States and around the world.

Winter's dedication to environmental preservation and to

peace are reflected in the consort's music, which includes the voices of wolves, whales, and eagles in musical celebrations of the natural world. Wildlife visuals, lasers, and other Planetarium special effects will accompany the performance of "Lullaby to the Great Mother Whale from the Baby Seal Pups" and "Icarus," as well as "Kurski Funk" and other selections from their new album, *Earthbeat*. The concerts offer a rich and moving musical adventure for all.

To register for the Paul Winter Consort, please use the February Members' programs coupon on page 3.

ROTUNDA

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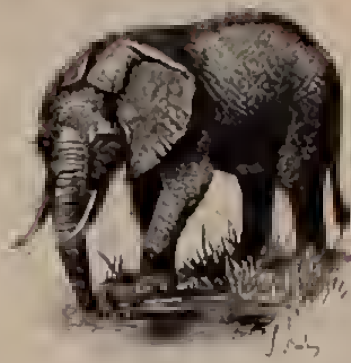
The African Elephant

Tuesday, March 15

7:30 p.m.

Main Auditorium

Free, and open only to Members



A popular Member's program returns next month with a screening of *The African Elephant*. Filmed in the wilds of Tanzania by naturalist-director Simon Trevor, the 100-minute film follows the life cycle of the African elephant and offers a comprehensive view of its

rearing, social behavior, feeding, mating, and death.

The film includes footage of other animals that share the elephant's domain — a cheetah stalking its prey, a newborn wildebeest taking its first steps, and flamingos in flight over the Great Rift Valley.

To register, please use the February Members' programs coupon.

An Evening with Richard Leakey

Thursday, February 25

6:00 and 8:30 p.m.

Main Auditorium

\$10 for Members, \$15 for non-Members



Leakey's excavations in East Africa unearth relics from the distant past.

"Descended from apes!" exclaimed the horrified wife of the Bishop of Worcester. "Let us hope it is not true, but if it is, let us pray that it will not become generally known."

Contrary to the wishes of the bishop's wife (expressed with such shuddering distaste upon the 1859 publication of Darwin's *On the Origin of Species*), evolution is more than generally known. Its widespread acceptance beyond the scientific community is owing in large part to the dedicated work

of paleoanthropologists such as Richard Leakey, who will discuss with Members his search for the missing pieces in the puzzle of human evolution.

"By searching our long-buried past for an understanding of what we are," Leakey has observed, "we may discover some insight into our future." His work, and that of his well-known parents, has long been the center of scientific acclaim and controversy. The Leakeys have discovered hundreds of fossils, some of which have up-

set many long-held ideas on evolution and necessitated a redesign of the scenario for the slow progress from ape to *Homo sapiens*.

Leakey will illustrate and describe his views on human origins with slides of his field work in Africa. Among the recent discoveries he will discuss with Members is the "black skull," one of the most significant early humanlike fossils unearthed in many years. To register, please use the February Members' programs coupon.

February Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to *February Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

An Evening with Richard Leakey. Thursday, February 25, 6:00 and 8:30 p.m. \$10 for Members, \$15 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$15. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 8:30 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$15: _____

Total amount enclosed for program: _____

Lullabies from the Heart. Sunday, February 14, 11:00 a.m. and 1:30 p.m. \$2.50 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times, if possible:

_____ 11:00 a.m. _____ 1:30 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

The African Elephant. Tuesday, March 15, 7:30 p.m. Free, and open only to Members. Number of tickets: _____

Dinosaurs Dead or Alive. Friday, March 18, at 6:30 p.m., Saturday, March 19, and Sunday, March 20, at 11:00 a.m., 1:00 and 3:00 p.m. \$4, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first, second, and third choice of dates and times:

Friday, Mar. 18: _____ 6:30 p.m.
Saturday, Mar. 19: _____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.
Sunday, Mar. 20: _____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Paul Winter Consort. Thursday, March 24, 6:30 and 9:00 p.m. \$16 for Members, \$20 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$20. Please indicate a first and second choice of times, if possible:

_____ 6:30 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$16: _____

Number of additional tickets at \$20: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Wanted: Dinosaurs Dead or Alive

Friday, March 18 at 6:30 p.m.
Saturday, March 19, and Sunday, March 20
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$4, and open only to Members



Ornitholestes seizing on Archaeopteryx



A half-dozen Protoceratops and a nest of eggs

Young Members are invited to meet "Sherlock Bones, Dinosaur Detective" and solve a very strange dinosaur mystery. Mike Weilbacher returns to the Museum next month with an all-new program of dinosaur skits, songs, and activities.

Kids enter "Professor Paleo's Spare Body Parts Shop" to look at his collection of spikes, club tails, horns, plates, and crests. They'll learn about the diet of the strange and mysterious flying reptiles when they join the "Dinosaur Chain Gang," and

they'll sing along with the bone-jamming chorus of "Totally Pterosaur."

Weilbacher's programs take into account the latest scientific insights and encourage audience participation. This is the fourth consecutive year he's performed at the Museum, and his shows have been sponsored by the Academy of Natural Sciences of Philadelphia and the Maryland Science Center. Weilbacher is a full-time educator at the Academy of Natural Sciences, where he designs

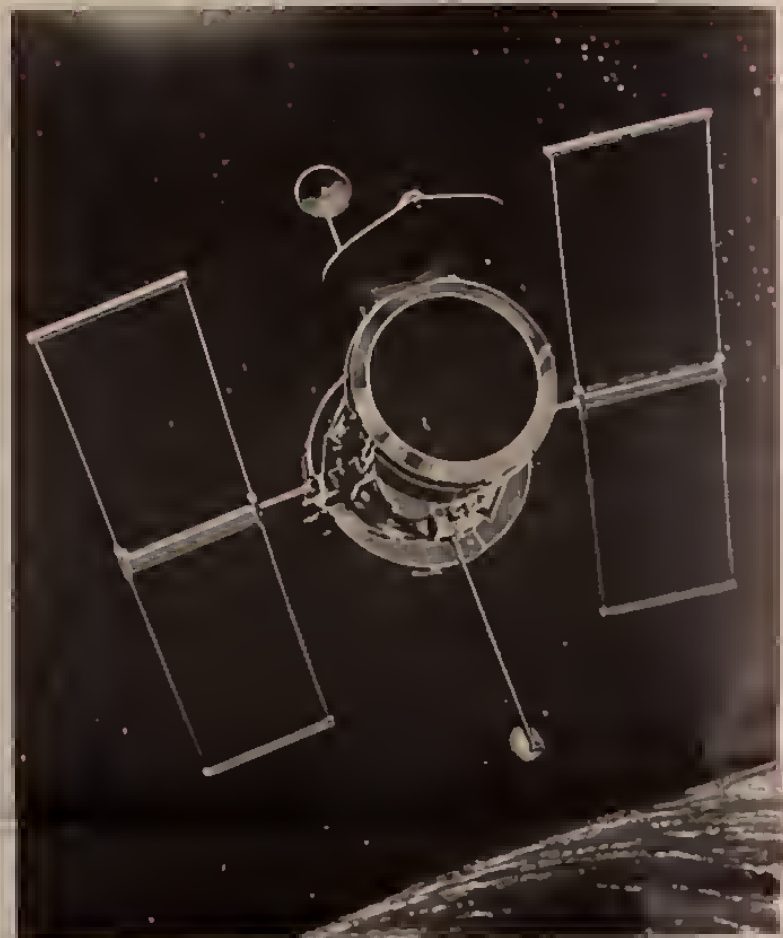
large-scale dinosaurian celebrations like Dinosaur Days, the Dinosaur Film Festival, and the National Dinosaur Art Contest.

Activities before and after each show include Dinosaur Bingo, making *Tyrannosaurus* masks from paper bags, and creating dinoscapes — drawings of the natural disasters that might have caused the dinosaurs' extinction.

To register for *Dinosaurs: Dead or Alive*, please use the February Members' programs coupon on page 3.

Space Futures

The Space Telescope
Tuesday, February 2
The Feasibility of Interstellar Flight
Tuesday, February 9
Both programs at 7:30 p.m.
Main Auditorium



The Space Telescope

A dream of humankind for centuries and a hope for the growth and survival of the human race, the concept of interstellar flight is moving rapidly from the pages of science fiction into reality. In cooperation with the Institute of Aeronautics and Astronautics, the American Museum—Hayden Planetarium is presenting *Space Futures*, a three-part series that examines current advances in space exploration.

The series — which opened on January 26 with Dr. Tobias Owen's discussion of *The Exploration of the Solar System: Past Triumphs, Future Prospects* — continues this month with presentations on *The Space Telescope* and *The Feasibility of Interstellar Flight*. Tickets are available at a per-program price of \$7 for Members and \$10 for non-Members. For ticket availability, please call the Membership Office at (212) 769-5600.

The largest single payload ever to be carried into space by the shuttle, *The Space Telescope* is designed to transcend the earth's atmosphere and cloud cover to produce the sharpest astronomical images in history. NASA astronomer Ray Villard will discuss this remarkable engineering achievement, which is scheduled to be launched within the next year. The Hubble Space Telescope will scan fascinating objects

across the universe, riding in an orbit 360 miles above the astronomers who will control its movements. The telescope will study the atmospheres of planets within our solar system and venture beyond to seek out and analyze the faint light from other galaxies.

Ray Villard is a public information officer at the Space Telescope Science Institute at the Johns Hopkins University in Baltimore. He has been active in astronomy education efforts for over a decade.

In *The Feasibility of Interstellar Flight*, Dr. Robert L. Forward will review current and near-future propulsion systems in terms of their ability to support both probes and manned flight to the stars. He'll describe past methods for interstellar flight, including Project Orion, the Bussard Ramjet, and Project Daedalus. Among the new exploratory techniques he'll discuss is a class of spacecraft that consists only of payload, structure, and thruster. These ships will carry no energy source or propellant or even an engine and will operate by beamed-power propulsion.

Formerly a senior scientist at Hughes Research Laboratories, Dr. Forward is a science consultant specializing in exotic physical phenomena and advanced space propulsion. He is the writer of science-fiction books as well as science-fiction novels.

In Time of Plague

Akeley Gallery
Through March 13

"A plague o' both your houses!" is the dying Mercutio's parting shot to the assemblage of Capulets and Montagues in Act III of *Romeo and Juliet*. By invoking "plague," the bitterly eloquent Mercutio is true to the term's Greek and Latin roots, which denote a blow or wound inflicted upon an entire community rather than upon an individual.

In Time of Plague represents 500 years of human responses to the spread of epidemic disease. Artifacts, photographs, art, and memorabilia depict the causes of plague, along with its victims and the ways in which societies have attempted to vanquish it.

Plague has been most often perceived as an outside or alien force, natural or supernatural, that invades the community and lays souls low, regardless of their social, economic, or moral standing. Artists reflect the stylistic conventions and the religious and scientific understandings of their time and place. The art of different historical periods testifies to the manner in which a succession of dread diseases have laid claim to the human imagination, ranging from the bubonic plague in seventeenth-century Europe, to the incidence of smallpox among conquered peoples of the New World, to the modern-day calamity of AIDS.

This exhibition is made possible by funding from the Rockefeller Foundation.



A drawing from an 1892 New York newspaper depicts the tumultuous conveyance of a cholera victim from her Manhattan home to the hospital.

Sword Dance Festival

Saturday, February 13
1:30 and 3:30 p.m.
Kaufmann Theater
Free

A winter celebration from the coal-mining regions of northern England, sword dancing is a lively old tradition. A variety of performances will be featured, including Morris dancing, mummers' plays, and musical ac-

companiment on fiddle, flute, and accordion.

The Half Moon Sword Dance Team will host the program, with appearances by the Greenwich Guard, the New Haven Morris and Sword,

Greenwich Morris, and other dance teams. For additional details, call (212) 769-5305.

An Education Department
Public Program.

Enjoy Your Visit?

If you can't get enough of the Museum, perhaps you could come more often. An ideal incentive for increasing the frequency of your visits is available in the form of volunteer work.

The Volunteer Office offers a

variety of absorbing and important jobs in the Museum. Whatever your particular talent may be, there could be an opportunity to exercise it here. For an application, call the Volunteer Office at (212) 769-5366.

Black History Month

Programs of folklore, poetry, music, and dance highlight the Museum's observance of Black History Month, which features profiles of some of the black men and women who have made lasting contributions to American society.

Demonstrations and performances at the Leonhardt People Center are repeated several times during the afternoon: programs in the Kaufmann Theater take place at 2:00 and 4:00 p.m. Seating is on a first-come, first-served basis. These programs are made possible in part by a gift from the Vidda Foundation, the Samuel and May Rudin Foundation, and the family of Frederick H. Leonhardt. For further information, call (212) 769-5315.

Leonhardt People Center
1:00 to 4:30 p.m.
Free

February 6 and 7

African Empires In this slide-illustrated talk, Michael Webb discusses the rise, fall, and resurgence of African kingdoms.

African Proverbs Quassia Tukufu uses slides to discuss the ritual application and the continuity of proverbs in guiding and shaping behavior throughout the African diaspora.

African Ceremonial Dance MFOA (Message From Our Ancestors) demonstrates a cross-section of dances used in rituals and ceremonies in West African societies.

February 13 and 14

Tales and Folklore from the South Cheryl Tate-Lambert presents a collection of original tales based on the lives and traditions of southern blacks.

Africanisms, Power, and Influence of the Black Church In this slide-illustrated discussion, Rosalind Jeffries explores the black church and how it has been instrumental in preserving black cultural, political, and social structures.

Black Profiles Living History A dramatic presentation by Michael P. G. G. Randolph on the lives of several black Americans who have made important contributions to American culture and history.

February 20 and 21

African-American Songs and Games In this participatory presentation, Karen Hamilton demonstrates songs and games that reflect black culture.

Zora Neale Hurston Life and Legacy With dramatic readings of Hurston's work, Stephanie Berry discusses the life and accomplishments of the noted author and anthropologist Zora Neale Hurston.

Scott Joplin and Ragtime America The Jan Rosemond Tno presents the music of ragtime composer and musician Scott Joplin and demonstrates his influence on jazz.



The Museum's observance of Black History Month begins with programs on African empires, proverbs, and ceremonial dances.

February 27 and 28

In Honor of James Baldwin Clifton Powell presents some of Baldwin's works and discusses this noted writer's life and contribution to American literature.

Contemporary Black Photographers, 1940-1987 (Saturday, February 27 only). In this slide-illustrated talk, Deborah Wilis discusses the works of black photographers in studio, commercial, and fine art, as well as in photojournalism.

Contemporary Black Artists (Sunday, February 28 only). Dierdie Bibby examines the works and accomplishments of black American artists in a slide-illustrated talk.

Today's Gospel Music The Growth in Christ Community Choir performs contemporary gospel music in the tradition of the black church.

Wednesday, Feb. 17
Main Auditorium
7:30 p.m.
Free

From Church to Pop The cast of the hit gospel/blues musical "Mama, I Want to Sing" will perform a selection of songs tracing the evolution of church music to pop/soul music (one performance only).

Kaufmann Theater
2:00 and 4:00 p.m.
Free

Saturday, February 6
The African Story Drum The

Shadow Box Theatre presents a spectacular puppetry adaptation of four African folktales woven into one exciting adventure about a little girl named Kijana, her animal friends, and her abduction by the Zimwe, a "bad man." The audience helps the parents rescue their daughter by singing the password song for a happy ending.

Sunday, February 21

Traces The Charles Moore Dance Theatre presents a history of black dance in America from plantation days to the present. Selections will include Takai, a traditional dance from Ghana, Slaves' Night Off, music and dance performed at afternoon gatherings on the plantation, and newer pieces from the twenties and forties.

Sunday, February 28

A Tribute to Genius: Lowedown 'n' Blues Jazz Band The Lowedown 'n' Blues seven-piece ensemble will paint a musical portrait of five improvisational masters, beginning with earlier traditional compositions of Duke Ellington and continuing with the works of Thelonius Monk, Charlie Parker, John Coltrane, and Ornette Coleman, who set the stage for the contemporary music scene. Compositions by all five of these legendary figures will be performed.

An Education Department Public Program.

River Fish and Ocean Monsters

Wednesday, March 16

7:30 p.m.

Main Auditorium

\$6 for Members, \$7 for non-Members

The American Littoral Society's twenty-third annual symposium on ocean and coastal topics features reports on new species of ocean dwellers and environmental protection of the lower Hudson River.

Emory Kristof, National Geographic staff photographer, will use film and slides to describe his study of some of the sea's largest living creatures. He'll describe his recent work in Bermuda on Project Beebe, a survey of new species conducted from a diving bell one mile below the surface.

John Cronin, river keeper for the Hudson, will outline the lower Hudson's environmental concerns. As river keeper, Cronin studies the river

ecosystem, educates the public about its value, and defends the river in court through his organization, the Hudson River Fishermen's Association. Cronin and the association were active in combatting the Westway Project and Con Ed power plant sitings.

In addition to these speakers, the society will present its Graham Macmillan Award for services to the marine sciences, and there will be a short underwater film by Robin Lehman.

To register, please use the adjacent coupon. Note: tickets will not be available at the Museum until the evening of the program. For further information, call (201) 291-0055.



Please send me _____ tickets to River Fish and Ocean Monsters (\$6 for Members, \$7 for non-Members)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Please make check payable to The American Littoral Society and mail with a stamped, self-addressed envelope to: American Littoral Society, Highlands, NJ 07732.

Museum Notes

Special Exhibitions and Highlights

Carthage: A Mosaic of Ancient Tunisia depicts a civilization's successive cultures between 800 B.C. and the sixth century A.D. Bronze and marble statues, lavish jewelry, and enormous pictorial mosaics are among the distinctive art forms on display in the most comprehensive view of ancient life in this region ever exhibited in the United States. In Gallery 3 through May 1.

For an inside story of the Museum's history and exhibits, take a **Museum Highlights Tour**. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and ex-

perience all the thrills of white-water rafting in the current Naturemax Theater presentation, **Grand Canyon: The Hidden Secrets**. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of **Grand Canyon: The Hidden Secrets** co-feature another new film, **Chronos**.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that

sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the age of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 3:00 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, **FACES** explores its monthly themes through a variety of activities, including games, stories, puzzles, and recipes. **FACES** is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$17.95. To subscribe, send your check or money order payable to **FACES** (add \$4 for foreign orders) to **FACES**, Dept. 722, 20 Grove Street, Peterborough, NH 03458.



A face from Carthage, now in Gallery 3

Happenings at the Hayden

Sky Shows

The Hayden Planetarium presents a double-feature Sky Show of **Cosmic Illusions** and **The Space Telescope**.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the **Amazing Disappearing Martians** and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. **The Space Telescope: New Eyes on the Universe**, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. **Cardboard Rocket** will be shown at noon on Saturday, February 13, and at noon on Saturday, March 12. Admission for Participating, Donor, and Contributing Members is \$2.75

for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are at 10:00 a.m. on Saturday, April 9, and at noon on Saturday, May 7. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: **Wonderful Sky**, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in **Laser Hits of the Sixties**.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.



Blackfoot Indian Astronomy, a Planetarium mural

Sun



Mon

Tue

2 7:30 p.m. *The Space Telescope: Members' Evening Program.* Main Auditorium. Tickets required. Page 4

Wed

3 7:30 p.m. *Images of a People: How Television Views Blacks and How Blacks View Themselves.* Main Auditorium. Tickets required. For information, call (212) 769-5315.

7:45 p.m. *Amateur Astronomers Association.* Dr. Jacob Shaham, speaker. "The Oldest Pulsars in the Universe." Kaufmann Theater. Free.

Thu

4 7:00 p.m. *New York Microscopical Society Inge Fiedler, speaker: "Pigment Analysis in Art Conservation."* Room 419. Free

Fri

8

7 1:00 to 4:30 p.m. *African Empires, African Proverbs: African Ceremonial Dance.* Black History Month. Leonhardt People Center. Free. Page 6

15

14 11:00 a.m. and 1:30 p.m. *Presidents' Day. The Museum is open*

22

21 1:00 to 4:30 p.m. *African-American Songs: Zora Neale Hurston: Life and Legacy.* Scott Joplin and Ragtime America Black History Month. Free. Page 6

2:00 and 4:00 p.m. *Traces.* Black History Month. Kaufmann Theater. Free. Page 6

29

28 1:00 to 4:30 p.m. *In Honor of James Baldwin: Contemporary Black Artists: Today's Gospel Music.* Black History Month. Leonhardt People Center. Free. Page 6

2:00 and 4:00 p.m. *A Tribute to Genius: Lowdown 'n' Blues Jazz Band.* Black History Month. Kaufmann Theater. Free. Page 6

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9 7:30 p.m. *The Feasibility of Interstellar Flight.* Members' Evening Program. Main Auditorium. Tickets required. Page 4.

8:00 p.m. *Linnaean Society of New York.* Kaufmann Theater. Free.

11

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, The American Museum Restaurant is open till 7:30 p.m.

12

13 1:00 to 4:30 p.m. *Tales and Folklore from the South.* Africanisms, Power, and Influence of the Black Church, Black Profiles Living History. Leonhardt People Center. Free. Page 6

2:00 p.m. *New York Herpetological Society.* Room 319. Free

1:30 and 3:30 p.m. *Sword Dance Festival.* Kaufmann Theater. Free. Page 5.

18

17 7:30 p.m. *From Church to Pop.* Performance by cast of the hit gospel/blues musical "Mama, I Want to Sing." Main Auditorium. Free. Page 6.

16

8:00 p.m. *New York Entomological Society.* Room 419. Free.

The Department of Education's *Spring Afternoon and Evening Lecture Series* begins today. For a complete listing of courses, see the January issue of *Rotunda*, or call (212) 769-5310 for a brochure.

24

23 8:00 p.m. *Linnaean Society of New York.* Leonhardt People Center. Free.



26

25 6:00 and 8:30 p.m. *An Evening with Richard Leakey, Members' Evening Program.* Main Auditorium. \$10 for Members, \$15 for non-Members. Page 3.



20

1:00 to 4:30 p.m. *African-American Songs and Games.* Zora Neale Hurston: Life and Legacy. Scott Joplin and Ragtime America Black History Month. Leonhardt People Center. Free. Page 6

27 1:00 to 4:30 p.m. *In Honor of James Baldwin: Contemporary Black Photographers, 1940-1987: Today's Gospel Music.* Black History Month. Leonhardt People Center. Free. Page 6.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

February 1988 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 3 March 1988



The collection of Native American art and lore by a turn-of-the-century expedition to the Northwest coast is the focus of a Members' program.

From the Land of the Totem Poles

Tuesday, April 19

7:00 p.m.

Main Auditorium

Free, and open only to Members

Between 1897 and 1902, a fascinating group of men explored the vanishing aboriginal cultures of the northern Pacific from Siberia to Canada to obtain valuable ethnographic data. The ambitious Jesup North Pacific Expedition, organized by Franz Boas and funded by Museum president Morris Ketchum Jesup, brought back thousands of artworks from both the Northwest coast and Siberia that are now among the Museum's most cherished treasures.

Members will learn about the adventures of the Jesup Expedition's field workers, the reaction of the New York

public to the project, and the extraordinary artworks that were acquired during the expedition. Giant totem poles, shamans' rattles, carved bowls, painted chests, and masks are among the innumerable ritual and decorative works collected by members of the expedition. Theorizing that the American Indians had originally come to the Western Hemisphere from Asia by way of the Bering Strait, they studied tribal social organization, language, religion, history, and migration. Their detailed investigations proved a close relationship between the tribes of Siberia and those of

North America.

Speaker Aldona Jonaitis is vice-provost for undergraduate studies at SUNY Stony Brook and a specialist in Native American art. She is the author of numerous publications, including the new book, *From the Land of the Totem Poles: Northwest Coast Art at the American Museum of Natural History*.

There will be a reception in the Hall of Northwest Coast Indians at the program's conclusion. To register, please use the March Members' programs coupon on page 3.

Paul Winter Consort

The popular ensemble will return to the Planetarium this month for another Members' concert under the stars.
Page 4

Call Me Owl

Birds of a feather will be spotlighted in a Members' family program, *Wise Birds*. Live owls will assist the program's host in a profile of these creatures and their ecology.
Page 3

Children's Workshops

On spring Saturdays and Sundays, Museum educators will instruct schoolchildren on human anatomy, archeology, the life cycles of whales, and other subjects in the *Workshops for Young People*.
Page 5

Sky's the Limit

Courses for Stargazers begin next month at the Planetarium, with classes in astronomy, meteorology, aviation, and navigation.
Page 10

From the Amazon to the Andes

This four-part program, one of the Department of Education's *Spring Afternoon and Evening Lecture Series*, features a private preview of the Hall of South American Peoples.
Page 9

The Wildest Parties in Town

An ostrich egg, a warthog tusk, and a mask from Zaire are some of the exotic items that young explorers inspect at a Safari Party. In this birthday adventure, kids hunt through the exhibition halls for elephants, giraffes, and zebras, play Safari Party games, and design their own beaded and leathered masks.

Participating, Donor, and Contributing Members can observe their children's birthdays with theme parties at the Museum. In addition to the Safari Party, there are celebrations that feature a Planetarium Sky

Show, a visit to the dinosaur halls, and a Grand Canyon adventure.

Star Parties introduce children to the Planetarium with a Sky Show and a tour of the Planetarium's permanent exhibits, including the Hall of the Sun. The partyers may play musical planets, make a space mural, or create their own flying saucers. (Star Parties are available only on Sunday afternoons and Saturdays.)

"Pin the Plates on the Stegosaurus" and "Duckbill, Duckbill, Brontosaurus" (a prehistoric version of "Duck, Duck,

Goose") are among the Dinosaur Party activities. Children also visit the dinosaur exhibition halls and create keepsake fossils with shells and plaster of Paris.

An eye-filling experience awaits Grand Canyon Partyers at the Naturemax Theater, where the movie screen is four stories high. A viewing of *Grand Canyon: The Hidden Secrets* gives kids a cinematic glimpse of the animals they'll see in the Hall of North American Mammals — armadillos, wolverines, mountain lions, and grizzly bears.

The parties, which are de-

signed for 5- to 10-year-olds, are conducted by a Museum Birthday Party coordinator, who reviews details with the parent before the party. All the parent needs to do on the day of the party is to bring the cake and help escort the children during tours of the Museum halls.

The parties are two hours long and held on weekdays between 4:00 and 6:00 p.m. and weekends at 11:00 a.m. or 2:30 p.m. There is a minimum of 10 and a maximum of 20 participants, and the fee is \$195, plus \$10 per child. The fee includes

all materials, decorations, ice cream, juice, and favor bags; it does not include cake. (Lunch, available upon request, is an extra \$1.50 per child.)

For further information and reservations, please call the Membership Office at (212) 769-5600 or write to: Members' Birthdays, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

We are now booking parties for April, May, and June.



Safari Partyers explore the Hall of African Mammals.

Intelligence Powder

A Play Reading
Wednesday, March 16
7:30 p.m.
Kaufmann Theater
Free

Intelligence Powder, the work of Algerian poet and playwright Kateb Yacine, will be read by Ubu Repertory Theater. The play recounts the picaresque adventures of philosopher-rogue Puff of Smoke, who attempts to acquire fortune, outwit a pompous sultan, and get out of trouble just as quickly and as often as he gets into it. Selling or-

dinary sand as "intelligence powder" and claiming to have a donkey that excretes gold coins are among Puff of Smoke's hoaxes. In a phantasmagorical conclusion, Puff of Smoke's path crosses that of Ali, a young vagabond whose destiny is linked to that of the sultan, the sultan's son, and the whole kingdom.

Ubu Repertory is an organi-

zation dedicated to cross-cultural artistic exchange, specifically for the works and artists of French-speaking countries.

Seating for this program is on a first-come, first-served basis. For further information, call (212) 769-5315.

An Education Department
Public Program.

ROTUNDA

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Mosaics of Carthage

Tuesday, April 26

7:30 p.m.

Main Auditorium

\$3, and open only to Members

Tunisia is the source of the world's richest collection of mosaics, and Members can hear the colorful history of these vivid works of art from the guest curator of the current exhibition *Carthage: A Mosaic of Ancient Tunisia*. A specialist in Roman art and archeology, David Soren has conducted extensive excavations in Tunisia.

Mosaics of Carthage will focus on Tunisia's Roman period, which extended from the first through the fourth centuries A.D. Laid to waste by Roman conquerors in 146 B.C., Carthage was reborn in less than a century. The city's new beauty reflected the splendor of Roman culture and government, and the most spectacular evidence of Carthage's resur-

rection is found in its mosaics. The elaborate depictions of banquets, hunts, and scenes from mythology bespeak the humor, fantasy, and passion of their creators. Hundreds of mosaic pavements have been unearthed in Tunisia in the twentieth century, and these discoveries have been a valuable source of information on Roman civilization to archeologists and historians.

Dr. Soren will describe to Members the attitudes and occupations of the artisans who created the mosaics as well as the inspirations for their work. He'll trace the thematic evolution of the pictorial mosaics across four centuries, from the black and white geometric designs of the first century A.D.,

reminiscent of Italian mosaics of that period, to the Tunisian mosaicists' gradual freedom from Italian influence. The idyllic scenes from classical mythology were joined by realistic scenes from the social and economic life of Tunisia. Dr. Soren will also discuss the methods by which the ancient craftsmen pieced the mosaics together and how the mosaics were lifted from their foundations for a national tour of the United States.

The Carthage exhibition in Gallery 3 will remain open until 7:15 p.m. on the evening of the program for Members who wish to view it.

To register for *Mosaics of Carthage*, please use the March Members' programs coupon.

Wise Birds

Sunday, April 10

11:00 a.m., 1:00 and 3:00 p.m.

Kaufmann Theater

\$2.50, and open only to Members

Host Bill Robinson will be joined by an array of feathered friends for a Members' family program that's all about owls. Robinson will describe the nesting and hunting behavior of owls and illustrate his presentation with live guest stars, including a great-horned owl, a barred owl, a barn owl, and a tiny pearl-spotted owl.

Although it's one of the most common large owls in North America, the great-horned owl keeps a low profile. Its prey can't hear it coming because of the owl's specialized feather structure, which muffles sound during flight. Robinson will compare the noise level of owl flight with that of an eagle's flight by sending both animals on a cruise over the heads of the audience.

The dark-eyed barred owl is a New York State native with a charming call that sounds like "who cooks for you?" (The southern populations, often heard in the Florida Everglades, has been heard to inquire "who cooks for y'all?") Like the barn owl, the barred owl relies on its excellent hearing and sharp eyesight to capture prey.

Old silos and barns on Long Island are the usual nesting places in this area for the barn owl, a species that's found throughout the world. The barn owl's pronounced facial disc funnels sound toward its ear openings and is a helpful adaptation.

The petite pearl-spotted owl feeds mainly on insects and small birds. Its small size can be deceptive, since it sometimes attacks and kills sleeping birds

much bigger than itself.

Science teacher Bill Robinson presents his lectures on birds of prey to over 100,000 students annually. He has published articles on birds

of prey in both the United States and Europe and has appeared on many network television programs. To register for *Wise Birds*, please use the March Members' programs coupon.



Join us for a real hoot.

March Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *March Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The African Elephant. Tuesday, March 15, 7:30 p.m.
Free, and open only to Members.
Number of tickets: _____

Dinosaurs Dead or Alive. Friday, March 18, at 6:30 p.m.; Saturday, March 19, and Sunday, March 20, at 11:00 a.m., 1:00 and 3:00 p.m. \$4, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6. Please indicate a first, second, and third choice of dates and times:

Friday, Mar. 18: _____ 6:30 p.m.
Saturday, Mar. 19: _____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.
Sunday, Mar. 20: _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$4: _____
Number of additional tickets at \$6: _____
Total amount enclosed for program: _____

Paul Winter Consort. Thursday, March 24, 6:30 and 9:00 p.m. \$16 for Members, \$20 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$20. Please indicate a first and second choice of times, if possible:

_____ 6:30 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$16: _____
Number of additional tickets at \$20: _____
Total amount enclosed for program: _____

Wise Birds. Sunday, April 10, 11:00 a.m., 1:00 and 3:00 p.m. \$2.50, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4. Please indicate a first and second choice of times, if possible:

_____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____
Number of additional tickets at \$4: _____
Total amount enclosed for program: _____

From the Land of the Totem Poles. Tuesday, April 19, 7:00 p.m. Free, and open to only Members. Participating, Donor, and Contributing Members are entitled to four tickets. Associates are entitled to one. All additional tickets are \$4.

Number of Members' tickets: _____
Number of additional tickets at \$4: _____
Total amount enclosed for program: _____

Mosaics of Carthage. Tuesday, April 26, 7:30 p.m. \$3, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

The African Elephant

Tuesday, March 15

7:30 p.m.

Main Auditorium

Free, and open only to Members

With its delicately fanlike ears, tiny eyes, and limbs of colossal thickness and strength, the elephant is a curious study in contrasts. Despite its ponderous form and tremendous power, it can be gentle and its motions unexpectedly smooth and graceful. It can use its most distinctive feature, the trunk, for a variety of actions that range from tearing a tree from the ground by its roots to accepting a peanut from a child's hand. From six to eight feet in length, the trunk has nearly 40,000 interlaced muscles that allow its diversity of movement.

Members can observe elephants in their natural habitat with the return of a popular film program, *The African Elephant*. Naturalist-director Simon Trevor filmed his memorable portrait of the elephant in Tanzania. The 100-minute film documents life in an elephant community, detailing the animal's rearing, social behavior, feeding, mating, and death. Footage of the elephant's neighbors includes a cheetah stalking its prey, a newborn wildebeest taking its first steps, and flamingos in flight over the Great Rift Valley.

To register for *The African Elephant*, please use the March Members' programs coupon on page 3.



Paul Winter Consort

Thursday, March 24

6:30 and 9:00 p.m.

Planetarium Sky Theater

\$16 for Members, \$20 for non-Members

The Paul Winter Consort arrives at the Hayden Planetarium this month to perform their unusual style of living music, which combines elements of classical, jazz, and international folk traditions with themes drawn from the natural environment. The Members' concerts will feature wildlife visuals, lasers, and other Planetarium special effects.

Paul Winter's career spans three decades. He is known not only for his numerous recordings but also for his work as an environmentalist. His compositions blend sounds from conventional instruments (particularly wind and percussion) with natural sounds, such as those made by dolphins, whales, and wolves. By incorporating environmental themes, natural sounds, and the best in musical traditions, Winter hopes to enhance his listeners' awareness of their environment and their connection with it.

The consort's repertoire for this performance will include pieces from *Wintersongs* and

Canyon, including "Lullaby to the Great Mother Whale from the Baby Seal Pups" and "Icarus." They will also perform "Kurski Funk" and other selections from their new album, *Earthbeat*.

To register, please use the March Members' programs coupon on page 3.



Art and Mythology

Four Monday evenings, beginning April 4
7:00-8:30 p.m.

Main Auditorium

Series tickets: \$27 for Members,

\$30 for non-Members

Tickets for individual lectures are not sold

Was there a real-life King Arthur? How can a painting hold the key to personal intuition? These and other questions about the mingling of fact and legend in art are addressed in the four-part series *Art and Mythology*. To register for this program, please see the coupon on page 9. For further information, please call (212) 769-5310.

Art and Mythic Vision, on April 4, will examine the interrelationships of the worlds of art, myth, and the imagination. James B. Spann, lecturer in art history at the Metropolitan Museum of Art, will illustrate his lecture with slides from the Metropolitan Museum's collection and from around the world.

The Mythology of Heavenly Ascent, on April 11, will detail the widespread influence of the ascent of Muhammad into heaven, discussing the impact on medieval Iran, the Spanish court of Alfonso X, and Dante's

creation of *The Divine Comedy*. Virgil Bird is a lecturer in art history at Baruch College, CUNY, and formerly of the Islamic Department at the Metropolitan Museum of Art.

The Age of Arthur, on April 18, will cite historical and archaeological evidence that indicates the existence of a real-life military leader who inspired the legendary tales of King Arthur. Janice B. Klein is an archaeologist and staff member of the University Museum at the University of Pennsylvania.

Myths and Mountains of China, on April 25, will discuss the connections between the mysterious mountains, deserts, and oases of the ancient Silk Route and the myths and religions of western Chinese peoples. Edwin Bernbaum is an expert on Eastern mythology and religion.

An Education Department Public Program.

Wanted: Dinosaurs Dead or Alive

Friday, March 18, at 6:30 p.m.

Saturday, March 19, and Sunday, March 20

11:00 a.m., 1:00 and 3:00 p.m.

Kaufmann Theater

\$4, and open only to Members

The 11:00 a.m. show on Sunday, March 20, is SOLD OUT

An all-points bulletin has been issued, and Mike Weilbacher, dinosaur-hunter extraordinaire, will lead the merry chase. *Dinosaurs: Dead or Alive* is a captivating Members' family program that explores the Age of Reptiles with skits, songs, and activities.

A full-time educator at the Academy of Natural Sciences of Philadelphia, Weilbacher has appeared annually at the Museum for the past four years. His energetic and entertaining shows present insights into dinosaur life in a format of audience participation.

This year's program of all-new material brings kids inside "Professor Paleo's Spare Body

Parts Shop" to admire an exotic array of spikes, club tails, horns, plates, and crests. The audience will sing along with "Totally Pterosaur" to discover the diet of the flying reptiles, and it will play sleuth with "Sherlock Bones, Dinosaur Detective."

Before and after each show, young Members can play Dinosaur Bingo, make *Tyrannosaurus* masks from paper bags, and draw dinoscapes — illustrations of the natural disasters that may have caused the dinosaurs' extinction.

The program is geared toward 4- to 10-year-olds. To register, please use the March Members' programs coupon on page 3.

The Department of Education Presents

Workshops for Young People

SUNDAY COURSES

Through the Eyes of a Child: Introducing the Museum

5- or 6-year-olds with one adult
Two Sundays

Section A: April 10 and 17;
10:15-11:45 a.m.

or

Section B: May 15 and 22;
10:15-11:45 a.m.

Fee: \$25 (\$23 for Members)

A Museum educator introduces you and a child to this exciting Museum. Minerals, plant and animal specimens, and beautiful objects help children perceive the world around them. Presented by Majorie M. Ransom of the Education Department.

Animals without Backbones

Grades 7, 8, and 9

Five Sundays

April 10, 17, 24, May 1 and 8;
10:30 a.m.-12:00 p.m.

Fee: \$30 (\$28 for Members)

From cockroaches to butterflies, students survey the fascinating world of invertebrates. How does a starfish eat or an earthworm breathe? What is in a single drop of pond water? By performing simple behavioral experiments, students discover how these animals have survived and adapted to many different environments. Using dissecting scopes and microscopes, students investigate internal and external anatomy to understand what has made this group of animals so successful. Classes are taught by Dr. Betty Faber, entomologist.

Eggs: The Perfect Package

Grades 5 and 6

Two Sundays

April 10 and 17;
10:30 a.m.-12:30 p.m.

Fee: \$15 (\$13 for Members)

What makes an egg an egg, and what animals make them? Come and hunt through the

Museum in search of eggs and nests. Learn about the many different types of eggs — how they are made, the superstitions attached to them, and how they have been used in different parts of the world. There will be an opportunity for participants to design their own eggs. Presented by Andrea Thaler and Mary Kim of the Education Department.

SATURDAY WORKSHOPS

Students should bring a bag lunch.

Science Experiments for Young Children

Grades 2 and 3

April 9, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

How can you make musical chimes? How can you peek around the corner without being seen? How can you make pictures move? Finding the answers to these and many other questions is easy and fun in a program specially designed for young people. Presented by Dina Cukier, science and art teacher.

Wonderful Whales

Grades 3 and 4

Section A: April 9

or

Section B: April 16

10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Whales can approach 100 feet in length, weigh over 140 tons, and devour 8 tons of food a day, and some species are nearing extinction. Participants learn all about whales and their endangered status through film, songs, games, artifacts, and a visit to the Museum's Hall of Ocean Life. Taught by Merryl Kafka, educator at the New York Aquarium.

American Indian Lore and Legend

Grades 3, 4, and 5

April 16, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Native Americans consider the land, plants, and animals gifts from the creator that are to be respected. Students will develop an understanding of Native American traditions, beliefs, and values through stories, crafts, films, and a visit to the Museum's exhibition halls. Taught by Rob Bernstein, instructor at the New York Botanical Gardens.

Bones.

Bones.

and More Bones

Grades 6 and 7

April 23, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Learn about the bones of the human skeleton — how the shape of a bone is a clue to its function and how 206 bones join together to support and protect the human body. Working with real bones and with casts, students will learn about the evolution of the human skeleton and about some of the techniques archeologists use to get information about the age, sex, and health of individuals from bones. Presented by Ann Prewitt of the Education Department.

Archeology

Grades 5 and 6

May 7, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Students participate in the excavation of a simulated archeology site in the classroom. This and other activities help youngsters acquire an understanding of the field techniques and approaches used by archeologists. Presented by Anita Steinhart, lecturer and teacher of anthropology.

Playing and Learning

Grades 3 and 4

May 14, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Games are played in virtually all parts of the world and can awaken a child's sense of wonder. Games also help children learn how to become adults. Participants learn about the games of other cultures and how they are played. Museum exhibition halls and display objects are included. Presented by Mary Kim of the Education Department.

But Will It Bite?

Grades 3 and 4

May 21, 10:30 a.m.-1:30 p.m.

Fee: \$10 per child and per adult (\$9 per child and per adult for Members)

Discover how insects live and grow. Watch dragonflies fly through the air and hear grasshoppers sing. Delight in many-colored ladybird beetles and ants at work on constructing a home in the ground. Students accompanied by an adult use the wooded areas and meadows of Central Park and a laboratory classroom to investigate the behavior of some very common animals — the insects.

Presented by Dr. Betty Faber, entomologist.

FOR THE LEARNING DISABLED

Marvelous Mammals

Limited to 15 children, functioning at third- to fifth-grade level

May 14, 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Have you ever wondered what a raccoon's favorite food is, what a muskrat does with its house during winter, or why a squirrel has a bushy tail? Children will use mounted specimens and explore the Museum's exhibition halls to learn about many different mammals and their habitats. This program is designed for the learning-disabled child and provides a small-class setting with a hands-on approach. Presented by Rhonda Young, special education instructor of the Education Department.

DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____
(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Members' Tour of the Month

Tiffany: 150 Years of Gems and Jewelry

Free, and open only to Participating,
Donor, and Contributing Members

Specially trained volunteer Museum Highlights Tour guides will conduct Members on a sparkling foray that begins at *Tiffany: 150 Years of Gems and Jewelry*, the exhibition coming to Gallery 1, and concludes with the profusion of minerals and gems on permanent display.

The items on temporary display — brooches, bracelets,

watches, and rings — bespeak Tiffany's international acclaim as an innovator in jewelry design. In the nearby Hall of Minerals are colorful mineral specimens from all over the world. Their striking shapes, hues and textures distinguish the specimens as natural masterpieces. The array of rare treasures in the Hall of Gems includes facet-

ed rubies from North Carolina and Burma, star sapphires in shades that range from white to blue to purple, and elaborate figurines of goddesses and Buddhas carved from jadeite and rock crystal.

Tours last approximately one hour and are not recommended for young children. To register, please use the adjacent coupon

Members' Tour of the Month: Tiffany — 150 Years of Gems and Jewelry. Free and open only to Participating, Do- nor, and Contributing Members.

Please indicate a first, second, and third choice of times:

| | |
|-------------------------|-------------------------------------|
| Wed., April 6 (p.m.) | _____ 6:30 _____ 7:00 _____ 7:30 |
| Sat., April 9 (a.m.) | _____ 10:30 _____ 11:00 _____ 11:30 |
| Wed., April 13 (p.m.) | _____ 6:30 _____ 7:00 _____ 7:30 |
| Sat., April 16 (a.m.) | _____ 10:30 _____ 11:00 _____ 11:30 |
| Sun., April 17 (a.m.) | _____ 10:30 _____ 11:00 _____ 11:30 |
| Wed., April 20 (p.m.) | _____ 6:30 _____ 7:00 _____ 7:30 |
| Thurs., April 21 (p.m.) | _____ 2:00 _____ 2:30 _____ |
| Sun., April 24 (a.m.) | _____ 10:30 _____ 11:00 _____ 11:30 |

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *Tiffany Tours*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Please note: registration closes on **March 25**.

Chilean Museums: Today and Tomorrow

The Anthropology and Exhibition departments are preparing a Hall of South American Peoples, which is scheduled to open this year. The hall will feature both the archeology and ethnography of the vast continent of South America, concentrating on the archeology of the central Andean region and the ethnography of Amazonia, two areas in which the Museum's collections are most extensive. The curators and their assistants (Archeology: Curator Craig Morris and Assistant Peter Kvietok; Ethnography: Curator Robert Carneiro and Assistant Laila Williamson) have been working on this project with other specialists in the field for the past six years.

Peter Kvietok, research/exhibit assistant, began working at the Museum in 1979 as a volunteer assistant to Dr. Morris. After six months, he left to conduct archeological investigations in Wyoming, Colorado, and Texas for private and university contractors. In 1982 he rejoined the Museum staff to start work on the Hall of South American Peoples and has since been involved in all curatorial tasks related to this exhibit.

The hall will feature objects from a great collection that began when Ephraim George Squier, a former U.S. commissioner to Peru, acquired antiquities in South America in 1869. The Museum purchased Squier's collection in 1875. Since that time, the Museum's holdings have grown through scientific expeditions, private donations, and institutional exchanges. Over 1,000 of the finest objects from this collection will be on display in the new hall.

This scientific staff of the Anthropology Department has always maintained a close association with South America through its extensive program of field research on the continent. Although this involvement has traditionally concentrated on archeological field investigations, there has been a recent and sorely needed upsurge of interest in the maintenance of museums and their collections and a concomitant increasing awareness of the research potential of these collections. In light of the ongoing work on the preparation of the new hall at the Museum, Peter Kvietok was invited to teach a course on museology at the University of Toropoco in Anco, Chile, in the fall of 1987. His experiences on the trip led to this article.

Chile, a land of great cultural diversity and varied terrain, is home to more than 110 museums. The definition of "museum" is quite broad, ranging from the Museum of Natural History in Santiago (the oldest museum in the Americas) to myriad smaller provincial museums (some resembling storerooms) that house the collections of local neophytes. Many of the museums are not elegant; they are often crowded, lack information, are dusty and noisy, or are simply closed. They are full of fascinating material, but it is often difficult to view. The reason behind this state of affairs is clear — economic priorities in a Third World nation do not favor museum projects. In addition, limited museum budgets most often favor active field work or research, rather than collections/exhibit maintenance and improvement.

Ironically, some of the most advanced ancient societies and best-preserved remnants of material culture are from these parts of the world. You can witness the grim reality of a museum collection of 2,000-year-old Paracas mummies wrapped in layers of finely embroidered cloth (incomparable in technical excellence, and fine preservation to anything in the New World in the pre-Columbian era) that is rapidly disintegrating for want of proper storage and care.

Among the awesome challenges that South American museums face is protection of their collections from theft; grave robbing and archeological site destruction offer great promise of economic return and in many countries are, at best, only symbolically prohibited. Also, many of the operating supplies that we take for granted in our museums are unobtainable or prohibitively expensive in South America. In fact, if not for the exceptional collections and the infectious enthusiasm of the staff in these museums, my challenge would have been daunting indeed.

In the fall of 1986 I received an invitation from the Institute of Archaeology in Arica, Chile, to present a short course on practical approaches to exhibit preparation. The director of the institute, Dr. Mario Rivera, was familiar with our project on the future South American hall and was eager to share our institutions' experiences. I accepted with no hesitation and then began to think

through the logistics of my preparation.

What kind of financial and material resources do Chilean museologists have at their disposal? What kind of museums exist in their country? What level of formal training do museum employees have? How long would my course run? Who would participate, and how many? Surprisingly, many of these basic questions remained unanswered or the replies vague until my arrival in Chile.

I had traveled in Central and South America before, so I had already been exposed to the possible realities awaiting me. I was hard pressed, however, to prepare a detailed curriculum without knowledge of some specifics. I learned a valuable cultural lesson when I accepted the clearly different approach to planning and logistics that many Chileans take: Leave it for tomorrow!

I began to concentrate less on extracting course-specific information from my Chilean colleagues and spent more time on carefully documenting the various elements in the preparation of our South American hall, on the kind of exhibitions that the American Museum has excelled in, on the diversity of current exhibitions in New York, and on a careful review of current museological literature on a number of topics. I armed myself with all the information that I felt would be unknown or inaccessible to colleagues in Chile (copies of current literature, material samples, good-quality slides), prepared a rough course outline for a two-week period, tried to brush up on my lecture-quality Spanish, and began to look forward to good Chilean wines.

We set a final date for my departure (July 15) and length of stay (one month), the length of my course (two weeks), and the kind of participants ("museum professionals" — whatever that meant). My hotel reservations were made, and I was off!

I arrived in Arica after a long but uneventful air flight. Arica is a free port 20 miles from the Peruvian-Chilean border. The town thrives on business, principally the sale of imported goods to Chileans, Bolivians, and Peruvians. Western manufactured goods were in abundance and at very reasonable prices. Superficially, at least, Chile was not so dissimilar from the United States.



The city of Arica is situated on the mouth of the Azapa valley, Chile. Barren desert stretches far miles to the north and south of the valley.

Archeologically, Arica was already familiar territory to me since the American Museum has very important archeological collections from Arica. The late Dr. Junius Bird conducted excavations at several sites in Arica and its immediate vicinity in 1941. Bird's pioneering work established the chronology of the early cultures of northern Chile, mainly as a result of his excavations in the refuse heaps of ancient settlements rather than in the well-worked burial tombs. He is still fondly remembered by the Chilean archeological community, and it was gratifying to find that the American Museum has an impeccable reputation in this remote part of the world.

Junius never had the opportunity of working at the new Institute of Archaeology. The institute is closely affiliated with the University of Tarapaca and is essentially a research institution that serves as a base of operations for eleven Chilean archeologists and one ethnohistorian, each of whom directs field-oriented research as well as collaborative group projects. The institute maintains storage facilities for the collections and laboratory spaces for analyses, conservation, photography, and cartography, as well as a library, an exhibit gallery, and the editorial offices for *Chungara*, an anthropological journal devoted to research in the Andes.

I found the museum to be very unusual in that its collections consist almost entirely of scientifically excavated materials. This means that the curators know what site each object came from, where in the site it was found, and its specific association. This kind of complete documentation of a major museum collection is rare. This scale of contextual information is a great boon to anyone interested in studying and exhibiting glimpses of past lifeways.

The breadth of research represented by the institute's scientists can be best expressed by a sample of some of their current projects: restoration of colonial structures and mural paintings in northern Chile, the survey and documentation of geoglyphs (large stone drawings on hill slopes), the excavation and study of burial practices through time, and the exhaustive study of the health and pathology of the ancient inhabitants of Arica.

In addition to this internal research, the institute is host to a steady influx of foreign researchers who work in the region and study the museum's collections. The exhibit gallery is modest in approach and presentation; the current installation offers a representative view of 12,000 years of prehistory in northern Chile and features some of the finest objects from the museum's ample collections. Past installations have featured the work of the institute's staff, such as an exhibit on paleopathology curated by Dr. Marvin Allison.

During my first day at the institute, I learned that my course would start on the third of August and run until the twelfth, with approximately five hours of lecture per day in Spanish. I had two weeks prior to this date to work with the museum on the preparation of a proposal for a traveling exhibit on the archeology of northern Chile and to become acquainted with the institute. Each task was both fun and productive — all of the archeologists had fascinating stories to tell, equally fascinating collections to show off, and usually lots of time to talk.

In addition to all this professional eaves-dropping, I had to select a suitable theme for a traveling exhibit and initiate its organization. I had the good fortune of working with Juan Chacama, an enthusiastic young museologist on the institute staff. We discussed the current themes in north Chilean archeology, decided on interpretive themes for the general public, presented our ideas to the staff archeologists, and ended by filling the wastepaper baskets with many of our ideas.

For example, textiles from northern Chile would make an attractive exhibit, but their travel and exhibit requirements were far too expensive. Pre-Columbian textiles have already received a fair amount of exposure in this country. The theme of interregional contacts (coast-highland-jungle) is at the forefront of current archeological inquiry, but we decided it was too idea-oriented to adapt to a successful exhibit format.

After many days of searching, we settled on an exhibit theme — *Life by the Sea: The Ancient Maritime Traditions of Northern Chile*. The exhibit is planned to have a multidisciplinary approach: it will include information from maritime biology, ethnohistory, and modern fishing industries. Our plans are progressing smoothly, and we expect to present an exhibit proposal to prospective institutions by early 1989. The Chileans would like the show to present their rich archeological heritage to the American public. We also plan to have the show travel within Chile and other South American countries.

During the period allotted for work on the traveling exhibit, there were opportunities to visit some of the local archeological sites and smaller museums. Approximately two miles south of the institute there lies an archeological site called San Lorenzo, a *pucara*, or large settlement constructed on a defensible hilltop. The site has been partly excavated and features a small, modest on-site museum.

The exhibits consist of objects from excavations at the



At Lluta valley, Chile, Luis Brianes and Jose Perez de Arce inspect geoglyphs, or ground drawings, in the form of birds.



The museum building at San Lorenzo combines exhibit and storage space. The archeological site is partly visible at right.



The high peaks of the National Wildlife Preserve are reflected in the saline waters of Lake Chungara.

nearby site, a reconstructed model of the site, and several interpretive graphics. More than anything else, this museum represents a desire by the Chileans to show off their heritage and to bring people face to face with direct remnants of their past. Unfortunately, the museum's resources are not as great as its ambition.

One of the campuses of the University of Tarapaca houses another, larger museum. Its recent installation was amply supported by the Chilean government. The exhibits are stylish, well thought out and presented, educational, and popular. It is really a fine achievement and represents the capabilities of my Chilean colleagues when adequate financial support is available for their work.

We visited archeological sites along the coast of Chile that consist of ancient cemeteries on sandy hills with densities exceeding our own crowded beaches in the summer. The sites are isolated except for the occasional fisherman who lands his boat nearby.

We visited rocky seaside cliffs that still hold vestiges of the ancient deposits of guano (excrement of sea birds) that were extensively mined by both the Chileans and Peruvians in the mid-nineteenth century, when guano was used as a potent fertilizer. We spotted the remains of stout cords used by the miners to scale the precipitous cliffs, where they would claw at the white deposits.

One day we ascended from the coast into the nearby highlands to visit the National Wildlife Preserve around Lake Chungara. In just three and a half hours, we climbed from sea level to over 5,000 meters. Nearly everyone in our group experienced the slightly unpleasant surprises that a rapid ascent to high elevation can bring. On the way up, we passed numerous archeological sites that had been restored by the institute and were now open to the public. At our final destination, Lake Chungara, we were rewarded with a sparkling, clean vista of a flat, snow-covered landscape.

High peaks loomed in the distance and fragile-looking vicuñas (a South American member of the camel family) scampered in the fields. I am sure that the low oxygen content of the frigid mountain air affected our perceptions of that hauntingly beautiful landscape. On our way down, we passed geoglyphs — large ground drawings of men, animals, and geometric motifs that are simply made with rocks positioned directly on the desert floor. They are visible on the southern hillslopes that mark the physical boundary between the Azapa valley and the

vast coastal deserts that circumscribe it.

Although there is still healthy debate, most scientists now believe that geoglyphs were orientational markers — ancient road signs — used by the steady streams of ancient llama caravans that regularly traveled between the coast and highlands. Our tour bus soon rejoined the stream of modern vehicles returning to Arica.

After spending a productive first two weeks, I began my course on the third of August. During the first three days I had the good fortune of coteaching with a real professional, Santiago Aranguiz (Directory of Libraries, Archives, and Museums), an exhibit designer from Santiago, Chile. We were both pleased to find out that 46 people had registered for the course, which had been advertised as a Basic Introduction to Museology. This was the first time such a course had been presented in Chile, and 46 registrants marked an overwhelming measure of interest for an economically troubled country like Chile.

My presentation topics included the history of exhibit production at the American Museum, the functions of museums and their departmental structure, the team approach to exhibit production, collections documentation, exhibit text writing and editing, and exhibit evaluation and testing. Santiago presented the following themes: a survey of museums in Chile and their organization and functions, museography as a career in Chile, exhibit production and design development, and museum publications and their production. At the end of the course, participants were responsible for short presentations about their specific museum work and future plans. The objectives were certainly very ambitious; our classes normally extended beyond their allotted times, and we developed a good rapport with the participants and met our objectives.

I was very pleased to see how motivated Chilean museum workers are and how willing they are to learn new techniques. They are faced with the daily reality of little funding, few staff members, and limited materials. They nonetheless continue to slowly improve their museums and do it with great enthusiasm. The general community was interested in our program: several newspaper articles were written about the course, and I appeared on national television and gave several lectures outside the formal course at the university.

Some of my lecture topics seemed slightly out of place. When I discussed the growing necessity of computerizing

collections documentation in U.S. museums, I was politely interrupted by one of the participants. He informed me that the Institute of Archaeology in Arica was the only museum in Chile that owned any computers. They have three ATARI home computers, models that are designed for home video games.

I quickly learned to shift gears. I won't dwell on the marked difference between resources that separate museums in Chile and the United States, just as I tried to minimize this point during the course. Rather, I discussed the need for organized approaches to documentation and storage, which must precede computerization anyway.

Santiago and I concentrated on efforts to make the information within museums available to a wider scholarly audience by assimilating scattered individual documentation into central museum registries. We discussed the need to develop procedural guidelines for exhibit preparation, from initial idea selection to opening night. Museums were not perceived as integral parts of the community, and that is a serious mistake. We outlined ways in which to integrate members of the community into museum activities and ways to make the museum more responsive to the public's needs and interests. The exhibits should be perceived as learning laboratories and not just demonstrations of scholarly expertise. Many South American people know surprisingly little of their own past, and their museums are the agencies to correct that.

When I discussed the alternative in presenting contextual exhibits, I was proud to show slides of the American Museum's classic dioramas. As we viewed the startling realism of these timeless displays, I discussed the fascinating histories of their preparations. I ended my discussion by saying that the dioramas themselves are museum artifacts: because of their lengthy and costly preparations, dioramas are no longer financially feasible as a dominant exhibit technique (or at least not in this historic manner). I was happy and surprised to hear that dioramas are now one of the exhibit techniques that Chilean museums are only starting to integrate into their displays.

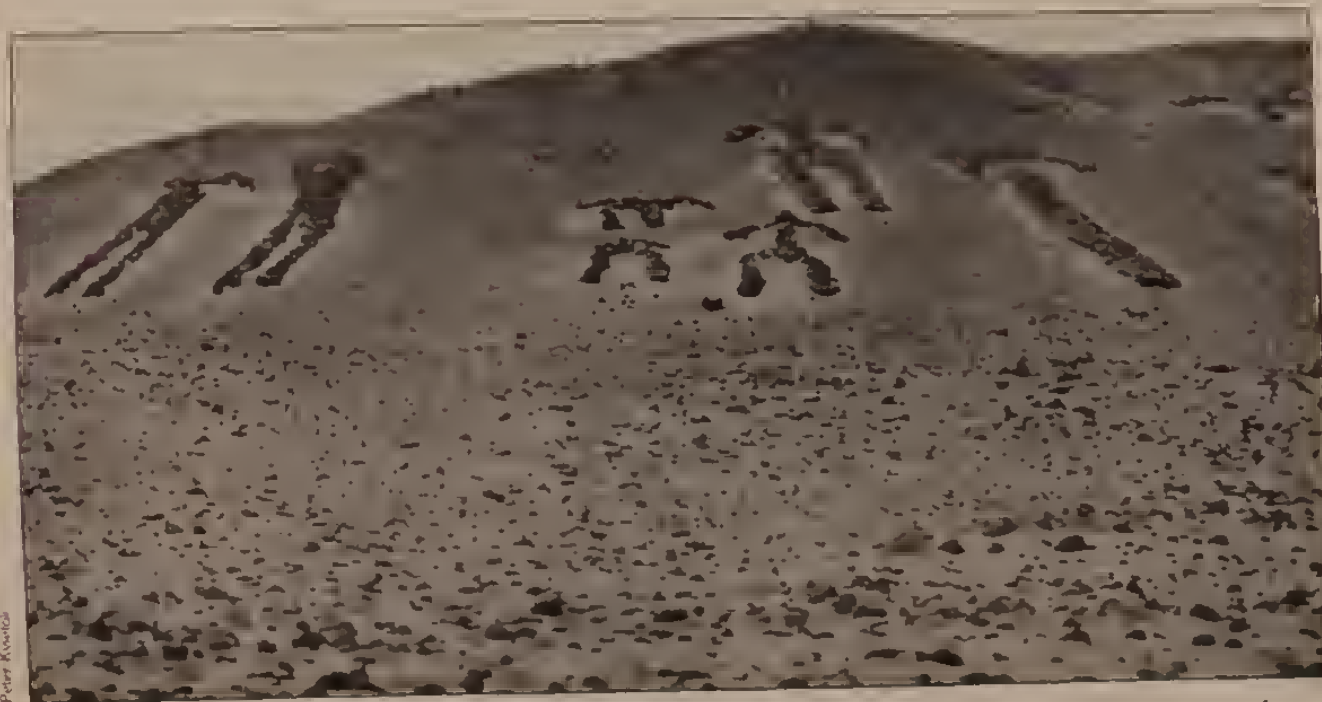
We can offer a great service to foreign countries by making the tools and tricks of our museum trade available to willing professionals who follow in our footsteps. Our own past and present achievements in museum practices deserve the same careful documentation and distribution that scientific investigations have received.



The world's oldest mummies, the Chinchorro tradition, date back as far as 9,000 years ago. This reconstruction for exhibition is displayed at the Institute of Archaeology in Arica, Chile.

On the second-to-last day of our course, we took a field trip to the Institute of Archaeology to critique its exhibit gallery. After reviewing over three-fourths of the exhibit cases with critical but constructive eyes, we were expelled from the building by an earthquake that registered 6.6 on the Richter scale. I've learned to become more cautious in my critiques and respectful of Chilean museologists' multimedia techniques!

— Peter Kvietok



These geoglyphs of human forms on the south side of the Lluta valley were made by simply heaping together the dark cobbles scattered across the desert floor.

The author's plans for the continuation of the program include:

- A series of traveling workshops that teach specific aspects of museum work (e.g., exhibit design, collections storage, educational programming).

- A series of traveling exhibits to circulate within Chile and to foreign countries.

- The start of an annual museums conference within Chile (or the southern Andean region) to help support the regular exchange of professional viewpoints in museum activities.

- The initiation of a brief triannual newsletter that will highlight current projects in Chilean or southern Andean museums.

Peter Kvietok would like to hear from anyone who has past experience in similar programming or an active interest in South American museums. He can be reached at the Department of Anthropology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024; telephone: (212) 769-5447.

Special Event Volunteers

When the crowds are gone and the Museum is quiet, the Education Department will pioneer an exciting new program for children. A limited number of adult volunteers are needed to supervise activities for a children's program at the Museum from Friday, March 25, to Sunday, March 27.

We're looking for volunteers

who work well with children between the ages of 9 and 12 and can offer one day or one evening on a March weekend. The times required are from 3:00 to 11:00 p.m. on Friday or Saturday, or from 8:00 a.m. to 2:00 p.m. on Saturday or Sunday.

To apply, please call the Volunteer Office at (212) 769-5566.

Native American Month



Native American traditions are explored in a weekend series at the Lenhardt People Center. Please see the calendar on page 12 for a schedule of events. For further information, call (212) 769-5310.

An Education Department Public Program.

From the Amazon to the Andes

Four Thursday evenings, beginning April 14
7:00-8:30 p.m.

Main Auditorium

Series tickets: \$27 for Members,

\$30 for non-Members

Tickets for individual lectures are not sold



Iwalapeti Indians of Mato Grosso, Brazil

The customs and behaviors of tribal societies in South America are the focus of this four-part series, which also features a private preview of an exhibition hall in preparation, the Hall of South American Peoples.

Amazonian Peoples April 14

The Amazon Basin, an area of some two million square miles of rain forest, is one of the last places on earth where native peoples still practice their aboriginal culture. In the Amazonian section of the Hall of South American Peoples, an attempt is made to bring to life the culture of the Indians who live there.

Dr. Robert L. Carneiro, Curator of South American Ethnology, will give a brief overview of Amazonian Indian culture and discuss its representation and interpretation in the hall. Dr. Carneiro will describe the ideas that underlie the design of the Amazonian section and the ways in which these ideas were implemented. The vicissitudes and lighter moments that invariably accompany the preparation of a large exhibit hall will also be highlighted.

The Yanomamö Indians: A Quarter-Century of Study April 21

The Yanomamö, a large tribe

of tropical forest Indians, have managed to retain their political integrity and native patterns of warfare without interference from the outside world. Approximately 12,000 Yanomamö live in some 125 widely scattered villages on the border between Venezuela and Brazil. Until recently, they existed in isolation from urban influences.

Napoleon A. Chagnon, professor of anthropology at the University of California, Santa Barbara, began his study of the Yanomamö in 1964. In this lecture, he will describe the character of the Yanomamö, their conflicts and how they resolve them, and their retention of tribal sovereignty.

Private Preview April 27

Subscribers to *From the Amazon to the Andes* are invited to a private preview of the Hall of South American Peoples, which is scheduled to open later this year. The preview will take place from 6:00 to 8:00 p.m. Please note that the preview is on a Wednesday and the lectures are on Thursdays.

Shamanism in the Upper Amazon April 28

By drinking a hallucinogenic tea, the Amazon shaman experiences overwhelming visions and revelations that are believed to empower him to be-

witch his enemies, cure his sick friends, communicate with the spirits of the dead, and predict the future. The shaman is indeed a powerful figure in the unlettered world.

The Upper Amazon rain forest is one of the last remaining areas of the world where hallucinogenic drugs are used under essentially aboriginal conditions. Michael Hamer, president of the Foundation for Shamanistic Studies and former professor of anthropology at the New School for Social Research, will describe shamanistic practices, including the use of hallucinogenic agents to achieve trance states for interaction with the supernatural world.

May 5 The Andean Music Tradition

The recorded music that will be played in the Hall of South American Peoples was performed on ancient instruments. Unearthed by archeologists after 2,000 years underground, these instruments from the Museum's collections have now been played, recorded, and returned to their cases.

John Cohen, professor at the State University of New York at Purchase and an ethnomusicologist and filmmaker, will discuss the methods and difficulties involved in this project. He will also offer a survey of

present-day Andean music, describing his efforts to determine whether the descendants of the ancient musicians still play the same kinds of instruments today.

To register for *From the Ama-*

zon to the Andes, please use the adjacent coupon. For further information, please call (212) 769-5310.

An Education Department Public Program.

DEPARTMENT OF EDUCATION Spring 1988 Lecture Series

I would like to register for the following course(s): _____

Day(s): _____

Time(s): _____

Price: _____ (Please note that discount prices shown apply only to Participating, Donor, and Contributing Members.)

Name: _____

Address: _____

City: _____

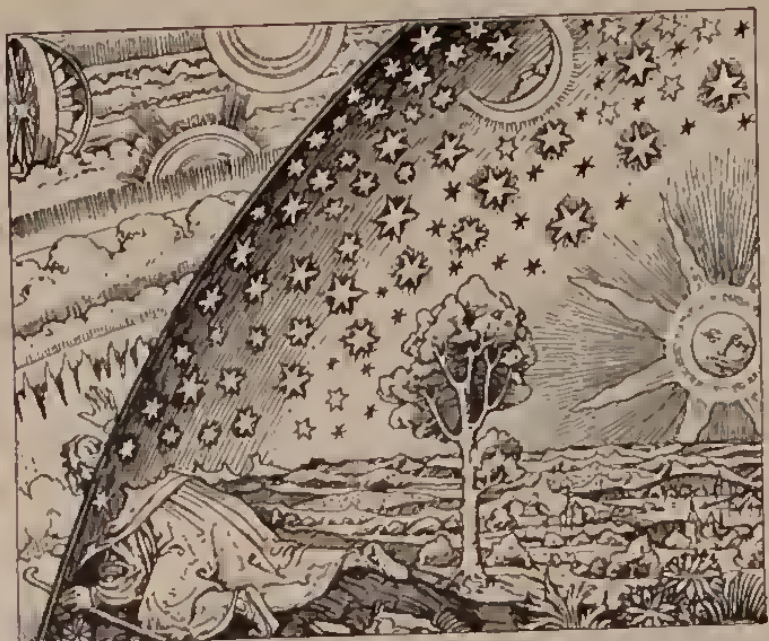
State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Spring 1988 Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy
Eight Tuesdays, beginning
April 5; 6:30-8:40 p.m.
Classroom 3
Instructor: Dr. Bartol
Fee: \$80 (\$72 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include Earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Stars, Constellations, and Legends

Five Thursdays, beginning
April 7; 6:30-8:10 p.m.
Sky Theater
Instructor: Mr. Beyer
Fee: \$60 (\$54 for Members)

An introduction to the lore of the sky. Using the Zeiss projector in the Sky Theater, this course identifies the prominent stars, constellations, and other sky objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated. No prerequisites.

How to Use a Telescope

Eight Wednesdays, beginning
April 6; 6:30-8:40 p.m.
Classroom 3
Instructor: Mr. Storch
Fee: \$80 (\$72 for Members)

An introduction to selection and use of a small amateur telescope. Topics include basic optics of telescopes, equatorial and altazimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other aids for observation. No previous knowledge of astronomy is assumed. This course is particularly recommended for those considering the purchase of a telescope.

Understanding the Sky
Six Mondays, beginning
April 4; 6:30-8:40 p.m.
Classroom 2

Instructor: Mr. Lovi
Fee: \$70 (\$63 for Members)
Why do things occur in the sky the way they do? Why does the length of the day change during the year? What is the midnight sun, and where and when can it be seen? What determines the visibility of the moon and planets? In this course we will discuss these and other topics, in both the classroom and the Sky Theater, where the amazing capabilities of our Zeiss projector will recreate and explain these "heavenly happenings."

ASTRONOMY: INTERMEDIATE COURSES

Solar System Exploration
Eight Thursdays, beginning
April 7; 6:30-8:40 p.m.
Classroom 1
Instructor: Dr. Allison
Fee: \$80 (\$72 for Members)

The exploration of the solar system by planetary spacecraft may be counted as one of the grand adventures of contemporary human endeavor. This course will present the concepts, methods, and discoveries of planetary space science as a comparative study of other worlds. Special topics will include planetary meteorology, geology, and internal structure, rings, satellites, magnetospheres, and orbital dynamics. The presentation will be richly illustrated with images and other data from several missions to the first seven planets of the solar system. The observations will be interpreted in a quantitative context, assuming a knowledge of high school-level algebra and fundamental principles of physics (to be reviewed in class). At the same time, the exposition will reflect upon the romance of scientific discovery and the idea of the neo-Elizabethan era of planetary exploration.

METEOROLOGY
Weather and Climate
Eight Thursdays, beginning
April 7; 6:30-8:40 p.m.

Classroom to be announced
Instructor: Mr. Rao
Fee: \$80 (\$72 for Members)

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

AVIATION

Ground School for Private and Commercial Pilots
Fourteen sessions, Mondays and Thursdays, beginning
April 4; 6:30-8:40 p.m.
Classroom 3
Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotters, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, federal aviation regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Fourteen sessions, Mondays and Thursdays, beginning
April 11; 6:30-8:40 p.m.
Classroom 3
Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters
Eight Thursdays, beginning
April 7; 6:30-9:00 p.m.
(section 1)

Eight Wednesdays, beginning
April 6; 6:30-9:00 p.m.
(section 2)
Classroom 2
Instructors: Dr. Hess/Mr. Latimer
Fee: \$105 (\$94.50 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

NAVIGATION: INTERMEDIATE COURSES

Piloting for Sailboat Operators
Eight Tuesdays, beginning
April 19; 6:30-9:00 p.m.
Classroom 2
Instructor: Dr. Hess
Fee: \$105 (\$94.50 for Members)

This course draws upon and reviews material covered in *Navigation in Coastal Waters* and is geared to the sailboat navigator with some experience who wishes more information on position-determination techniques and methods. Topics include the mariner's compass with a review of compass error and deviation, dead reckoning, determination of speed, position finding methods with vertical sextant angles, the use of ranges and other lines of bearing for fixes and running fixes, sailing in currents, and estimation and application of leeway. The equipment kit obtained for *Navigation in Coastal Waters* will be used in the course. Prerequisite: *Navigation in Coastal Waters* or equivalent experience with the permission of the instructor.

Introduction to Celestial Navigation

Eight Tuesdays, beginning
April 5; 6:30-9:00 p.m.
Classroom 1
Instructor: Prof. Parnham
Fee: \$105 (\$94.50 for Members)

This intermediate course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

NAVIGATION: ADVANCED COURSES

Advanced Celestial Navigation
Eight Mondays, beginning
April 4; 6:30-8:40 p.m.
Classroom 1
Instructor: Prof. Parnham
Fee: \$80 (\$72 for Members)

This course includes subject matter not covered in *Introduction to Celestial Navigation* with additional practice problems for the solution of the celestial line of position, latitude by meridian transit of the sun and other celestial bodies, latitude by observation of Polaris, computation of sunrise, sunset, moonrise, moonset, and twilight phenomena. Other subjects include navigational astronomy, star identification by altitude and azimuth methods, azimuth computations for determining compass error and deviation at sea, comparison of sight-reduction tabular methods using marine navigation and air navigation tables, and sight reductions by formula methods. Prerequisite: *Introduction to Celestial Navigation* or equivalent experience with the permission of the instructor.

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note that discount prices apply only to Participating, Donor, and Contributing Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024-5192. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, between 9:30 a.m.-4:30 p.m.

Museum Notes

Special Exhibitions and Highlights

Carthage: A Mosaic of Ancient Tunisia depicts a civilization's successive cultures between 800 B.C. and the sixth century A.D. Bronze and marble statues, lavish jewelry, and enormous pictorial mosaics are among the distinctive art forms on display in the most comprehensive view of ancient life in this region ever exhibited in the United States. In Gallery 3 through May 1.

In Time of Plague, the current exhibition in the Akeley Gallery, represents 500 years of human responses to the spread of epidemic disease. Artifacts, photographs, art, and memorabilia depict the causes of plague, along with its victims and the ways in which societies have attempted to vanquish it. Through March 13.

For an inside story of the Museum's history and exhibits, take a **Museum Highlights Tour**. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m. till 8:30 p.m. on

Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, **Grand Canyon: The Hidden Secrets**. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of **Grand Canyon: The Hidden Secrets** cofeature another new film, **Chronos**.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, FACES explores its monthly themes through a variety of activities, including games, stories, puzzles, and recipes. FACES is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$17.95. To subscribe, send your check or money order payable to FACES (add \$4 for foreign orders) to: FACES, Dept. 722, 20 Grove Street, Peterborough, NH 03458

Happenings at the Hayden

Sky Shows

The Hayden Planetarium presents a double-feature Sky Show: **Cosmic Illusions** and **The Space Telescope**.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the Amazing Disappearing Martians and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. **The Space Telescope: New Eyes on the Universe**, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for chil-

dren. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. **Cardboard Rocket** will be shown at noon on Saturday, March 12, and at noon on Saturday, April 16. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are at 10:00 a.m. on Saturday, May 7, and at noon on Saturday, June 4. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for chil-

dren. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: **Wonderful Sky**, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in **Laser Hits of the Sixties**.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

The Museum is about to Fold

Origami Spring Classes for Volunteers

With the folding fingers of origami practitioners, ordinary sheets of paper are transformed into pandas, strawberrys, and stars. At the Origami Spring Classes, Museum origami specialists Alice Gray and Michael Shall will instruct beginners in the art of folding. Students start with easier models like the swan, sailboat, and jumping frog and progress to more com-

plicated models like the flapping bird, omega star, and peacock.

The sessions will be conducted from 6:30 to 8:30 p.m. on six consecutive nights: on April 20 and 27 and May 4, 11, 18, and 25.

Please note that the classes are progressive, each lesson builds upon teachings from the previous class. The classes are free, with all materials provided;

in exchange, students are expected to repay the 12 class hours as origami volunteers, helping the Museum prepare for and teach at the annual Origami Holiday Tree.

Class size is limited and preregistration is required. For information and registration, please call the Volunteer Office at (212) 769-5566.



Sat

5 11:00 a.m. New York Map Society. Room 319. Free.

1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. Thunderbird Dance Company, a celebration of spring: *Herbal Traditions*, edible, medicinal, and poisonous plants; *Spirit of the Drum*. Calling of the Flute, a discussion/ demonstration of Native American music. Free.

12 1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. *Tales of Lorono, the Weeping Woman*: Birch Bark Basketry, a talk and demonstration; *Finger Weaving*, a demonstration of a Woodlands Indian art. Free.

Fri

4

Thu

3

Wed

2 7:45 p.m. Amateur Astronomers Association. Terry Facey, speaker: "The Hubble Space Telescope." Kaufmann Theater. Free.

Tue

1

Mon

Sun



6 1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. Thunderbird Dance Company, celebration of spring: *Flying Turtles and Talking Stones*, stories from the Earth and Sky; *Spirit of the Drum*. Calling of the Flute, a discussion/ demonstration of Native American music. Free.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

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13 1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. *Tales of Lorono, the Weeping Woman*: Birch Bark Basketry, a lecture and demonstration; *Finger Weaving*, a demonstration of a Woodlands Indian art. Free.

2:00 p.m. New York Shell Club. Room 419. Free.
Last chance to see *In Time of Plague*, in the Akeley Gallery

20 11:00 a.m., 1:00 and 3:00 p.m. Dinosaurs Dead or Alive. Members' Family Program. Kaufmann Theater. \$4, and open only to Members. Tickets required. Page 4
1:00 to 4:30 p.m. Native American Month. See March 19
2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free.
2:00 p.m. New York Paleontological Society. Room 419. Free.

27 1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. *Little Rabbit Dancers*: *Beadwork and Porcupine Quills*, decorative motifs of Woodlands Indians; *Home and Hearth*, discussion of Native American dwellings and tipi construction. Free.

17

16 7:30 p.m. Intelligence Powder, a play-reading by Ubu Repertory Theater. Kaufmann Theater. Free. Page 2.

7:30 p.m. River Fish and Ocean Monsters, the American Littoral Society's twenty-third annual symposium. Main Auditorium. \$6 for Members, \$7 for non-Members. For information, call (201) 291-0055.

23 7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

8:00 p.m. Linnaean Society of New York. Leonhardt People Center. Free.

18 6:30 p.m. Dinosaurs Dead or Alive. Members' Family Program. Kaufmann Theater. \$4, and open only to Members. Tickets required. Page 4.

1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. *Tools for Living*, technologies of the Woodlands Indians; *Bustles and Fringe*, dance outfits. Free.

26 1:00 to 4:30 p.m. Native American Month at the Leonhardt People Center. *Little Rabbit Dancers*: *Beadwork and Porcupine Quills*, decorative motifs of Woodlands Indians; *Home and Hearth*, discussion of Native American dwellings and tipi construction. Free.



24 6:30 p.m. and 9:00 p.m. Paul Winter Consort. Members' Planetarium Concert. Sky Theater. \$16 for Members, \$20 for non-Members. Page 4.

30 Tiffany: 150 Years of Gems and Jewelry opens in Gallery 1. See page 5 for information about Members' guided tours.

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m., thanks to a generous grant from Mobil The American Museum Restaurant is open till 7:30 p.m.

Two Movies on the Big Screen

Every Friday and Saturday evening the Naturemax Theater presents double-feature showings of *Grand Canyon* *The Hidden Secrets and Chronos*. Showtimes are at 6:00 and 7:30 p.m., and Members receive a 40 percent discount on admission.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts. National Science Foundation. National Endowment for the Arts, National Endowment for the Humanities. Institute for Museum Services. 300 corporations. 60 private foundations. 490,000 members, and numerous individual contributors.

March 1988 American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 4 April 1988



Chrysanthemum brooch



Kunzite necklace



The Tiffany Diamond



Empress Eugenie Jewels

Tiffany: 150 Years of Gems and Jewelry

In Gallery 1
Through June 5

A sensational retrospective of jewelry and American gemstones is on display at the Museum. *Tiffany: 150 Years of Gems and Jewelry* explores the evolution of jewelry design in the United States, focusing on Tiffany's unparalleled role as designer, manufacturer, and purveyor of fine jewelry, and the historical relationship between the Museum and Tiffany.

The work of gem expert George F. Kunz provided the initial link between the two institutions. An honorary curator in precious stones at the Museum, Kunz assembled Tiffany's first major collection, a display of precious North American stones that were a highlight of the 1889 Paris Exposition. Museum trustee

J.P. Morgan purchased the collection for the Museum, as well as a second collection assembled by Tiffany and Dr. Kunz. These acquisitions placed the Museum's holdings among the world's preeminent gem collections.

Approximately 100 items illustrate Tiffany's most significant contributions in the area of design, including the introduction of American gemstones to the rest of the world. The exhibition includes several themes—American gemstones, artistic achievement, and fine jewelry.

The American gems include Montana sapphires, American freshwater pearls, and Maine tourmalines. Among the unmounted specimens are a 10-carat

Yogo sapphire, a slice of blue azurite malachite, and a 128-carat wonder known as the Tiffany Diamond, the world's largest and finest canary diamond.

The enduring tradition of delightfully unusual jewelry is represented by the contemporary creations of designers such as Elsa Peretti and Paloma Picasso. The exhibition features many classic jewelry designs, including platinum and diamond bow brooches, platinum and diamond line bracelets, and classic gemstone rings. Among the collection of jeweled watches is the enamel and diamond pocket watch owned by escape artist Harry Houdini, which sports a chain of miniature handcuffs.

A Farewell to Arts

April is the last month in which to see *Carthage: A Mosaic of Ancient Tunisia* in Gallery 3. Its not-to-be missed highlights include some precious keepsakes, and a Members' program profiles the exhibition's mosaic masterpieces.

Pages 5-7

Brief Encounters

A program of short films features a potpourri of subjects and styles, from a satire of the Swedish cinema to archival footage of a great American choreographer in her heyday.

Page 10

The Lure of Lore

From the Land of the Totem Poles recounts the adventures of a turn-of-the-century expedition to preserve elements of the Northwest Coast Indians' rapidly vanishing cultures.

Page 8

Monkey Business

Baboons May Be Smarter than People, and anthropologist Shirley Strum will cite evidence from her 15-year association with baboons in the wilds of Kenya to explain why. In an additional Members' family program, *The Pumphouse Gang*, Strum will discuss life within the baboon family circle.

Page 2

Stephen Jay Gould

The 58th annual James Arthur Lecture on the Evolution of the Human Brain will examine the origins of language. Speaker Stephen Jay Gould will discuss Chomsky under the *Spandrels of San Marco*.

Page 10

Baboons May Be Smarter than People

Monday, May 16

7:30 p.m.

Main Auditorium

\$5 for Members, \$9 for non-Members



We sometimes look to animals for insights about human behavior, a method that has often served to bolster preexisting ideas about the uniqueness of humans. In the Members' program *Baboons May Be Smarter than People*, anthropologist Shirley Strum describes her study of savanna baboons, which not only indicates broad similarities between humans and nonhumans but also suggests a higher degree of sophistication on the monkeys' side.

The common view of baboons is of a society built around aggressive males and their jostling for dominance, a rigid social structure centered on the powerful males and the necessity of brute force for survival on the African savanna. Strum's 15-year study of one troop of baboons, the Pumphouse Gang, presents striking evidence that friendship and social reciprocity, not aggression, are their keys to survival. According to Strum, indi-

viduals in baboon society act out of enlightened self-interest, realizing that they need each other for survival and success.

Strum's research has changed ideas not just about how baboons behave but about how our earliest human ancestors might have acted. Her work has illustrated the importance of the family in primate society, the centrality of females to the group, and the social sophistication of these monkeys. Baboon research has a great deal to offer in reassessing ideas about the evolution of consciousness, of sex roles, of a large brain, of reciprocity and social intelligence. Each of these factors is an important consideration in the search for human origins.

Unlike many other researchers, Strum never interacts with the animals. Her object is to avoid intimacy, to be tolerated but unobtrusive. This solitary work consists of following the Pumphouse Gang from dawn to dusk, but there's never a dull

moment. "Watching the baboons is like watching a soap opera," Strum has remarked, "except the baboons are much nicer people than you see on *Dallas* or *Dynasty*." The drama of their lives revolves not around sex or male intimidation but around alliances and friendships.

Shirley Strum is an associate professor of anthropology at the University of California, San Diego, where she teaches courses on primate behavior and human evolution. She is also the director of the Gilgil Baboon Project in Kenya. Her recently published book, *Almost Human*, follows the lives of the Pumphouse Gang from 1972 to 1985 and relates discoveries about their behavior that forced scientists to rethink previous ideas about animals and humans.

To register for *Baboons May Be Smarter than People*, please use the April Members' programs coupon on page 3.

The Pumphouse Gang

Sunday, May 15

1:30 p.m.

Kaufmann Theater

\$3 for Members, \$6 for non-Members

There are no bad baboon mothers in the wild, according to anthropologist Shirley Strum. Although some baboon mothers have better status within the troop, which means their young are better off, all of them are effective mothers. At the Members' family program *The Pumphouse Gang*, Strum will describe her studies of baboon babies and of growing up in a baboon society (see the related article on this page).

Among the largest and most adaptable monkeys on the African continent, baboons inhabit a variety of landscapes, from forests to semideserts, from Ethiopia to the Cape of Good Hope. Strum's observations on baboon family life are the result of her long association with a tightly knit group of monkeys known as the Pumphouse Gang. The gang is actually one of nine troops of olive baboons (a total of about 800 animals) that ranges on the grass and scrublands of Kenya.

Olive baboon mothers spend much of their time with offspring. Like all female baboons, though, they also develop lasting bonds with nonfamily mem-

bers of their sex. They stay in the troop for life, unlike males, who establish less permanent friendships with females and often transfer from group to group.

In contrast with research conclusions of the past, Strum found that the stable core of such troops rests not with the powerful adult males but with family groups of mothers and their offspring. Family members spend more time with each other than with other baboons; they walk and sit together, give each other assistance in times of conflict with animals outside the family, and rest and groom together. Grooming, the most comforting form of contact, can reinforce a mother's emotional bonds with her infant as well as establish or maintain relationships with other baboons. A young baboon's physical independence of its mother does not sever their relationship. As with chimpanzees — and humans — emotional bonds endure.

To register for *The Pumphouse Gang*, please use the April Members' programs coupon on page 3.

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341

Owl Be Seeing You

Sunday, April 10
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50, and open only to Members

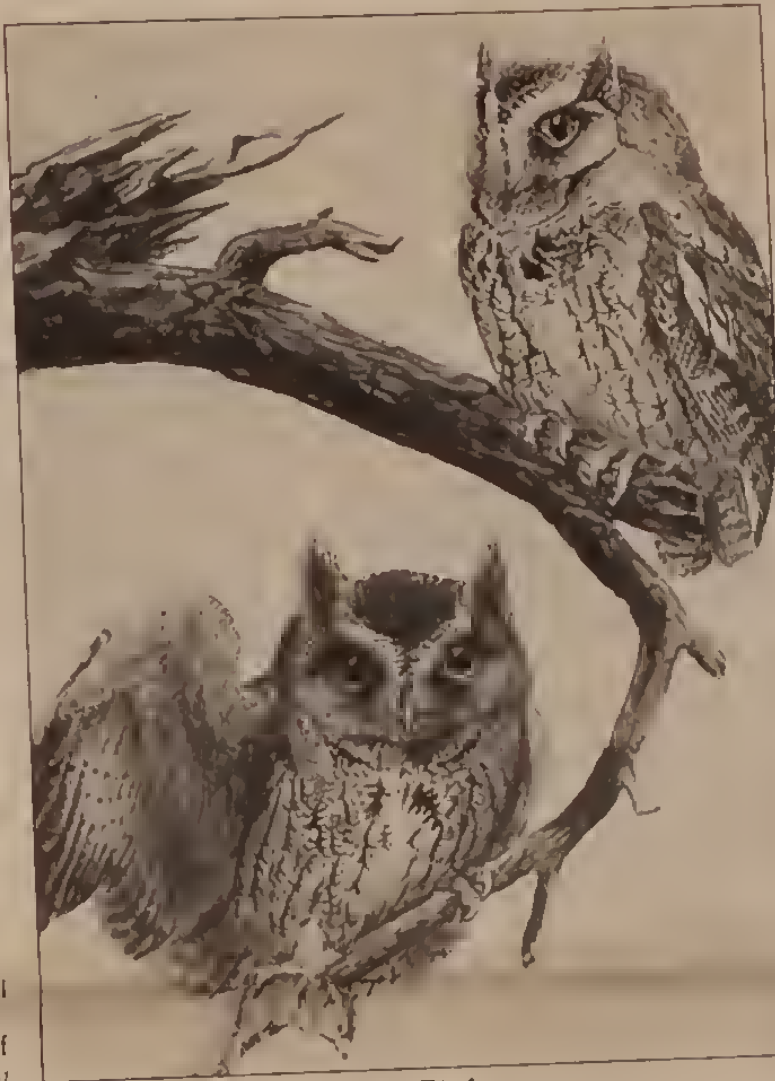
They can't move their eyes, but their heads can turn 270 degrees and they have better vision than humans during daylight hours. Their low profile during the day is a deliberate attempt to avoid hostile confrontations with the other birds that instinctively recognize them as nocturnal predators. These and other prudent owl practices will be discussed in the Members' family program *Wise Birds*.

From the tufted tips of their highly sensitive ears to their zygodactyl feet, owls bear physical traits that make them formidable hunters. Host Bill Robinson will describe their nesting and predatory behavior, illustrating his talk with a variety of live guest stars, including a great-horned owl, a barred owl, a barn owl, and a tiny pearl-spotted owl.

Rather than feather their own nests, owls take up residence in a hollow tree or an abandoned crow's nest. Great-horned owls in the Catskill Mountains may nest as early as the first week in February and often find themselves covered with snow while incubating their eggs. Along with their keen hearing and sharp eyesight, owls have the ability to fly almost silently, allowing them to stealthily approach their prey. Robinson will demonstrate the contrast in noise level between the flight of an eagle and that of an owl by sending each bird on a cruise

around the Kaufmann Theater. Science teacher Bill Robinson presents his lectures on birds of prey to over 100,000 students annually. He has published articles on birds

of prey in both the United States and Europe and has appeared on many network television programs. To register for *Wise Birds*, please use the April Members' programs coupon.



Wise Birds

Exploration of the Ocean Frontiers

Saturday, April 30
2:00 p.m.
Kaufmann Theater
Free



Views from the bottom of the sea

In cooperation with the Explorer's Club and the New York Academy of Sciences, the Department of Education will host a symposium on Ocean Frontiers. This symposium, which is part of the national celebration of Science and Technology Week 88, will feature three speakers:

Eugenie Clark, ichthyologist and professor of zoology at the

University of Maryland, will discuss her research on the reproductive behavior of tropical sand fish and deep-sea sharks.

Ed Peary Stafford, historian and grandson of Admiral Robert E. Peary, will focus on explorations by his famous grandfather and his Eskimo relatives.

John Musick, ichthyologist and senior research scientist with the Institute of Marine Sci-

ence, will discuss the tracking of sea turtles with satellite observation techniques.

For information, call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

An Education Department Public Program.

April Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: April Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Wise Birds. Sunday, April 10, 11:00 a.m., 1:00 and 3:00 p.m. \$2.50, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4. Please indicate a first and second choice of times, if possible:

_____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

From the Land of the Totem Poles. Tuesday, April 19, 7:30 p.m. Free, and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$4.

Number of free tickets: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

Mosaics of Carthage. Tuesday, April 26, 7:30 p.m. \$3, and open only to Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

The Pumphouse Gang (for families). Sunday, May 15, 1:30 p.m. \$3 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Baboons May Be Smarter than People (for adults). Monday, May 16, 7:30 p.m. \$5 for Members, \$9 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$9.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$9: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

May and June Programs and Field Trips



Bird-watching activities

Bird Identification for the Beginner

Sunday, May 1
10:30 a.m.-3:00 p.m.
Fee: \$40 (no discount for Members)
Limited to 25 adults

This workshop is designed to help the novice birder learn techniques for bird identification. In the morning, the group will view mounted specimens representing the variety of birds in the New York area. After lunch in the Museum (a sandwich lunch is included in the fee), the class moves to Central Park, adding practical experience to their newly acquired knowledge. John Bull, author of *Birds of New York State* and a field associate in the Department of Ornithology, leads the workshop.

Marbling: An Ancient Paper Craft

Saturday, May 7
11:00 a.m.-6:00 p.m.
Fee: \$50 (no discount for Members; fee includes all materials for workshop)
Limited to 20 adults

Marbling is an ancient craft with a remarkable history. The first recorded reference to marbling dates back to Japan's Heian era (A.D. 794-1185). Known as *suminagashi*, meaning "floating ink," it was used exclusively by members of the royal household as a beautiful background for calligraphy. From the sixteenth century to the present, marbled paper has been used for fine books and stationery throughout the world. Some of its uses are less well known; for example, marbling was placed on the edges of volumes to prevent tampering with account books, and Benjamin Franklin provided marbled paper for use in the printing of \$20 bills in 1775, when the Continental Congress authorized the issue of paper currency backed by Spanish milled dollars.

This all-day workshop consists of a short lecture on the history of paper marbling, followed by instruction with hands-on experience in the production of marbled paper. Students will have the opportunity to use various techniques in their production of about ten sheets of marbled paper each. This workshop is given by Steven Leipertz, a Thorne Research Fellow in the Department of Herpetology and Ichthyology, who has been marbling for over five years.

Birds of the Wetlands: A Day Trip to Jamaica Bay

Saturday, May 7
8:00 a.m.-5:00 p.m.
Limited to 36 adults
Fee: \$40 (no discount for Members)

An all-day excursion by bus to the marshlands and estuaries of Jamaica Bay Wildlife Refuge observes the spring migration of marsh and water birds. Herons, egrets, waterfowl, and shore birds are only a few of the varieties of birds attracted to these rich wetlands. Naturalist Stephen C. Quinn leads the trip. Bring your own box lunch.

A Geology Cruise Around Manhattan

Tuesday, June 14
6:00-9:00 p.m.
Fee: \$22 (\$20 for Members)
Adults only

Take a three-hour boat trip around Manhattan to survey the geology of the region. Learn about the origins of the Palisades and see the landscapes of Manhattan Island while traveling through North America's southernmost fjord. The itinerary includes the Hudson, Harlem, and East rivers. Sidney S. Horenstein of the Department of Invertebrates is the host. Bring your own box supper.

Geology Cruise Up the Hudson

Tuesday, June 21
6:00-9:00 p.m.
Fee: \$22 (\$20 for Members)
Adults only

This three-hour sunset cruise up the Hudson River

surveys the geology of a local fjord. Learn about the origins of the Palisades, plant and animal environments, local history, and environmental concerns of this important river. Sidney S. Horenstein of the Department of Invertebrates provides the running commentary. Bring your own box supper.

The Nooks and Crannies of Staten Island

Saturday, June 18
11:00 a.m.-4:00 p.m.
Fee: \$35 (\$32 for Members)
Adults only

A five-hour boat trip circumnavigates this geological and historically fascinating part of New York City. Cruise past the island's high coastal hills to observe the abundant birdlife of Kill van Kull and Raritan Bay. This cruise surveys the ecology of Prall's and Shooter's islands and their historic wrecks and tidal flats; reviews Tottenville's colonial past, historic lighthouses, and Hoffman and Swinburne islands (the sentinels of New York Bay); and promises unusual views of the Narrows. Sidney S. Horenstein of the Department of Invertebrates is the host. Bring your own box lunch. Snacks are also available on board.

Iron-mining Geology: A New Jersey and Pennsylvania Day Trip

Saturday, June 4
8:00 a.m.-7:30 p.m.
Fee: \$65 (no discount for Members)
Limited to 45 adults

Geology and history are combined in this trip through New Jersey and Pennsylvania's major geological formations. The bus will depart from the Museum and travel through the Newark basin and into the Appalachian Plateau, where the group will discuss the origins and geology of the region and the mineralogical importance of the formations. At the French Creek Iron Mines in Pennsylvania, participants take a 15-minute walk on a forest path to the mines. These open-pit excavations supplied the ore for the Hopewell Furnace, which produced cannons for the Revolutionary War. Participants will explore the machinery and technology of a seventeenth- and eighteenth-century national historic site at Hopewell, then take a short trip to the Bethlehem Steel Works to see modern furnaces transform ore into steel.

Samples of coal, iron ore, coke, and steel can be collected at various stops. Bring your own box lunch; snacks are also available at Hopewell. This adventure into geology and history will be lead by Dr. Demetrius Pohl, assistant curator in the Department of Mineral Sciences, and Christine Carlson, professor of geology at Hunter College.

Department of Education May and June Programs and Field Trips

| | No. of tickets | at (Members) | Total |
|---|----------------|--------------|-------|
| Iron-mining Geology | — | \$65 (\$65) | — |
| Bird Identification | — | \$40 (\$40) | — |
| Birds of the Wetlands | — | \$40 (\$40) | — |
| Marbling | — | \$50 (\$50) | — |
| Geology Cruise Around Manhattan | — | \$22 (\$20) | — |
| Geology Cruise up the Hudson | — | \$22 (\$20) | — |
| The Nooks and Crannies of Staten Island | — | \$35 (\$32) | — |
| Grand total | | | \$ — |

Enclose this coupon with a stamped, self-addressed envelope and a check or money order payable to the American Museum of Natural History. Send to: Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. For further information, call (212) 769-5310.

Name: (last) _____ (first) _____

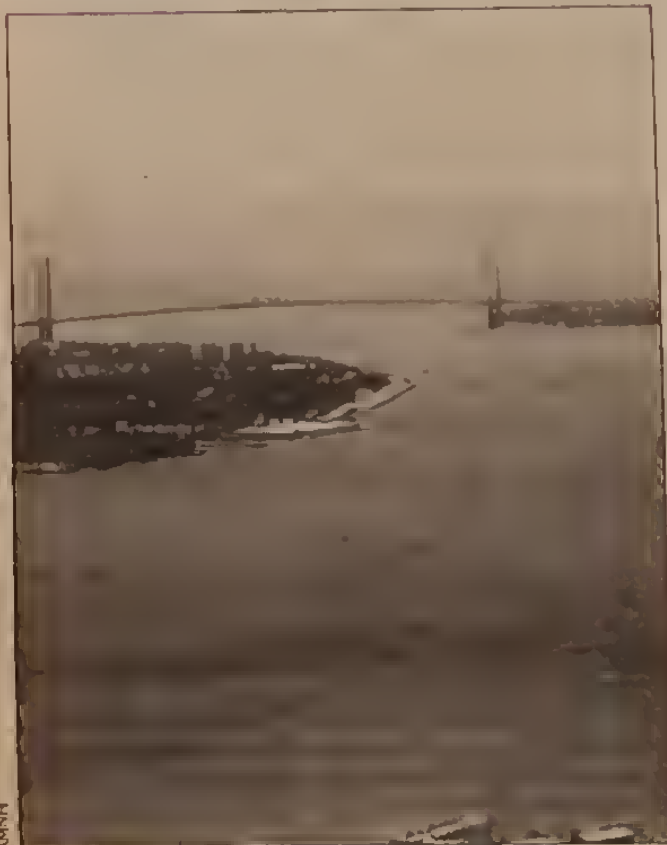
Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____



Geology cruises



Staten Island, too

CARTHAGE

A Mosaic of Ancient Tunisia

In Gallery 3, through May 1

Carthage, a great naval power, challenged Rome for dominance of the ancient world.

If the clash between Carthage and Rome had ended differently, the entire course of world history might have changed.

Last opportunity to view this important exhibition before it begins its national tour.



This North African seaport was a great crossroads of ancient civilizations. Prized for its strategic location along the Mediterranean, Carthage was claimed by Berbers, Phoenicians, Romans, Vandals, and Byzantines. The city's fortunes underwent a remarkable series of reversals between 800 B.C. and A.D. 600 — from a thriving center of commerce and a military stronghold, Carthage was reduced to a devastated wasteland only to achieve a phoenixlike resurrection that was marked by its

artistic excellence.

This tumultuous succession of cultures is dramatically brought to life with the largest collection of Tunisian artifacts ever shown in the United States. Realizing that innumerable vestiges of Carthaginian history would be lost in the wake of modern construction, Tunisian authorities sponsored an international effort in the early 1970s to preserve the city's legacy. The American Museum played a major role in these conservation activities, and the exhibition in

Gallery 3 is the triumphant issue.

Carthage: A Mosaic of Ancient Tunisia was produced by the American Museum in cooperation with the Tunisian National Institute of Archaeology and Art, the Musée National du Bardo of Tunis, and the Tunisian museums of Sfax, Sousse, Carthage, El Jem, and Nabeul. The exhibition is supported in part by a grant from the National Endowment for the Humanities and an indemnity from the Federal Council on the Arts and Humanities.

Portraits in Stone

Tuesday, April 26
7:30 p.m.
Main Auditorium
\$3, and open only
to Members

Bits of stone, painstakingly arranged in beds of mortar, have survived to tell of life in Roman-occupied Tunisia. These tiny cubical pieces, some of them no bigger than a penny, were cunningly assembled to form colossal, many-hued pictures of plants and animals, humans and gods. The Members' program *Mosaics of Carthage* will explore the history of these enduring monuments of creativity and craftsmanship.

David Soren, guest curator of *Carthage: A Mosaic of Ancient Tunisia*, will host the program. He will discuss Tunisia's Roman period, which extended from the first through the fourth centuries A.D. After reducing the once-proud city of Carthage to a smoking ruin in 146 B.C., Roman conquerors rebuilt the city in less than a century. Carthage swiftly recouped its prosperity by its traditional mastery of the sea and commerce, its hardy agricultural system, and its rich artisanal excellence, stunningly evidenced by the region's mosaic masterpieces.

The hundreds of mosaic pavements that have been discovered within the last century are a valuable source of information on Roman civilization to archeologists and historians. Aspects of ancient North African daily life and outlook are revealed by the mosaics, which range from simplistic to highly realistic. They depict banquets and revelry, as well as hunting scenes — pygmies stalking a hippopotamus, an elephant trapped in the coils of an immense python, and a captured wild boar, trussed up and borne aloft by triumphant hunters. An intricate bedroom-floor mosaic portrays four scenes of divine courtship interwoven with pictures of serpents, birds, flowers, geometric patterns, and laces.

Dr. Soren will describe the attitudes and occupations of the artisans who created the mosaics as well as the inspirations for their work. He'll trace the thematic evolution of the pictorial mosaics across four centuries, discussing the early methods by which the mosaics were fashioned and the latter-day techniques used to lift them from their foundations for a national tour of the United States.

The Carthage exhibition in Gallery 3 will remain open until 7:15 p.m. on the evening of the program for Members who wish to view it. To register for *Mosaics of Carthage*, please use the April Members' programs coupon on page 3.

Unearthing the Buried Treasures

The guest curator for *Carthage: A Mosaic of Ancient Tunisia* is no stranger to field work. David Soren has conducted extensive Tunisian excavations and has participated in archeological activities in Turkey, Portugal, and Cyprus.

Dr. Soren, who has lectured throughout the United States and Canada, will present the Members' program *Mosaics of Carthage* (see "Portraits in Stone" on this page). His numerous publications on archeological and historical themes include a companion book to the

Gallery 3 exhibition (see page 7 for details).

A specialist in Greek and Roman art and archeology, Dr. Soren is the chairman of the classics department at the University of Arizona. A Phi Beta Kappa graduate of Dartmouth College, he received his master's degree and doctorate from Harvard University, and his professional experience ranges from curator of coins at Harvard's Fogg Museum of Art to ceramic specialist for the American Schools of Oriental Research Carthage excavation.



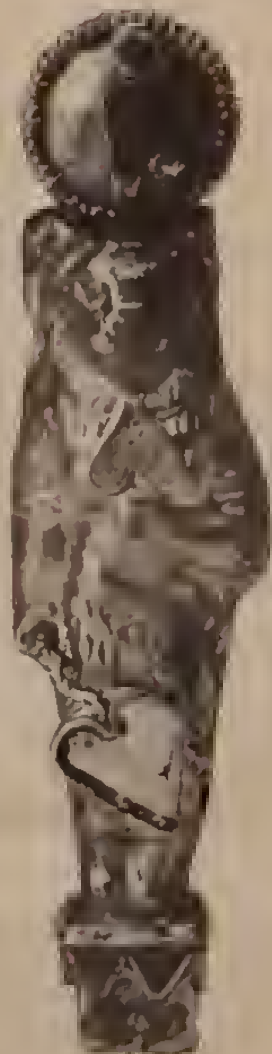
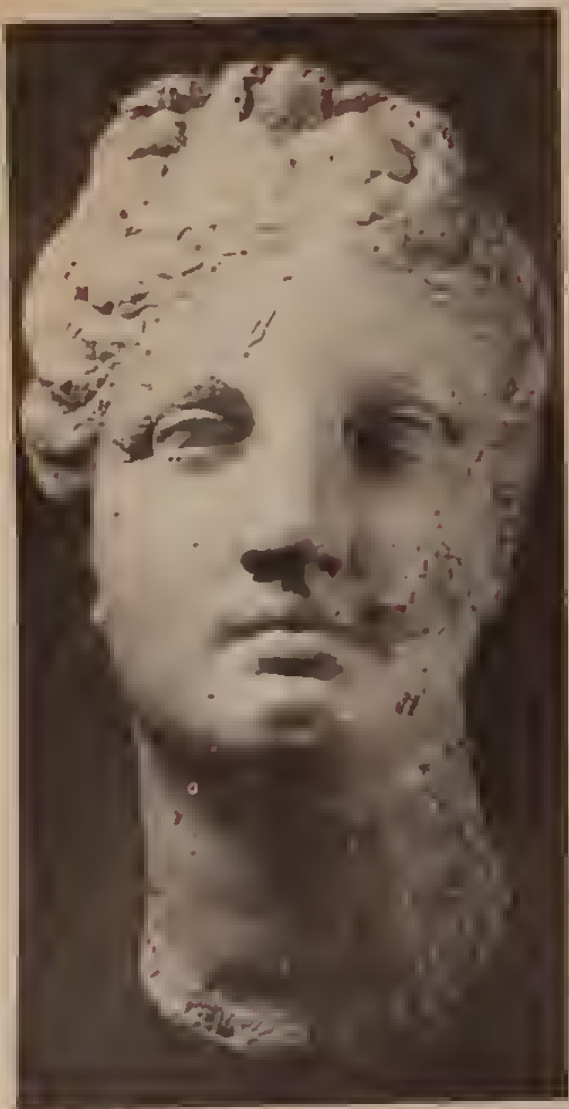
David Soren

Pictures from an Exhibition

Religious Life

The first Carthaginians, the Berbers, worshiped stones, stars, certain animals, and other natural elements. Roman gods were gradually incorporated into the city's religious life, and the spread of Christianity throughout the Roman empire left its mark on Carthage as well. Strong religious convictions are apparent in many of the exhibition's loveliest works of art.

At left is a strikingly beautiful face of Venus, which can be purchased at the Gallery 3 Shop (\$95). The gold pendant below represents the lion-headed goddess Sekhmet, who is crowned with a solar disk and clutching ivy leaves that are thought to symbolize eternal life. At right is a rare example of an early Christian art form, the mosaic covering of a tomb.

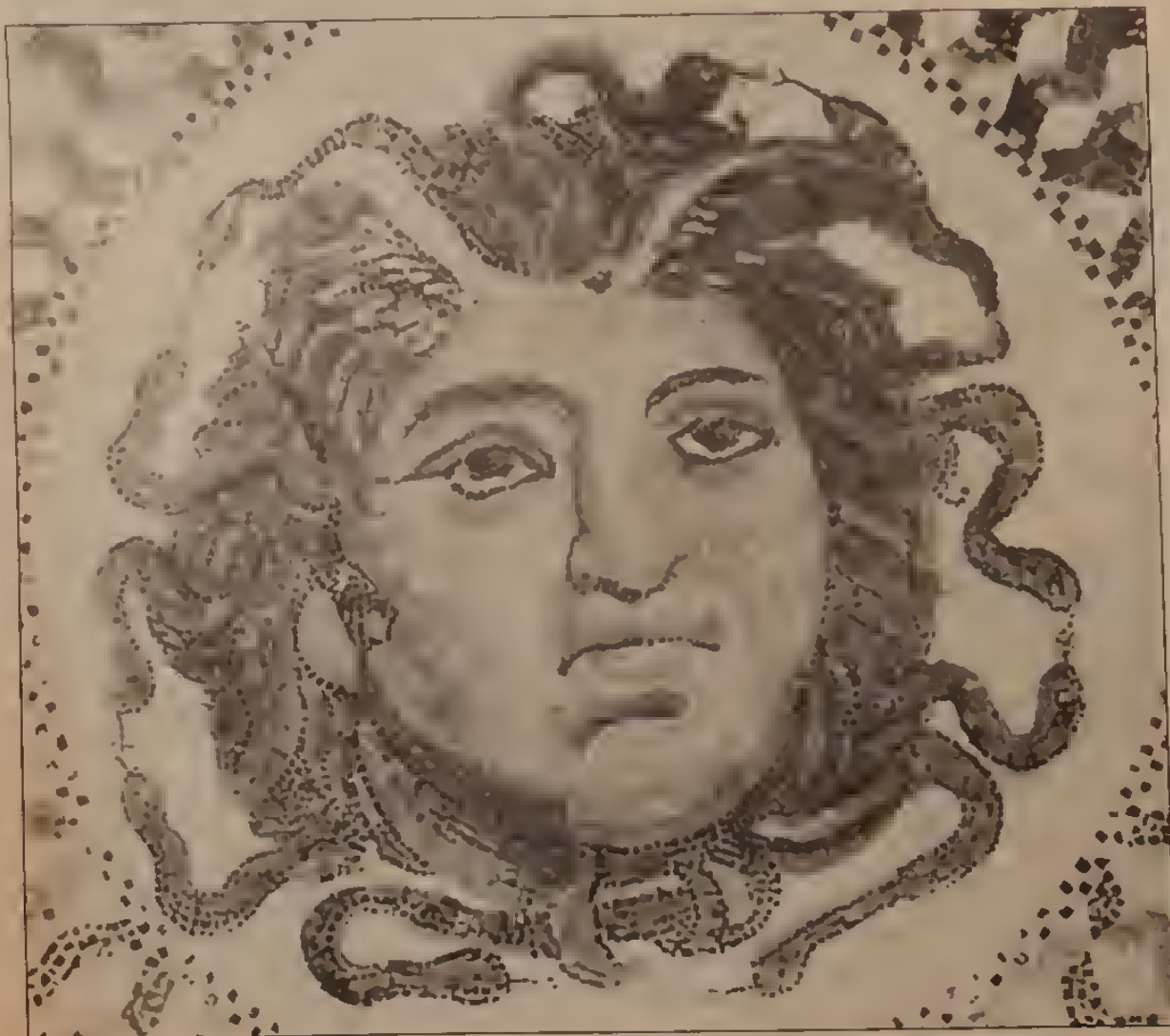


Romanization

Between 246 and 146 B.C., Carthage and Rome battled for supremacy in the Mediterranean world. Although the bitter Punic wars ended with Carthage's subjugation as a Roman colony, the city rose from its ashes to unprecedented heights of prosperity. Tunisian wheat made the country the breadbasket of the Roman em-

pire and Tunisian arts flourished as never before.

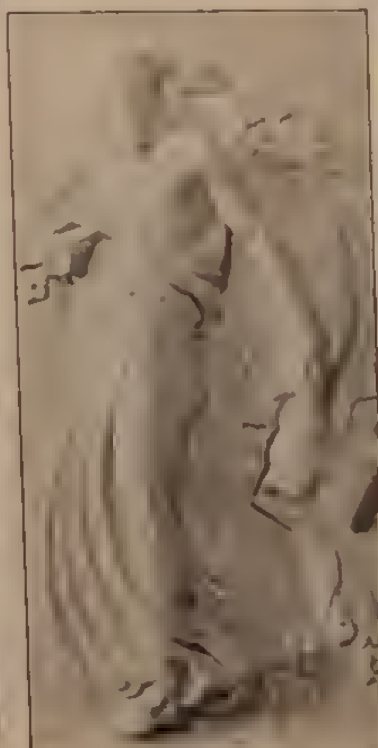
The lavish production of extraordinary mosaics reflects the region's revitalization. The mosaic below is from the third century A.D. and depicts a popular protector from evil spirits, Medusa, whose looks were thought to transform beholders into stone.

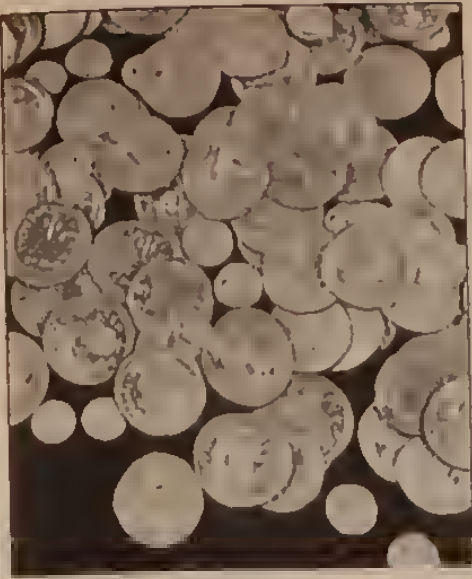


Rapture and Composure

The images below feature contrasting attitudes. At the left is a relief of a dancing Maenad, a female follower of Bacchus, who bears a blade in one hand and a sacrificial goat in the other. A reproduction is available at the Gallery 3 Shop (\$65). The

terra cotta statuette at right is from the late second or first century B.C. and represents *Dea Nutrix*, the nurturing goddess. To modern eyes, it suggests a Madonna and Christ child; the sculptor was probably inspired by the Roman goddess Ceres.





Lives of Luxury

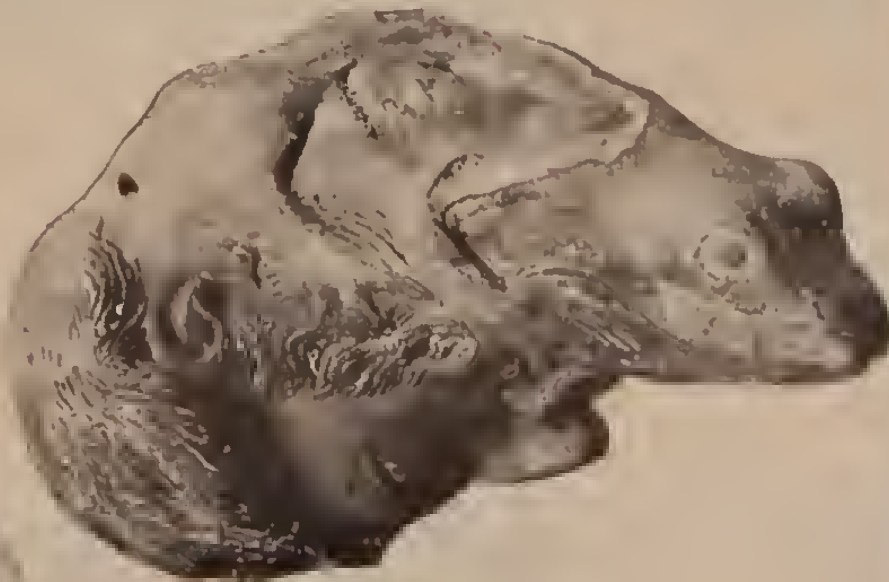
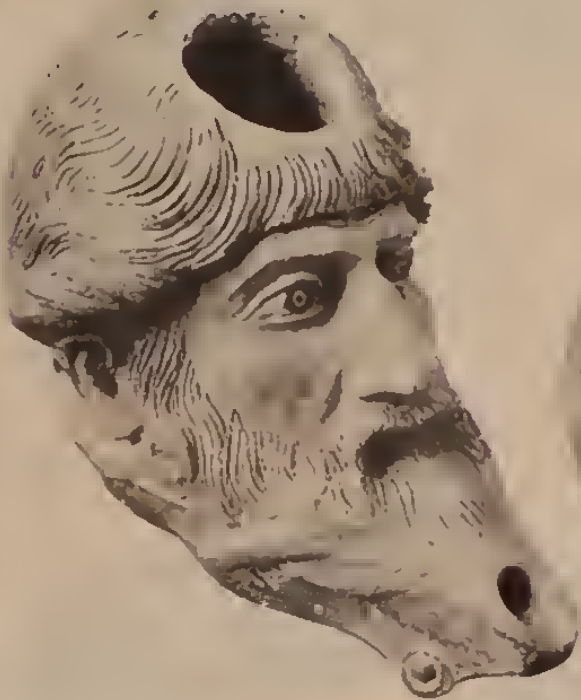
Items from the everyday life of ancient Carthage indicate the opulent tastes of its citizenry. Decorated ceramic goblets, jugs, vases, and bowls proclaim a thriving pottery industry whose wares were exported to all parts of the Roman empire. The region's wealth in metals is exemplified by engraved gold rings and copper razors, copper mirrors and a lead makeup box, and the miniature bronze bells and cymbals that were placed in tombs as noisemakers to ward off evil spirits.

The oil lamp pictured below holds a surprise: upright, it bears the likeness of a bearded man's face; overturned, the lamp

is transformed into the figure of a frog. A reproduction is available at the Gallery 3 Shop (\$20).

The treasure of Rougga (upper left) consists of 268 gold coins found in a ceramic vessel. The buried treasure dates from A.D. 600-650.

An abundance of marble and bronze statues highlight the exhibition. At the upper right is the majestic figure of Lucilla, wife of Emperor Lucius Verus. At the lower right is a bust of an anonymous resident of the Kairouan region, a reproduction of which can be purchased at the Gallery 3 Shop (\$35).



CARTHAGE A Mosaic of Ancient Tunisia

A beautiful companion publication has been prepared to enhance your enjoyment of the exhibition.

The view at left is of the Capitulum of Dougga, a temple of Jupiter in the Tunisian town that boasts a tremendous collection of monuments in almost perfect condition. Perspectives of ancient and modern Tunisia are available in a book of brilliantly colored photographs and captivating prose.

A vivid memento of an unforgettable exhibition, *Carthage: A Mosaic of Ancient Tunisia* explores the complexity of ancient Carthaginian cultures and places their artistic achievements in historical context. Edited by David Soren, the exhibition's guest curator, and Aicha Ben Abed Ben Khader, conservator and director of the Musée National du Bardo in Tunis, the book features an overview of Carthaginian history, Tunisians' assessment of their own ancient land, and a catalog of items from the exhibition.

Carthage: A Mosaic of Ancient Tunisia, the striking, 238-page full-color book, can be purchased in the Gallery 3 Shop at a special price of

\$15.95 (paperback) and \$28 (hardcover). This represents a savings of \$4 and \$7, respectively—20 percent off the publisher's price. Call (212) 769-5150 to place orders with the Shop. It is also available in hardcover through the Members' Book Program; use the coupon below or call toll-free,

1-800-234-5252. (Please note that this price is in lieu of Members' and other discounts.)

Also available is a videotaped exploration of major archeological sites in Tunisia. *Carthage: A Mirage of Antiquity* was filmed on location and is narrated by David Soren (\$20).

Members' Book Program

YES, send me ____ copies of *Carthage: A Mosaic of Ancient Tunisia*.

☐ \$28 (hardcover)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please make check payable to the American Museum of Natural History and mail to: Members' Book Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.



Perspectives on an intriguing culture

From the Land of the Totem Poles

Tuesday, April 19

7:30 p.m.

Main Auditorium

Free, and open only to Members

The collections of Northwest Coast Indian art and ethnology here at the Museum are among the world's biggest and best. Members can discover how this priceless collection was acquired in a program that recounts a turn-of-the-century adventure, the Jesup North Pacific Expedition.

Undertaken in a series of field trips between 1897 and 1902, the expedition investigated and established ethnological relations between the peoples of America and Asia. Comparisons of language and culture suggested an affinity between northeast Siberians and Northwest Coast Native Americans; although often a matter of speculation, the subject had never been systematically explored.

The historical project that bears his name reflects Morris K. Jesup's deepest and most substantial commitment to the Museum. One of the institution's original incorporators in

1868, Jesup served as its president from 1881 until his death in 1908. The expedition's leader, Dr. Franz Boas, was already known for the extent and accuracy of his field work. His firsthand study of North American natives was one of the earliest such investigations. Three broad branches of anthropology—physical, cultural, and linguistic—are represented in his studies, which had a deep and lasting effect on American anthropology and are the source of many contemporary ideas about culture, race, and society.

The scale of the Jesup Expedition surpassed any previous research or collecting activities on the Northwest Coast. The six-year project devoted most of its time to recording mythology, surveying archeology, and making observations on physical anthropology. Although the expedition's primary objective was tracing intercontinental eth-

nic links, there remained abundant opportunity for the exploration of subsidiary interests such as decorative art.

Aldona Jonaitis will describe the expedition's field work, the reaction of the New York public to the project, and the remarkable artwork that was acquired in the course of the expedition. Jonaitis is vice-provost for undergraduate studies at SUNY-Stony Brook and a specialist in Northwest Coast Native American art. She is the author of numerous books, monographs, and articles, as well as a newly published book *From the Land of the Totem Poles: Northwest Coast Art at the American Museum of Natural History*.

A reception in the Hall of Northwest Coast Indians will follow the program. To register, please use the April Members' programs coupon on page 3.

It Is Not Good That These Stories Are Forgotten

Franz Boas, the Jesup North Pacific Expedition's mastermind, was sensitive not only to the value of the objects, myths, and oral traditions of the Northwest Coast Indians but also to the feelings of the people whose heritage he wished to preserve. Before commencing the expedition in 1897, Boas wrote to his friend and interpreter George Hunt and asked him to provide a feast for the Kwakiutl Indians and to offer them the following explanation.

Friends, I am Mr. Boas who is speaking to you. I am he whom you called Heiltsaquoalis. It is two winters since I have been with you, but I have thought of you often. You were very kind to me when I was with you. . . . I am thinking . . . that it is difficult for you to show to the white men in Victoria that your feasts and your potlatches are good, and I have tried to show them that they are good. . . . I am trying to do the right thing. I am trying to show them that your ways are not bad ways. . . . I am sorry to see how many of your children do not obey the old laws, how they walk the ways of the white man. The ways of the Indian were made differently from the ways of the white man at the beginning of the world, and it is good that we remember the old ways. . . . Your young men do not know the history of your people. . . . It is not good that these stories are forgotten. . . .



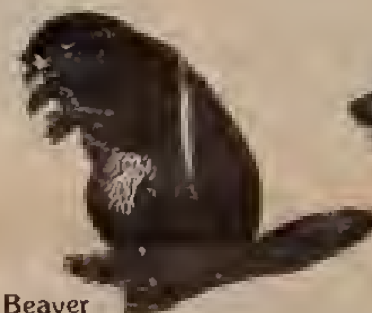
Wolf



Eagle



Killer Whale



Beaver



Bear



Mouse

FACES: The Magazine about People

Each month finds a new theme in FACES, the innovative magazine of cultural anthropology for 8- to 15-year-olds. The theme is explored through legends and folktales from around the world and thought-provoking poetry, puzzles, and games. Recent issues have taken rivers, harvest traditions, and the lives of early humans as their themes; upcoming issues will look at the stars, life in the Himalayas, and

money. This puzzle was featured in an issue on masks.

Published in cooperation with the American Museum, FACES reaches children at homes and schools in every state and 25 foreign countries. Members receive a discount price of \$15.95 for a one-year subscription (10 issues); the non-Members' price is \$17.95. Orders can be placed with the coupon below. Add \$5 for foreign orders.

Animal Mask Mix-Up

Northwest Coast Indians link their lives with animals and have a long tradition of picturing them on almost everything from spoons to totem poles. Unless you know the "language" the artist is using, you often can't tell what you're looking at. But animals have certain features the artists usually show as clues. See if you can match the animals above with the corresponding masks at night. Answers appear on page 11.



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____

SUBSCRIBE TO FACES

A children's magazine published ten times a year.

____ \$15.95 (Members) ____ \$17.95 (non-Members)

Child's name: _____

Address: _____

City: _____ State: _____ Zip: _____

Your name: _____

Your address: _____

City: _____ State: _____ Zip: _____

Please make check or money order payable to FACES and mail with this coupon to: FACES, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Clip art: Dover Publications
Photos reproduced by kind permission
of the Royal British Columbia Museum
and Milwaukee Public Museum

Latin American Month

Spinted renditions of traditional music and dance will highlight the Museum's observance of Latin American month. Festivities range from performances of folkloric music of the Andes to Brazilian *Capoeira*.

In addition to the special musical programs outlined below, a series of weekend programs at the Leonhardt People Center will explore the music, art, and religion of Latin American peoples. Please see the calendar on page 12 for a schedule of events. Demonstrations and performances are repeated several times throughout the afternoon; seating is limited and on a first-come, first-served basis. Short films also highlight each weekend. These programs are made possible in part by the generosity of the family of Frederick H. Leonhardt and by a gift from the Henry Nias Foundation.

For further information, please call (212) 769-5315.

Creation of the World: A Samba Musical
Wednesday, April 6
7:00 p.m.
Main Auditorium
Free

A music and dance spectacular dramatizes the legend of Genesis according to Yoruba mythology brought to Brazil by African slaves. The film tells a story of love and hate involving a god who symbolizes masculine and feminine forces and the orixas (deities) who created nature.

The samba opera is sung and danced by the multiaward-winning Beija Flor Samba School, a group of amateur performers from Nilopolis, a working-class suburb of Rio. They perform 16 new sambas written especially for this film with spontaneous choreography and on-location recordings that maintain the natural appeal of the samba sound. The result is a rich film tapestry of color, song, and dance, dramatizing the sensual confrontation of male and female forces that created the world. Directed by Vera de Figueiredo (color, 56 min., 35 mm).

Music of the Andes
Wednesday, April 13
7:30 p.m.
Main Auditorium
Free

United in their commitment to foster and preserve Latin American folk music, the seven New York City-based musicians of Hinantillan derive their name from the Quechua term for togetherness. Hinantillan is equally committed to a progressive and innovative approach to Andean music. These performers boast a repertoire that embraces more than 50 instruments, including indigenous Andean instruments such as *zamponas* (pan pipes), *queñas* (flutes), *charangos* and *cuatros* (guitarlike instruments), and *bombo legueros* (large Argentinian drums).



Hinantillan performs music of the Andes

Astillero Jazz Ensemble
Sunday, April 17
2:00 and 4:00 p.m.
Kaufmann Theater
Free

Traditional Mexican rhythms are a chief influence on the Astillero Jazz Ensemble. The quartet will perform a repertoire of original compositions, arrangements, and interpretations on guitar, bass, tenor saxophone, flute, drums, and percussion instruments.

Cantamerica/Los Pampas
Sunday, April 24
2:00 and 4:00 p.m.
Kaufmann Theater
Free

Formed for the promotion of Argentinian culture, Los Pampas also perform dances from Mexico, Chile, Bolivia, and other Latin American countries. Pedro Escudero and Laura Valdes, the duo who lead Los

Pampas, will dance to the musical accompaniment of their ensemble, Cantamerica.

DanceBrazil
Wednesday, May 4
7:30 p.m.
Main Auditorium
Free

A vibrant company of dancers, singers, and musicians, DanceBrazil is renowned for its spontaneous performances of the martial arts dances *Capoeira* and *Maculele*. Under the direction of acclaimed choreographer Jelon Vieira, DanceBrazil will also present Samba, a sensual and frolicsome costume dance, and the dazzling ritual dances of *Candomblé*, which reflect the color and vitality intrinsic to Afro-Brazilian dance.

An Education Department Public Program.

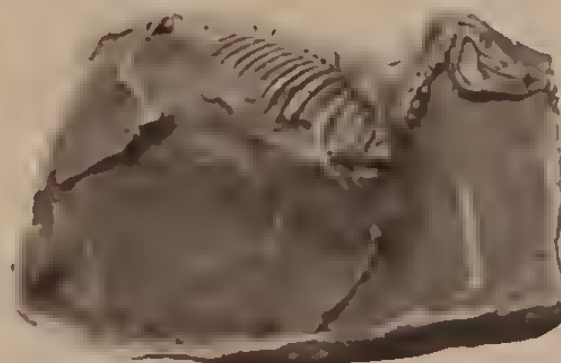


Machu Picchu, Peru, an ancient Inca city

Participating, Donor, and Contributing Members are cordially invited to a

Behind-the-Scenes Tour of the Department of Vertebrate Paleontology

Sunday, May 1, and Wednesday, May 4, \$10



Vertebrate paleontology: what an alarmingly polysyllabic mouthful. Call it VP — the insiders do. Next month, Members can step inside the most active center of VP in the world — the Museum's own Department of Vertebrate Paleontology — where staff scientists will describe how they study the fossil record to uncover the history of vertebrates.

Paleontologists are skilled at finding, retrieving, preserving, displaying, and explaining fossils. The keys to unlocking the mysteries of past life, fossils are vanished creatures that have left their remains in layered rocks. Through the paleontologist's painstaking work with fossils, the evolution and extinction of past forms of life — from diminutive reptiles to towering mammoths — come into focus.

The most general appeal of VP lies in the evolutionary story it tells — a tale of interest not only to paleontologists but to other scientists as well. Paleontology is also closely connected with the history of the earth itself, the field of historical geology.

Paleontologists can contribute valuable information to the stratigrapher and the paleogeographer, and the geologist's study of sediments can tell the paleontologist about the environment in which ancient animals lived and died.

Representatives from the Department of VP will discuss their field explorations, their maintenance and improvement of the Museum's vast collections, and their systematic research. Staff members have undertaken a spectrum of activities that include studies on the phylogeny of sharks and the evolution of mammals. Expeditions undertaken in the past year have investigated fossils all over the world, from Switzerland's turtles to Chinese reptiles to a 20-million-year-old coastal region of Chile where the collection of hundreds of animal specimens offers clues not only to the area's past animal life but also to the process of plate tectonics in the southern Andes.

To register, please use the coupon below

Behind-the-Scenes Tour of the Department of Vertebrate Paleontology. \$10, and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- _____ Sunday, May 1, between 10:30 a.m. and noon
- _____ Sunday, May 1, between 1:00 and 2:30 p.m.
- _____ Wednesday, May 4, between 5:15 and 6:15 p.m.
- _____ Wednesday, May 4, between 6:30 and 7:30 p.m.

Number of tickets at \$10 each: _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Favorite Short Films

Wednesday, April 20
7:00 p.m.
Kaufmann Theater
Free

From the scores and sometimes hundreds of films they view each year, six media experts were asked to select their all-time favorite short films. This extraordinary program is the result, an array of forms and subjects that range from a six-minute work on dancer/choreographer Doris Humphrey filmed more than 50 years ago to a 1987 documentary of a child's reaction to divorce. For anyone who loves films, this program is a must. The following shorts are listed alphabetically by title.

Air for the G-String (b/w, 6 min., 1934). Accompanied by the music of J. S. Bach and four members of her group, choreographer Doris Humphrey dances the lead in a film of her early work. Introduced by Susan Braun, executive director, Dance Films Association.

The Dove (b/w, 15 min., 1968). A satire on Swedish films, particularly those of Ingmar Bergman. Introduced by Bernice Coe, Coe Film Associates.

Enter Hamlet (color, 4 min., 1964). Fred Mogubgub's pop art drawings are zanily juxtaposed to Maurice Evans's somber reading of Hamlet's soliloquy. Introduced by Clare Gartrell Davis of Mogubgub, Gartrell, Davis Productions and president of the New York Film/Video Council.

Film (b/w, 22 min., 1965). Buster Keaton stars in a character production without dialog, written by Samuel Beckett and based on the George Berkeley maxim "to be is to be perceived." Introduced by Marie

Nesthus, principal librarian, Donnell Media Center, New York Public Library.

One Small Step (color, 17 min., 1987) On the same day that the first man lands on the moon, a child learns that her parents are divorcing. Introduced by the filmmaker, J. Mirra Kopell.

Pigs! (color, 11 min., 1967). Portrays a group of pigs on a farm, sleeping, eating, and exploring the barnyard. Introduced by Emily Jones, film teacher, C.W. Post College.

Time Piece (color, 8 min., 1965). A symbolic collage, using pixillation and rapid editing, of one man's life in the suburban rat race of the 1960s. The vaguely familiar main character (also the writer, producer, and director) is Jim Henson, creator of the Muppets. Introduced by Louise Spain, coordinator of media services, LaGuardia Community College.

This program is presented jointly by the Department of Education and the New York Film/Video Council. The council is committed to finding new ways to study and to promote the production, distribution, and use of independent film and video. Its membership consists of media professionals as well as film buffs.

Favorite Short Films is made possible in part by the Helena Rubinstein Foundation. Seating is limited and on a first-come, first-served basis. For information, call (212) 769-5305.

An Education Department
Public Program.

Evolution of the Human Brain

The 58th James Arthur Lecture
Speaker: Stephen Jay Gould
Tuesday, April 5
6:00 p.m.
Main Auditorium
Free

The 1988 James Arthur Lecture, *Chomsky under the Spandrels of San Marco*, will be delivered by Stephen Jay Gould. This series of annual lectures was established in 1932 at the bequest of scientist James Arthur, who wished to provide a forum in which distinguished speakers could share important discoveries and insights into human evolution. Gould's presentation will explore the origins of language.

The recipient of numerous literary and academic awards,

Stephen Jay Gould is the Alexander Agassiz Professor of Zoology at Harvard University, curator of invertebrate paleontology at Boston's Museum of Comparative Zoology, and research associate in the Department of Invertebrates, American Museum of Natural History. A regular contributor to *Natural History* magazine, Gould is the author of several books, including *The Panda's Thumb* and *The Mismeasure of Man*.

For further information, please call (212) 769-5375.

New World Views

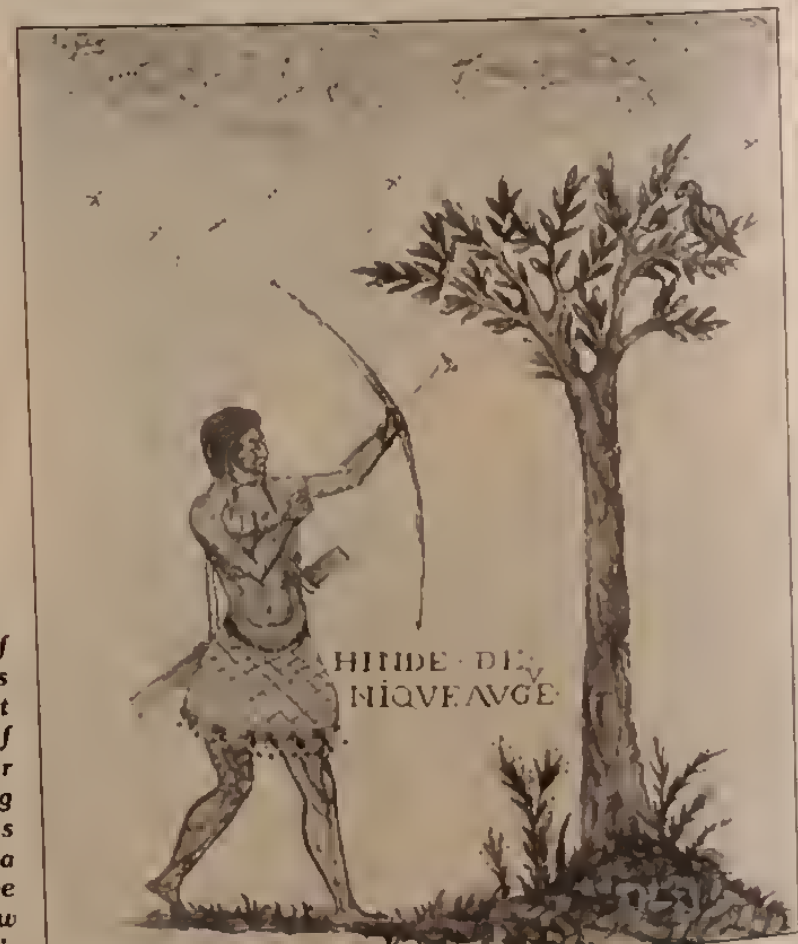
Sir Francis Drake and the Age of Discovery

Through May 1
at the Pierpont Morgan Library

Members can see the New World through the eyes of a sixteenth-century European at the Pierpont Morgan Library, where one of the earliest illustrated records of Old World contact with the Americas is on display. American Museum Members receive a discounted admission of \$1 per person to *Sir Francis Drake and the Age of Discovery*. (The usual contribution is \$3.)

The exhibition features 200 captioned watercolors by an unknown artist who is thought to have accompanied Sir Francis Drake on his expeditions. The images, created between the years 1577-87, depict flora, fauna, and native Indian life of the Caribbean.

Your membership card will admit you and your guests at the reduced rate to the Pierpont Morgan Library, which is located at 29 East 36th Street (at Madison Avenue), New York, NY 10016. Hours are Tuesday through Saturday, 10:30 a.m. to 5:00 p.m. and Sunday from 1:00 to 5:00 p.m. Closed Mondays and holidays. Call (212) 685-0008, ext. 352 for further information.



The fanciful rendering of llamas (above) is accompanied by text that describes them as "sheep of Peru" and praises their mountain-climbing abilities. The anonymous French-speaking artist also portrayed the native inhabitants of the New World (right), extolling their resourcefulness as hunters and artisans.

Museum Notes

Special Exhibitions and Highlights

Carthage: A Mosaic of Ancient Tunisia depicts a civilization's successive cultures between 800 B.C. and the sixth century A.D. In Gallery 3 through May 1. See pages 5-7.

Tiffany: 150 Years of Gems and Jewelry presents over 100 gems and jewelry items in a retrospective of jewelry design in the United States. Gallery 1. See page 1 for details.

Rural Korean life in the 1900s is explored in *The Once and Future Korea*, a new exhibition in the Akeley Gallery. Archival photographs from a 1912 expedition by explorer and naturalist Roy Chapman Andrews are featured, along with contrasting images of Korea in the 1980s. Through September 25.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday,



Beavers in the Hall of North American Mammals

and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New

York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthdays Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the ages of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.



A portrait of Persepolis in the Hall of Asian Peoples

Happenings at the Hayden

Sky Shows

The Hayden Planetarium presents a double-feature Sky Show: *Cosmic Illusions* and *The Space Telescope*.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the Amazing Disappearing Martians and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, April 16, and at noon on Saturday, May 14. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and

\$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Sixties*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Answers to "Animal Mask Mix-up" on page 8

1. Mouse
2. Bear
3. Wolf
4. Eagle
5. Killer Whale
6. Beaver

Sun

Mon

Tue

Wed

Thu

Fri

Sat

April 1988

American Museum of Natural History

3 Easter. The Museum is open.



10 11:00 a.m., 1:00 and 3:00 p.m. Wise Birds. Members' Family Program. Kaufmann Theater. \$2.50, and open only to Members. Tickets required. Page 3.

1:00 to 4:30 p.m. *Fala Brazil*. Dance and Music Ensemble. Afro-Brazilian Culture on Parade: Cultural Persistence of the Brazilian Timbira Tribe. Latin American Month at the Leonhardt People Center. Free.

17 1:00 to 4:30 p.m. Music of the Andean Highlands, a performance and discussion by Pepe Santana and Alahualpa Poalasin; Aztec Metaphor: Gods, Words, and Costumes, a slide-talk by Joan Beachley. Latin American Month at the Leonhardt People Center. Free.

2:00 and 4:00 p.m. Astillero Jazz Ensemble. Kaufmann Theater. Free. Page 9.

2:00 p.m. New York Paleontological Society. Room 419. Free.

24 1:00 to 4:30 p.m. Marco Rizo Quartet performs Latin American popular music; *The Image of the Shaman in Pre-Columbian Indian Art*. Latin American Month at the Leonhardt People Center. Free.

2:00 and 4:00 p.m. *Cantamerica*/Los Pampas, a performance of Latin American songs and dances. Kaufmann Theater. Free. Page 9.



5 6:00 p.m. The 58th James Arthur Lecture on the Evolution of the Human Brain. Speaker, Stephen Jay Gould: "Chomsky under the Spandrels of San Marco." Main Auditorium. Free. Page 10.

6 7:00 p.m. *Creation of the World: A Samba Musical*. A film. Main Auditorium. Free. Page 9.

7:45 p.m. Amateur Astronomers Association. Dr. Fred Hess, speaker: "The Skies from Borneo to Antarctica." Kaufmann Theater. Free.

12 8:00 p.m. Linnaean Society of New York Kaufmann Theater. Free.

13 7:00 p.m. New York Mineralogical Club. Leonhardt People Center. Free.

7:30 p.m. Music of the Andes, a performance by Hinantillan of Latin American folk music. Main Auditorium. Free. Page 9.

19 7:30 p.m. From the Land of the Totem Poles. Main Auditorium. Free, and open only to Members. Tickets required. Page 8. The American Museum Restaurant will be open prior to this program.

8:00 p.m. New York Entomological Society. Room 323. Free.

26 7:30 p.m. Mosaics of Carthage. Members' Evening Program. Main Auditorium. \$3, and open only to Members. Tickets required. Page 5. The American Museum Restaurant will be open prior to this program.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700, toll-free outside NY State: (800) 462-8687



The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

9 1:00 to 4:30 p.m. *Fala Brazil*. Dance and Music Ensemble. traditional dances of Brazil; Afro-Brazilian Culture on Parade, a slide-talk by Dr. Morton Marks; Cultural Persistence of the Brazilian Timbira Tribe, presented by Dr. Dolores Newton. Latin American Month at the Leonhardt People Center. Free.

16 1:00 to 4:30 p.m. Music of the Andean Highlands, a performance and discussion by Pepe Santana and Alahualpa Poalasin; Aztec Metaphor: Gods, Words, and Costumes, a slide-talk by Joan Beachley on the costume attributes of Mexica deities. Latin American Month at the Leonhardt People Center. Free.

23 1:00 to 4:30 p.m. Marco Rizo Quartet performs Latin American popular music; *The Image of the Shaman in Pre-Columbian Indian Art*, shamanism today and its relationship to archeological objects. Latin American Month at the Leonhardt People Center. Free.

30 1:00 to 4:30 p.m. Mexican Folk Dances, performance by Ballet Folklórico de New York; *Sacred Burial of a Mayan King at Palenque*, art and iconography; *Erotic Humor in Moche Art*, a slide-talk. Latin American Month at the Leonhardt People Center. Free.

2:00 p.m. *Exploration of Ocean Frontiers*, a symposium. Kaufmann Theater. Free. Page 3.

Evening Hours

The Museum is open every Friday and Saturday evening until 9:00 p.m., thanks to a generous grant from Mobil. The American Museum Restaurant is open till 7:30 p.m.

Two Movies on the Big Screen

Every Friday and Saturday evening the Naturemax Theater presents double-feature showings of *Grand Canyon*. The Hidden Secrets and Chronos Showtimes are at 6:00 and 7:30 p.m., and Members receive a 40 percent discount on admission.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 5 May 1988



Monkey Business

Monday, May 16

7:30 p.m.

Main Auditorium

\$5 for Members, \$9 for non-Members

In the Members' program *Baboons May Be Smarter than People*, anthropologist Shirley Strum will discuss her insights into baboon social organization and the light these ideas has shed on options open to early human societies. By continuing observations of nonhuman primate behavior, she believes, we can hope to gain a better understanding of ourselves — what we share with other primates, and what is uniquely ours. Strum will cite evidence from her 15-year study of the Pumphouse Gang, a troop of olive baboons in Kenya.

Earlier and well-established theories about baboon society viewed the

baboon world as a closed and rigidly organized system governed by a core of adult males (few in number but all-dominant). The males afford protection, assert discipline, and provide cohesion through their leadership. The role of females is merely reproductive.

This was a revelatory view in its time, but on the basis of new information about primates, Strum doubted that even baboons could be so easily explained. That the small percentage of the troop represented by adult males could be overwhelmingly responsible for social life seemed questionable. Her long-term studies and markedly different evidence

indicate that the troop's stability is founded upon the reciprocity and cooperation exhibited by female baboons, who are courted by males with finesse, not force.

Shirley Strum is an associate professor of anthropology at the University of California, San Diego, where she teaches courses on primate behavior and human evolution. She is also the director of the Gilgil Baboon Project in Kenya and the author of a recently published book, *Almost Human*. To register for *Baboons May Be Smarter than People*, please use the May Members' programs coupon on page 3

Wee Wonders

An unusual Members' program explores little slices of life that often go unnoticed. *Small Secrets: A Creature Garden of Verses* blends poetry and photography for remarkable views of the insect world.

Page 3

The Look of Love

It's the season when fancies lightly turn to thoughts of you-know-what. *Romance Signs*, a program for the hearing impaired, looks at love and its many expressions.

Page 5

Time after Time

Ancient and modern civilizations take on a brand-new look through the time-lapse cinematography of *Chronos*, a dazzling Naturemax film.

Page 6

A Nation, Now and Then

The Once and Future Korea, a new exhibition in the Akeley Gallery, contrasts a country's leap from peasant society to industrial giant.

Page 4

¡Caramba!

A fast-paced program of flamenco and other forms of traditional dance awaits Members with next month's appearance by the Spanish Dance Society.

Page 2

Spanish Dance

Thursday, June 16

7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members



Salt Diamond

A dramatic evening of spirited and colorful dance will trace the historical development of Spanish dance. An instructive and exuberant Members' program by the Spanish Dance Society traverses a broad gamut of styles, from historical dances of a classical bent to regional folk dances and flamencos.

The program will trace the influence of foreign cultures on Spanish dance as well as the effect of Spanish dance on Latin American styles. Regional Spanish dances display the cultural influence of Celts and Moors, and the program opens with a Celtic Suite of traditional dances. In the sixth and seventh centuries B.C., Celts settled in

the northwest region of Spain. Dances from this region resemble those of Ireland and Scotland, even to the extent of bagpipe accompaniment. In coastal Galicia, musicians use shells as a percussion instrument, and this tradition will be represented by a performance of *Baile de las Nacres*.

The Moors occupied southern Spain from the eighth to fifteenth century A.D. Their influence on Spanish dances — which are usually dances of courtship performed in couples — is evident in the trios, which are executed by a man and two women. Often the steps reflect a subservience on the part of the females, who bow deeply to the

male dancer. The program features three Moorish-influenced dances: *Mozarabe*, *Bolero de Algodre*, and *La Charrada*.

The Spanish Dance Society is noted for its sumptuous costumes as well as its vast repertoire. The only international organization committed to the promotion of excellence in Spanish dance, the society is under the direction of its founder, the celebrated choreographer Marina Keet. Accompanists are guitarist Ralph Pemberton and singers Maricarmen and Jorge Porta.

To register for Spanish Dance, please use the May Members' programs coupon on page 3.



Ruth Beckman

DanceBrazil

Wednesday, May 4

7:30 p.m.

Main Auditorium

Free



Northland Television

The brilliant musical culture of Brazil will be celebrated in a program of traditional and modern dance. DanceBrazil has shared its musical heritage with audiences throughout North America and Europe, and its appearance at the Museum promises a rich and exciting pageant.

The repertoire for this appearance includes Samba, a joyous dance in which the musicians, spinning and juggling their tambourines, join the dancers; the ritual dances of *Candomblé*, which portray Afro-Brazilian gods; and *Maculelê*, a powerful fighting dance that is performed with

machetes.

The performance will be highlighted by the martial-arts dance *Capoeira*. Based on an ancient form of streetfighting that was popular among the African slaves in the Brazilian state of Bahia, *Capoeira* is distinctive for its acrobatic maneuvers such as cartwheels, round-offs, and backflips, executed in slow motion and at full speed.

The company is under the direction of its founder, acclaimed choreographer Jelon Vieira. For further information about this program, please call (212) 769-5315.

An Education Department Public Program.

ROTUNDA

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Baboon Family Ties

Sunday, May 15

1:30 p.m.

Kaufmann Theater

\$3 for Members, \$6 for non-Members

The Pumphouse Gang will take Members young and old inside baboon family circles for a look at the way these creatures are born and bred. Anthropologist Shirley Strum will host this family program, recounting her experiences from a 15-year study of a community of olive baboons known as the Pumphouse Gang.

When challenged by an outsider, the baboon family presents a common front. Among baboons, as among most monkeys and apes, paternity is neither known nor recognized — a family comprises an adult female and her offspring. Adult males cross over from troop to troop; it is the smaller units, such as the family, that assure the troop's overall stability.

Strum observed only two types of baboon friendships: those between females and those between males and females. Adult males usually have little to do with each other and pass their time quietly feeding or sitting with their favorite female friends. A serious fight, the sexual receptivity of a female, or the introduction, departure, or death of a male are all factors that could drastically change a male's relationship to other males. In contrast, a female's relationships appear stable and unchanging. Strum discovered



that even as family ties form the basic structure of the troop, so do friendships provide the critical attachments between males and females and between different family groups.

Strum will use slides of the

Pumphouse Gang to illustrate her presentation. She'll also host a Members' program for adults on baboon behavior (see page 1 for details). To register, please use the May Members' programs coupon.

Small Secrets A Creature Garden of Verses

Thursday, June 2

7:30 p.m.

Kaufmann Theater

\$3 for Members, \$5 for non-Members

Admire an azure butterfly sipping nectar from a starched white daisy, and wonder at a tiny, jewel-like crab spider sitting in the heart of a glowing purple morning glory. Larger-than-life-sized photos of exquisite arthropods are featured in a unique Members' program that offers entomological information in the form of verse.

The amusing and educational verses are the handiwork of author and poet Helen Worth, who will be joined in the program by her husband, macrophotographer and entomologist Arthur Gladstone. Macrophotography involves photographing objects too large for a microscope but too small for a conventional camera. The program's vivid color slides reflect Gladstone's noteworthy contribution to both technical and aesthetic aspects of photography. He has devised a unique combination of equipment and lighting in order to capture exotic glimpses of the insect world.

To register for *Small Secrets: A Creature Garden of Verses*, please use the May Members' programs coupon.



May Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *May Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The Pumphouse Gang (for families). Sunday, May 15, 1:30 p.m. \$3 for Members, \$6 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$6.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Baboons May Be Smarter than People (for adults). Monday, May 16, 7:30 p.m. \$5 for Members, \$9 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$9.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$9: _____

Total amount enclosed for program: _____

Small Secrets: A Creature Garden of Verses. Thursday, June 2, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Spanish Dance. Thursday, June 16, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

The Once and Future Korea

In the Akeley Gallery
Through September 25

Relics from a turn-of-the-century peasant culture are bracketed by the hallmarks of a modern society in the new exhibition *The Once and Future Korea*. Images of a thriving industrial society — computer graphics, a television set, color photographs of glistening skyscrapers, assembly lines, and neon signs — offer a striking contrast to items from a nearly forgotten way of life — an assortment of good-luck talismans, ironing sticks, a wash paddle, and an umbrella-shaped paper hat cover for a rainy day. These contrasting images represent Korea's transformation from a traditional peasant society to a powerful industrial nation.

Rare glimpses of bygone lifestyles are offered by the exhibition's assemblage of sepia-toned photographs from the Museum's collection. These photos, which have never before been publicly displayed, were taken by explorer and naturalist Roy Chapman Andrews in 1912 during an expedition to remote and largely uncharted villages in the far north of Korea.

Andrews was drawn to Korea by rumors of a "devil fish" whose description matched that of the supposedly extinct California gray whale. After he had observed, measured, and photographed the gray whales, Andrews negotiated a trip through snowy mountain slopes, swamps, and dense forests to acquire bird and mammal specimens previously unknown to Western museum collections.

Exploits from the difficult and dangerous expedition are recounted in Andrews' memoirs, in which he worked the episodes into full-blown adventure stories. They include a near-mutiny among his drivers (who plotted desertion in the mistaken assumption that Andrews had gotten them lost and was leading them blindly) and a tiger hunt (in which the tiger never materialized, much to Andrews' relief). A reminiscence of wandering into the alarming company of eight flintlock rifle-bearing Manchurian bandits concludes happily after Andrews befriends the bandits and invites them back to his camp for dinner.

After losing touch with the rest of the world for several months, Andrews emerged from the Korean wilderness to discover the publication of his own obituary. In his 1929 memoirs, *Ends of the Earth*, Andrews observed that "I have 'died' so frequently since that I am quite accustomed to it."

The Once and Future Korea is an Arthur Ross Exhibit of the Month and is supported in part by the Korean Cultural Service.



These and other photos taken by explorer Roy Chapman Andrews are among the items on display. The 1912 expedition to isolated reaches of northeast Korea involved numerous modes of transportation, including hand-operated push railway, oxcart, and a ferry fashioned from a hollow log (above).



Korea Month

A series of weekend programs this month at the Leonhardt People Center celebrates Korean culture. Please see the calendar on page 8 for a

schedule of events.

Presentations take place each Saturday and Sunday between 1:00 and 4:30 p.m. and are repeated throughout the after-

noon. Seating is on a first-come, first-served basis. These programs are made possible in part by a gift from the family of Frederick H. Leonhardt. For

additional details, call (212) 769-5183.

An Education Department Public Program.

Participating, Donor, and Contributing Members are cordially invited to a

Behind-the-Scenes Tour of the Department of Vertebrate Paleontology

Sunday, May 1, and Wednesday, May 4, \$10

This month, Members will enter laboratories and storage areas that are off-limits to the general public to learn about the Museum's vast collections of fossil reptiles, fish, birds, and mammals. Behind-the-scenes tours of the Department of Vertebrate Paleontology will reveal how these priceless resources are obtained, preserved, and organized.

The tours will be conducted by representatives from the department, whose study of vertebrate fossils requires expertise in numerous areas, including field collection, preparation, illustration, biogeography, and geology-related sciences. Paleontologists must apply their special training with the broad perspective of a natural historian; if they fail to do so, the study of fossils has very little significance in the search for the patterns of life history.

The tours will begin in the department's lab, where Members will follow fossils from their arrival in packing crates to their removal from the matrix in which they are embedded. Staff members will discuss the specialized techniques involved in this delicate procedure, including working with microscopes and hand tools, pneumatic drilling, air-abrasion, and chemical preparation.

The second part of the tour will look at the department's ar-

chives. Collection-oriented research is the heart of museum work, and even carefully documented collections will lose scientific value if accurate information about them is not readily available. An overview of traditions in record-keeping will range from Edward Drinker

Cope's field notes on excavations of dinosaur bones in the American Southwest in the 1870s to a 1987 expedition to southern Chile, where fossils of whales, marine invertebrates, and land mammals offer clues to the rise of the Andes Mountains from the sea.

The tours will conclude in the storage areas, where Members can observe the scope of the department's holdings, from minuscule items tucked away in drawers to huge skeletons reposing on racks. Staff members will describe their continual efforts to expand and improve

these collections, which are used by department curators, research associates, graduate students, postdoctoral researchers, and many visiting scientists.

For registration information about the tours, please call (212) 769-5600.



Members will see how fossils — such as this fish from the Triassic Period — are prepared for study and exhibition.

Romance Signs A Program for the Hearing Impaired

Saturday, June 4
2:00 and 4:00 p.m.
Kaufmann Theater
Free

A whimsical look at the American romance novel is offered by Vibrations, Productions in Deaf Awareness. Romance Signs portrays the gamut of emotions associated with love found and love lost and the communication of these feelings. Stereotypical romantic situations are dramatized through simultaneous use of sign and voice.

Vibrations, Productions in Deaf Awareness has frequently performed popular programs at the Museum. Romance Signs is suitable for the entire family, and seating is on a first-come, first-served basis. For additional information, please call (212) 769-5325.

An Education Department Public Program.



Versions of the Traditional

The Language of Birds

Friday, May 13
7:00 p.m.
Linder Theater
Free

Folktales and poetry are featured in a reading by David Guss from his book *The Language of Birds*. Guss is a poet, translator, editor, folklorist, and anthropologist whose books include *Watunna: An Orinoco Creation Cycle* (North Point Press), *Talking Leaves: An Anthology of Tribal Poetries* (Panjandrum Press), and the forthcoming *Folktales of the Indians of Latin America* (Pantheon Press). He is a visiting assistant professor in the department of anthropology at Vassar College.

The Speaking of Animals

Saturday, May 14
2:00 p.m.
Linder Theater
Free

Joseph Bruchac and Louis Mofsie will present a program of Native American stories and music for children and their families. *The Speaking of Animals* will relate Native American tales and myths about the ways in which animals communicate with each other.

Joseph Bruchac is a storyteller and writer whose many books include *Iroquois Legends* (The Crossing Press) and *Songs from this Earth on Turtle's Back* (The Greenfield Press). He is the director of the Greenfield Review Literary

Center. Louis Mofsie is the director of the Thunderbird American Dancers and has performed with a variety of theater companies, including Off the Beaten Path and the Native American Theatre Ensemble. He teaches art in the East Meadow Public School System.

Seating for these programs is limited and on a first-come, first-served basis. For further information, call (212) 769-5305. *Versions of the Traditional* is made possible in part by a grant from the New York State Council on the Arts and the Helena Rubinstein Foundation.

An Education Department Public Program.

Birds of a Feather

Field Class in Bird Identification

May 3, 10, 17, 24, 31

Tuesdays, 7:00 to 9:00 a.m.

May 5, 12, 19, 26, and June 2

Thursdays, 9:00 to 11:00 a.m.

Bird watchers can flock together with naturalists Stephen C. Quinn (on Tuesdays) and Harold Feinberg (on Thursdays) to observe the spring migration of birds through Central Park. Participants will learn how to identify species according to their field marks, habitat, behavior, and song.

The fee for this program is \$5, to be paid each morning before the walk starts (there is no preregistration). Classes meet at 77th Street and Central Park West. For further information, please call (212) 769-5310.

An Education Department Public Program.



Chronos

Naturemax Theater
through June 24

Dynamic imagery and New Age music tell the story of time in *Chronos*, a magical film that embraces nature, art, science, and the spirit of creative civilization through the ages. This remarkable film is shown on Friday and Saturday evenings in the Naturemax Theater, which features the 70-millimeter IMAX format and a 40-foot screen that's the largest indoor movie screen in New York City.

Chronos means "time," an apt title since time itself is the film's invisible but ever-present star. At the heart of the director's concept is the extensive use of time-lapse cinematography, which transforms familiar scenes such as Stonehenge, Grand Central Station, the Pyramids at Giza, and the Hall of Mirrors at Versailles into extraordinary visions.

Although the film celebrates the most magnificent architectural sites of the ancient world and bustling modern cities, *Chronos* returns again and again to the timeless beauty and tranquility of Monument Valley, Utah. This contrast between busy city and serene desert provides a commentary on the transitory nature of human civilization.

The film visits over 50 locations in eight countries to portray life and humanity as the motivational force behind an ever-changing matrix of natural and man-made monuments. The journey is conducted without a word of narration; one bold image after another speaks for itself.

Chronos can be seen in the Naturemax Theater on Fridays and Saturdays only, along with its co-feature, *Grand Canyon*:



The Alcazar, Segovia, Spain



Vatican, Saint Peter's, Rome

The Hidden Secrets. Showtimes are at 6:00 and 7:30 p.m. Admission to the double feature is \$5.50 for adults and \$3 for children, and Members receive a 40 percent discount. *Chronos*

is in its final weeks at the Museum; its run will end on June 24.

For further information about *Naturemax*, please call (212) 769-5650.

Tiffany 150 Years of Gems and Jewelry

The extravagant ornament below is a handpiece — the upper loop circles the wrist, the nether loops ring the fingers, and a delectable assortment of colored gemstones graces the back of the hand. This piece is among the sparkling array of gemstones, jewelry, and natural mineral specimens on display in Gallery 1 through June 5.



Tiffany & Co.

Laser Sixties

Return with us now to those thrilling days of yesteryear, when raising your consciousness was more important than raising your bank balance, when war was not healthy for children and other living things, when if it felt good, you were supposed to do it. When, perhaps most significantly, popular music was good and exciting.

Every Friday and Saturday night at the Hayden Planetarium *Laser Sixties* offers a kaleidoscopic experience that synchronizes laser visuals with rock music.

Featured hits from 1965-69 include contributions from such musical luminaries as the Doors, the Grateful Dead, the Byrds, the Moody Blues, and

Mr. Jimi Hendrix. Recollections of the era's momentous events include a tribute to the Summer of Love with Janis Joplin's searing rendition of "Summertime" and Crosby, Stills, Nash, and Young's paean to Four Days of Love and Peace, "Woodstock."

Whether or not you can remember what you were doing when you heard that the Beatles had broken up, *Laser Sixties* is surefire entertainment. Showtimes are at 7:30, 9:00, and 10:30 p.m. on Friday and Saturday. Admission for Participating, Donor, and Contributing Members is \$5 per show, and \$6 per show for non-Members. For further information, call (212) 769-5921.

Museum Notes

Special Exhibitions and Highlights

Tiffany: 150 Years of Gems and Jewelry presents over 100 gems and jewelry items in a retrospective of jewelry design in the United States. In Gallery 1 through June 5.

Rural Korean life in the 1900s is explored in *The Once and Future Korea*, a new exhibition in the Akeley Gallery. Archival photographs from a 1912 expedition by explorer and naturalist Roy Chapman Andrews are featured, along with contrasting images of Korea in the 1980s. Through September 25. See page 4.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., till 8:30 p.m. on Wednesday, and from 10:00 a.m. to 3:00 p.m. on Saturday.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.



Leopards in the Akeley Hall of African Mammals

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest indoor movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*. See page 6 for details.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the ages of 5 and 10 can choose from four fabulous themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on weekdays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, **FACES** explores its monthly themes through a variety of activities, including games, stories, puzzles, and recipes. **FACES** is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$17.95. To subscribe, send your check or money order payable to **FACES** (add \$5 for foreign orders) to: **FACES**, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Happenings at the Hayden

Sky Shows

The Hayden Planetarium presents a double-feature Sky Show: *Cosmic Illusions* and *The Space Telescope*.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the Amazing Disappearing Martians and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, May 14, and at noon on Saturday, June 11. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for

children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Sixties*. See page 6.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.



Sun

1 10:30 a.m. Behind-the-Scenes Tours of the Department of Vertebrate Paleontology. \$10, and open only to Members. Tickets required. Page 5.

1:00 to 4:30 p.m. The conclusion of Latin American Month programs at the Leonhardt People Center. Mexican Folk Dances by Ballet Folklórico de New York; Sacred Burial of a Mayan King at Palenque, art and iconography; Erotic Humor in Moche Art.

8 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Traditional Clothing; Changes and Continuity of Korean Women: Calligraphy. Free

2:00 p.m. New York Shell Club. Room 419. Free

Mon

2

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

Tue

3 7:00 to 9:00 a.m. Field Class in Bird Identification. Page 6.

Wed

4 5:15 p.m. Behind-the-Scenes Tours of the Department of Vertebrate Paleontology. \$10, and open only to Members. Page 5.

7:30 p.m. DanceBrazil. Main Auditorium. Free. Page 2.

7:45 p.m. Amateur Astronomers Association. Dr. Sune Engelbrektson: "Mysteries of the Island Universe." Kaufmann Theater. Free.

Thu

5 9:00 to 11:00 a.m. Field Class in Bird Identification. Page 6.

Fri

10 7:00 to 9:00 a.m. Field Class in Bird Identification. Page 6.

8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

11 7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

12 9:00 to 11:00 a.m. Field Class in Bird Identification. Page 6.

7:00 p.m. New York Microscopical Society. Speaker, Irving L. Horowitz: "Minerals and the Microscope." Room 419. Free.

18

17 7:00 to 9:00 a.m. Field Class in Bird Identification. Page 6.

8:00 p.m. New York Entomological Society. Room 323. Free.

16 7:30 p.m. Baboons May Be Smarter than People. Members' Evening Program. \$5 for Members, \$9 for non-Members. Main Auditorium. Page 1.

The American Museum Restaurant will be open prior to this program.

15 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Traditional Dances of Korea; Funeral Ancestor Worship: Kayagum; The Korean Zither. Free.

1:30 p.m. The Pumphouse Gang. Members' Family Program. \$3 for Members, \$6 for non-Members. Tickets required. Kaufmann Theater. Page 3.

2:00 p.m. New York Paleontological Society. Room 419. Free.

22 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Ritual Buddhist Dances; The History of Korean Musical Instruments; Changes in Agricultural Practices. Free.



30

Memorial Day. The Museum is open.

29 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Korean Folk Dances; Korean Pottery; Rope Tying. Free.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

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26 9:00 to 11:00 a.m. Field Class in Bird Identification. Page 6.

25 7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

20

19 9:00 to 11:00 a.m. Field Class in Bird Identification. Page 6.

21 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Ritual Buddhist Dances; The History of Korean Musical Instruments; Changes in Agricultural Practices. Free.

28 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Korean Folk Dances; Korean Pottery; Kayagum; The Korean Zither. Free.



May 1988 American Museum of Natural History

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

Sat

7 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Traditional Clothing; Changes and Continuity of Korean Women: Calligraphy. Free.



14 1:00 to 4:30 p.m. Korea Month at the Leonhardt People Center. Traditional Dances of Korea; Funeral Ancestor Worship: Kayagum; The Korean Zither. Free.

2:00 p.m. The Speaking of Animals, a program of stories and music for children. Linder Theater. Free. Page 5.

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 6 June 1988



Robin Aronson

Spanish Dance

Thursday, June 16
7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members

Spanish dance in all its splendid variety is celebrated in a Members' program of infectious rhythms, handsome costuming, and captivating movement. The Spanish Dance Society will present an evening of lively and instructive treats from its vast repertoire of traditional dance.

The program will focus on regional Spanish dances and the many aspects of flamencos, as solo performances, theatrical duets, or group dances. Although it is perhaps the most familiar of the dashingly rhythmic forms, flamenco is but one style from the immense range of Spanish dance. The influence of Spain's

foreign inhabitants throughout the ages — such as the Celts and Moors — is evident in traditional dances from areas such as Galicia, Andalusia, the Basque region, Castile, and Catalonia. An introduction to each number will trace the influence of other cultures on Spanish dance as well as the subsequent influence of Spanish styles on the dances of South America.

The repertoire will include *Corri-Corri*, reputed to be Spain's oldest dance; *La Charrada*, a dazzling piece in which the dancers are clad in brocaded black velvet gowns and draped with silver ornaments; and *Baile de las Nacres*,

which originates in the coastal region of Galicia and features shells as a percussion instrument.

The Spanish Dance Society is directed by Marina Keet, who founded it in 1965. Among Keet's extensive choreographic credits are the direction and production of lecture-demonstrations for universities and museums, full-scale ballets and operas for the theater, and spectaculars for stage and festival.

Members are invited to join in a special "tasting" of Glenlivet Scotch prior to the performance. To register for *Spanish Dance*, please use the June Members' programs coupon on page 3.

Members Only

A private viewing at the Planetarium will give Members a look at the facts behind science fiction with the new Sky Show *Encounter: The Search for Extraterrestrial Intelligence*.
Page 3

Name that Whatchamacallit

A team of Museum experts will attempt to identify and analyze do-hickeys, thingamajigs, and other natural items at the Museum's tenth annual *Identification Day*.
Page 6

West Side Stories

An evening constitutional offers a whole new look at some familiar scenes with the ever-popular *Sunset Walking Tours*. The geologic, geographic, and architectural history of Riverside Park and Lincoln Center will be explored.
Page 3

Chinese Reptiles

Members can attend a preview of the new exhibition *From the Land of Dragons* and a program that details the evolutionary significance of the Chinese fossils on display.
Page 4

Ecology on Film

The conservation of natural resources, pollution control, and Dr. Seuss's *Lorax* are featured in a family program of environmental films.
Page 6

Small Secrets A Creature Garden of Verses

Thursday, June 2
7:30 p.m.
Kaufmann Theater
\$3 for Members, \$5 for non-Members

The intricacies of the insect universe are enlarged upon and poetically explored in *Small Secrets: A Creature Garden of Verses*. A lighthearted look at arthropods in action, this unusual Members' program combines fascinating photography with charming and informative verse.

Small Secrets will be hosted by acclaimed photographer Arthur M. Gladstone and award-winning author Helen Worth. The delightful delivery of Worth's scientifically accurate verses provides compelling and memorable enhancement for Gladstone's awe-inspiring photography of some of the smaller denizens of our planet.

Gladstone is a writer, chemist, and retired U.S. Air Force major as well as a specialist in insect macrophotography. His work with subjects that are too big for a microscope but too small for a conventional camera requires a high degree of physical coordination — some 20 pounds of hand-held equipment are involved — as well as deep patience in waiting for exactly the right moment. His exceptional portraits of infinitesimal creatures will be augmented by Worth's vivacious delivery of her witty verses. Worth's poetry has appeared in national magazines, and her award-winning books, dealing with the history, technique, and art of cooking, have brought her international renown.

To register for *Small Secrets: A Creature Garden of Verses*, please call the Membership Office at (212) 769-5600.



Out of Time

Chronos
Naturemax Theater

The spirit of Western civilization and the majesty of nature are explored through time-lapse cinematography in *Chronos*. This remarkable motion picture, which ranges from Jerusalem to Los Angeles for a memorable portrait of the passage of time, is nearing the end of its run at the Naturemax Theater.

Chronos can be seen on New

York City's largest indoor movie screen on Fridays and Saturdays only, along with its cofeature *Grand Canyon: The Hidden Secrets*. Showtimes are at 6:00 and 7:30 p.m. Admission to the double feature is \$5.50 for adults and \$3 for children, and Members receive a 40 percent discount. For further information about Naturemax, please call (212) 769-5650.



ROTUNDA

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ENCOUNTER

The Search for Extraterrestrial Intelligence

Members' private viewing: Thursday, July 28
 Planetarium Sky Theater



A giant radio receiver, built by aliens, scans the universe in a new Sky Show at the Hayden Planetarium.

Sci-fi novels, supermarket tabloids, and Hollywood cinematic extravaganzas never tire of depicting fantasy encounters with outer-space aliens. But behind the lively imaginations of science-fiction authors and special-effects wizards is a fascinating story of how scientists use robot-operated spacecraft, high-speed computers, and ultrasensitive listening devices

to seek out extraterrestrial life. A new Sky Show, *Encounter: The Search for Extraterrestrial Intelligence*, examines the quest for visitors beyond the stars: Where and how are scientists searching for life in space? What is the likelihood of success? What type of contact might we expect? On Thursday, July 28, Participating, Donor, and Contributing

Members can attend a private viewing of *Encounter: The Search for Extraterrestrial Intelligence*. Showtimes are at 6:00 and 7:30 p.m., and admission is \$2.75 for adults and \$1.50 for children. Please use the June Members' programs coupon to register. For general information on Sky Show times and prices, see "Happenings at the Hayden" on page 7.

Sunset Walking Tours

Riverside Park
 Tuesday, July 12
 3:00, 4:30, 6:00, and 7:30 p.m.
 \$7, and open only to Participating, Donor, and Contributing Members

Lincoln Center
 Tuesday, July 19
 3:00, 4:30, 6:00, and 7:30 p.m.
 \$7, and open only to Participating, Donor, and Contributing Members

Arrive with comfortable shoes and curiosity; depart with remarkable insights into the natural history of New York City landmarks. The geology, geography, and architecture of Riverside Park and Lincoln Center will be explored with the Members' *Sunset Walking Tours*. Each of the tours will be conducted by Sidney Horenstein, senior scientific assistant in the Department of Invertebrates and urban geologist extraordinaire.

The tour of Riverside Park will focus on the area between 72nd and 86th Streets. The park, which dates from the 1880s, was originally cut off from the Hudson by jagged fences and unsightly rows of railroad tracks. The area was transformed by a West Side im-

provement plan of the 1930s, in which urban planner Robert Moses masterfully combined transportation and recreation, engineering and architecture. With the concealment of the railroad tracks and the addition of promenades, terraces, and a vast array of recreational facilities, Riverside Park took on a modern face and a new life.

Members will also learn about the naturalistic design of Riverside Drive, which broke with the traditional grid pattern of Manhattan roadways to follow the land's horizontal and vertical contours. The origins and regional geology of the Palisades and Hudson River will be discussed as well.

Tours of Lincoln Center and its environs, from 59th Street and northward, will focus on the

area's geology and geography, with an accent on local history and architecture. Local masonry features different stones from sources as distant as Quebec, Italy, and Missouri, and a certain building stone in the area bears a strong similarity to rocks collected from the highlands of the moon. The tour will be highlighted by an examination of the exterior of Saint Paul the Apostle Church and an account of its history. Built in 1856 with recycled stones from a recently dismantled aqueduct, the church is the mother house of the Society of Paulist Fathers.

The *Sunset Walking Tours* are among the most popular of Members' programs, and prompt registration is advised. To register, please use the June Members' programs coupon.

June Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *June Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Spanish Dance. Thursday, June 16, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Sunset Walking Tours: Riverside Park. Tuesday, July 12, 3:00, 4:30, 6:00, and 7:30 p.m. \$7, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 3:00 _____ 4:30 _____ 6:00 _____ 7:30

Number of tickets at \$7: _____

Total amount enclosed for program: _____

Sunset Walking Tours: Lincoln Center. Tuesday, July 19, 3:00, 4:30, 6:00, and 7:30 p.m. \$7, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 3:00 _____ 4:30 _____ 6:00 _____ 7:30

Number of tickets at \$7: _____

Total amount enclosed for program: _____

From the Land of Dragons. Thursday, July 21, 7:30 p.m. \$3 for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4. This ticket will admit you to the exhibition preview as well.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

Members' Private Viewing of *Encounter: The Search for Extraterrestrial Intelligence*. Thursday, July 28, 6:00 and 7:30 p.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

Korean Women. Thursday, August 11, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

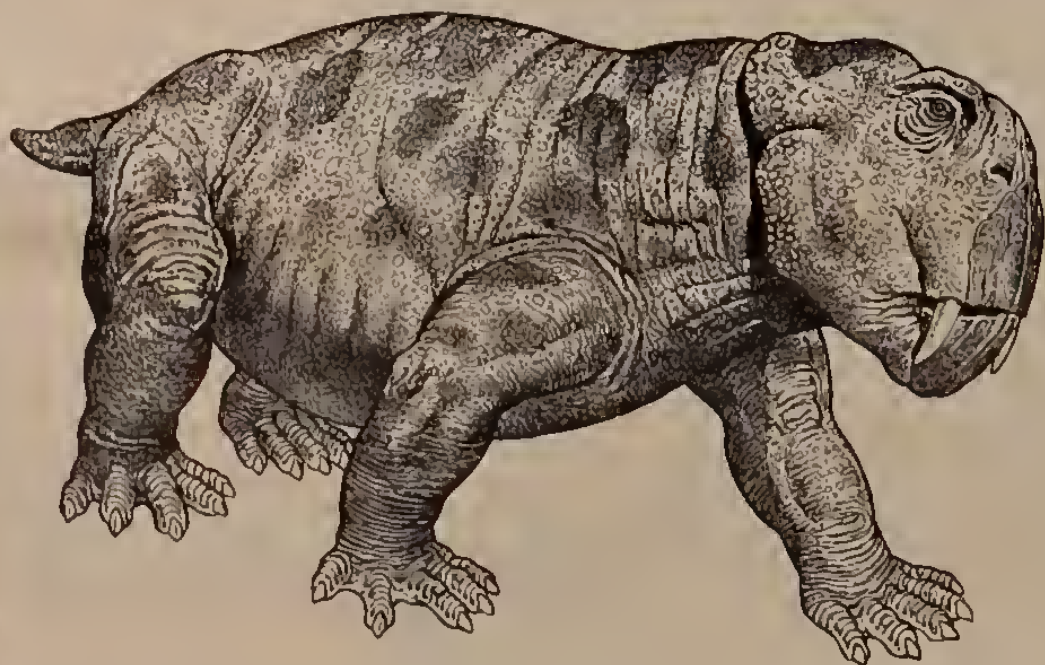
Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

From the Land of Dragons

Members' exhibition preview
Thursday, July 21
6:00-7:15 p.m.
Gallery 1

Members' evening program
Thursday, July 21
7:30 p.m.
Main Auditorium

\$3 for Members, \$4 for non-Members



Lystrosaurus, a therapsid or mammal-like reptile

The most comprehensive exhibition of Chinese fossils ever displayed in the Western Hemisphere arrives at the Museum next month, and Members are invited to attend an exhibition preview as well as a related program on the relevance of Chinese fossils to evolution.

Numerous well-preserved skeletons of previously unknown animals have been discovered by Chinese scientists within the last few decades. Until now, few Westerners have had the chance to see these remarkable specimens. *From the Land of Dragons* is the result of the cooperative efforts of the American Museum and the Institute of Vertebrate Paleontology and Paleoanthropology in Beijing.

The exhibition, which opens in Gallery 1 on July 22, features skeletons of extinct groups such as dinosaurs and flying reptiles and is particularly rich in fossils that offer clues to the origin of such modern groups as turtles,

crocodiles, and mammals. Although the Chinese fossils can be considered objects of beauty in their own right, their true significance can only be appreciated through an evolutionary perspective. The American Museum is a leading research center for studies of the evolutionary relationships of animals, and *From the Land of Dragons* provides a showcase for the results of this research by interpreting the evolutionary relationships of the newly discovered Chinese fossils.

The Members' program will feature 20-minute presentations by four noted paleontologists. One of the resident curators for the exhibition, Dr. E. S. Gaffney of the Department of Vertebrate Paleontology, will begin the program with an explanation of the role of Chinese fossils in vertebrate evolution (Dr. Lowell Dingus, also of the Department of Vertebrate Paleontology, is co-curator of the exhibition.) Dicotyledons, the

plant-eating, mammal-like reptiles that are prominently displayed in the exhibition, will be discussed by Dr. G. King, assistant curator at the University Museum of Oxford University, England. Advanced mammal-like reptiles and the origin of mammals will be described by Dr. T. Rowe, assistant professor in the Department of Geology at the University of Texas. The program will conclude with a presentation on the evolution of dinosaurs and their relatives by Dr. J. Gauthier, assistant curator in the Department of Herpetology at the California Academy of Sciences.

The Members' preview of *From the Land of Dragons* will take place immediately prior to the program, from 6:00 to 7:15 p.m. Your ticket for the Members' program will admit you to the exhibition as well. To register for the preview and program, please use the June Members' programs coupon on page 3.

Shamans, Matchmakers, and More Conventional Korean Women

Thursday, August 11
7:30 p.m.
Main Auditorium
\$3 for Members, \$5 for non-Members

Healing the sick, sending restless souls to paradise, and ensuring her clients' good fortune are a Korean shaman's primary responsibilities. She mediates between the dead and the living, gods and mortals, and her communion with the spirit world brings comfort and security to those in the secular world.

A Korean matchmaker, on the other hand, deals with strictly temporal matters. Her concerns are with finding a compatible blend of personalities, moralities, lifestyles, and other issues that contribute toward the making of a successful marriage. Although only a few Korean women become shamans, many take an active hand in matchmaking.

The shaman and the matchmaker have more in common than is readily apparent. Both occupations are traditionally women's roles. Shamans and matchmakers are usually articulate, canny individuals who are skilled judges of character. Both serve as go-betweens in the known and unknown worlds: shamans between humans and spirits; matchmakers between earthly strangers. Both are, by the nature of their work, open to accusations of deception. These roles require an extro-

verted and assertive personality — characteristics that are the antithesis of their society's feminine ideals of serenity and docility, although such characteristics are consistent with images of women in some Korean folklore.

Shamans and matchmakers in modern Korea will be discussed in a Members' program by Laurel Kendall, assistant curator in charge of Asian ethnographic collections in the Department of Anthropology. Dr. Kendall is the author of *Shamans, Housewives, and Other Restless Spirits* (1985) and *The Life and Hard Times of a Korean Shaman* (1988), both from University of Hawaii Press. She began her observations on Korean society in 1971 as a Peace Corps volunteer, and since 1976 she has focused on the role of women in contemporary and traditional Korean culture. Her initial research on women and ritual led her to a study of contemporary marriage practices, and from this pursuit she developed an interest in matchmakers.

To register for *Shamans, Matchmakers, and More Conventional Korean Women*, please use the June Members' programs coupon on page 3.

Korea: A Public Symposium

Sunday, June 12
2:00 p.m.
Kaufmann Theater
Free

In conjunction with the exhibition *The Once and Future Korea*, four scholars will discuss that nation's dramatic transformation from a traditional peasant society to a world economic power. Their slide-illustrated talks will present historical and contemporary views of the dynamic folk culture, changing marriage patterns, the conse-

quences of urban growth, and the Korean community living abroad.

For additional information, call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

An Education Department Public Program.

Santería Beliefs, Practices, and Healing

A three-part series of panel discussions and performances offers an in-depth look at Santería, including its most controversial aspects, such as possession and animal sacrifice, as well as the ways in which it can aid modern medicine in a holistic approach to the treatment of physical and psychological disorders.

Santería is an Afro-Cuban religion that combines the beliefs and religious practices of the Yoruba people of southwest Nigeria with some aspects of Roman Catholicism. When members of the Yoruba were brought to Latin America as slaves, their Spanish and Portuguese masters introduced them to Christianity and forbade them to continue their own religious practices. In order to ensure their cultural survival in the New World, the Yoruba hid the practices of their ancient religion under the cloak of Christianity, which led to a symbolic merging, or an identification between Yoruba deities (orishas) and some of the Catholic saints.

Santería is currently experiencing a tremendous increase in popularity not only in Latin America but also in the United States. No longer restricted to the confines of the Hispanic barrios, the practices of Santería are now embraced by people of diverse ethnic and social backgrounds.

Many psychiatrists and psychologists are interested in Santería because they feel it provides an outlet for repressed feelings and offers a set of symbolic actions that contribute to psychic and social stability. The first two panels in this series feature psychiatrists and psychologists who work with santeros (priests of Santería) during sessions with patients who are members of the faith.

For further information about this series, call (212) 769-5315.

Santería and Its Uses in Clinical Psychology
Wednesday, June 8
7:00 p.m.
Kaufmann Theater
Free

The first program of this series will define Santería and its effects on the lives of its practitioners. The priesthood and divination systems will be discussed, as well as the function of a santero and the ways in which

this faith can be utilized by psychologists, psychiatrists, and other medical specialists.

The discussion will be moderated by Migene Gonzalez-Wippler, who has an M.A. in anthropology from Columbia University and is the author of several popular books about Santería. Panelists include Dr. Ian Canino, child psychiatrist at Columbia Presbyterian Medical Center; Dr. Estyne del Rio, psychotherapist and santera; Eduardo Pastoriza, elder and priest of Chango for over 40 years; Carlos Collazo, babalawo and elder; and John Mason, priest of Chango and Santería scholar.

Psychodynamics of Animal Sacrifice
Wednesday, June 15
7:00 p.m.
Kaufmann Theater
Free

The significance of animal sacrifice in the practice of Santería will be discussed, as well as the concepts of *ebbo* (offerings to orishas) and *ashe* (the power to make things happen), various forms of initiation, and the importance of herbalism. Moderator Migene Gonzalez-Wippler and some of the panelists from the previous program (Dr. del Rio, Mr. Pastoriza, and Mr. Mason) will be joined by Dr. Alex Carballo, chief psychologist at Sunset Park Mental Health Clinic, Brooklyn, and Dr. Charles Wetli, deputy chief medical examiner of Dade County, Florida.

Spirit Possession
Wednesday, June 22
7:00 p.m.
Kaufmann Theater
Free

The concluding program will focus on the bata drums (two-headed religious drums) and the state of being possessed. Chango priest Stephen Lloyd (Egba Oba Wale) and other bata drummers will demonstrate rhythms (*toques*) in honor of various orishas and explain the mechanics and effects of possession. Dancers will demonstrate the movements of each *toque* and how each saint/orisha is invoked to take possession through an interplay of sound and motion.

An Education Department Public Program.

Summer Workshops for Children

\$10, and open only to Participating, Donor, and Contributing Members

Members' children can fill some of those long, hot, uneventful summer days with special workshops that combine tours of a few of the Museum's most intriguing exhibition halls with imaginative activities.

Sarah Germain, coordinator of Museum birthday party programs, puppeteer, and actress, will conduct the workshops. Enrollment is limited; please use the coupon below to register.

Star Hunt
Ages 7-10
Wednesday, July 13
10:30 a.m.-12:00 p.m.

Young star hunters gather in the Planetarium and start off with a game that sends them hither and yon, seeking the solutions to outer-space mysteries. After the children view *The Secret of the Cardboard Rocket*, a Sky Show geared toward young audiences, a member of the Planetarium staff will take them on brief behind-the-scenes tour to see how a Sky Show is made. The workshop concludes with the participants' creation of their own cardboard rockets.

Creative Movement
Ages 5-7
Tuesday, July 12
10:30 a.m.-12:00 p.m.

In a workshop filled with storytelling, costume making, and dance, kids consider the variety of ways in which animals move. In the halls of Ocean Life, African Mammals, and Birds of the World, participants will observe sea creatures, birds, and other animals in their habitats and then perform animal-like movements to recorded music of bird calls, African drums, and the sounds of whales.

Shadow Puppetry
Ages 6-12
Tuesday, July 19
10:30 a.m.-12:30 p.m.

Shadow puppet plays are a form of entertainment that's popular with children and adults alike. In the Hall of Pacific Peoples, participants will observe a fascinating assortment of shadow puppets. After hearing folktales from cultures in Southeast Asia and elsewhere, the children will devise their own shadow puppets and perform a play that parents can attend at the workshop's conclusion.

Mask Making
Ages 6-10
Wednesday, July 20
10:30 a.m.-12:00 p.m.

The uses of masks in African and Native American cultures are illustrated in this workshop, in which participants will tour the halls of Man in Africa and Northwest Coast Indians and create masks of their own.



Kids visit *Birds of the World* and *Ocean Life* in the workshop on creative movement.



Summer Workshops for Children. \$10, and open only to Participating, Donor, and Contributing Members.

Your name: _____

Your child's name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Number of tickets at \$10 each: _____

Star Hunt: _____

Creative Movement: _____

Shadow Puppetry: _____

Mask Making: _____

Total amount enclosed: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Summer Workshops for Children, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

A Family of Environmental Films

Sunday, June 5
11:00 a.m.—3:30 p.m.
Kaufmann Theater
Free

Our Environment

11:00 a.m. *A Sand County Almanac* (16 min., color). Aldo Leopold is celebrated for his descriptions of the natural environment across America, particularly his accounts of Sand County farm in Wisconsin. This film presents ecology in the poetic language of Leopold's land ethic.

11:20 a.m. *Water Means Life* (18 min., color). Problems and proposed solutions to finding quality drinking water for all human needs.

11:45 a.m. *Harold and His Amazing Green Plants* (8 min., color). The life cycle of a green plant from seed to maturity, showing the roles of water, soil, sunshine, and air.

12:00 p.m. *Silent Forest* (23 min., color). Beneath the ocean's surface, a kelp forest stretches along the Pacific Coast of North America. Anchored to the ocean floor, the forest reaches up to the surface and supports a unique community of marine life.

12:30 p.m. *Trail* (17 min., color). This film explores the interactions between the environment and wildlife.

Pollution and Conservation

1:00 p.m. *The Lorax* (25 min., color). An animated tale by Dr. Seuss about pollution and the need to conserve our natural resources.

1:30 p.m. *Air Pollution: A First Film* (12 min., color). Air

supports life through a cycle between plants and animals and can be polluted by a small amount of waste. This film shows the results of air pollution and suggests methods for its control.

2:00 p.m. *Garbage Explosion* (15 min., color). A look at one of the major problems in our consumer economy. This film examines environmental pollution and disposal methods around the country.

2:20 p.m. *Why We Conserve Energy: The Witch of the Great Black Pool* (12 min., color). An animated film on the importance of conserving our natural resources.

2:40 p.m. *Nuclear Watchdogs* (13 min., color). An exploration of nuclear reactor safety and the system of regulations in the United States.

3:00 p.m. *On American Soil* (29 min., color). American farms produce enough food to meet our domestic needs and dominate the international grain market as well. However, this abundance is achieved at a great cost to the fertile topsoil. Although it's less visible, erosion is worse today than in Dust Bowl days.

For further information, call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

An Education Department Public Program.

Fossils, True and False

Identification Day

Saturday, June 11
1:00—4:30 p.m.
Dana Education Wing
First floor
Free



Bring your shells, rocks, insects, leathers, bones, and other artifacts of dubious origin to the only event of its kind in New York City. Museum experts will identify curios from basements and backyards, exotic souvenirs from vacations past, flea-market finds, and other natural objects at the Museum's tenth annual Identification Day.

A team of six scientists from the Departments of Mammalogy, Invertebrates, Mineral Sciences, Anthropology, and Entomology will attempt to identify, analyze, and give the history, classification, and structure of objects put before them. Identification Day was instituted

in response to numerous requests from the public for information about items collected all over the world. Last year's offerings ranged from dinosaur teeth and a giant, 100-million-year-old petrified clam to a 25-pound "fossil" with promisingly intricate markings that proved to be a prosaic hunk of concrete.

No appraisals will be given, nor will the Museum identify gemstones.

For additional information, please call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation. An Education Department Public Program.

Celebrate Middle East Month



"A Glimpse of Egypt" on June 4 and 5

Religion and mythology, art and traditional dances are discussed and demonstrated this month in a celebration of Middle Eastern cultures. These presentations are repeated several times between 1:00 and 4:30 p.m. in the Leonhardt People Center. Seating is limited and on a first-come, first-served basis, and programs are subject to change.

Middle East Month is made possible in part by a gift from the family of Frederick H. Leonhardt. For further information, call (212) 769-5182.

June 4 and 5

The Dances of Kurdistan, performed by members of the Kurdish Program, Cultural Survival.

Medieval Persian Ceramics, a slide-talk by Paul Sanlaçon.

A Glimpse of Egypt, a slide-talk by L.D. Frazier, featuring historical and modern-day reflections.

June 11 and 12

Middle Eastern Women's Dances, a performance by Kadija al-Nakhla (June 11 only).

Origins of the Mosque, a slide-talk by Virgil Bird on the development of Arabic, Persian, and Turkish mosques.

Middle Eastern Myth and Symbols in Western Literature, a slide-talk by Charles Grippi.

Women of Valor, two dramatic portraits of Israeli women by Judith Goldsmith (June 12 only).

June 18 and 19

Women of Valor, two dramatic portraits of Israeli women by Judith Goldsmith.

Veiled Women, a slide-talk and hands-on demonstration by Kadija al-Nakhla on the traditional and historical use of the veil in the Middle East.

Dance and Culture in Israel, a slide-talk by Ayelet Sela on the role of dance in Israeli culture.

June 25 and 26

The Dances of Kurdistan, performed by members of the Kurdish Program, Cultural Survival.

The World of Islam, a slide-talk by Paul Sanlaçon surveying religious and secular life in the Muslim world.

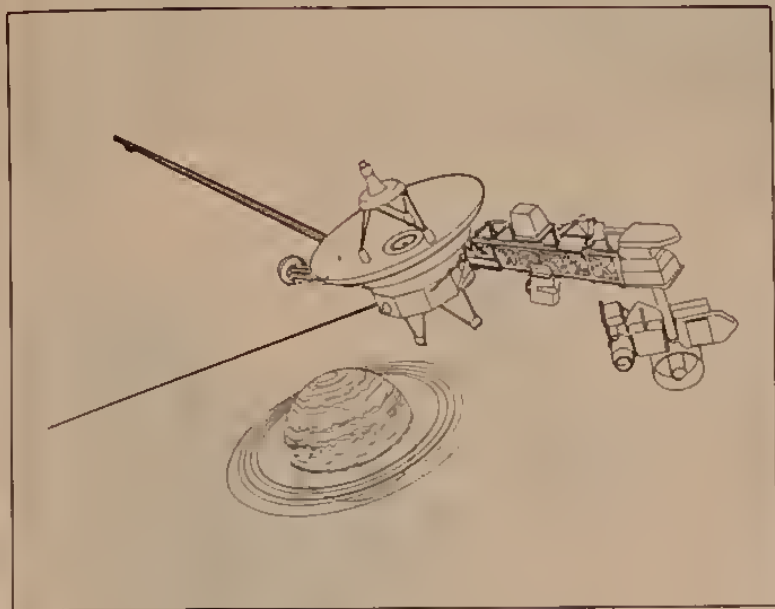
The Children of Saladin, a slide-talk by Vera Saeepour on Kurdish culture.

An Education Department Public Program.



"Middle Eastern Women's Dances" on June 11

Happenings at the Hayden



Sky Shows

The Hayden Planetarium presents a double-feature Sky Show through June 26: *Cosmic Illusions* and *The Space Telescope*.

Cosmic Illusions, narrated by Harry Blackstone, Jr., reveals nature's sleight of hand — the making of a "blue moon" and the appearance of the sun at the horizon after sunset. The show also recounts the story of the *Amazing Disappearing Martians* and reveals the secrets behind many UFO pictures.

NASA is scheduled to launch a telescope that will remain in orbit for at least 15 years, scanning alien atmospheres, searching for planets in new solar systems, and looking for clues to the birth and ultimate fate of the universe. *The Space Telescope: New Eyes on the Universe*, narrated by Kirk Douglas, describes this extraordinary device, which will see to the edge of the universe.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

Please note that there will be no Sky Shows on June 27 and 28 during the installation of the new show, *Encounter: The Search for Extraterrestrial Intelligence*, which will open to the general public on June 29. See page 3 for details of a Members' private viewing.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. Card-

board Rocket will be shown at noon on Saturday, June 11. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Museum Notes



Gothenburg Art Gallery

"Fisherman in Boat" is on display at the Naturemax Gallery's In the Realm of the Wild: The Art of Bruno Liljefors.

Special Exhibitions and Highlights

Rural Korean life in the 1900s is explored in *The Once and Future Korea*. Archival photographs from a 1912 expedition by explorer and naturalist Roy Chapman Andrews are featured, along with contrasting images of Korea in the 1980s. Through September 25, in the Akeley Gallery.

Two outstanding collections of colored diamonds are on temporary display in the Morgan Hall of Gems. The largest and most comprehensive suite of colored diamonds on display in a public institution, the exhibit features 153 diamonds in a variety of colors and shapes.

In the Realm of the Wild: The Art of Bruno Liljefors features paintings and drawings of waterfowl, birds of prey, and game animals of Sweden, the artist's native land. In the Naturemax Gallery through August 7.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.75 for cars and \$8.75 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sun-

day after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Closed on weekends.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of white-water rafting in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest indoor movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*. Through June 24.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk, starting at 11:45 a.m. Limited to ages 5 through 10.

Birthday Parties at the Museum. Give your child a party to remember — one that sends young imaginations on a prehistoric romp with the dinosaurs, through the rain forests of Africa, on an outer-space odyssey, or on a white-water raft ride through the Grand Canyon. Children between the ages of 5 and 10 can choose from four themes: the dinosaur party, the safari party, the star party, or the Grand Canyon party.

The parties are two hours long and are held after 3:30 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$195, plus \$10 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5600.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, *FACES* features a variety of activities, including games, stories, puzzles, and recipes. *FACES* is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order payable to *FACES* (add \$5 for foreign orders) to: *FACES*, Dept. 722, 20 Grove Street, Peterborough, NH 03458.

Sun

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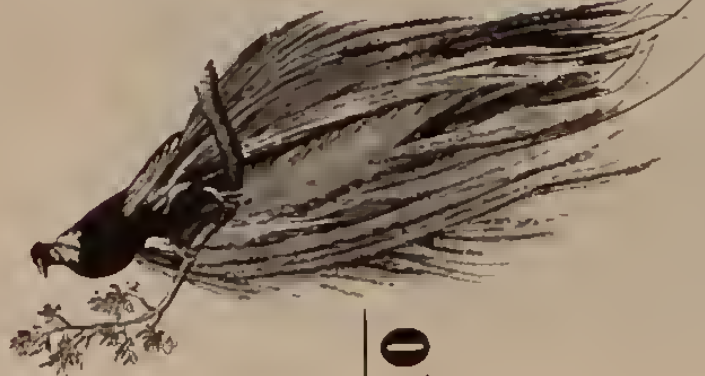
Thu

Fri

Sat

4 11:00 a.m. New York Map Society. Room 319. Free.

11:00 a.m. to 5:00 p.m. Dinosaur Day on the Great Lawn of Central Park. This recreational and educational program is sponsored by the American Museum and the City's Department of Parks and Recreation. Rain date: June 5. Call (212)360-3444 for further information.



11 1:00 to 4:30 p.m. Middle Eastern Women's Dances: Origins of the Mosque; Middle Eastern Myth and Symbols in Western Literature. Middle East Month at the Leonhardt People Center. Free. Page 6.

1:00 to 4:30 p.m. Identification Day. Dana Education Wing, first floor. Free. Page 6.

18 1:00 to 4:30 p.m. Women of Valor: Veiled Women; Dance and Culture in Israel. Leonhardt People Center. Free. Page 6.

25 1:00 to 4:30 p.m. The Dances of Kurdistan: The World of Islam; The Children of Saladin. Middle East Month at the Leonhardt People Center. Free. Page 6.

June 1988

American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

5 11:00 a.m. to 3:30 p.m. A Family of Environmental Films. Kaufmann Theater. Free. Page 6.

1:00 to 4:30 p.m. The Dances of Kurdistan: Medieval Persian Ceramics, A Glimpse of Egypt. Middle East Month at the Leonhardt People Center. Free. Page 6.

Last chance to see Tiffany: 150 Years of Gems and Jewelry in Gallery 1

12 1:00 to 4:30 p.m. Origins of the Mosque; Middle Eastern Myth and Symbols in Western Literature; Women of Valor. Middle East Month at the Leonhardt People Center. Free. Page 6.

2:00 p.m. Korea. A Public Symposium. Kaufmann Theater. Free. Page 4.

2:00 p.m. New York Shell Club Room 419. Free.

19 1:00 to 4:30 p.m. Women of Valor: Veiled Women; Dance and Culture in Israel. Leonhardt People Center. Free. Page 6.



26 1:00 to 4:30 p.m. The Dances of Kurdistan: The World of Islam; The Children of Saladin. Middle East Month at the Leonhardt People Center. Free. Page 6.

Last chance to see Cosmic Illusions and The Space Telescope: New Eyes on the Universe at the Hayden Planetarium. Page 7.

8 7:00 p.m. New York Mineralogical Club. Leonhardt People Center. Free.

7:00 p.m. Santeria and Its Uses in Clinical Psychology. First in a three-part series. Kaufmann Theater. Free. Page 5.

15 7:00 p.m. Psychology of Animal Sacrifice. Second in a three-part series on Santeria. Kaufmann Theater. Free. Page 5.

22 7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

7:00 p.m. Spirit Possession. Third in a three-part series on Santeria. Kaufmann Theater. Free. Page 5.

29 1:30 p.m. Encounter: The Search for Extraterrestrial Intelligence, a new Sky Show, opens at the Hayden Planetarium. Page 3.



10

9

16 7:30 p.m. Spanish Dance. Members' Evening Program. Main Auditorium. \$5 for Members, \$8 for non-Members. Page 1.

The American Museum Restaurant will be open prior to this program.

17 2:00 p.m. New York Herpetological Society. Kaufmann Theater. Free.

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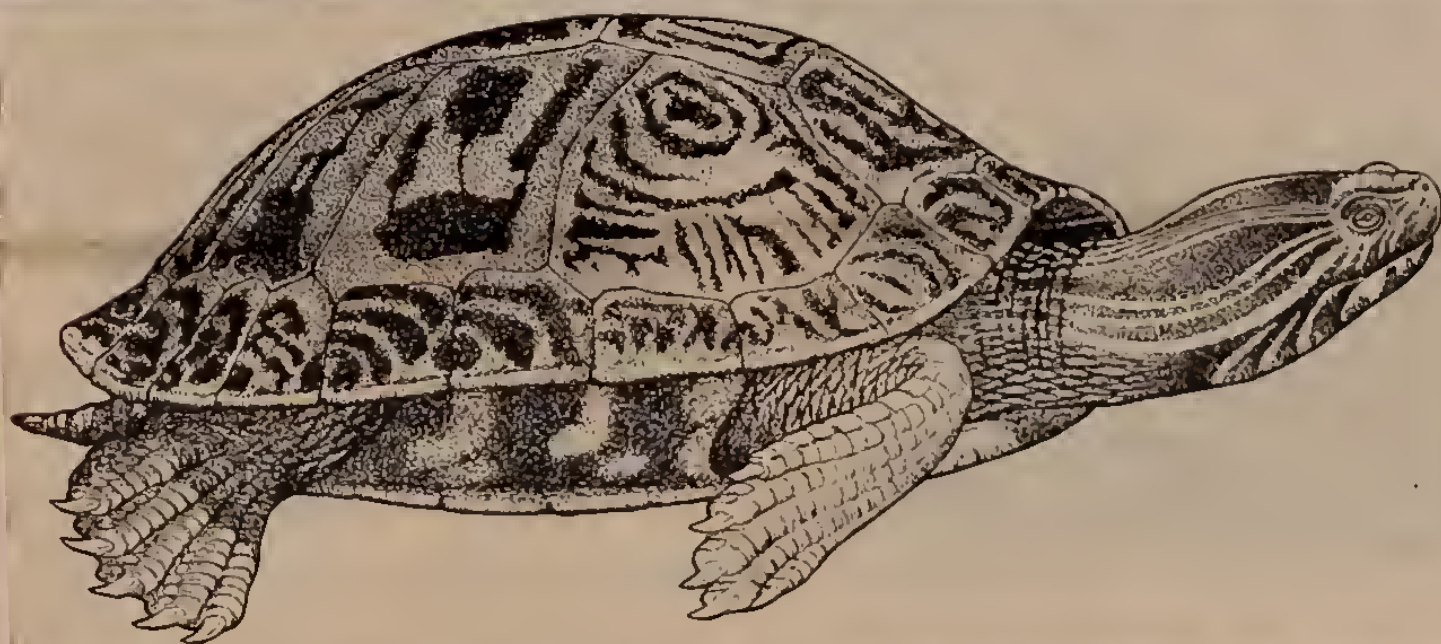
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13

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 7 July-August 1988



A new exhibition features a wide array of extinct animals, from the fantastic Dsungaripterus (upper left) and Psittacosaurus (upper right) to the somewhat more familiar-looking Mongolemys.

From the Land of Dragons An Exhibition of Chinese Fossils

Members' preview: Thursday, July 21, 6:00 to 7:15 p.m.

Open to the general public: Friday, July 22

Gallery 1

Archaic flying reptiles, a primitive rhinoceros, one of the oldest mammals ever discovered, and dinosaurs of all sizes will appear in Gallery 1 this month. The animals range from a diminutive horned dinosaur species that's only a few feet long to a 40-foot behemoth that resembles the *Brontosaurus*.

From the Land of Dragons, the most comprehensive exhibition of Chinese fossils ever displayed in the Western Hemisphere, is the triumphant issue of an international cooperative effort. The American Museum and the Institute of Vertebrate Paleontology and Paleoanthropology in Beijing combined their

resources to produce a fascinating exhibition of fossils that illustrates the evolutionary relationships of animals.

Two major groups of fossils are represented — one group consists of turtles, crocodiles, dinosaurs, and their extinct relatives; the other consists of mammals and their extinct relatives. The exhibition traces the fossils' relationships to one another, as well as to living groups.

Among the highlights is a 24-foot slab of rock with a cluster of nine skeletons of dicynodonts, which are distant relatives of mammals. Eight feet long, with a massive pair of tusks and a turtlelike beak, dicynodonts vanished about 200 million

years ago. Their fossils provide evidence of continental drift and their remains have been discovered on every continent. This exhibition will be the first time that dicynodonts from all the continents are displayed together.

Members are invited to a preview of *From the Land of Dragons* on Thursday, July 21, between 6:00 and 7:15 p.m. After the preview, four renowned paleontologists will present a Members' program that examines the evolutionary relationships between the Chinese fossils. For details, please see page 2.

The exhibition will be on display through January 1.

Música Tradicional

Two evenings of music at the Museum celebrate the Latin rhythms of New York. Puerto Rican and Calambian folk music will be performed by Los Pleneras de la 21, Impacta Vallenata, and Conjunto Meladía Tropical.
Page 4

Wise Women

An anthropologist will describe her studies of Asian women who build their professional reputations on their skills as judges of character. Laurel Kendall will present the Members' program *Shamans, Matchmakers, and More Conventional Korean Women*.
Page 3

It's Over Your Head

Sit back, relax, and fix your gaze on the ceiling. No, it's not just another daydream, it's the true story of the ongoing quest for life beyond the stars. Members are invited to a private viewing of the new Sky Show *Encounter: The Search for Extraterrestrial Intelligence*.
Page 5

Arts and Crafts

Looking for a new and unusual hobby? Quilting, drum making, and tap dance are among the multicultural offerings of the Department of Education's *Fall Workshops*.
Page 6



1988 Margaret Mead Film Festival

Mon.—Thurs., Sept. 26–29

Screenings begin at 6:30 p.m.

\$4 per evening for Members

\$5 per evening for non-Members

The complete program will appear
in the September issue of *Rotunda*.

**53 Documentary Films
37 Premieres
Filmmakers from 15 nations**

Extend your vision of the world.

Festival Information: (212) 769-5305

Chinese Fossils

Thursday, July 21

7:30 p.m.

Main Auditorium

\$3 for Members, \$4 for non-Members

After surveying the Museum's newest exhibition, Members can attend a related program to hear expert views on the evolutionary significance of the animals on display.

The Members' preview of *From the Land of Dragons* — which will take place on Thursday, July 21, between 6:00 and 7:15 p.m. (see page 1 for details) — will be followed by a program in which noted paleontologists offer an evolutionary perspective on the Chinese fossils.

Dr. Eugene Gaffney will begin the program with a discus-

sion of the role of Chinese fossils in vertebrate evolution. Dr. Gaffney, who is with the Museum's Department of Vertebrate Paleontology, is a resident curator of the exhibition. (Dr. Lowell Dingus, of the Departments of Vertebrate Paleontology and Exhibition, is co-curator.) Dicotyledons, the herbivorous relatives of mammals that are among the exhibition's most spectacular displays, will be described by Dr. Gillian King, assistant curator at the University Museum of Oxford University, England. Dr. Timothy Rowe, assistant professor in

the Department of Geology at the University of Texas, will discuss advanced mammal-like reptiles and the origin of mammals. Dr. Jacques Gauthier, assistant curator in the Department of Herpetology at the California Academy of Sciences, will conclude the program with a presentation on the evolution of dinosaurs and their relatives.

Each presentation will be about 20 minutes long. To register for the Members' preview of *From the Land of Dragons* and the program, please use the Summer Members' programs coupon on page 3.

ROTUNDA

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Kindred Spirits

Thursday, August 11

7:30 p.m.

Main Auditorium

\$3 for Members, \$5 for non-Members

"If you do it well, your reward is three cups of wine. If you do it badly, your reward is three slaps in the face."

Korean proverb

In this case, "it" refers to matchmaking. The successful Korean matchmaker is a figure of social consequence; besides the cups of wine, she may command great respect as well as a considerable fee. But woe be- tide the failed matchmaker, whose mismatch may excite such extreme recriminations that a few physical clouts seem paltry in comparison.

A similarly risky occupation is that of the Korean shaman. Like the matchmaker, she relies on her abilities as an accurate judge of character. She sizes people up, draws them out, and as- sesses their sources of pride and lear. Both professions require a show of faith between the agent and her clients, and because of this, both shaman and match- maker are sometimes regarded as tricksters and charlatans.

These related roles will be ex- amined in the Members' pro- gram *Shamans, Matchmakers, and More Conventional Korean Women*. The program will be presented by Laurel Kendall, assistant curator in charge of Asian ethnographic collections in the Department of Anthro- pology. Dr. Kendall began her observations of Korean society as a Peace Corps volunteer in 1971, and over the last decade and a half she has focused on the role of women in contempo- rary and traditional Korean cul- ture. Her initial studies of women and ritual led her to a study of contemporary mar- riage practices and sparked her interest in matchmakers.

Dr. Kendall studied a spec- trum of matchmakers, from the



A Korean wooden doll from the early twentieth century, wearing the costume and colffure of a young married woman.

highly professional variety who cater to the upper classes to the amateurs who make up the matchmaking majority. Al- though only a few Korean women become shamans, many women engage in match- making.

Both shaman and match- maker are usually women, and their services are more fre- quently and freely sought by other women. In both profes- sions, the agent acts as a medi- ator between her clients and the unknown — the shaman with the realm of the supernatural and the matchmaker with pro- spective spouse and in-laws.

Both professionals, by the na- ture of their work, stand outside conventional Korean society. Their outspokenness and calcu- lation have more in common with the women of some Ko- rean folklore than with their culture's ideal of passive femi- ninity. Both roles are endlessly fascinating, and the program promises a rare venture into a world where traditional and modern mores are deeply en- meshed.

To register for *Shamans, Matchmakers, and More Con- ventional Korean Women*, please use the Summer Members' programs coupon.

A Gift for the Future

Give a gift that will help en- sure that the Museum will be here for your children's chil- dren, just as it is here for you to- day. It is a gift that will not only give you the satisfaction of pro- viding long-term support for the Museum but may give you spe- cial tax advantages as well.

Through your will, you can provide a legacy for the scien- tific work, educational pro- grams, and exhibits at the Mu- seum. You will join an increas- ing number of fellow Members who have decided to make a contribution in this thoughtful way.

Most bequests are for unre- stricted purposes to the general fund. The gift may be of cash, securities, real estate, life insur- ance, tangible personal prop-

erty, or other assets.

We'll make it easy for you to consider the bequest option by sending you information about the different kinds of bequests and the wording that can be used in your will.

If you would like to know more about how to make a be- quest or if you have already in- cluded the Museum in your will, please call Chris Strome at (212) 769-5151, or use the coupon below.

Please send me information about how I can make a bequest.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (include area code): _____

Send this coupon to Bequests, Development Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Summer Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Mu- seum of Natural History and mail with a self-addressed, stamped envelope to: Summer Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Sunset Walking Tours: Riverside Park. Tuesday, July 12, 3:00, 4:30, 6:00, and 7:30 p.m. \$7, and open only to Partici- pating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 3:00 _____ 4:30 _____ 6:00 _____ 7:30

Number of tickets at \$7: _____

Total amount enclosed for program: _____

Sunset Walking Tours: Lincoln Center. Tuesday, July 19, 3:00, 4:30, 6:00, and 7:30 p.m. \$7, and open only to Partici- pating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 3:00 _____ 4:30 _____ 6:00 _____ 7:30

Number of tickets at \$7: _____

Total amount enclosed for program: _____

From the Land of Dragons. Thursday, July 21, 7:30 p.m. \$3 for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Mem- bers' price. Associates are entitled to one. All additional tickets are \$4. This ticket will admit you to the exhibition preview as well.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

Members' Private Viewing of Encounter: The Search for Extraterrestrial Intelligence. Thursday, July 28, 6:00 and 7:30 p.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indi- cate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 7:30 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

Shamans, Matchmakers, and More Conventional Ko- rean Women. Thursday, August 11, 7:30 p.m. \$3 for Mem- bers, \$5 for non-Members. Participating, Donor, and Contrib- uting Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to dif- ferent Museum departments in the same envelope. Thank you for checking.

Música Tradicional

The Museum's Department of Education, in association with City Lore: The New York Center for Urban Folk Culture, presents *Música Tradicional*, a celebration of Puerto Rican and Colombian folk music.

These programs are made possible in part by a gift from the Henry Nias Foundation. For further information, please call (212) 769-5315.

Los Pleneros de la 21 and Impacto Vallenato

Wednesday, July 13

7:30 p.m.

Main Auditorium

Free

Bomba and *plena* are the only distinctive African-derived music and dance forms native to Puerto Rico. These forms developed in coastal towns where large communities of blacks settled to work at the sugar cane mills.

Bomba, which is often performed at social gatherings, is a dance for couples in which the woman performs relatively fixed steps while her partner exhibits his improvisational dance skills and "dialogues" with the solo drummer. The traditional *bomba* ensemble consists of *maracas*; *fua* (a pair of sticks that are struck on a hard, resonant surface); one or two low-pitched, barrel-shaped drums called *buleadores*, which provide a fixed supporting rhythm;

and a higher-pitched, improvisational drum called a *subidor*. *Bomba* texts are usually on themes relating to everyday life, and the musical form is call and response between the lead singer and chorus.

Although also of African origin, *plena* incorporates more European musical elements than *bomba*. *Plena* began as street music but eventually moved into bars and clubs and has come to be associated with nightlife. *Plena* is a dance for couples, but the dance itself is not as fundamental to the music as in *bomba*. Typical *plena* instruments are the *panderetas*, hand-held frame drums; the *güiro*, which plays a fixed harmonic rhythm; and a harmonica or accordion. Conga drums have been added in recent years, and a guitar or *cuatro* may also serve as accompaniment. *Plena* texts are on contemporary or historical themes and are often a record of community oral history.

Los Pleneros de la 21 was formed in New York City by Juan Gutierrez and a group of Puerto Rican community musicians who are dedicated to the preservation and performance of *bomba* and *plena*. They perform in a New York style that is firmly rooted in the traditions of Puerto Rico.

Vallenato is a musical expression of northern Colombia that originated at the turn of the century in the town of Valledupar



Los Pleneros de la 21 perform the folk music of Puerto Rico.

(Upar Valley) and eventually spread throughout the Atlantic coast. Initially, the *vallenato* ensemble consisted of guitar, *guacharaca* (a scraped gourd), and the *caja*, a drum of African origin. The accordion, now central to *vallenato*, was introduced to Colombia in the 1920s by Dutch and German immigrants. Throughout the years, other instruments were added to the traditional ensemble, including the electric bass, conga drums, and timbales. *Vallenato* flourishes as a vital cultural expression in the Colombian community of New York City.

Vallenato consists of four basic rhythms that vary in structure: *paseo*, *puya*, *merengue*, and *son*. Its lyrics deal with a variety of subjects that range from romantic themes to the history of *vallenato* itself. Among the most important *vallenato* com-

posers and interpreters are Emiliano Zuleta, Rafael Escalona, Alfredo Gutierrez, Alejo Duran, and Juancho Polo Valencia.

Impacto Vallenato was formed in 1986 by Rafael and Victor Velasquez in order to foster a greater understanding and appreciation of this folk music. The members of the quintet are natives of the Atlantic coast of Colombia.

Conjunto Melodía Tropical

Sunday, July 17

2:00 and 4:00 p.m.

Kaufmann Theater

Free

Jíbaros is an indigenous term used mainly to describe the people of the interior rural areas

of Puerto Rico. They are of primarily Spanish ancestry, and *jíbaro* music is rooted largely in Spanish-derived musical styles. It includes *aguinaldos* (Christmas music), *danzas* (court music), and various types of *seises* (six-couple dances).

In the countryside, *jíbaro* music is used for everyday entertainment, but in the cities its primary settings are special occasions such as weddings, baptisms, and holidays. In New York City, *jíbaro* musical expressions found an outlet in the hometown social clubs formed in the 1940s, where the music was performed for informal entertainment as well as for special occasions.

An Education Department Public Program.

Join the Party

Every day is somebody's birthday, and almost every day at the Museum, children between the ages of 5 and 10 take guided tours of the exhibition halls, play special games, enjoy refreshments, and take home unique souvenirs in a favor bag full of delightful surprises.

The children's birthday party program is open only to Participating, Donor, and Contributing Members. All parties are led by a Museum birthday party coordinator, who consults with the parents beforehand to review details and confirm that the child's tastes and needs will be satisfied. On the day of the party, we handle everything—all you need to do is bring the cake and help escort the children during tours of the exhibition halls.

Because children's interests are as diverse as the Museum's exhibits, kids can choose from three exciting party themes: a Star Party at the Planetarium, a Dinosaur Party, or a Safari Party.

Star Parties are highlighted by a viewing of one of the Sky Shows at the Planetarium. The partyers can take a guided tour of permanent exhibitions such as the Hall of the Sun. Activities include a game of musical planets, designing a space mural,



A pair of Dinosaur Party "hosts."

and constructing cardboard rockets or flying saucers.

The most popular of our parties features a look at *Tyrannosaurus rex*, the dinosaur mummy, and a nest of dinosaur eggs. Kids may touch a dinosaur skull, play Duckbill, Duckbill, Brontosaurus (a prehistoric version of Duck, Duck, Goose), or pin the plates on the *Stegosaurus*. In addition, Dinosaur Partyers may create a fossil of their very own.

Elephants, zebras, giraffes, and other wild animals are among the Museum's exhibits, and Safari Parties explore the Hall of African Mammals to seek them out. Safari Party activities include making a mural of African environments and animals, designing African

masks from feathers and beads, and handling exotic safari items like a giant ostrich egg, a warhog tusk, and a mask from Zaire.

The parties are two hours long and are at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. The cost includes all materials, decorations, juice, and favor bags. Lunch is available at an extra charge, and the cake is not included.

Please call the Membership Office at (212) 769-5600 for reservations. We are now booking for September through November.

New Views of Old New York

Walking Tours of Riverside Park

Tuesday, July 12

3:00, 4:30, 6:00, and 7:30 p.m.

\$7, and open only to Participating, Donor, and Contributing Members

Walking Tours of Lincoln Center

Tuesday, July 19

3:00, 4:30, 6:00, and 7:30 p.m.

\$7, and open only to Participating, Donor, and Contributing Members

ALL TOURS SOLD OUT FROM JUNE ROTUNDA

New York City landmarks take on a fresh aspect with the Members' *Sunset Walking Tours*. These fascinating forays offer insights into the geology, geography, and architecture of some sights that New Yorkers either take for granted or have never noticed. Urban geologist Sidney Horenstein, senior scientific assistant in the Department of Invertebrates, will conduct the explorations of Riverside Park and Lincoln Center.

During the tour of Riverside Park, which will center on the area between 72nd and 86th streets, Horenstein will explain how the park was transformed from a dreary wasteland of railroad tracks to a delightful urban

playground. He will also discuss the naturalistic design of Riverside Drive and the origins and regional geology of the Palisades and Hudson River.

The Lincoln Center tours will highlight local history and architecture, including a look at the exterior of Saint Paul the Apostle Church and an account of its history. The survey of the area from 59th Street and northward will also consider its geology and geography, with particular emphasis on the variety of building stones used in local architecture.

To register for the *Sunset Walking Tours*, please use the Summer Members' programs coupon on page 3.

Summer Workshops for Children

\$10, and open only to Participating, Donor, and Contributing Members

Educational fun awaits young Members in the Summer Workshops for Children. Kids can choose from a variety of Museum activities — an interplanetary excursion, exercises in animal-like locomotion, and adventures in puppetry and mask making. These workshops will be conducted by actress and puppeteer Sarah Germain, who is also a coordinator of Museum birthday parties. Enrollment is

limited; please use the coupon below to register.

Creative Movement Ages 5-7 Tuesday, July 12 10:30 a.m.-12:00 p.m.

The movers and shakers of this workshop will get acquainted with physical warm-ups and movement games, and then they'll explore the Mu-

seum for a look at the variety of ways in which animals move. Their tours will feature a dive into the Hall of Ocean Life to observe how sea creatures get around, a safari in the Hall of African Mammals, and a flight through the Hall of Birds of the World. The children will improvise costumes and use creative movement to act out the African folktale "How Anansi the Spider Learned to Fly." Their performance, which parents can attend, will take place in the last 15 minutes of the workshop.

Star Hunt Ages 7-10 Wednesday, July 13 10:30 a.m.-12:00 p.m.

The Secret of the Cardboard Rocket, a Sky Show that takes young audiences on an outer-space odyssey, highlights the workshop for Star Hunters. The kids will go behind the scenes at the Planetarium for a quick look at how Sky Shows are made, and they'll take a Star Hunt tour that focuses on the Planetarium's permanent exhibits. Participants will also learn about our solar system and galaxy through activities like drawing a giant mural and creating their own souvenir spacecraft.

Shadow Puppetry Ages 6-12 Tuesday, July 19 10:30 a.m.-12:30 p.m.

Experiments with hand and body shadows on a screen will introduce youngsters to shadow puppetry, an ancient and delightful form of entertainment. The participants will use a South Indian shadow puppet and learn a traditional song, visit the Museum's collection of Southeast Asian shadow figures in the Hall of Pacific Peoples, and make jointed shadow puppets of their own. All participants will have the opportunity to use their new puppets to present an experimental show on the shadow screen.

Mask Making Ages 6-10 Wednesday, July 20 10:30 a.m.-12:00 p.m.

Beginning with a look at the Museum's bountiful collection of masks from all over the world, this workshop offers children an overview of the diversity and similarity of human cultures. The mask collections featured on the tour include those in the halls of Pacific Peoples, Man in Africa, and Northwest Coast Indians. The mask makers can choose from prepared designs that relate to the cultures they've explored, or they can design their own masks with cardboard, felt markers, and collage materials. At the conclusion of the workshop, the group will use their masks to illustrate the Native American folktale "How Coyote Put the Stars in the Sky."



Kids can create their own puppets.

In the Realm of the Wild The Art of Bruno Liljefors of Sweden

In the Naturemax Gallery Through August 7



Crows, by Bruno Liljefors.

Visitors to the Naturemax Gallery do not go unobserved — a pair of crows awaits just inside the door. One bird offers a shy greeting, showing only the luxuriant plumage of its gray-and-black back. Its shiny-beaked companion, however, appears to note each passer-by with a gleaming and unblinking eye.

The gallery's other portraits — including those of partridges, foxes, ducks, and dogs — are the work of one of Sweden's most influential painters. In *The Realm of the Wild: The Art of Bruno Liljefors* features 45 paintings and 15 watercolors and drawings. Liljefors (1860-1939) cultivated his

childhood interest in wild animals and their environmental adaptations into a distinguished career as a portraitist of waterfowl, birds of prey, and game animals in their habitats.

The exhibition coincides with the 350th anniversary of the founding of the New Sweden Colony in Delaware and is among the approximately 1,000 events that will take place throughout the United States this year in commemoration of the birth of North America's first Swedish colony. The exhibition was organized by the Gothenberg Art Gallery of Sweden and is supported by D. Carnegie & Co. AB and Trygg-Hansa, Stockholm.

Brave New Worlds

Members' private viewing of *Encounter: The Search for Extraterrestrial Intelligence* Thursday, July 28 Planetarium Sky Theater

A "close encounter of the third kind" awaits Participating, Donor, and Contributing Members at the Planetarium. *Encounter: The Search for Extraterrestrial Intelligence* depicts the scientific quest for life beyond the stars — where and how astronomers are searching, the probability of their success, and the type of contact that they anticipate. The show profiles the astonishingly sophisticated equipment that assists scientists in their search, including robot-

operated spacecraft, high-speed computers, and ultrasensitive listening devices. The Members' private viewing will take place on Thursday, July 28. Showtimes are at 6:00 and 7:30 p.m., and admission is \$2.75 for adults and \$1.50 for children. Please use the Summer Members' programs coupon on page 3 to register. For general information on Sky Show times and prices, see "Happenings at the Hayden" on page 7.

Summer Workshops for Children. \$10, and open only to Participating, Donor, and Contributing Members.

Your name: _____
Your child's name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime telephone: _____
Membership category: _____
Number of tickets at \$10 each: _____
Creative Movement (Tuesday, July 12): _____
Star Hunt (Wednesday, July 13): _____
Shadow Puppetry (Tuesday, July 19): _____
Mask Making (Wednesday, July 20): _____
Total amount enclosed: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Summer Workshops for Children, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Fall Workshops

This fall, the Department of Education will present a series of participatory programs for children and adults that offer lessons in traditional crafts, storytelling, and dance. Early registration is advised, for which you may use the coupon below. For further information, call (212) 769-5315. These programs are made possible in part by a gift from the Sidney, Milton, and Leoma Simon Foundation.

For Adults

African Batik

3 Saturdays, Sept. 10, 17, and 24; 1:00–5:00 p.m.
Fee: \$25

Batik is a textile tradition found throughout West Africa. This workshop introduces the historical background of batik and a technique that uses paraffin and commercial dyes. Instructor: Selina Ahoklui.

Calabash Arts: The Shekere

3 Saturdays, Sept. 10, 17, and 24; 12:00–2:00 p.m.
Fee: \$25

Learn how to make a shekere, a musical instrument made from a gourd and beads or shells. The shekere's traditional uses will also be discussed. Instructor: Madeleine Yayodele Nelson.

Afro-Caribbean Dance

3 Sundays; Sept. 11, 18, and 25;
11:00 a.m.–1:00 p.m.
Fee: \$20

This unique dance workshop explores choreography based on rhythms and movements from the cultures of the African diaspora. Instructor: Pat Hall-Smith.

African Drum Making

4 Sundays, Sept. 11, 18, 25 and Oct. 2;
11:00 a.m.–1:00 p.m.
Fee: \$25

Learn how to make a traditional African drum — the heartbeat of African music — that is used in most ceremonies and festivals. Instructor: Kobla Mensa Dente.

The African Mbira

4 Sundays, Sept. 11, 18, 25, and Oct. 2;
12:00–4:00 p.m.
Fee: \$25

The mbira is a box-shaped soundboard played with the thumb and fingers. Students learn to construct and play this traditional African instrument. Instructor: Kevin Nathaniel Hylton.

Traditional Quilting

Section A: Saturday, Sept. 17; Section B: Sunday, Sept. 25;
11:00 a.m.–5:00 p.m.
Fee: \$25 (per section)

Discover the rich heritage of quilting. Complete a project that incorporates techniques from three different cultures: the appliqué technique of the Dahomey people, strip-quilting of Guyana, and patchworking of the southern United States. Instructor: Carmen Lowe.

Tap Dance

3 Saturdays, Sept. 17, 24, and Oct. 1;
11:00 a.m.–1:00 p.m.
Fee: \$20

Learn traditional tap choruses to a background of great jazz standards. Instructor: Mickey Davidson.

Adinkra

2 Saturdays, Oct. 1 and 8;
11:00 a.m.–2:00 p.m.
Fee: \$25

Discover the techniques of African adinkra printing on cloth. Students learn traditional symbols and create new ones. Instructor: Selina Ahoklui.

Coiling

3 Sundays, Oct. 2, 9, and 16; 11:00 a.m.–2:00 p.m.
Fee: \$25

Using natural and synthetic materials, each participant will create a beautiful African or Native American traditional coiled basket and a piece of jewelry. Instructor: Quassia Tukufu.

For Youngsters

Minimum age:
8 years

Caribbean Storytelling and Story Writing

Section A: 2 Saturdays, Sept. 10 and 17; Section B: 2 Saturdays, Sept. 24 and Oct. 1;
11:00 a.m.–1:00 p.m.
Fee: \$10 (per section)

Children will learn how to write, illustrate, and transform a Caribbean story into a performance. Instructor: Cheryl Byron.

Nuba Face Painting

Section A: Sunday, Sept. 11; Section B: Sunday, Sept. 18;
11:00 a.m.–1:00 p.m.
Fee: \$10 (per section)

An introduction to the Nuba ritual of face painting, in which participants will create the symbolic decorations on each other and take home a photograph. Instructor: Quassia Tukufu.

African Basketry

2 Saturdays, Sept. 24 and Oct. 1;
11:00 a.m.–2:00 p.m.
Fee: \$10

A variety of techniques will be demonstrated in this introduction to the traditions of basketry in Nigeria, Zaire, and South Africa. Participants will complete a project of their own. Instructor: Carmen Lowe.

For Adults and Teenagers

Caribbean Mask Making

4 Sundays, Sept. 11, 18, 25, and Oct. 2;
11:00 a.m.–2:00 p.m.
Fee: \$25

In Caribbean countries, masks are used for many celebrations. Participants will create a colorful papier-mâché mask derived from the African, Spanish, and Taino Indian influences on Puerto Rican culture. Instructor: Josephina Monter.

An Education Department
Public Program.

Pre-Columbian Art

From the Ernest Erickson Collection



This Guatemalan ceramic effigy jar, which dates from A.D. 900–1200, depicts a kneeling hunchback.

A special exhibition highlights the early artistic achievements of Native Americans with displays of Aztec wood carvings, Olmec figurines of glittering jade, ceramic sculptures from Oaxaca of humans and animals, and ornate ceramic vessels that were decorated by Mayan artisans with fantastic paintings of people and gods. *Pre-Columbian Art from the Ernest Erickson Collection* illustrates a broad range of regional differences in artistic style and content with 150 artifacts from Mexico and upper Central America.

The magnificent works on display appear through the generosity of a businessman who was born in Finland and shared his interest in the art of pre-Columbian civilizations with the public by lending items from his collections to the museums of New York, his adopted city. The

pre-Columbian collections of Ernest Erickson (1893–1983) form the core of the American Museum's permanent exhibition on the ancient cultures of Mesoamerica, which opened in 1970.

The curator for the special exhibition is N.C. Christopher Couch, who is a visiting professor of art history at Columbia University and an authority on the art and archeology of Mesoamerica. The resident curator is Craig Morris, chairman of the Department of Anthropology.

The exhibition, which is particularly rich in ceramic and stone sculpture from West Mexico and Veracruz and includes a section on South American textiles, will be on display through August 15. It is supported by funds from the American Museum and the Ernest Erickson Foundation.

DEPARTMENT OF EDUCATION Fall Workshops

Name (last): _____ (first): _____

Address: _____

Borough: _____ State: _____ Zip: _____

Telephone (area code & number; day and evening): _____

African Batik (\$25): _____
Calabash Arts (\$25): _____
Afro-Caribbean Dance (\$20): _____
African Mbira (\$25): _____
Traditional Quilting (\$25 per section): _____ A _____ B
Tap Dance (\$20): _____
Adinkra (\$25): _____
Coiling (\$25): _____
Caribbean Storytelling (\$10 per section): _____ A _____ B
Nuba Face Painting (\$10 per section): _____ A _____ B
African Basketry (\$10): _____
African Drum Making (\$25): _____
Caribbean Mask Making (\$25): _____

Total amount enclosed: \$ _____

Please mail a stamped, self-addressed envelope with a check or money order payable to the American Museum of Natural History to: *Fall Workshops*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Museum Notes

Special Exhibitions and Highlights

Rural Korean life in the 1900s is explored in *The Once and Future Korea*. Archival photographs from a 1912 expedition by explorer and naturalist Roy Chapman Andrews are featured, along with contrasting images of Korea in the 1980s. Through September 25, in the Akeley Gallery.

Two outstanding collections of colored diamonds are on temporary display in the Morgan Hall of Gems. The largest and most comprehensive suite of colored diamonds on display in a public institution, the exhibit features 153 diamonds in a variety of colors and shapes.

In *the Realm of the Wild: The Art of Bruno Liljefors* features paintings and drawings of waterfowl, birds of prey, and game animals of Sweden, the artist's native land. In the Naturemax Gallery through August 7.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.



7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Naturemax

Two movies are currently being shown on New York City's largest indoor movie screen.

Grand Canyon: The Hidden Secrets takes audiences on a historical journey through one of the nation's most spectacular natural wonders. In *The Dream Is Alive*, viewers enter NASA spacecraft and observe astronauts at work. Both films are shown daily. Check the Naturemax ticket counter for showtimes. There is a separate admission for each film.

On Wednesday, Friday, and Saturday evenings, *The Dream Is Alive* and *Grand Canyon* will share a double-feature bill at 6:00 and 7:30 p.m.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, from 10:30 a.m. to 12:30 p.m. and from 2:00 to 4:30 p.m., and on Saturday from 1:00 to 4:30 p.m. Closed Sunday and Monday, on Saturday, July 2, and for the entire month of September.

The Discovery Room is closed from July 1 through September 30.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, FACES features a variety of activities, including games, stories, puzzles, and recipes. FACES is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order payable to FACES (add \$5 for foreign orders) to: FACES, Dept. 722, 20 Grove St., Peterborough, NH 03458.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Closed on weekends.

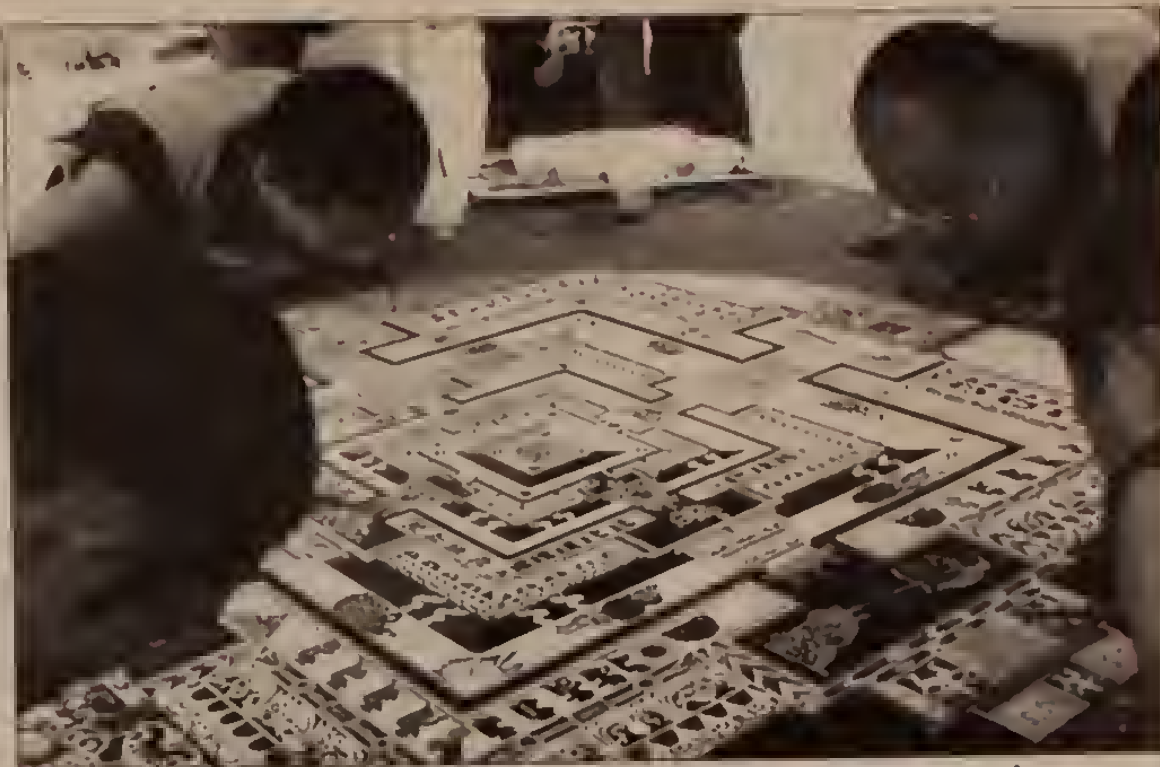
The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to

Tibetan Sand Mandala: Wheel of Time

An Ongoing Live Demonstration

July 9–August 22
Leonhardt People Center
Free



Grain by grain, a magnificent sand mandala will be constructed.

The Venerable Lobsang Samten, personal attendant to the Dalai Lama, will be at the Museum every day but Monday for six weeks while he and an assistant create a colorful seven-foot sand mandala. These intricate geometric designs in the Tibetan Buddhist tradition are believed to be the home of the deities, and the artist's purity and motivation are essential to the concept. This ancient tradition has been performed since the Buddha first taught it over 2,500 years ago.

Over a period of weeks, colored sands are gradually added through the end of a delicate funnel. A thin rod controls the meticulous flow of sand, which can be tapered to a few grains at a time. Visitors will have the opportunity to see the monk at work and to watch the progress on the mandala.

The Frederick H. Leonhardt People Center will house this unique demonstration, and it will be open to all visitors at the following times: on Tuesdays, Thursdays, and Sundays from

10:00 a.m. to 5:00 p.m., and on Wednesdays, Fridays, and Saturdays, from 10:00 a.m. to 8:00 p.m. On Sundays at 2:00 and 4:00 p.m., Lobsang Samten will give 20-minute talks explaining the significance of sand mandalas. Demonstrations will not be held on Mondays. Photography is allowed.

This program is presented in cooperation with Samaya Foundation, Barry Bryant, Director.

An Education Department Public Program.

Happenings at the Hayden

Sky Shows

Encounter: The Search for Extraterrestrial Intelligence tells the true story of the scientific quest for life beyond the stars. See page 5 for details of a Members' private viewing.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 1:00, 2:00, 3:00, and 4:00 p.m., and Sunday at 1:00, 2:00, 3:00, and 4:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at

noon on Saturday, July 16, and on Saturday, August 13. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New

York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Laser Genesis*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun Mon Tue Wed Thu Fri Sat
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July 1988

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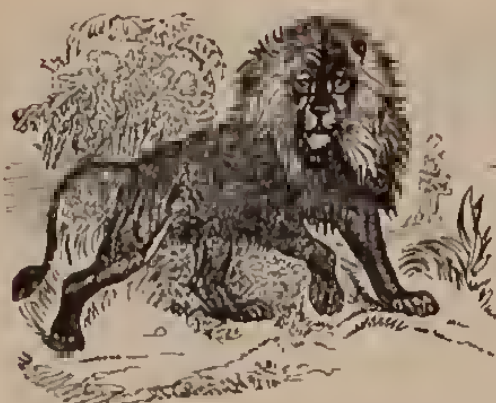
4 Independence Day. The Museum is open. 5

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9 10:00 a.m. The Tibetan Sand Mandala, an ongoing live demonstration, begins in the Leonhardt People Center. Page 7



12 10:30 a.m. to 12:00 p.m. Creative Movement. Tickets required. Page 5.
3:00, 4:30, 6:00, and 7:30 p.m. Members' Sunset Walking Tours: Riverside Park. Tickets required. Page 4.

13 10:30 a.m. to 12:00 p.m. Star Hunt, a summer workshop for Members' children. \$10, and tickets are required. Page 5.
7:30 p.m. Los Pleneros de la 21 and Impacto Vallenato, part of Música Tradicional. Main Auditorium. Free. Page 4.

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17 2:00 and 4:00 p.m. Conjunto Melodia Tropical, part of Música Tradicional. Kaufmann Theater. Free. Page 4.

19 10:30 a.m. to 12:30 p.m. Shadow Puppetry. Tickets required. Page 5.
3:00, 4:30, 6:00, and 7:30 p.m. Members' Sunset Walking Tours: Lincoln Center. Tickets required. Page 4.

20 10:30 a.m. to 12:00 p.m. Mask Making, a summer workshop for Members' children. \$10, and tickets are required. Page 5.

21 6:00 to 7:15 p.m. Members' preview of From the Land of Dragons opens to the general public. Gallery 1. Tickets required. Page 1.
7:30 p.m. Chinese Fossils. Tickets required. Page 1.
The American Museum Restaurant will be open prior to the Members' program.

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27 7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

28 6:00 and 7:30 p.m. Members' private viewing of Encounter: The Search for Extraterrestrial Intelligence. Tickets required. Page 5. The American Museum Restaurant will be open prior to the Members' program.

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August 1988

7 Last chance to see In the Realm of the Wild: The Art of Bruno Liljefors in the Naturemax Gallery. Page 5.

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11 7:30 p.m. Shamans, Matchmakers, and More Conventional Korean Women. Tickets required. Page 3. The American Museum Restaurant will be open prior to this program.

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15 Last chance to see Pre-Columbian Art from the Ernest Erickson Collection, a special exhibition on the second floor. Page 6.

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24 7:00 p.m. Met Grotto; National Speleological Society. Room 319. Free.

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Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 8 September 1987



© New York Zoological Society Photo

Project Snow Leopard

Tuesday, September 29

Main Auditorium

7:30 p.m.

\$4 for Members, \$8 for non-Members

In a Members' program featuring breathtaking slides and absorbing commentary, wildlife biologist Rodney Jackson describes the mission that took him halfway around the world: tracking the elusive snow leopard through the Himalayas of western Nepal.

From base camps at altitudes of 10,000 feet or more, Jackson and his field associates conducted the most comprehensive study of snow leopards — the rarest and least-known of the world's great cats — ever undertaken. Between 1982 and 1985, Jackson trapped five leopards, put radio collars on them, and tracked them as they led their daily lives. Adopting a nomadic lifestyle similar to that of his subjects, Jackson pursued the leopards through cliffs made dangerous

by fusillades of falling rocks and deep snow. His study revealed significant data about the cats' solitary nature, the elaborate system of scent marking and ground scraping they use to find and avoid each other, and their staggered use of shared territory.

The leopards are ideally suited to their environment: their well-developed chests and massive forepaws help them scale the Himalayas's rocky slopes, and their yard-long tails help them maintain their balance as they leap from rock to rock. They eat and hunt alone — primarily in ridges and ravines, where mountain sheep and goats congregate — and seek each other out only to mate.

Jackson's study is vital to the Nepalese government, which is preparing a con-

servation and management plan to save the snow leopard. Ironically, it is the snow leopard's natural camouflage — its luxuriant smoke gray coat, sprinkled with patterns of black spots as distinctive to the bearer as fingerprints are to a human — that attracts the humans who threaten the animal's survival. Although in many parts of Nepal it's illegal to trap the cats, the hunting continues: a coat fashioned from snow leopard pelts can fetch up to 60,000 black-market dollars.

Members will hear about dramatic encounters between the leopards and researchers as well as some brand-new information about the rare cats' habits and ecology. To register for *Project Snow Leopard*, please use the September Members' programs coupon on page 3.

Margaret Mead Film Festival

Four evenings of premiering anthropological films from 17 nations mark the Festival's eleventh year.
Pages 7-10

The Final Frontier

Two new Sky Shows premiere at the Planetarium this month, and a magical reception awaits Members attending the private viewing of *Space Telescope* and *Cosmic Illusions*.
Page 2

A Matter of Courses

Going back to school this month isn't necessarily kids' stuff. The Department of Education offers adult courses in geology, film, world cultures, and a host of other subjects with the *Fall 1987 Lecture Series* (pages 4-6) as well as *Workshops for Young People* (page 11), and *Community Workshops* (page 13).

Bee A-buzz

In *Jack's Big Bug Show*, young Members enter a giant beehive for the inside story. This close-up of the insect world is honeycombed with fun.
Page 3

Sankofa Music

Kimati Dinizulu and his Kotoko Society use traditional instruments from a variety of African cultures to perform Sankofa Music. This free program will take place in the Main Auditorium on Wednesday, September 30, at 7:30 p.m. For further information, please call the Department of Education at (212) 769-5315. This program is made possible in part by a gift from the Grumman Corporation.

Planetarium Double Feature

Cosmic Illusions and Space Telescope

Planetarium Sky Theater
Open to general public: Thursday, September 10

Members' private viewing: Thursday, October 8
6:00 and 8:00 p.m.
\$2.75 for adults and \$1.50 for children



Is it a UFO or a grand deception? Cosmic Illusions, the new Planetarium Sky Show, will tell.

Like a magician, nature performs its own sleight of hand: the sun blazes overhead when it's not really there, one quasar becomes a pair, and the stars quickly change their color. These magic tricks are among the surprises of *Cosmic Illusions*, which also features the story of the Amazing Disappearing Martians and the secrets behind many UFO pictures.

Space Telescope describes a device so sensitive that from New York City, it could spot a firefly at the distance of Sydney,

Australia. Within the next 18 months, NASA is scheduled to launch just such a device into space, where it will scan alien atmospheres, search out new solar systems, and provide clues to the birth and the ultimate fate of the universe.

Live magic tricks are in store for Members attending the private viewing of the new double feature. Tom Ogden, a magician of international renown, will perform before each show on Thursday, October 8. Admission to the Members' private viewing is \$2.75 for adults and

\$1.50 for children. To register, please see the coupon on page 3.

The current Planetarium Sky Show, *The Seven Wonders of the Universe*, will close on Monday, September 7. There will be no Sky Show on September 8 and 9, while the installation of the new show is in progress. (On these two days, there will be no admission fee for the Planetarium's two floors of exhibits.) For showtimes and details of other Planetarium shows, please see "Happenings at the Hayden" on page 15.

La Crystal: The Musical Cutting Edge

Tuesday, October 20
7:00 p.m.

Planetarium Sky Theater
\$5 for Members, \$8 for non-Members

The Hayden Planetarium presents the latest in its series of Members' concerts under the stars, featuring a unique instrument known as La Crystal. Michel Deneuve of Paris will perform works by Mozart, J. S. Bach, and Erik Satie on an instrument made almost entirely of glass. When La Crystal is stroked with moistened fingers, it vibrates with tones similar to those of a stringed instrument. The vibrations are transferred to

metal rods and transmitted to resonators, producing melodies of haunting beauty.

Accompanying the music will be the Planetarium's unique array of vistas from outer space and laser visuals plus a new special effect, a live TV projection of the musician performing against the starry sky.

To register for La Crystal, please use the September Members' programs coupon on page 3.



Classical music of a crystalline quality.

Volunteers

vol-un-teers (völ' ən tīrz') n.

1. people who enter or offer to enter into any service of their own free will.

2. individuals who contribute to the Museum's ongoing research and education as well as to their personal satisfaction.

Join the staff of 500 strong

who share their time and talents. If you're interested, please call the Volunteer Office at (212) 769-5566 for an application.

Origami Special Sessions

The Friends of The Origami Center of America, which resides autonomously here in the Museum, offers Special Sessions throughout the fall on selected Saturday and Sunday afternoons. Instruction at each session is independent of all other sessions and at varying

levels of sophistication. All sessions, from September 26 through mid-December, will be held in the Museum.

Class size is limited, admission is through pre-registration only, and a fee will be charged. For a Special Sessions brochure, please send a self-

addressed no. 10 business envelope with two first-class stamps to: Friends of the Origami Center of America, Room FS3, 15 West 77th Street, New York, NY 10024-5192. Registration will be conducted on a first-come, first-served basis.

ROTUNDA

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September 1987

Henry H. Schulson — Manager of Membership Services
Donna Bell — Editor
Angela Soccadato — Designer
Rita Campon — Copy Editor
Peter Zelaya — Editorial Assistant
Alan Temes — Editorial Adviser

Rotunda, a publication for Participating, Donor, and Contributing Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Tel. (212) 769-5600 © 1987 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please return to the Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Printed by Waldon Press, Inc., New York.

A Flea in Your Ear

Sunday, September 27
1:30 and 3:30 p.m. (both shows for families)
Kaufmann Theater
Free and open only to Members

Jack is back to bug you with a lively Members' family program. Geared toward children between the ages of 4 and 12, Jack's Big Bug Show is an audience participation program that takes a larger-than-life look at the insect world.

An insect safari opens the show, as big bug hunter Jack Branagan conducts a search for the world's largest bug. The discovery of lovable Leroy, an eight-foot insect puppet with antennae, compound eyes,

wings, and stinger spiracles, leads to a discussion of insect anatomy that's full of fun and surprises.

The on-stage hatching of an egg and emergence of a caterpillar, along with vivid slides of the life cycle of the monarch butterfly, illustrate the process of metamorphosis. Jack explains how the majority of insects play an important part in the balance of the ecosystem, describing the ways in which helpful insects are used to curb

the spread of harmful ones. Branagan, a beekeeper himself, will also bring a giant hive (without the bees) for Members to inspect.

A former elementary school teacher, Jack Branagan entertains his young audiences while educating them. Members may recall his popular program from last fall, *The Ice Age and Its Mammoth Hunters*.

To register for Jack's Big Bug Show, please use the adjacent coupon.

Members' Tour of the Month

The Eskimo: Life and Art

Free and open only to Participating, Donor, and Contributing Members

It's bleak and bitter to an outsider. But to a native, the harsh surroundings abounded in materials for housing, weapons, tools, and clothing. The Eskimo respected their environment and believed it to be populated by spirits whose bounty they enjoyed. To keep in tune with the spirit world, the Eskimo transformed common items of utility into objects of grace and beauty.

The glorification of nature through art is the theme of the October Members' Tour of the Month, *The Eskimo: Life and Art*. The tour is presented in conjunction with the coming exhibition *Ancient Eskimo Ivories of the Bering Strait* (opening in the Naturemax Gallery on Friday, October 9), which features numerous prehistoric ivories of outstanding sculptural quality and complexity.

The tour begins at the northern limit of the Pacific Ocean near the Arctic Circle, by way of a diorama in the Hall of Oceanic Birds that depicts the craggy cliffs of the Bering Strait. From there, the tour proceeds to the Hall of Ocean Life for a look at the walrus, seal, and polar bear, which are among the animals that the Eskimo hunted and reproduced in their art.

In the Hall of Eskimos, Members can observe a traditional culture that existed in relative isolation until the early twentieth century. Kayaks, harpoons, and models of Eskimo houses are among the Hall's many features, including a stunning display of Eskimo apparel. Fashioned from the skins of seal and caribou, the clothing is styled for aesthetic appeal as well as practicality.

The tour concludes in the exhibition *Ancient Eskimo Ivories of the Bering Strait*. In this distinctive art form, engraved designs and relief carvings often represent interrelationships of living things with the spirit world. Knives, needle cases, and snow goggles are just a few of the richly ornamented ivories on display.

The tours are conducted by professionally trained volunteer Museum Highlights Tour guides, and each tour lasts ap-

proximately one hour. To register, please use the adjacent coupon. This tour is not recommended for children under 12.



"I Am the Walrus" in Ocean Life.

Members' Tour of the Month: Eskimo Life and Art.

Free and open only to Participating, Donor, and Contributing Members.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please indicate a first, second, and third choice of tours, if possible:

| | | | |
|----------------------|-------|-------|-------|
| Sun., Oct. 11 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 14 (p.m.) | 6:30 | 7:00 | 7:30 |
| Sat., Oct. 17 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 21 (p.m.) | 2:30 | 6:30 | 7:30 |
| Sat., Oct. 24 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Oct. 25 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Oct. 28 (p.m.) | 6:30 | 7:00 | 7:30 |

Number of people: _____

Please mail with a self-addressed, stamped envelope to: Members' Tour, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Please note: registration closes on September 28.

September Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: \$ _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: September Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Jack's Big Bug Show. Sunday, September 27. 1:30 and 3:30 p.m. Free and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3. Please indicate a first and second choice of times, if possible:

_____ 1:30 p.m. _____ 3:30 p.m.

Number of tickets: _____

Project Snow Leopard. Tuesday, September 29, 7:30 p.m. \$4 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Members' Private Viewing of Cosmic Illusions and Space Telescope. Thursday, October 8, 6:00 and 8:00 p.m. \$2.75 for adults, \$1.50 for children, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 6:00 p.m. _____ 8:00 p.m.

Number of adults' tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

La Crystal. Tuesday, October 20, 7:00 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Colors of the Rainbow. Sunday, October 18, 1:00 and 3:00 p.m. \$2.50 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of times, if possible:

_____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$2.50: _____

Number of non-Members' tickets at \$5: _____

Total amount enclosed for program: _____

Ghost Stories. Friday, October 30, 7:30 p.m. (for adults), and Saturday, October 31, 1:00 and 3:00 p.m. (for families). \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of Saturday showtimes, if possible:

_____ 7:30 p.m., Friday, October 30 (for adults)

_____ 1:00 p.m., Saturday, October 31 (for families)

_____ 3:00 p.m., Saturday, October 31 (for families)

Number of Members' tickets at \$3: _____

Number of non-Members' tickets at \$5: _____

Total amount enclosed for program: _____

Fall 1987 Lecture Series

The Glory of Carthage

Six Monday evenings, starting Oct. 19
7:30-9:00 p.m.

\$40 (\$36 for Members)

Oct. 19 — **CARTHAGE: MOSAIC OF ANCIENT TUNISIA.** **David Soren**, professor of classics and classical archeology at the University of Arizona, presents an overview of the special exhibition for which he is guest curator, *Carthage: A Mosaic of Ancient Tunisia*. Slides illustrate elements of Punic life and culture, as exemplified by statuary, jewelry, and mosaics. Ancient beliefs in magic, spirits, and the cult of Baal provide the backdrop.

Oct. 26 — **MOSAICS AT CARTHAGE.** Among the glories of ancient Carthage are the mosaic pavements that adorned public and private buildings. They were viewed not as isolated works of art but as an integral part of the architecture. In this slide lecture, **Margaret Alexander**, professor of art history at the University of Iowa, compares Carthaginian style with mosaic pieces from other parts of the Mediterranean world.

Nov. 2 — **THE MARITIME EMPIRE.** Originally a colony of Tyre, Carthage was one of several Phoenician maritime outposts in the West. In this slide lecture, **Robert R. Steiglitz**, professor of Hebrew studies at Rutgers University, discusses how Carthaginian navigators and sailors conducted sea explorations and trade expeditions from Lebanon to Britain.

Nov. 9 — **SLAVERY IN ANCIENT CARTHAGE.** Carthage relied upon slavery for a major part of its work force. During the time of the Republic, the power of a master over a slave was unrestricted, but under more humanitarian rulers the system changed. **Richard Jensen**, professor of classics at the University of Arizona, uses slides to illustrate the historical pattern of this widespread practice.

*Nov. 16 — **THE MOSAICS OF THE MUSÉE DE BARDO.** **Dr. Aicha Ben Abed**, conservator and director of the Musée de Bardo in Tunis, outlines the history of its magnificent collections from Carthage and examines their scientific and historical importance. The mosaics, many of which have never before been seen outside of Tunisia, form the centerpiece for the special exhibition now on loan to the Museum. This program is richly illustrated with slides.

Nov. 23 — **THE EARLY CHRISTIAN CHURCH.** During the period of the Carthaginian twilight, this Romanized city became an area of Christian conversion. The list of distinguished Carthaginians of this period includes the Christian apologist Terullian and Saint Cyprian, the bishop of Carthage. **Elaine Pagels**, professor of religion, Princeton University, presents a case study of a 22-year-old Roman woman, Perpetue, who defiantly converted and was martyred in the Carthage amphitheater.

* For subscribers to this series, a private preview of *Carthage: A Mosaic of Ancient Tunisia* is scheduled for Nov. 16 at 5:45 p.m.

The Carthage series is supported in part by a grant from the National Endowment for the Humanities.

Eskimo Arts and Culture

Four Thursday evenings, starting Oct. 22
7:00 p.m.-8:30 p.m.

\$30 (\$27 for Members)

Oct. 22 — **ANCIENT IVORIES OF THE BERING STRAIT.** Since the early twentieth century, ancient Eskimo (Inuit) ivory carvings have been found in the Bering Strait area off Alaska. Sites on Saint Lawrence Island, Puvuk Island, the Seward Peninsula, and Point Hope have revealed an elegant art that has existed since the fourth century B.C. This slide-illustrated lecture is presented by **Allen Wardwell**, director of the Isamu Noguchi Garden Museum in New York and guest curator of the exhibition *Ancient Eskimo Ivories of the Bering Strait*.

Oct. 29 — **ART AND IDEOLOGY IN WESTERN ALASKAN ESKIMO CULTURE.** Using nineteenth-century historical accounts and artifacts, this slide-illustrated lecture by **William Fitzhugh**, curator of Arctic anthropology at the Smithsonian Institution, re-

constructs the ways of life and belief systems of the ancient Bering Sea cultures. Fitzhugh explores the cultures' continuities and the significance of Eskimo art's flamboyant style.

Nov. 5 — **WESTERN ALASKAN PREHISTORY.** **Edwin Hall**, professor of anthropology, State University of New York at Brockport, discusses the current thinking on coastal Alaskan prehistory, which dates back some 5,000 years. The unique way of life of prehistoric Alaskans, based on sea and land hunting, illustrates human adaptation to extremes of environment and isolation.

Nov. 12 — **ALASKA'S BURIED CULTURAL HERITAGE.** Inuit people, archeologists, and collectors have had some misunderstandings about each other's activities. **Aron Crowell**, scientific researcher, Department of Anthropology, National Museum of Natural History, looks at those disagreements in a slide-illustrated case study of the role of Inuit art on Saint Lawrence Island and Kodiak Island.

Israeli Society Today

Three Tuesday evenings, starting Oct. 20
7:00-8:30 p.m.

\$20 (\$18 for Members)

Tension, interdependence, and cooperation all characterize the complex relationships of Israeli peoples. The current situation, which has been shaped by war, religious differences, and cultural attitudes, is the focus of this series, moving from images of division to the ways in which the society is attempting to reconcile its differences.

Oct. 20 — **Asher Arian**, professor in political science at the Graduate Center/CUNY and Tel Aviv University, gives an overview of the historical and cultural background of Israeli society.

Oct. 27 — **David Shipler**, Middle East correspondent for the *New York Times* and winner of the 1987 Pulitzer Prize for his book *Arabs and Jews: Wounded Spirits in the Promised Land*, reports on Israeli society today.



Medusa, one of the vivid Carthaginian mosaics.



Dougga, a Roman site in Tunisia.

Nov. 10 — A dialogue featuring two members of an Arab-Jewish cooperative village, Neve Shalom, in Israel. **Joseph Montville**, research director for the Center for the Study of Foreign Affairs at the State Department's Foreign Service Institute, moderates the discussion.

This series is presented in cooperation with the New Israel Fund, an Israeli-American foundation that promotes cooperative projects for the betterment of that nation.

Human Sexuality: Male/Female Relations

Four Thursday evenings, starting Oct. 22
7:00-8:30 p.m.
\$30 (\$27 for Members)

These slide-illustrated lectures are presented by **Helen Fisher**, an associate in the Department of Anthropology. Dr. Fisher is the author of numerous books and articles, including *The Sex Contact*, a study of gender and culture.

Oct. 22 — **HUMAN SEXUALITY**. Marriage, divorce, and adultery around the world; comparing human courting behavior, infatuation, and sexual attachment. Oct. 29 — **ORIGIN OF THE FAMILY**. The evolution of monogamy and other forms of family life from origins more than two million years ago on the grasslands of Africa.

Nov. 5 — **WOMEN, MEN, AND POWER**. This lecture examines power relationships in other primates and male/female relationships in egalitarian cultures to explain the evolution of the double standard.

Nov. 12 — **FUTURE SEX**. The Industrial Revolution and recent historical events have had indelible consequences for modern relationships between the sexes. This final lecture looks at modern trends in biotechnology and social life and makes some predictions about the future of the family.

Dinosaurs: New Views

Three Tuesday evenings, starting Oct. 20
7:00-8:30 p.m.
\$20 (\$18 for Members)

Oct. 20 — **DINOSAURS AT THE MUSEUM**. Recent interest in dinosaurs has been stimulated by new discoveries, and existing exhibitions are being reexamined under a brighter light. **Dr. Edwin H. Colbert**, curator of vertebrate paleontology at the Museum of Northern Arizona, and former chairman of the Department of Vertebrate Paleontology at the American Museum, presents an illustrated lecture on the Museum's dinosaur collections.

Oct. 27 — **DINOSAURS: SCIENCE OR SCIENCE FICTION?** We have been fine-tuning our beliefs about dinosaurs for 150 years, based on new discoveries such as preserved skeletons, skin imprints, footprints, and even dinosaur eggs. We have learned where they lived, what they looked like, and why they became extinct — depending upon whose theory we've heard. But what about the color of a dinosaur? Speculation on the answer to this and other questions can help provide breakthroughs and fire the imagination. What are the theories? How did they develop? **Eugene Gaffney**, curator in the Department of Paleontology, addresses these questions.

Nov. 10 — **DINOSAURS: THE STEGOSAURUS**. In this slide-illustrated lecture, paleontologist and artist **Stephen Czerkas** shows the process by which the physical appearance of dinosaurs is scientifically recreated from fossilized skeletal remains. Focusing on the *Stegosaurus*, Mr. Czerkas, who has several works on display in the current exhibition *Dinosaurs Past and Present*, tells how the scientific and popular visions of these unique creatures are shaped.

What's New in Geology

Five Monday evenings, starting Oct. 19
7:00-8:30 p.m.
\$35 (\$31.50 for Members)

Keep up with the latest information in the geological sciences — it often takes years for new discoveries to make their way into textbooks and popular articles. This illustrated lecture series presents new interpretations that show how recent discoveries have changed the way we think about our planet. **Sidney S. Horenstein** is senior scientific assistant in the Department of Invertebrates.

Oct. 19 — **HOW CONTINENTS DRIFT: PLATE TECTONICS**.

Oct. 26 — **EARTHQUAKES, VOLCANIC ERUPTIONS, AND OTHER NATURAL DISASTERS**.
Nov. 2 — **BEYOND THE EARTH: PLANETARY GEOLOGY**.

Nov. 9 — **EVOLUTION, FOSSILS, AND EXTINCTION**.

Nov. 16 — **LANDSCAPES: THEIR ORIGIN AND DEVELOPMENT**.

The World of Islam

Six Monday evenings, starting Oct. 19
7:00-8:30 p.m.

or

Six Tuesday afternoons, starting Oct. 20
2:30-4:00 p.m.
\$40 (\$36 for Members)

Paul J. Sanfaçon, lecturer in anthropology at the Museum, discusses the role of Islam in the history of the Mediterranean world and the Middle East. His slide-talks cover the Five Pillars, the role of Ayatollahs and other men of knowledge, and the Islamic system of education. Included are discussions of Jews and other minorities in Muslim lands, relations between nomadic and sedentary peoples, and daily life.

1. **BEGINNINGS AND SPREAD OF ISLAM** — a world religion from Morocco to East Asia.
2. **NOMADS AND TOWN DWELLERS** — urban-rural relations and the "Islamic" city.
3. **SURRENDER TO ALLAH** — general principles of Islam.
4. **MEN AND WOMEN IN MUSLIM SOCIETIES** — stereotypes and reality.
5. **ISLAM EDUCATION** — history and comparisons with Judaic and Christian education.
6. **THE COLONIAL PERIOD AND TODAY** — British, French, and American spheres of influence.



Kenneth A. Chambers

Discover Alaskan wildlife.

Alaska: Giant of the North

Four Monday afternoons, starting Oct. 19
2:30-4:00 p.m.

or

Four Monday evenings, starting Oct. 19
7:00-8:30 p.m.
\$30 (\$27 for Members)

A place of wild beauty and vast distances, Alaska is a land where bald eagles soar above misty rain forests, wolves hunt herds of caribou across rolling tundra, and enormous bears fish for salmon. It is a land of contrasts: of huge moose and tiny, delicate wildflowers, smoking volcanoes and awesome glaciers, majestic mountain ranges and deep fjords — a land at once rugged and yet incredibly fragile.

Although this slide-illustrated lecture series focuses on the spectacular wilderness areas and their animal and plant inhabitants, it also covers aspects of Alaskan history and politics, the state's swiftly changing economy, and the life styles of its native peoples.

Kenneth A. Chambers, author of *A Country Lover's Guide to Wildlife*, is lecturer in zoology at the Museum and has led all of the Museum's Alaskan wildlife tours. Oct. 19 — **SOUTH-EASTERN ALASKA**. Russian occupation; gold fever; Juneau and other coastal townships; and magnificent Glacier Bay.

Oct. 26 — **SOUTH-WESTERN ALASKA**. Bears and the Brooks River; Valley of Ten Thousand Smokes; cliff-nesting birds; the Pribilof Aleuts; and the saga of the fur seals.

Nov. 2 — **SOUTH-CENTRAL ALASKA**. The renowned wildlife and plants of scenic Denali National Park; Anchorage; Fairbanks; and the Alaskan railroad.

Nov. 9 — **ARCTIC ALASKA**. Exploring in the eastern Brooks Range and along the Arctic coastal plain; Inuit people today.

History and Romance: Films from the Archives

Five Thursday evenings, starting Oct. 22
7:00-8:30 p.m.

\$35 (\$31.50 for Members)

"Welcome to the world of history, mystery and romance . . ." Early factual films were thus introduced in movie houses, and many of the early filmmakers were from the American Museum. This series will examine those pioneer movie makers and their relationships with the Museum. These lectures are presented by **Penelope Bodry-Sanders**, manager of Special Collections in the Museum's Library.

Oct. 22 — **MARTIN and OSA JOHNSON**, cinematographers. *Simba, King of Beasts: A Soga of the African Veldt*, c. 1928, b/w, sound (titles), 1 hr. 16 min.

Oct. 29 — **ROY CHAPMAN ANDREWS and J.B. SHACKELFORD**, cinematographers. *Central Asiatic Expedition Films: Fossils and Artifacts*, 1922-28, b/w, silent (titles), 19 min.; *Mongols* 1922-28, b/w, silent (titles), 29 min.; *Peking*, 1922-28, b/w, silent, 7 min.

Nov. 5 — **WILLIAM JAMES MORDEN and HERFORD TYNES COWLING**, cinematographers. *Morden's Expedition to Africa and Asia*, 1922-24: *Africa*, b/w, silent, 52 min. (excerpts); *Beyond the Vole of Kashmir*, 1922-24, b/w, silent, 50 min. (excerpts); *Burma Blues from a Buzzing Orient*, 1922-24, b/w, silent (titles), 10 min.; *Ceylon*, 1922-24, b/w (tinted stock), silent, 34 min. (excerpts).

Nov. 12 — **W. DOUGLAS BURDEN and MARCEL LE PICARD**, cinematographers. *Silent Enemy*, c. 1930, b/w, sound (titles), 1 hr., 7 min. The theme of this classic is the Objibwa Indians' struggle for survival.

Nov. 19 — **CARL ETHAN AKELEY**, cinematographer. *Carl and Mory in Africa*, Eastman-Pomeroy-Akeley Expedition, 1926, b/w, silent, 7 min.; *Military Drill of Kikuyu Tribes*, 1909, b/w, silent, 33 min. (excerpts); *Meandering in Africa*, 1921 Gorilla Expedition, b/w, silent (titles), 39 min.



AMNH

Akeley, Meandering in Africa.

Anthropology on Film

Four Tuesday afternoons, starting Oct. 20
2:30-4:30 p.m.

or

Four Tuesday evenings, starting Oct. 20
7:00-9:00 p.m.
\$30 (\$27 for Members)

Malcolm Arth, anthropologist and chairman of the Margaret Mead Film Festival, presents films illuminating our understanding of society and human behavior. Following screenings, Dr. Arth is sometimes joined by the filmmakers for lively discussion. To take advantage of works now being completed, some selections are not announced until the series begins.

Oct. 20 — **LAU**, 1986. (55 mins.) Director: Leslie Woodhead. A Pacific Solomon Island society confronts the issue of whether its traditional patterns of culture will vanish.

SECOND FILM TO BE ANNOUNCED.

Oct. 27 — **PASSION: TRUST**, 1987. (25 mins.) Director: Olivier Koning. A Dutch couple in love with each other — and with danger.

GATES OF HEAVEN. 1977. (90 mins.) Director: Errol Morris. Acclaimed by film critics as one of the greatest documentaries of all time. A look at this life — and the afterlife — in America.
 Nov. 10 — **NEW FILMS ON ESKIMO CULTURE.** 1987. (60 mins. and 20 mins.) Directors: Sarah Elder and Leonard Kamenling. These filmmakers, renowned for the sensitivity and beauty of their documentaries on Yupik Eskimo culture, have two brand-new, still-untitled works. One looks at Eskimo dance as it reflects the people's view of the world; the shorter film finds an elder reminiscing about his youth.
 Nov. 17 — **FILM AND GUEST TO BE ANNOUNCED.**



Medieval bestiaries beckon.

Beasts of the Middle Ages

Four Thursday evenings, starting Oct. 22
 7:00-8:30 p.m.
 \$30 (\$27 for Members)

Medieval Europeans lived in a world where they felt themselves to be — and indeed were — at the mercy of nature. How did they perceive domestic, wild, and fabled beasts? Was the whale a monster? Was the louse related to the dragon? Why did thirteenth-century bishops abhor hawks and monkeys?

Looking at medieval writing and art, this series examines the Middle Ages and offers occasional comparisons with the contemporary world. Presented by **Marie A. Lawrence**, senior scientific assistant in the Department of Mammalogy.

Oct. 22 — **WORLD VIEW OF MEDIEVAL EUROPE.** ANS. Biblical beasts.
 Oct. 29 — **BEASTS OF MANOR AND HUNT**
 Nov. 5 — **BEASTS OF HERALDRY AND WAR**
 Nov. 12 — **BESTIARIES**

Photography in the Field

Four Tuesday evenings, starting Oct. 20
 7:00-8:30 p.m.
 \$30 (\$27 for Members)

Richard P. Sheridan, head of the Museum's Photography Studio, presents a four-part lecture series on the evolution of in-the-field photography since the 1830s. The lectures are illustrated with slides and film, and images from the Museum's photographic collection depict film/camera technologies and their applications.

Oct. 20 — **THE BEGINNINGS OF PHOTOGRAPHY.** The discoveries of light-sensitive materials and strategies developed to exploit them. New technologies and new directions.

Oct. 27 — **CAPTURING THE IMAGE.** The evolution of film and camera technology (direct positives, glass plates, nitrates, lantern slides, albumen prints, and paper negatives).

Nov. 10 — **EARLY TECHNIQUES.** In the field with Akeley, Dossiter, Curtis, Wannamaker, and others. How early images were used in the design of museum exhibits.

Nov. 17 — **THE FINAL IMAGE.** Techniques for creating a "good" image. Approaches to archival preservation.

Ikebana: The Art of Flower Arranging

Four Monday evenings, starting Oct. 19
 7:00-9:30 p.m.

\$90 (materials included)

Limited to 20 persons

Judith S. Hata, artist and floral designer, presents a workshop on the techniques, history, and art of Ikebana. This 1,200-year-old Japanese art of flower arranging has spread to all parts of the world. The series stresses the rules of Ikebana, but arrangements are limited only by the creative urge. Students make use of a range of materials, from flowers, leaves, and nuts to stone and even (for the avant-garde) old automobile parts.

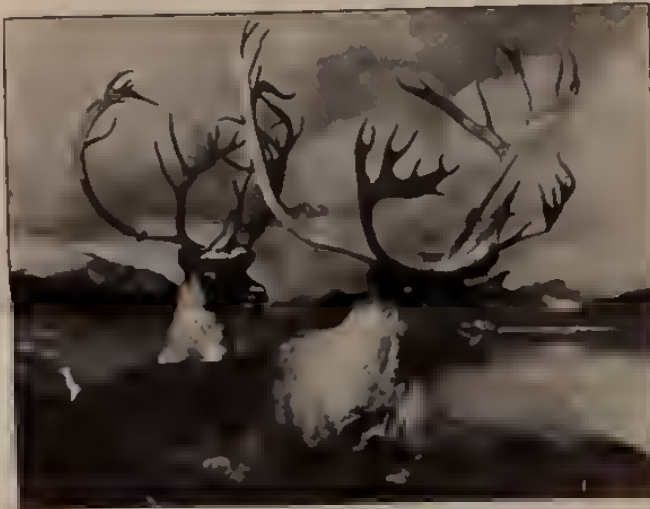
Origami: Introduction to Paper Folding

Six Monday evenings, starting Oct. 19
 7:00-8:30 p.m.

\$75 (materials included)

Limited to 20 persons

Origami is the Japanese word for the centuries-old art of folding single sheets of paper to create almost anything imaginable without using scissors or paste. Participants learn many traditional origami bases and become familiar with the maneuvers and terminology of the art. Among the models taught are a butterfly, strawberry, dove, panda, and frog. The instructor, **Michael Shall**, provides step-by-step diagrams that he designed together with his teacher, Alice Gray.



Learn to draw caribou.



Sketch Museum bison.

Animal Drawing

Eight Monday evenings, starting Oct. 19
 7:00-9:00 p.m.

\$95 (materials not included)

Limited to 25 persons

Join a Museum artist to sketch a variety of subjects, such as gazelles on the African plains and timber wolves in the snowbound north. After the Museum has closed to the public, students draw from the famed habitat groups as well as mounted specimens. **Stephen C. Quinn**, senior principal preparator-artist in the Department of Exhibition, discusses drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant, whether beginner or experienced artist.

The following exhibition halls serve as studios: the Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and Hall of Ocean Life.

Wild Flowers of the Northeast

Five Tuesday afternoons, starting Oct. 20
 2:30-4:00 p.m.

or

Five Thursday evenings, starting Oct. 22

7:00-8:30 p.m.

\$35 (\$31.50 for Members)

Thousands of species of wild flowers are native to the varied landscape of the northeastern United States. Some are common, others are very restricted in range, and some function with unusual adaptations. All are a part of the web of life — carnivorous bog plants, Arctic creepers on windswept mountaintops, and ornate woodland orchids. These and a selection of wild flowers from the forests, meadows, pine barrens, and wetlands will be discussed in this series of slide-illustrated lectures. **William Schiller** is lecturer in botany at the Museum.

1. **ANATOMY OF A WILD FLOWER** — basic structure, family, and environment.
2. **MOUNTAINTOP AND BOREAL WILD FLOWERS** — above timberline and in the evergreen woodland below.
3. **WILD FLOWERS OF MOIST WOODLAND** — spring and fall flowers.
4. **WILD FLOWERS OF DRY ENVIRONMENTS** — pine barrens and seashores.
5. **WILD FLOWERS OF THE WETLANDS** — bogs, marshes, and swamps.

Spring 1988 Field Trips

For a field trip itinerary and application, call (212) 769-5310.

Weekend for Bird Enthusiasts

May 14 and 15

Limited to 36 adults

Two-day bus trip covering wooded areas near New York City, and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen.

Weekend in Geology

May 21 and 22

Limited to 36 adults

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain, there are visits to Sandy Hook and the Highlands of the Navesink. Collecting stops are made enroute. The group is accommodated overnight near Parsippany.

DEPARTMENT OF EDUCATION Fall 1987 Lecture Series

I would like to register for the following course(s): _____

Day(s): _____

Time(s): _____

Price: _____ (Please note that discount prices shown apply only to Participating, Donor, and Contributing Members.)

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Fall 1987 Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Margaret Mead Film Festival 1987



Threat. Tuesday, Auditorium, 7:45 p.m.

American Museum of Natural History

Central Park West at 79th Street

Monday–Thursday, Sept. 14–17

Screenings 6:30 to 10:00 p.m.

★ 51 FILMS ★ 44 PREMIERES ★ FILMMAKERS FROM 17 NATIONS

DISCUSSIONS BY FILMMAKERS/ANTHROPOLOGISTS

Admission: \$5 per evening (\$4 for Members)

Ticket sales start at 5:00 p.m. daily.





No Advance Sales

Seating is on a first-come, first-served basis.



Entering its second decade, the Festival is a continuing tribute to Margaret Mead and her role in visual anthropology and public education.

For information, call (212) 769-5305.

Monday, September 14

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|---|---|--|--|
| MYTH 6:30 <input type="checkbox"/> The Hero's Journey: The World of Joseph Campbell 1987. William Free and Janelle Balnicke. (58 mins.) A thinking man for all seasons, a visionary of our time.  Our God the Condor 8:00 <input type="checkbox"/> Our God the Condor 1987. Paul Yule and Andy Harries. (30 mins.) Peruvian Indians revive a spectacular ceremonial encounter between condor and bull. Premiere. 8:45 <input type="checkbox"/> The Diary of a Dry Season: The Tyi Wara 1987. Jean-Paul Colleyn. (40 mins.) A Minyanka festival in Mali evokes the Tyi Wara, a mythological beast. Premiere. 9:40 <input type="checkbox"/> Uluru: An Anangu Story 1986. Dave Roberts. (57 mins.) Aborigines, tourists, and the government of Australia caught in a symbolic conflict. Premiere. | SEARCH FOR SELF 6:30 <input type="checkbox"/> Alter Ego: Letters from a Doctor in Africa 1986. Hillie Molenaar and Joop van Wijk. (43 mins.) Witches and doctors, spirits and gods — a Dutch psychiatrist heads a mental health hospital in Guinea-Bissau. Premiere. 7:30 <input type="checkbox"/> What is a Jew to You? 1986. Aviva Ziegler. (50 mins.) A Jewish filmmaker in Australia looks at self and family to answer the question. Premiere. 8:35 <input type="checkbox"/> Link-Up Diary 1987. David MacDougall. (87 mins.) Australian Aborigines separated from their families in childhood are reunited. Premiere.  Link-Up Diary | AFRICAN SPIRIT 6:30 <input type="checkbox"/> Hail Umbanda 1986. José Araujo. (45 mins.) Spirit healing in a growing Afro-Brazilian religious movement. Premiere.  Hail Umbanda 7:30 <input type="checkbox"/> Songs of the Adventurers 1987. Gei Zantinger. (47 mins.) Basotho mine workers from neighboring Lesotho compose eloquent autobiographical songs based on their experiences in South Africa. Premiere. 8:30 <input type="checkbox"/> The Two Rivers 1985. Mark Newman. (58 mins.) A black South African writer takes us behind the scenes of his Venda homeland. 9:45 <input type="checkbox"/> Repeat: Hail Umbanda. | TWO COMMUNITIES 6:30 <input type="checkbox"/> Caught in a Web 1986. Toni de Bromhead. (70 mins.) A tale of two towns in Britain and France. Premiere.  Caught in a Web 8:00 <input type="checkbox"/> The Bharvad Predicament 1987. Jayasinhji Jhala and Roger Sandall. (50 mins.) Hindu cattle keepers and farmers in conflict over land and water. Premiere. 9:05 <input type="checkbox"/> Repeat: Caught in a Web. |

Tuesday, September 15

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|---|--|---|
| WORLDS IN COLLISION 6:30 <input type="checkbox"/> Classified People 1987. Yolande Zauberman. (60 mins.) A 91-year-old South African man separated from his children by an absurd racial classification system. Premiere. 7:45 <input type="checkbox"/> Threat 1987. Stefan Jarl. (72 mins.) Chernobyl and the Lapp people; an apocalyptic present. Premiere.  Threat 9:15 <input type="checkbox"/> Radio Bikini 1987. Robert Stone. (57 mins.) The loss of innocence as the world entered the nuclear age. Premiere. | DIARY OF A MAASAI VILLAGE The first New York screening of a series of remarkable films on the Maasai people by British anthropologist Melissa Llewelyn-Davies. A continuing saga as the lives of people in one village unfold over a seven-week period. Premiere. 6:30 <input type="checkbox"/> The Prophet's Family 1984. (50 mins.) An 80-year-old Maasai prophet, his wives and his people. 7:25 <input type="checkbox"/> Two Ways of Justice 1984. (52 mins.) A son of the prophet is jailed and the family takes action. 8:45 <input type="checkbox"/> Two Journeys 1984. (50 mins.) The journeys of a bride and groom as two families are linked by marriage. 9:40 <input type="checkbox"/> Nine Cows and an Ox 1984. (44 mins.) Ceremonies follow the marriage, and other things get resolved. | MALE AND FEMALE 6:30 <input type="checkbox"/> Daughters of the Midnight Sun 1986. Ylva Floreman and Peter Ostlund. (40 mins.) Lapp women in Sweden speak about their changing lives. Premiere. 7:25 <input type="checkbox"/> Asian Heart 1985. Bodil Trier and Malene Ravn. (38 mins.) European men contract brokers to find Asian wives. Premiere. 8:20 <input type="checkbox"/> No Longer Silent 1986. Laurette Deschamps. (57 mins.) Women of India raise their voices against exploitation of their sex.  No Longer Silent 9:35 <input type="checkbox"/> Repeat: Daughters of the Midnight Sun. | CULTURE CONFLICT 6:30 <input type="checkbox"/> Ma'Loul Celebrates its Destruction 1986. Michel Khleifi. (30 mins.) Palestinian families revisit their old village site. Premiere. 7:15 <input type="checkbox"/> White Justice 1986. Morgané Lafiberté and Françoise Wera. (57 mins.) Inuit custom and Canadian law meet in the far North. Premiere. 8:30 <input type="checkbox"/> Repeat: Ma'Loul Celebrates its Destruction. 9:15 <input type="checkbox"/> Repeat: White Justice. |

Workshops for Young People



Leapin' Lizards introduces children to the world of reptiles.

SUNDAY COURSES

Through the Eyes of a Child: Introducing the Museum

5- or 6-year-olds with one adult
Two Sundays
Section A: Oct. 18 and 25;
10:15-11:45 a.m.
or
Section B: Nov. 8 and 15;
10:15-11:45 a.m.
Fee: \$25 (\$23 for Members)

A Museum educator introduces you and a child to the excitement of the Museum. Minerals, plant and animal specimens, and beautiful objects offer children a broader perspective on the world around them. Presented by Marjorie M. Ransom of the Education Department.

Nature Activities for the Very Young

Grades 1 and 2
Four Sundays; Oct. 18, 25,
Nov. 1, and 8
Section A: 10:15-11:15 a.m.
or
Section B: 11:30 a.m.-
12:30 p.m.
Fee: \$25 (\$23 for Members)

Children participate in fall nature activities, from growing seeds to learning about different kinds of leaves. They explore the nature of New York City in the Alexander M. White Natural Science Center; visit there with Sam, a talking starling; and view the exhibition halls. Taught by Mary Croft, early childhood specialist.

Feeding the Birds

Grades 1 and 2
Two Sundays; Oct. 18 and 25;
10:30 a.m.-12:30 p.m.
Fee: \$15 (\$13 for Members)
Bring your window to life during lean winter months with a bird feeder. Learn which seed feeders are best and what birds to expect. Participants will make a bird feeder and go to the exhibition halls to become familiar with the local birds. Presented by Frances Smith of the Education Department.

All About You

Grades 6, 7, and 8
Five Sundays; Oct. 15, Nov. 1,
8, 15, and 22;
10:30 a.m.-noon
Fee: \$30 (\$28 for Members)
Take your blood pressure, listen to your heartbeat, see how blood flows, and "tune" in your senses; through these and other activities, students learn how their bodies work and acquire a better understanding of their anatomy and physiology. Taught by Dr. Betty Faber, entomologist.

In Search of Human Origins

Grades 5 and 6
Two Sundays; Nov. 1 and 8;
2:00-3:30 p.m.
Fee: \$15 (\$13 for Members)
Trace our ancestors through time and observe the evidence scientists use to put together a picture of human origins. Using several Museum exhibition halls, students explore physical

anthropology and human cultural development. Presented by Anita Steinhart, lecturer in anthropology.

SATURDAY WORKSHOPS

Students should bring a bag lunch.

Origami

Grades 5 and 6
Oct. 24; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Origami is a Japanese word for the centuries-old art of folding single sheets of paper, without scissors or paste, to create objects. This introductory workshop teaches participants how to fold a sailboat, a butterfly, and a strawberry, as well as figures decided upon by the students. Presented by Michael Shall, professional paper folder and volunteer origami specialist at the Museum.

Masks from Around the World

Grades 3 and 4
Oct. 31; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Masks play important roles in people's lives: some are used for fun or theater, others for religious ceremonies. In this program, Museum exhibition halls are used to demonstrate how masks are used in different cul-

tures, and students create their own masks. Presented by Shelly Richter, instructor in arts and crafts.

Masks from Around the World

Grades 1 and 2
Nov. 21; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
See the description above for Masks from Around the World. Presented by Blair Durant of the Education Department.

Birding for Beginners

Grades 6, 7, and 8, with one adult
Oct. 31; 10:30 a.m.-1:30 p.m.
Fee: \$15 per child and \$15 per adult (\$13 each for Members)
A parent must enroll along with the child.

The perfect way to begin bird watching. Study skins and mounted specimens, and a talk in the Museum exhibition halls are followed by a short field walk into nearby Central Park. A limited number of binoculars are provided, but those who have their own are encouraged to bring them. Presented by Lisa Breslof of the Education Department.

Dinosaurs

Grades 3 and 4
Nov. 7; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Explore the world of dinosaurs through the Museum's famous collection and through film. Discover what foods dinosaurs ate and what their environment looked like. Participants create their own little dinosaur dioramas. Presented by Alison Loerke of the Education Department.

Leapin' Lizards

Grades 4 and 5
Nov. 7; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Learn how amphibians and reptiles live, what and how they eat, their methods of locomotion, how colors and patterns protect them, and how they reproduce. Through slides, tapes,

and activities in the Hall of Reptiles and Amphibians, students gain an understanding of these fascinating animals. Presented by Carol Townsend of the Department of Herpetology.

Learn to Weave

Grades 7 and 8
Nov. 14; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Learn the basic techniques of simple loom weaving and the origins of woven fabric. Participants build a simple loom and explore simple stitches. Use of yarn, ribbon, fabric, and other materials is demonstrated. Presented by Stephanie Fogel, instructor in arts and crafts and former volunteer at the Museum.

The Hidden Mineral World

Grades 5 and 6
Nov. 14; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Which mineral do you use every time you turn on or off a light switch? What causes some eye makeup to sparkle? Minerals play an essential role in our everyday lives, from the foods we eat to the tools we use. Students explore the world of minerals through the Museum's exhibition halls, games, and hands-on activities. Presented by Alison Loerke of the Education Department.

Native American Games and Crafts

Grades 3 and 4
Nov. 21; 10:30 a.m.-1:30 p.m.
Fee: \$10 (\$9 for Members)
Students learn about Native Americans by playing the toss and catch game and the double ball game. They also learn about other elements of Native American life with a visit to the Eastern Woodlands and Plains Indians Halls. Includes a field trip across the street to Central Park to look at plants. Presented by Rob Bernstein, instructor at the New York Botanical Garden.

An Education Department Public Program.

DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____
(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.



Hoxsey: The Quack Who Cured Cancer. Wednesday, Auditorium, 7:35 p.m.

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Our God the Condor, Monday
Passion: Crossroads, Wednesday
Passion: Recollections, Wednesday
The Prophet's Family, Tuesday
Radio Bikini, Tuesday
Some Babies Die, Wednesday
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Two Ways of Justice, Tuesday
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Uluru: An Anangu Story, Monday
What is a Jew to You?, Monday
White Justice, Tuesday
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Yuki Shimoda: Asian American Actor, Thursday

Margaret Mead Film Festival 1987

Honorary Chairperson
 Mary Catherine Bateson

Festival Chairperson
 Malcolm Arth



Programming Committee
 Malcolm Arth
 Nathaniel Johnson
 Jonathan Stack

This Department of Education public program is made possible in part by a grant from the New York State Council on the Arts.





Classified People. Tuesday, Auditorium, 6:30 p.m.

Wednesday, September 16

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|--|---|---|
| LIFE AND DEATH 6:30 <input type="checkbox"/> The Diary of a Dry Season: Minyanka Funerals 1987. Jean-Paul Colleyn. (45 mins.) The Minyanka people of Mali balance joy with grief in their funeral ceremonies. Premiere. 7:35 <input type="checkbox"/> Hoxsey: The Quack Who Cured Cancer 1987. Ken Ausubel. (100 mins.) An alternative treatment for a life-threatening illness threatens the establishment. Premiere. 9:30 <input type="checkbox"/> Some Babies Die 1985. Martyn Langdon Down. (54 mins.) A counseling team helps families in Australia overcome their loss in a unique way. Premiere. | CULTURAL CONTINUITY 6:30 <input type="checkbox"/> Survival of a Small City 1986. Pablo Frasconi and Nancy Salzer. (65 mins.) Gentrification divides a coastal Connecticut community. Premiere. 7:50 <input type="checkbox"/> Xochimilco 1987. Eduardo Maldonado. (90 mins.) Mexico City's famous floating gardens, an oasis of Indian culture within the metropolis. Premiere.  The Basques of Santazi 9:30 <input type="checkbox"/> The Basques of Santazi 1987. Leslie Woodhead. (52 mins.) French Basques struggle against the loss of their culture. Premiere. | PORTRAITS 6:30 <input type="checkbox"/> Mara'acame 1982. Juan Francisco Urrusti. (47 mins.) A Mexican Huichol healer, singer, and interpreter of peyote dreams. Premiere. 7:30 <input type="checkbox"/> Passion: Recollections 1987. Olivier Koning. (25 mins.) A Dutch natural history museum curator with a calling. Premiere. 8:00 <input type="checkbox"/> Passion: Crossroads 1987. Olivier Koning. (25 mins.) A Dutch Roman Catholic priest charms a skeptical filmmaker as they talk about faith. Premiere. 8:45 <input type="checkbox"/> In Africa for a Spell 1986. Ilan Flammer. (60 mins.) A West African psychiatrist and a local healer compare notes. Premiere. 10:00 <input type="checkbox"/> Repeat: Mara'acame. | TEENAGE 6:30 <input type="checkbox"/> Chela 1986. Lars Palmgren, Goran Gester, and Lars Bildt. (48 mins.) The political awakening of a 16-year-old girl in Chile. Premiere. 7:35 <input type="checkbox"/> Stephanie 1986. Peggy Stern. (58 mins.) An American girl's dreams and disappointments as she journeys through adolescence.  Stephanie 8:50 <input type="checkbox"/> Repeat: Chela. 9:45 <input type="checkbox"/> Repeat: Stephanie. |

Thursday, September 17

| Auditorium | Kaufmann Theater | Linder Theater | People Center |
|--|---|--|---|
| FAITH 6:30 <input type="checkbox"/> The Earth Is Our Mother 1987. Peter Elsass. (50 mins.) Indians of Colombia defend their ways against missionary proselytizing. Premiere. 7:35 <input type="checkbox"/> Born Again 1987. James Ault and Michael Camerini. (89 mins.) Lust, love, and leadership in a Moral Majority community. Premiere. 9:25 <input type="checkbox"/> In Her Own Time 1986. Lynne Littman. (60 mins.) Anthropologist Barbara Myerhoff began studying orthodox Jews but ended looking inward. Premiere.  In Her Own Time | RELIGIOUS LIFE AND COMMUNITY 6:30 <input type="checkbox"/> A Tibetan New Year 1987. Jon Jerstad. (40 mins.) A Tibetan Buddhist monastery celebrates the New Year high in the Himalayas. Premiere. 7:20 <input type="checkbox"/> Depending on Heaven: The Grasslands 1987. Peter Entell. (28 mins.) A nomadic Mongolian family moves across the Central Asian landscape. Premiere. 8:00 <input type="checkbox"/> Cuyagua: The Saint with Two Faces 1987. Paul Henley. (56 mins.) A Venezuelan village holds a women's festival celebrating the sacred and profane. Premiere. 9:10 <input type="checkbox"/> Hamar Herdsman and His Song 1987. Jean Lydall and Ivo Strecker. (46 mins.) An Ethiopian people's male initiation ceremony. Premiere. 10:05 <input type="checkbox"/> First Moon 1987. Richard Gordon and Carma Hinton. (30 mins.) New Year celebrations in the Chinese village of Long Bow. Premiere. | FAMILIES 6:30 <input type="checkbox"/> The Fair at Dharamtalla 1984. Shape Film Collective. (60 mins.) Families of acrobats, healers, and snake charmers at a market in India. Premiere.  The Fair at Dharamtalla 7:45 <input type="checkbox"/> Kicking High . . . in the Golden Years 1986. Grania Gurievitch. (58 mins.) Music and dance, pathos and pleasure, and a bit of advice from senior citizens. Premiere. 9:00 <input type="checkbox"/> Chuck Solomon: Coming of Age 1986. Wendy Dallas and Marc Huestis. (60 mins.) A theater director with AIDS shares a special gift from his community and family. | CULTURAL IDENTITY 6:30 <input type="checkbox"/> Navajo Talking Picture 1986. Arlene Bowman. (40 mins.) A Navajo filmmaker attempts to rediscover her cultural heritage. 7:25 <input type="checkbox"/> Yuki Shimoda: Asian American Actor 1986. John Esaki. (30 mins.) A Japanese-American actor's life reflects his society. 8:10 <input type="checkbox"/> El Sebou 1986. Fadwa El Guindi. (27 mins.) A seventh-day naming ritual following the birth of Egyptian children. Premiere. 8:55 <input type="checkbox"/> Banderani 1987. Jeanine Moret. (30 mins.) Cooperation and exchange in a Bolivian Quechua-speaking village. Premiere. 9:35 <input type="checkbox"/> Repeat: Navajo Talking Picture. |



Hoxsey: The Quack Who Cured Cancer. Wednesday, Auditorium. 7:35 p.m.

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| | <i>Yuki Shimoda: Asian American Actor</i> , Thursday |

Margaret Mead Film Festival 1987

Honorary Chairperson
Mary Catherine Bateson

Festival Chairperson
Malcolm Arth

Programming Committee
Malcolm Arth
Nathaniel Johnson
Jonathan Stack

This Department of Education public program is made possible in part by a grant from the New York State Council on the Arts.



Classified People. Tuesday, Auditorium, 6:30 p.m.

Workshops for Young People



Leapin' Lizards introduces children to the world of reptiles.

SUNDAY COURSES

Through the Eyes of a Child: Introducing the Museum

5- or 6-year-olds with one adult
Two Sundays

Section A: Oct. 18 and 25;
10:15-11:45 a.m.

or

Section B: Nov. 8 and 15;
10:15-11:45 a.m.

Fee: \$25 (\$23 for Members)

A Museum educator introduces you and a child to the excitement of the Museum. Minerals, plant and animal specimens, and beautiful objects offer children a broader perspective on the world around them. Presented by Marjorie M. Ransom of the Education Department.

Nature Activities for the Very Young

Grades 1 and 2

Four Sundays: Oct. 18, 25,
Nov. 1, and 8

Section A: 10:15-11:15 a.m.

or

Section B: 11:30 a.m.-
12:30 p.m.

Fee: \$25 (\$23 for Members)

Children participate in fall nature activities, from growing seeds to learning about different kinds of leaves. They explore the nature of New York City in the Alexander M. White Natural Science Center, visit there with Sam, a talking starling, and view the exhibition halls. Taught by Mary Croft, early childhood specialist.

Feeding the Birds

Grades 1 and 2

Two Sundays: Oct. 18 and 25;
10:30 a.m.-12:30 p.m.

Fee: \$15 (\$13 for Members)

Bring your window to life during lean winter months with a bird feeder. Learn which seed feeders are best and what birds to expect. Participants will make a bird feeder and go to the exhibition halls to become familiar with the local birds. Presented by Frances Smith of the Education Department.

All About You

Grades 6, 7, and 8

Five Sundays: Oct. 15, Nov. 1,
8, 15, and 22;

10:30 a.m.-noon

Fee: \$30 (\$28 for Members)

Take your blood pressure, listen to your heartbeat, see how blood flows, and "tune" in your senses; through these and other activities, students learn how their bodies work and acquire a better understanding of their anatomy and physiology. Taught by Dr. Betty Faber, entomologist.

In Search of Human Origins

Grades 5 and 6

Two Sundays: Nov. 1 and 8;
2:00-3:30 p.m.

Fee: \$15 (\$13 for Members)

Trace our ancestors through time and observe the evidence scientists use to put together a picture of human origins. Using several Museum exhibition halls, students explore physical

anthropology and human cultural development. Presented by Anita Steinhart, lecturer in anthropology.

SATURDAY WORKSHOPS

Students should bring a bag lunch.

Origami

Grades 5 and 6

Oct. 24; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Origami is a Japanese word for the centuries-old art of folding single sheets of paper, without scissors or paste, to create objects. This introductory workshop teaches participants how to fold a sailboat, a butterfly, and a strawberry, as well as figures decided upon by the students. Presented by Michael Shall, professional paper folder and volunteer origami specialist at the Museum.

Masks from Around the World

Grades 3 and 4

Oct. 31; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Masks play important roles in people's lives: some are used for fun or theater, others for religious ceremonies. In this program, Museum exhibition halls are used to demonstrate how masks are used in different cul-

tures, and students create their own masks. Presented by Shelly Richter, instructor in arts and crafts.

Masks from Around the World

Grades 1 and 2

Nov. 21; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

See the description above for Masks from Around the World. Presented by Blair Durant of the Education Department.

Birding for Beginners

Grades 6, 7, and 8, with one adult

Oct. 31; 10:30 a.m.-1:30 p.m.

Fee: \$15 per child and \$15 per adult (\$13 each for Members)

A parent must enroll along with the child.

The perfect way to begin bird watching. Study skins and mounted specimens, and a talk in the Museum exhibition halls are followed by a short field walk into nearby Central Park. A limited number of binoculars are provided, but those who have their own are encouraged to bring them. Presented by Lisa Breslof of the Education Department.

Dinosaurs

Grades 3 and 4

Nov. 7; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Explore the world of dinosaurs through the Museum's famous collection and through film. Discover what foods dinosaurs ate and what their environment looked like. Participants create their own little dinosaur dioramas. Presented by Alison Loerke of the Education Department.

Leapin' Lizards

Grades 4 and 5

Nov. 7; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Learn how amphibians and reptiles live, what and how they eat, their methods of locomotion, how colors and patterns protect them, and how they reproduce. Through slides, tapes,

and activities in the Hall of Reptiles and Amphibians, students gain an understanding of these fascinating animals. Presented by Carol Townsend of the Department of Herpetology.

Learn to Weave

Grades 7 and 8

Nov. 14; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Learn the basic techniques of simple loom weaving and the origins of woven fabric. Participants build a simple loom and explore simple stitches. Use of yarn, ribbon, fabric, and other materials is demonstrated. Presented by Stephanie Fogel, instructor in arts and crafts and former volunteer at the Museum.

The Hidden Mineral World

Grades 5 and 6

Nov. 14; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Which mineral do you use every time you turn on or off a light switch? What causes some eye makeup to sparkle? Minerals play an essential role in our everyday lives, from the foods we eat to the tools we use. Students explore the world of minerals through the Museum's exhibition halls, games, and hands-on activities. Presented by Alison Loerke of the Education Department.

Native American Games and Crafts

Grades 3 and 4

Nov. 21; 10:30 a.m.-1:30 p.m.

Fee: \$10 (\$9 for Members)

Students learn about Native Americans by playing the toss and catch game and the double ball game. They also learn about other elements of Native American life with a visit to the Eastern Woodlands and Plains Indians Halls. Includes a field trip across the street to Central Park to look at plants. Presented by Rob Bernstein, instructor at the New York Botanical Garden.

An Education Department Public Program.

DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____

(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy

Eight Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 1
Instructor: Dr. Engelbrektson or
Eight Wednesdays, beginning Sept. 30; 6:30-8:40 p.m. Classroom 1
Instructor: Dr. Bartol
Fee: \$80 (\$72 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include the earth as a planet, the moon, the solar system and sun, the stars, the Milky Way and galaxies, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Stars, Constellations, and Legends

Five Tuesdays, beginning Sept. 29; 6:30-8:10 p.m. Sky Theater
Instructor: Mr. Beyer
Fee: \$60 (\$54 for Members)

An introduction to the lore of the sky. Using the Zeiss projector in the Sky Theater, this course identifies the prominent stars, constellations, and other objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated. No prerequisites.

How to Use a Telescope

Eight Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 3
Instructor: Mr. Storch
Fee: \$80 (\$72 for Members)

An introduction to the selection and use of a small amateur telescope. Topics include basic optics of telescopes, equatorial and altazimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other aids for observation. No previous knowledge of astronomy is assumed. This course is particularly recommended for those considering the purchase of a telescope.

Understanding the Sky

Six Mondays, beginning Sept. 28; 6:30-8:40 p.m. Classroom 2

Instructor: Mr. Lovi
Fee: \$70 (\$63 for Members)

Why do things occur in the sky the way they do? Why does the length of the day change during the year? What is the midnight sun, and where and when can it be seen? What determines the visibility of the moon and planets? In this new course, we will discuss these and other topics, both in the classroom and in the Sky Theater, where the amazing capabilities of our Zeiss projector will re-create and explain these "heavenly happenings." After taking this course, you will be able to enjoy and appreciate the ever-changing sky show by merely stepping outside your door.

Science in History

Eight Wednesdays, beginning Sept. 30; 6:30-8:40 p.m. Classroom 2

Instructor: Mr. Andersen
Fee: \$80 (\$72 for Members)

Science is an important reason that Western civilization is different from other civilizations on this planet. What are the roots of science? How has science advanced so quickly in just a short span of time? Only four centuries passed between Copernicus and the atomic age — between the scientific revolution that began with the abstract notion that the earth was not in the center of the universe and the present, when scientific policy might affect all life on the planet.

ASTRONOMY: INTERMEDIATE COURSES

Survey of the Planets

Eight Thursdays, beginning Oct. 1; 6:30-8:40 p.m. Classroom 1

Instructor: Ms. Jackson
Fee: \$80 (\$72 for Members)

Information supplied by spacecraft in the past several years has made the planets an exciting subject for scientific study. This course will introduce the planets both as parts of the entire structure of the solar system and as individual bodies. Topics include structure, composition, weather, rings, and

satellite systems of the various planets. Images from the many planetary spacecraft will be used to complement the class lectures and discussions. Prerequisite: *Introduction to Astronomy* is recommended but not required.

METEOROLOGY

Weather and Climate

Eight Thursdays, beginning Oct. 1; 6:30-8:40 p.m. Classroom 2

Instructor: Mr. Rao
Fee: \$80 (\$72 for Members)

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

AVIATION

Ground School for Private and Commercial Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning Sept. 29; 6:30-8:40 p.m. Classroom 3

Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotter, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, federal aviation regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning Oct. 13; 6:30-8:40 p.m. Classroom 3

Instructor: Mr. Cone, CFIA, AGI
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with *Ground School for Private and Commercial Pilots*.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters

Eight Tuesdays, beginning Sept. 29; 6:30-9:00 p.m. Classroom 2

Instructor: Dr. Hess
Fee: \$105 (\$94.50 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

NAVIGATION: INTERMEDIATE COURSES

Introduction to Celestial Navigation

Eight Tuesdays, beginning Sept. 29; 6:30-9:00 p.m. Classroom 1

Instructor: Prof. Pamham
Fee: \$105 (\$94.50 for Members)

For those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. This course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

FOR FAMILIES

The courses listed below are intended for the family, so that parents and children may learn together about astronomy and the space age. The courses may be taken by children aged 10 years and over without a parent if desired; however, much of the subject matter may not be appropriate for children under the age of 8. The tuitions are per

person. For additional information about the family courses, please write to the address appearing on the coupon or call (212) 769-5900 (Monday through Friday, 9:30 a.m.-4:30 p.m.).

Introduction to the Sky

Ten Saturdays, beginning Sept. 26; 9:30-10:20 a.m. Sky Theater

Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

Meeting in the Sky Theater, this course discusses and illustrates the various stars and constellations, some of their lore, and some of the many interesting objects found in the sky.

The Solar System

Ten Saturdays, beginning Sept. 26; 10:30-11:20 a.m. Classroom 1

Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

This course includes a brief overview of historical astronomy and considers the many theories concerning the origin of the solar system, as well as the geology of the planets and their satellites, including the earth and the moon. Additional topics include meteors and meteorites, asteroids, lunar phases, tides, eclipses, and the star of our solar system — the sun. This course, together with *Stars, Black Holes, and Galaxies*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Stars, Black Holes, and Galaxies

Ten Saturdays, beginning Sept. 26; 11:30 a.m.-12:20 p.m. Classroom 1

Instructor: Mr. Small
Fee: \$35 (\$31.50 for Members)

Topics include the evolution of the cosmos, star types, life cycles of stars, nebulae, black holes, galaxies, and quasars. Methods and instruments used by astronomers to collect their information will be emphasized. This course, with *The Solar System*, serves as excellent preparation for the Boy Scout merit badge in astronomy.

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note: only Participating, Donor, and Contributing Members are entitled to the Members' discount.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Home phone: _____

Office phone: _____

Membership category: _____

Please mail this coupon with a stamped, self-addressed envelope and your check payable to the American Museum-Hayden Planetarium to: Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024-5192. Registration by mail is strongly recommended. For additional information, call (212) 769-5900, Mon.-Fri., 9:30 a.m.-4:30 p.m.

Community Workshops

This month and next, the Department of Education presents a series of participatory programs whose theme is cultural expression through traditional crafts, music, and dance. Some of these workshops are exclusively for adults, and some are designed for the combined participation of adults and children aged 8 and older.

FOR ADULTS

African Batik
Instructor: Selina Ahoklui
Two Saturdays, Sept. 12 and 19; 1:30–5:30 p.m.
Fee: \$25

Batik is a textile tradition throughout West Africa. This workshop introduces the historical background and technique of authentic adire art. Complete a batik of your own, using paraffin and commercial dyes.

Chilapas Maya Weaving
Instructor: Maruka Campos
Two Saturdays, Sept. 12 and 19; 11:00–5:30 p.m.
Fee: \$25

An introduction to the culture of the Maya and the ancient technique of backstrap weaving. Participants learn to make a *faja*, the traditional sash worn by Maya women.

Calabash Art: The Shekere
Instructor: Madeleine Yayodele Nelson
Three Saturdays, Oct. 10, 17, and 24; 12:00–2:00 p.m.
Fee: \$25

Learn how to make a *shekere*, a musical instrument made from a gourd and beads or shells. The *shekere*'s traditional uses will also be discussed.

Introduction to African Drum-making
Instructor: Kobla Mensa Dente
Four Sundays, Sept. 13, 20, 27, and Oct. 4; 11:00 a.m.–1:00 p.m.
Fee: \$25

Learn how to make a traditional African drum — the heartbeat of African music — used in ceremonies, rituals, and festivals.

Advanced African Drum-making
Instructor: Kobla Mensa Dente
Five Sundays, Sept. 13, 20, 27, and Oct. 4 and 11; 1:30–4:30 p.m.
Fee: \$35

This workshop is for those with prior drum-making (carving) experience or those who have taken previous classes with Mr. Dente.

Afro-Caribbean Dance
Instructor: Pat Hall Smith
Three Sundays, Sept. 13, 20, and 27; 11:00 a.m.–1:00 p.m.
Fee: \$20

An introduction to Caribbean culture through dance. Dance to drum rhythms and learn movements and relationships of the musical rhythm to the dances and songs.

Rhythms of the Senegambia
Instructor: Obara Wali Rahman and Company, with a guest artist from Senegal
Three Sundays, Oct. 4, 11, and 18; 12:00–2:00 p.m.
Fee: \$20

An introduction to the culture of the Senegambia and its relationship to drumming and dance traditions. Learn basic movements and social dances that express the experience of the Senegambians.

Beadwork of Cameroon I
Instructor: Carmen Lowe
Saturday, Oct. 17; 11:00 a.m.–5:00 p.m.
Fee: \$25

Discover the rich heritage of Cameroon artisans and view their traditional and contemporary beadwork techniques. Use these techniques to design and complete a project of your own.

Beadwork of Cameroon II
Instructor: Carmen Lowe
Sunday, Oct. 18; 11:00 a.m.–5:00 p.m.
Fee: \$25

This workshop, for participants who have completed Beadwork of Cameroon I, introduces the technique of sculptured beadwork using cloth. Cameroon I or prior beadwork experience is a prerequisite.

Tap Dance
Instructor: Charles "Cookie" Cook, assisted by Mickey Davidson
Three Saturdays, Sept. 12, 19, and 26; 11:00 a.m.–1:00 p.m.
Fee: \$20

Learn traditional tap choruses to great jazz standards like "Take the A Train," "A Night in Tunisia," and others from one of the tap dance masters. This workshop is funded in part by a grant to Mr. Cook from the National Endowment for the Arts and the New York Foundation for the Arts Fellowship.

FOR ADULTS OR YOUNGSTERS Minimum age: 8 years

Puerto Rican Maskmaking
Instructor: Josephine Monter
Four Sundays, Sept. 13, 20, 27, and Oct. 4; 11:00 a.m.–4:00 p.m.
Fee: \$25

In Puerto Rico, masks are used in many celebrations. Participants will create colorful papier-mâché masks inspired by these celebrations and derived from African, Spanish, and Taino Indian roots.

Taino Indian Art
Instructor: Miguel Paz
Three Sundays, Sept. 13, 20, and 27; 2:30–4:30 p.m.
Fee: \$20

Learn about Taino Indian culture through art, and create facsimiles of pre-Columbian Taino Indian wooden art pieces.

The Art of Puppetry
Instructor: Schroeder Cherry
Three Saturdays, Sept. 12, 19, and 26; 11:00 a.m.–1:00 p.m.
Fee: \$25

Create individual puppets, discover how they reflect our culture, and perform in a class presentation.

To register, please use the adjacent coupon (workshops fill quickly, so please mail early). For further information, call (212) 769-5315. These programs are made possible in part by a gift from the William R. Hearst Foundation.

An Education Department Public Program.



Masks conceal identity, transform personality, and ward off evil.

DEPARTMENT OF EDUCATION Community Workshops

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime telephone: _____

I would like to register for the following workshop(s):

| | |
|---|------------------------------------|
| African Batik (\$25): _____ | Afro-Caribbean Dance (\$20): _____ |
| Maya Weaving (\$25): _____ | Beadwork I (\$25): _____ |
| Calabash Arts (\$25): _____ | Beadwork II (\$25): _____ |
| Drum-making I (\$25): _____ | Puerto Rican Masks (\$25): _____ |
| Drum-making II (\$35): _____ | Taino Indian Art (\$20): _____ |
| Tap Dance (\$20): _____ | Puppetry (\$20): _____ |
| Rhythms of the Senegambia (\$20): _____ | |

Total amount enclosed. _____

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Community Workshops, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Colors of the Rainbow

Sunday, October 18

1:00 and 3:00 p.m.

Kaufmann Theater

\$2.50 for Members, \$5 for non-Members

Follow the Rainbow Road Dancers to a Members' family program of prismatic delights. *Colors of the Rainbow*, an educational dance program geared toward children between 5 and 12 years old, features modern dance and theater pieces and a dazzling array of music, costumes, and special effects that is sure to please both young Members and Members who are young at heart.

The evolution of life on our planet, from sea-dwelling invertebrates to humankind, is traced in the dance "Origins." Inspired by some of the Museum's exhibits, "Origins" depicts the rise and fall of the dinosaur as well as the emergence of fish, birds,

and fellow mammals that are with us still.

A lone fisherman's relationship with sea creatures is the subject of "Water Dance," which is performed to music by Raffi, a popular children's songwriter and player. "Dots and Dashes," a modern dance, depicts round and straight shapes.

"Colors," which features jazz music and recited prose, focuses on rainbows, the spectrum, the creation of new colors through a mixture of primaries, and the relationship of color to mood. This story-theater dance explains the perception of color by evoking life in a world without color and its vivid transfor-

mation through the work of a wizard.

The Rainbow Road Dancers — Nadine Grisar, Terri Schenk, and Diana Tanzosh — have been performing together since 1981. Their imaginative presentations have captured the fancy of numerous school and community groups throughout the Greater New York area as well as audiences at Central and Prospect parks and here at the Museum.

The performance is 45 minutes long and encourages audience participation. To register for *Colors of the Rainbow*, please use the September Members' programs coupon on page 3.



"Origins," a dance inspired by Museum exhibits.

Ghost Stories

Friday, October 30 (for adults)

7:30 p.m.

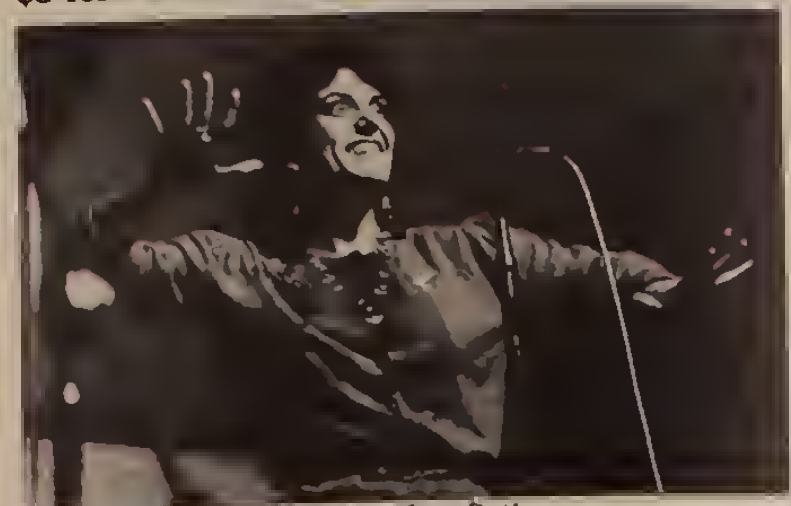
Saturday, October 31 (for families

with children aged 7 and older)

1:00 and 3:00 p.m.

Kaufmann Theater

\$3 for Members, \$5 for non-Members



Tom Raymond

Stranger than fiction

Storyteller Laura Simms returns to the Museum next month to enchant Members young and old with *Ghost Stories*. In an all-new program about restless spirits, magic, and witchcraft, Simms recounts events from the eerie and uncanny worlds of fairy tales and myth and the New York subway. The stories, she declares, are all true — or *could be*.

The Friday evening program for adults features a Tibetan story of a talking corpse that was told to Simms by a Buddhist Lama, a Russian fairy tale about the Mother of Death, and the North African epic of Buffalo Panther Woman. Saturday's

program, for children aged 7 and older, promises spooky fun.

Simms is one of America's foremost performers of international folklore and true-life stories. She has appeared throughout the United States, Canada, Europe and the South Pacific, interpreting oral traditions of ancient cultures for audiences of all ages. Her programs are a Halloween tradition at the Museum, where they have enthralled sold-out audiences for the past six years.

To register for *Ghost Stories*, please use the September Members' programs coupon on page 3.

Birthday Parties at the Museum

The restless young explorer, the budding paleontologist, the future astronaut — what do they have in common? Custom-made birthday parties at the Museum, that's what. The Membership Office has three different kinds of parties, designed for dinosaur lovers, safari-goers, and the starry-eyed.

A round of dinosaur trivia pursuit or of the dinosaur skeleton game begins — what else? — the Dinosaur Parties. Party-goers also see the dinosaur mummy and a nest of dinosaur eggs, touch a dinosaur tooth, and make fossils of their own. The parties are highlighted by a trip to the dinosaur halls, which star *Tyrannosaurus*, the dinosaur king, and his consortium of prehistoric pals, including the horny-headed *Triceratops* and the armor-backed *Stegosaurus*.

Children get the feeling of the Safari Parties by touching a warthog tusk and an ostrich egg. The partyers then enter safari territory — the halls of African Mammals and Man in Africa — to search for elephants, gorillas, and rhinoceroses and to learn about the different ways in which people have adapted to the African environment. After

the safari, each child makes an African animal mask.

Party-goers reach for the sky at the Star Parties, which feature a screening of a Planetarium show. Afterward, the children tour the Planetarium's exhibition halls, then return to the party room to make a flying saucer or a cardboard rocket, hold a meteorite, and play musical planets. We are also developing a program in conjunction with the new Naturemax feature *Grand Canyon: The Hidden Secrets*.

The parties are geared toward 5- to 10-year-olds. There can be a minimum of 10 children and a maximum of 20 children. The parties last for two hours, and the price — \$195, plus \$10 per child — includes all materials, room decorations, a special favor bag (with a month's complimentary membership pass), ice cream, and juice. Cake is not included, and lunch or dinner is extra. The parties are held on weekends at either 11:00 a.m. or 2:30 p.m. and on Wednesdays and Fridays after 4:00 p.m.

Please call (212) 769-5600 for reservations. We are now booking for November 1987 through January 1988.

Museum Notes

Special Exhibitions and Highlights

For panda fanciers who'd like a closer look, *The Giant Panda Exhibit* in the Roosevelt Rotunda offers an ideal view. The mounted pandas, which have been among the Museum's collections since the early 1900s, appear on an open platform in natural habitat settings.

The world's largest cut gem, *The Brazilian Princess*, is also on display in the Roosevelt Rotunda. Approximately the size of an automobile headlight, the pale blue topaz tips the scales at 21,005 carats.

The Museum was founded in 1869, its cornerstone laid in 1874, and its first structure was completed in 1877. Its construction was a task that required the combined skills of Hercules and Croesus. *Architecture for Dinosaurs*, in the Akeley Gallery, is a pictorial history of an epic feat.

The Library Gallery features a salute to the *Ladies in the Field: The Museum's Unsung Explorers*. Photographs, diaries, published monographs, and mementos chronicle the contributions of women to the development of the Museum.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday,

Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$7.50 for cars and \$8.50 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5600. Parking is not free during the Margaret Mead Film Festival.

Coat Checking. Daily, from 10:00 a.m. to 5:30 p.m. on the second floor. \$.50 per item.

Gifts Galore. Books, jewelry, and international clothing are just a few of the delightful souvenirs available at the Museum Shop. Located on the first floor near the 77th Street foyer, the Museum Shop is open every day from 10:00 a.m. to 5:00 p.m. and till 7:45 p.m. on Wednesdays. Children's natural history items are available in the Junior Shop, located in the lower level near the subway entrance and open every day from 10:00 a.m. to 4:45 p.m.

The Museum Library. One of the world's great natural history collections, the Library is on the fourth floor near the Hall of Earth History and open for research from Monday through Friday, 11:00 a.m. to 4:00 p.m. and till 9:00 p.m. on Wednesday.

Naturemax

Audiences ride down the raging Colorado River and experience all the thrills of

whitewater rafting along with early explorers in the current Naturemax Theater presentation, *Grand Canyon: The Hidden Secrets*. New York City's largest movie screen, four stories high, offers fantastic vistas of this natural wonder.

On Friday and Saturday only, the 6:00 and 7:30 p.m. showings of *Grand Canyon: The Hidden Secrets* cofeature another new film, *Chronos*.

Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For showtimes and other information, call (212) 769-5650 or stop by any information desk. Members receive a 40 percent discount at all shows, including the Friday and Saturday evening double features.

Let's Eat

The Food Express, located on the lower level near the subway entrance, offers cafeteria-style service daily from 11:00 a.m. to 4:45 p.m.

For a more leisurely meal, go next door to the *American Museum Restaurant*, which serves lunch from 11:00 a.m. to 4:00 p.m., Monday through Friday, and dinner on Wednesday, Friday, and Saturday from 5:00 to 7:30 p.m. The restaurant also serves tea from 4:00 to 5:00 p.m. every day, and Saturday and Sunday brunch from 11:00 a.m. to 4:00 p.m. Members receive a 10 percent discount. Reservations, which are suggested, can be made by calling (212) 874-3436.

Cocktails can be had on Wednesday in the *Lion's Lair*, from 3:30 to 7:30 p.m., and on Saturday and Sunday from noon to 5:00 p.m. There is no admission fee for the cash bar, which is located on the first floor in the Hall of Ocean Life.

Miss the Mead? Here's a second chance

\$4 for Members, \$5 for non-Members
Prices are per program



Our God the Condor

The Margaret Mead Film Festival repeats five of this year's premiering films in a post-Festival weekend. Ticket sales start at noon on the date of the showing.

For further information, please call (212) 769-5305.

Saturday, September 19 Linder Theater

Program A: 1:00 p.m.: *Born Again*
Program B: 3:00 p.m.: *What Is a Jew to You?*
Our God the Condor
Program A: 5:00 p.m.: *Born Again*
Program B: 7:00 p.m.: *What Is a Jew to You?*
Our God the Condor

Sunday, September 20 Kaufmann Theater

Program C: 1:00 p.m.: *Threat*
Daughters of the Midnight Sun
Program A: 3:00 p.m.: *Born Again*
Program C: 5:00 p.m.: *Threat*
Daughters of the Midnight Sun

Program A

Fundamentalist Christians remain little understood, despite their reshaping of our social and political landscape. *Born Again*, by James Ault and Michael Camerini, is an intimate portrait of a Moral Majority community in Massachusetts. The pastor struggles in the face of household dissent and teenage rebellion to minister to the "sin-sickness" of his flock. (89 mins.) USA

Program B

Australian filmmaker Aviva Ziegler turned the camera on herself to answer questions of ethnic identity in *What Is a Jew to You?* The result is not an anguished search, but rather a wry look at some of the confusions and paradoxes that can be part of being Jewish. (50 mins.) Australia

In *Our God the Condor*, Andy Hamies and Paul Yule ascended to the Peruvian Andes among the Quechua Indians of Cuzco to film the symbolic reenactment of the Spanish-Indian struggle. Tied to the back of a bull, a giant condor enters into mythological confrontation in this spectacular struggle for identity. (30 mins.) Great Britain

Program C

The Lapp (Sami) people, who are dependent upon reindeer herding, have lived in northern Scandinavia since ancient times. In April 1986, fallout from the Chernobyl nuclear accident contaminated a significant portion of their herds. *Threat*, by Swedish filmmaker Stephan Jarl, is a compelling examination of this ecological and cultural catastrophe. (72 mins.) Sweden

Daughters of the Midnight Sun, by Peter Östlund and Ylva Floreman, provides another insight into Lapp (Sami) culture before Chernobyl through a group of young women. Their nomadic life belongs to the past, but for a few weeks each summer they return to the mountains to live as before. (40 mins.) Sweden

Happenings at the Hayden

Sky Shows

The Seven Wonders of the Universe, narrated by Burt Lancaster. Through September 7. The ancients marveled at the seven wonders of their world, including the pyramids of Egypt and the Hanging Gardens of Babylon. Today our discoveries extend beyond our own planet, to the Grand Canyon of Mars, and to alien landscapes ablaze with the light of millions of stars. Journey through time and space to the greatest wonders of the universe.

The double feature of *Cosmic Illusions* and *Space Telescope* premieres on September 10. See page 2 for details.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 1:00, 2:00, 3:00, and 4:00 p.m., and Sunday at 1:00, 2:00, 3:00, and 4:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids aged 6 to 9. In this exciting new program, two young children build a cardboard rocket in their backyard and blast off one night with a special, magical friend for a tour of the planets. *Cardboard Rocket* will be shown at 11:00 a.m. on September 19, and at noon on October 17. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

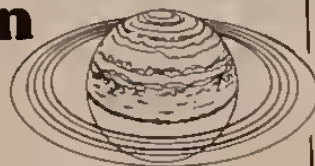
Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Showtimes are at noon on October 10 and November 7. Admission for Participating, Do-

nor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out weeks in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Central Park West at 81st Street, New York, NY 10024), indicate a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, please call (212) 769-5919.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in "Laser Genesis," featuring the music of the group Genesis and solo work of Phil Collins and Peter Gabriel. This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission is \$6 per show. Call (212) 769-5921 for further information.



Sun

Mon

Tue

1

Wed

2

Thu

3

Fri

4

Sat

September 1987

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700: toll-free
outside NY State: (800) 462-8687



12 Community Workshops, offered by the Department of Education, begin. Page 13.

11

10 1:30 p.m. The double feature *Space Telescope* and *Cosmic Illusions* premieres at the Hayden Planetarium Sky Theater. See page 2 for details of a Members' private viewing.

9 7:00 p.m. New York Mineral Club. Leonhardt People Center. Free.

8 8:00 p.m. Linnaean Society of New York. Kaufmann Theater. Free.

7 Last chance to see *The Seven Wonders of the Universe* at the Hayden Planetarium.

Full moon.

19 1:00 p.m. Margaret Mead Film Festival (repeats). Linder Theater. \$4 for Members, \$5 for non-Members. Page 15.

18

17 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4.

6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10. Moon at apogee.

16 6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10.

15 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4.

6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Pages 7-10.

7:15 p.m. Lapidary and Gem Society. Room 319. Free.

14 6:30 to 10:00 p.m. Margaret Mead Film Festival. \$4 for Members, \$5 for non-Members. Complete schedule on pages 7-10.

Last-quarter moon.

26 Origami Special Sessions, offered by the Friends of The Origami Center of America, begin. Page 2.

25

24

Autumnal equinox.

21

20 1:00 p.m. Margaret Mead Film Festival (repeats). Kaufmann Theater. \$4 for Members, \$5 for non-Members. Page 15.

2:00 p.m. New York Paleontological Society. Room 419. Free.

22 7:00 to 9:00 a.m. Field Class in Bird Identification observes fall migration of birds through Central Park. Meet at 77th Street and Central Park West. \$4.

Members on the "Sail Polynesia" Discovery Tour arrive at the Tuamotu Archipelago.

New moon.

28 Courses for Stargazers at the Hayden Planetarium begin. Page 12.

27 1:30 and 3:30 p.m. Jack's Big Bug Show. Members' Family Program. Kaufmann Theater. Free and open only to Members. Tickets required. Page 3.

30 7:30 p.m. Sankofa Music. Kimati Dinizulu and his Kotoko Society use traditional instruments and techniques in a performance of African-derived music. Main Auditorium. Free.

First-quarter moon.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

American Museum of Natural History

POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 9 October 1988

Ahoy, Members

The exotic flora and fauna of *Magnificent Voyagers*, the new exhibition in Gallery 3, will be the focus of a Members' private viewing. Afterward, a performance of sea chanties in the Hall of Ocean Life will feature the maritime music of the nineteenth-century expedition.

Page 5

Caribbean Month

The jibaro melodies of Puerto Rico, Trinidadian steel drum rhythms, and the ancestral music of the Bolivian Andes are among the musical celebrations of Caribbean Month at the Museum.

Pages 6-7

Martian Chronicles

The planet next door is saluted in *Night of the Martians*, a special Planetarium program that commemorates the hysteria-ridden night in 1938 when extraterrestrials "landed" in New Jersey.

Page 6

Drawn from the Sea

Art and technology go hand in hand in a new exhibition of fish illustrations. The scientific value of the portraits on display is complemented by their artistic excellence, and a Museum specialist will discuss both aspects in a Members' program.

Page 4

The Falkland Islands: Its People and Wildlife

Thursday, October 13

7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members

The denizens of its dazzling silver-white beaches are not sun-seeking tourists but birds, hundreds of thousands of birds, including albatrosses, petrels, terns, and six species of penguins. Swimming nearby are sea lions, seals, dolphins, and 19 species of whales. The scene is an archipelago deep in the south Atlantic, and an exploration of this remote region is offered with the Members' program *The Falkland Islands: Its People and Wildlife*.

The 1982 conflict between Great Britain and Argentina signaled a rediscovery of these fascinating islands, situated

some 300 miles off the tip of South America and Cape Horn. Along with their exotic variety of wildlife, the islands feature a diversity of landscapes that range from coastal regions and offshore islands to mountainous areas, lowlands, and plains. The program will examine the changing pattern of life in the Falklands and the importance of protecting the islands' precious wildlife.

The Falkland Islands. Its People and Wildlife will be hosted by Ian Strange, a wildlife artist and ecologist who lives and works in the islands. Strange's slide presentation will be accompanied by music

and natural sound with narration. His overview of the Falklands will include a discussion of ecology, conservation measures, and the dangers faced by the islands.

A lifelong naturalist, conservationist, and wildlife artist, Strange has lived in the Falkland Islands since the early 1960s and has devoted some 25 years to the study of the islands' environment and wildlife.

To register for *The Falkland Islands: Its People and Wildlife*, please use the October Members' programs coupon on page 3.

Eastern Dance Extravaganza



Morocco and the Casbah Dance Experience will perform in a Members' dance program that spotlights traditions of the Middle East and North Africa. The program will take place on Saturday, October 1, in the Kaufmann Theater, at 1:30 and 3:30 p.m. Tickets are \$3 for Members and \$5 for non-Members. Please call (212) 769-5600 for ticket availability.

Ensemble Sêpia

Sunday, November 20
3:00 p.m.
Kaufmann Theater
\$5 for Members, \$7 for non-Members

A Sunday afternoon of classical music at the Museum awaits Members with a performance by Ensemble Sêpia. The concert of strings, woodwinds, and brass instruments will range in repertoire from Baroque pieces to contemporary music.

The seasoned musicians of Ensemble Sêpia are dedicated

to bringing classical and modern music to audiences of diverse cultural backgrounds. The ensemble is under the direction of Milton Jones, who founded the group in 1981 with the assistance of Arnold and Melvin Greenwich.

Ensemble Sêpia has performed abroad as well as throughout the New York area,

including appearances at Carnegie Hall, Trinity Church, and on WQXR-FM. They have also served as accompaniment for performances by Opera Ebony and the Dance Theater of Harlem.

To register for Ensemble Sêpia, please use the October Members' programs coupon on page 3.

A Matter of Courses



Tibetan banner

The following are just a few of the courses offered by the Department of Education in the Fall 1988 Lecture Series. For information about these and other courses, call (212) 769-5310.

Middle Eastern Archeology

An exploration of ancient cultures through the archeology of Biblical lands. The lectures take place on four Monday evenings, starting October 17, from 7:00-8:30 p.m. \$27 for Members, \$30 for non-Members.

People of the Mountains and the Desert: Tibet and the American Southwest

Religious beliefs and ritual practices of Tibetans and Navajo and Hopi Indians bear striking similarities. Two Monday evenings, October 17 and 24, 7:00-8:30 p.m. \$18 for Members, \$20 for non-Members.

The Living Maya

Descendants of an ancient

culture maintain their traditions in the highlands and rainforests of Mexico, Guatemala, and Belize. Three Tuesday evenings, starting October 18, 7:00-8:30 p.m. \$22.50 for Members, \$25 for non-Members.

The Oceans Around Us

An introduction to oceanography, ecology, and marine biology. Four Tuesday evenings, starting October 18, 7:00-8:30 p.m. \$27 for Members, \$30 for non-Members.

The Hand of Man: Prehistoric Art

An examination of the prehistoric cave and rock art of Europe and the central Sahara. Four Thursday evenings, starting October 20, 7:00-8:30 p.m. \$27 for Members, \$30 for non-Members.

An Education Department Public Program.

ROTUNDA

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Donna Bell — Editor
Angela Soccodato — Designer
Rita Campon — Copy Editor
Peter Zelaya — Editorial Assistant
Alan Temes — Editorial Adviser

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Timeless Travels in Tropical America

Ten Weeks on the Río Orinoco

Thursday, November 17
7:30 p.m.
Main Auditorium
\$5 for Members, \$8 for non-Members



Venezuelan children assist scientists in collecting fish.

The Río Orinoco, South America's second-largest river, runs through Venezuela like a giant fishhook, with its eye on the Atlantic coast and its barb imbedded in the Amazonian rainforest. Members can journey to the American heart of darkness for a victim's-eye view of piranhas and electric eels and a rare glimpse of a still-flourishing town once considered "the end of the civilized world."

Robert McCracken Peck, a Fellow of the Academy of Natural Sciences of Philadelphia, has traveled extensively on the Orinoco and its tributaries — living with its people, examining its wildlife, and documenting a U.S.-Venezuelan research project focused on the river's abundant but little-known fish. Peck will recount his own experiences on the Orinoco and compare them with the earlier travels of Alexander Von Hum-

boldt, Alfred Wallace, and other explorer-naturalists of the nineteenth century. The program, which will feature slides and on-location recordings from Venezuela's Amazonas Territory, offers an extraordinary portrait of the region's diversity and the timeless lifestyles of the people who have made the Orinoco their home. To register for Rio Orinoco, please use the October Members' programs coupon

Ghost Stories

Friday, October 28 (for adults)
7:30 p.m.
Kaufmann Theater
\$3 for Members, \$5 for non-Members

Sunday, October 30 (for families)
1:00 and 3:00 p.m.
Kaufmann Theater
\$3 for Members, \$5 for non-Members

Spine-tingling excitement is headed this way with a pair of programs of supernatural tales. Storyteller Laura Simms, in her eighth annual Halloween appearance at the Museum, will present two enchanting Members' programs. Simms' repertoire comprises material from cultures throughout the world as well as her own original compositions. The tales are related in a wide selection of narrative forms and performance styles, ranging from prose and poetry of epic, myth, and

fairytale, to humorous, fast-paced narrative with song and audience participation. Simms uses no lights, props, or special effects — her tools are a dynamic voice, an uncanny sense of presence, movement, and outrageous characterizations. Listeners are held spellbound by the stories' irresistible momentum. The new stories in the program for adults will include "The Twelve Trials of the Great Teacher Naropa"; a riveting tale from the lore of New York State

Indians called "The Rolling Head"; and the ultimate in other-worldly adventures, a Tantric Hindu story of the power of the feminine, "Durga and the Buffalo Demon." The children's program will feature true-life ghost stories about kids, a story of two children and a dinosaur baby, a North American myth called "Kokolimalayas, the Bone Man," and many more. To register for Ghost Stories, please use the October Member's programs coupon.

The October 28 program is SOLD OUT from the September issue of ROTUNDA.

October Members' Programs Coupon

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime telephone: _____
Membership category: _____
Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: October Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Falklands. Thursday, October 13, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

Ghost Stories. Friday, October 28, 7:30 p.m. (for adults), and Sunday, October 30, 1:00 and 3:00 p.m. (for families). \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5. Please indicate a first and second choice of Sunday showtimes, if possible.

_____ 1:00 p.m., Sunday, October 30 (for families)
_____ 3:00 p.m., Sunday, October 30 (for families)

Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____

Members' Preview: The Hall of South American Peoples. Thursday, November 3, 6:00-8:30 p.m. Free and open only to Participating, Donor, and Contributing Members. The viewing will take place in two sessions; please indicate a first and second choice of times, if possible:

_____ 6:00-7:00 p.m. _____ 7:15-8:15 p.m.

Number of tickets: _____

Rio Orinoco. Thursday, November 17, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

Predators. Saturday, November 19, 11:00 a.m., 1:00 and 3:00 p.m. \$2.50 for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4.

Number of Members' tickets at \$2.50: _____
Number of additional tickets at \$4: _____
Total amount enclosed for program: _____

Ensemble Sèpia. Sunday, November 20, 3:00 p.m. \$5 for Members, \$7 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$7.

Number of Members' tickets at \$5: _____
Number of additional tickets at \$7: _____
Total amount enclosed for program: _____

Drawn from the Sea. Tuesday, November 29, 7:30 p.m. Free, and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.

Number of tickets: _____

In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Drawn from the Sea

Art in the Service of Ichthyology

Exhibition opens Friday, October 7
Akeley Gallery

Scientifically accurate and aesthetically pleasing, a new exhibition brings aquatic wonders to terra firma. *Drawn from the Sea* features 95 fish illustrations, many of which were retrieved from archival collections and are on display for the first time. The illustrations, which date from 1838 to 1988, were drawn by self-taught amateurs and professionally trained scientific illustrators.

Considered by some biologists a method superior to pho-

tography, illustration permits a more accurate rendering of intricate color patterns and anatomical details. A true picture of a fish can be a difficult task, particularly if a specimen has been placed in a preservative — scales fall off, color patterns fade, fins are folded or torn, and the body twisted or shrunken.

Based on a scientist's field notes, rough drawings, and photographs, an illustrator can reconstruct the appearance of a live fish. Artists often accompa-

nied field expeditions in order to record the life characteristics of fish as they were discovered.

Drawn from the Sea will depict the step-by-step process of scientific illustration, from the initial specimen to its final portrait. The history, techniques, and uses of scientific illustration will also be explored.

The exhibition, which was organized by the Smithsonian Institution's National Museum of Natural History, will be on display through December 11.



Artist Kako Morita created this watercolor and gouache painting of a stonefish in 1904.

Fishtales

Tuesday, November 29
7:30 p.m.
Main Auditorium
Free, and open only to Members

The history and significance of a remarkable new exhibition, *Drawn from the Sea*, are examined in a Members' program. Michael Smith, Kalbfleisch assistant curator in the Department of Herpetology and Ichthyology, is the resident curator for the temporary exhibition in the Akeley Gallery. Dr. Smith will discuss the history of the exhibition and the relevance of the items on display (see the related article on this page).

Drawn from the Sea is a traveling exhibition that originated at the Smithsonian Institution. Impressed with the artistic merit of technical illustrations of fish, ichthyologist Victor Springer became interested in the artists as well as their illustrations. Springer resurrected the illus-

trations from their archival confinement and organized a large and popular exhibit at the Smithsonian.

Visitors responded enthusiastically to the aesthetic appeal of the watercolors and pen-and-ink drawings. Most casual viewers, however, were overwhelmed by the artistic excellence of the exhibition and overlooked the scientific importance of the illustrations. The Members' program will underscore the fact that the items on display are valuable as scientific tools as well as being visually attractive.

"A finished fish drawing probably represents more real work per square inch of surface than any other kind of drawing," observed John Ridgway, a

prominent teacher of biological illustration. Many fish, for example, have thousands of scales, the size and arrangement of which bear potentially valuable information. Such complex physical information is most effectively conveyed by illustration.

Dr. Smith will stress the significance of the exhibition's subtitle, *Art in the Service of Ichthyology*. He'll describe the process of illustration and how it has contributed to the science of ichthyology. Items from the Museum's own collections added to the traveling exhibition will also be discussed.

To register for *Drawn from the Sea*, please use the October Members' programs coupon on page 3.

Appalachian Lives

This month finds a festival of Appalachian culture at the Museum. Through film, folk theater, and song, the rich and distinctive cultural heritage of Appalachia is explored. These programs are presented by the Education Department in conjunction with Appalshop and Art Center, an organization located in the coalfields of central Appalachia. The programs stress the connections between rural and urban life, uniting the experiences of people from the mountains with those of city dwellers.

For more information, call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

Long Journey Home
Friday, October 14
7:00 p.m.
Kaufmann Theater
Free

A new documentary film examines migrations into and out of Appalachia. This film, the second in a series on the history of the region, integrates personal experience with contemporary analysis for an understanding of the cultural, ethnic, and racial diversity of the region.

The film is rooted in the experiences of Anndrena Belcher, who migrated with her family to Chicago in the 1950s; Bill Turner, a black man whose family migrated from Alabama

to the east Kentucky coalfields early in this century; and the Kentucky family of James and Denise Hardin, who moved back to the mountains after 17 years in Baltimore.

Following the screening there will be a panel discussion with some of the individuals who appear in the film.

Films of Life
Saturday, October 15
11:00-12:30 p.m.
Kaufmann Theater
Free

11:00 a.m. *Catfish, Man of the Woods*. A day in the life of Clarence "Catfish" Gray, a fifth-generation herb doctor.

11:30 a.m. *Coal-Mining Women*. Traces women's significant contributions to coal-field struggles and the importance of their new position as working miners.

Appalachians and Migration
Saturday, October 15
2:00 p.m.
Kaufmann Theater
Free

The vibrant storytelling and musical traditions of Appalachia are alive and well and living throughout America, as demonstrated in this folk theater production by the Roadside Theater Company.

An Education Department Public Program.

Predators

Saturday, November 19
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$2.50 for Members, \$4 for non-Members

A black leopard, a bear cub, and a 75-lb. Burmese python are among the live guest stars of an unusual Members' family program that profiles predators of the animal kingdom.

Naturalist Andrew Simmons displays a variety of wild animals and explains their roles in nature. Birds of prey, such as the golden eagle, perch on his wrist while Simmons describes the plight of threatened or endangered predators. Simmons will also discuss the animals' adaptations for survival and conservation measures enacted by humans on the predators' behalf.

Audiences of all ages are enthralled by Simmons' wildlife programs. His skill in handling wild animals and his extensive knowledge of the animals' ecology have won him widespread acclaim and numerous television appearances. Simmons is one of the few individuals ever granted a permit by the U.S. Fish and Wildlife Service to maintain and exhibit a bald eagle for educational purposes, a privilege that is not extended even to state agencies or zoos.

To register for *Predators*, please use the October Members' programs coupon on page 3.

Songs of the Sea

In conjunction with the Members' private viewing of *Magnificent Voyagers* Monday, October 3
Free, and open only to Participating, Donor, and Contributing Members

"When up the shrouds the sailor goes and ventures on the yard, the landsman who no better knows believes his lot is hard. Bold Jack with smiles each danger meets, weighs anchor, heaves the log, trims all the sails, belays his sheets, and drinks his can of grog."

The deming-do of the nautical world is joyfully recounted in "Can of Grog," one of the sea shanties Members may hear in a celebration of our maritime heritage.

The performance of sea shanties in the Hall of Ocean Life will follow a Members' private viewing of *Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842*. The new exhibition in Gallery 3 salutes the achievements of a band of nineteenth-century scientists who circumnavigated the globe to compile scientific reports and atlases and collect thousands of bird, mammal, fish, coral, and plant specimens and ethnological artifacts. Because these specimens far surpassed the number and quality of previous U.S. collections, the expedition's findings helped to establish the natural sciences as professions in America.

Among the exhibition's highlights are a re-creation of a shipboard cabin, a 42-foot-long

mural of Antarctica, paintings of Hawaiian volcanoes, and a Fijian costume made of more than 300 feet of barkcloth.

After the private viewing, which will be held between 6:00-7:15 p.m., Members will gather in the Hall of Ocean Life for a 7:30 p.m. performance of ballads and ditties about seafaring life. Troubadours Tom Goux and Jacek Sulanowski will accompany themselves with guitars, banjo, concertina, and an assortment of bells and whistles in their performance of sea shanties.

Chanteys (pronounced and sometimes spelled *shanties*) are songs sung by the seamen during long hours of work on board ship. The tunes, which were created to help the singers endure the monotony and hardship of labor at sea, helped coordinate working rhythms and made the singers' work somewhat lighter.

Goux and Sulanowski will sing shanties from the period of

Magnificent Voyagers, tunes quite probably known to the members of the expedition. These songs will be the centerpiece of selections dating from before and after the 1840s, all from the tradition of the Yankee seafarer.

No reservations are necessary for the private viewing and concert; your membership card is your ticket of admission. Refreshments will be available between 5:45 and 8:15 p.m. at the cash bar in Ocean Life.

Magnificent Voyagers, which was organized by the National Museum of Natural History, Smithsonian Institution, and circulated by the Smithsonian Institution Traveling Exhibition Service, has been made possible in part by a generous grant from the Atlantic Richfield Foundation and the Smithsonian Special Exhibitions Fund. The exhibition at the American Museum of Natural History is sponsored by the Museum and Johnson and Higgins.



Jacek Sulanowski and Tom Goux sing sea shanties.

Magnificent Voyagers

Sunday, October 16

2:00 p.m.

Kaufmann Theater

Free



Maori image of carved wood

National Museum of Natural History, Smithsonian Institution

Dr. Herman J. Viola, director of Quincentenary Programs for the National Museum of Natural History at the Smithsonian Institution, will give an illustrated talk on the *Magnificent Voyagers*, the current exhibition in Gallery 3.

Dr. Viola created and developed the exhibition, which tells the story of the U.S. Exploring Expedition of 1838-1842. One of the largest temporary exhibitions in the history of the Smithsonian, the exhibition took four years to complete and required the cooperation of the Library of Congress, the National Ar-

chives, the Historical Division of the U.S. Navy, and the Smithsonian.

Dr. Viola is the author of numerous books and articles, including *Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842*, by Smithsonian Institution Press, and *Exploring the West, A Smithsonian Book*.

For more information call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

An Education Department Public Program.

Dance in Every Land

Tuesday, October 4

2:00 p.m.

Kaufmann Theater

Free

A colorful program of international dances will feature traditions from Spain, India, Mexico, Russia, China, Africa, Hawaii, Ukraine, Greece, and the Philippines. The program will be presented by the All Nations Dance Company, one of America's most successful and most-traveled troupes. All Nations is dedicated to fostering

international understanding through dance.

For information, call (212) 769-5305. This program is made possible in part by a grant from the Helena Rubinstein Foundation.

An Education Department Public Program.

Caribbean Song and Dance

**Marie Brooks Caribbean
Dance Theater**
Wednesday, October 5
7:30 p.m.
Main Auditorium
Free

The children of the Marie Brooks Caribbean Dance Theater developed their performance skills through the study of Caribbean, African, and Afro-American dance, drama, and music, including traditional drumming and song. This poised and disciplined group of dancers and drummers, aged 3 to 18, have traveled to the African, Caribbean, and South American countries whose traditional dances they perform.

Son de la Loma
Wednesday, October 26
7:30 p.m.
Main Auditorium
Free

The group Son de la Loma will perform the captivating rhythms of son, the traditional and popular music of Cuba. The synthesis of various African- and Spanish-derived musical expressions, son embraces a range of musical styles. Its widespread popularity in Cuba during the 1920s extended to the international scene in the late twenties and early thirties, and it remains among the most beloved of traditional musical forms.

Son de la Loma has created a unique combination of the evolving son styles. The group, formed by Armando Sanchez in New York City in the early 1970s, is dedicated to keeping alive the traditional son of Cuba.

Grupo Aymara
Wednesday, November 2
7:30 p.m.
Main Auditorium
\$4 for Members, \$5 for non-Members

Grupo Aymara demonstrates the evolution of indigenous Andean music in their two-part program. In the first part of their

concert, the musicians play the ancestral music of the Bolivian Andes. The ritual and celebration music will include original compositions that are based on ancient rhythms and instrumentations.

The second part of the concert reflects Grupo Aymara's study of the traditional songs, rhythms, and combinations of instruments developed in Bolivia since Spanish colonization. Their repertoire will feature selections from the popular Andean folk music of today, which has evolved from ancient rhythms and instruments, and their own original compositions in the folkloric style.

Formed in 1972, Grupo Aymara has performed in music festivals, theaters, churches, museums, and universities in South America, North America, and Europe. To obtain tickets for their performance, please use the coupon below or call (212) 769-5315 for further information.

**An Education Department
Public Program.**



Son de la Loma

GRUPO AYMARA

Wednesday, November 2, 7:30 p.m.

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Please make check payable to the American Museum and mail with a self-addressed, stamped envelope to: Community Programs, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Advance ticket purchase by mail is urged. Any remaining tickets will be sold only on the evening of the concert. There are no refunds, and seating is on a first-come, first-served basis.

Ticket orders will not be processed without phone number and self-addressed, stamped envelope. Members are limited to four tickets at the Members' price; all additional tickets are \$5.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Night of the Martians

Tuesday, October 25, 7:00 and 8:30 p.m.

Thursday, October 27, 7:00 p.m.

Planetarium Sky Theater

\$4 for Members, \$5 for non-Members

Of all the planets in our solar system, none have intrigued the human imagination like Mars. This fall the red planet will be closer to earth than it has been in the past 17 years. This fall also marks the fiftieth anniversary of Orson Welles's famous Halloween radio broadcast of the "War of the Worlds."

A special program at the Hayden Planetarium commemorates these occasions with actual excerpts from the legendary broadcast in which the Martians landed in New Jersey, marched on New York, and conquered the world. Then, via the best images available and Planetarium special effects, Dr. William Gutsch will present a look at Mars as an object of sci-

entific interest, from Earth-based telescope observations to unmanned probes to the colonization of Mars in the twenty-first century. In conjunction with the program, there will be a Planetarium exhibition of paintings and illustrations by noted artists and illustrators, depicting Mars in fact and fable.

Weather permitting, Members will take a close-up look at Mars through a telescope. There will also be a special selection of books, posters, and other Martian memorabilia available in the Space Shop, a live Martian to shake tentacles with, and free MARS® bars.

To register for *Night of the Martians*, please use the coupon below.



A Martian war machine marches on New York in Night of the Martians, a dramatic Planetarium program.

Space Art: The Universe through the Eyes of the Artist

Wednesday, November 9
7:00 p.m.

Planetarium Sky Theater

\$4 for Members, \$5 for non-Members

Hayden Planetarium artists Brian Sullivan and Dennis Davidson will be joined by noted astronomer and space artist William Hartmann for an illustrated talk in the Planetarium's Sky Theater.

Dr. Hartmann, an advisor to NASA and a senior scientist at the Planetary Science Institute in Tucson, will show many of his paintings depicting worlds both known and imagined. He'll discuss the universe as an inspiration to both the astronomer and the artist.

Brian Sullivan worked as an artist for the Smithsonian Institution's National Air and Space Museum and the University of Arizona's Flandrau Planetarium before joining the staff at Hayden. He has designed covers for such magazines as *Discover* and *OMNI* and created space art for NASA and the European Space Agency. Sullivan will demonstrate how he constructs and photographs models of spacecraft for Sky Shows. (The illustration above for *Night of the Martians* is Sullivan's handiwork.)

Dennis Davidson, the newest member of the Planetarium's show production team, has created artwork for NASA and a variety of aerospace companies and has acted as a consultant to the California Space Institute. He will discuss and demonstrate the use of imagery from satellites, probes, and Earth's geological formations to create space art as well as landscape panoramas and special effects

for Sky Shows. In addition, Davidson will comment on his experiences painting under the glow of ultraviolet light in the Planetarium's famous Outer

Space Black Light Gallery.

To register for *Space Art: The Universe through the Eyes of the Artist*, please use the coupon below.

PLANETARIUM PROGRAMS

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Membership number: _____

Total amount enclosed: _____

Please make check payable to the Hayden Planetarium and mail with a self-addressed, stamped envelope to: *Martians* or *Space Artists*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192.

Ticket orders will not be processed without phone number and self-addressed, stamped envelope. Members are limited to four tickets at the Members' price; all additional tickets are \$5. No refunds or exchanges on tickets.

Night of the Martians

Please indicate a first and second choice of shows, if possible:

_____ Tuesday, October 25, 7:00 p.m.

_____ Tuesday, October 25, 8:30 p.m.

_____ Thursday, October 27, 7:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

The Universe through the Eyes of the Artist

_____ Wednesday, November 9, 7:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Celebrate Caribbean Month

This month, the weekend demonstrations and performances at the Leonhardt People Center celebrate Caribbean cultures. Presentations are repeated several times each afternoon, and seating is on a first-come, first-served basis.

For further information about these programs, which are made possible by a gift from the family of Frederick H. Leonhardt, call (212) 769-5315.

1:00 to 4:00 p.m.
Leonhardt People Center
Free

October 1 and 2
Latin American Ballroom Music. Bobby Sanabria and Ascension.
Nosotros Trabajamos en la

Costura (Puerto Rican Women in the Garment Industry)

Caribbean Folk Art. Rafael Colon Morales uses slides to illustrate Caribbean folk art.

October 8 and 9

Caribbean Rhythms on Steel. Herman "Rock" Johnson and family perform popular Caribbean music.

Salsa: Latin Popular Music. Lore of the African Diaspora. Cheryl Byron and friends conduct a Caribbean journey.

October 15 and 16

Dominican Traditional Music. Los Amigos del Ritmo demonstrate music of the Dominican Republic.

Fiesta of Loiza Aldea. Sylvia Del Villard discusses the three-day festival of Loiza Aldea in Puerto Rico.

Afro-Cuban Traditional Religion. Migene Gonzalez-Wippler discusses Yoruba-derived religious practices

October 22 and 23

Traditional Music of Jamaica. Performance by De Drummers Dem and De Dawtas Dem.

Merengue: Dominican Music of Social Commentary. Debbie Pacini explores the social commentary of song lyrics.

Free Black Immigration. Roy Bryce-LaPorte discusses the experiences of Afro-Caribbean immigrants in New York City.

October 29 and 30
Music and Dance of Trinidad. Something Positive performs Trinidadian music.

Ethnobotany in Caribbean Curing Practices. Morton Marks discusses the use of plants in

Caribbean cultures.

Role of Women in the Migration of Onsha Religions. Marilyn Omifunké Torres presents a historical overview.

Sunday, October 2
Kaufmann Theater
2:00 and 4:00 p.m.
Free

Cuban Popular Music in Film. Featuring Irakere, Los Van Van, Machito and his orchestra, the Jose Cabello Orchestra, and others

Saturday, October 8
Kaufmann Theater
2:00 and 4:00 p.m.
Free

Puerto Rico Jibaro Music. Conjunto Melodía Tropical performs Spanish-derived traditional country music known as aguinaldo (Christmas music),

le-lo-lai, sones, decimas, and jibaro adaptations of European dances that include vals, polka, danza, and mazurka

Saturday, October 29
Kaufmann Theater
2:00 and 4:00 p.m.
Free

Caribbean Jump-Up. The excitement of the Trinidadian Carnival is re-created with a performance of steel drum music by the Satisfiers Steel Orchestra, traditional dance performances by Vibrations and the Alvin Forteau Caribbean Dancers, and an exhibition of Carnival costumes. Produced by Tropical Splendor and Culture and by the Cultural Association of the U.S.A.

An Education Department Public Program.

Members' Preview

Hall of South American Peoples

Participating, Donor, and Contributing Members are invited to attend a private viewing of the new Hall of South American Peoples on Thursday, November 3, from 6:00 to 8:30 p.m. The hall's opening, originally scheduled for this month, has been postponed to early 1989. To register, please use the coupon on page 3.



Happenings at the Hayden

Sky Shows

Encounter: The Search for Extraterrestrial Life tells the true story of the quest for life beyond the stars. The show explores the use of robot-operated spacecraft, high-speed computers, and ultrasensitive listening devices in scanning outer space and presents a scientific view of a "close encounter of the third kind." Through November 21.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rock-

et in their backyard and blast off one night with a magical friend for a tour of the planets. Cardboard Rocket will be shown at noon on Saturday, October 8, and on Saturday, November 12. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable

to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Museum Notes

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5606.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday,

Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday, dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday, brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For

reservations, call (212) 874-3436.

Naturemax

Two new movies are currently being shown on New York City's largest indoor movie screen.

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film in which audiences brave 12-foot waves and raging volcanoes in a re-creation of the islands' discovery. *Behold Hawaii* is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 2:30, 3:30, and 4:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown at 6:00 and 7:30 p.m. on a double-feature bill with a film that portrays Indonesian life and culture from a Western perspective. *Dance of Life* re-enacts battles by Sumba tribesmen and other colorful and dra-

matic episodes from Indonesian society.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m., Saturday and Sunday, 1:00 to 4:30 p.m. Closed Monday and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m., free tickets are distributed at the first-floor information desk.

Museum Birthday Parties

Young Members can let the good times roll with the dinosaurs or the blue whale, in Africa or on another planet. Children between the ages of 5 and 10 can choose from five exciting birthday party themes: a Dinosaur Party; a Star Party; a Safari Party; an Aquanaut Party in the Hall of Ocean Life; or a Naturemax Party in one of New York's largest theaters.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5606.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

October 1988 American Museum of Natural History

2 1:00 to 4:00 p.m. Latin American Ballroom Music: Puerto Rican Women in the Garment Industry; Caribbean Folk Art. Caribbean Month at the Leonhardt People Center. Free. Page 7.
2:00 and 4:00 p.m. Cuban Popular Music in Film. Kaufmann Theater. Free. Page 7.

9 1:00 to 4:00 p.m. Caribbean Rhythms on Steel: Salsa: Latin Popular Music: Lore of the African Diaspora. Caribbean Month at the Leonhardt People Center. Free. Page 7.
2:00 p.m. New York Shell Club Room 419. Free.

16 1:00 to 4:00 p.m. Caribbean Month at the Leonhardt People Center. Free. Page 7.
2:00 p.m. Magnificent Voyagers, a lecture on the Gallery 3 exhibition Kaufmann Theater. Free. Page 5.
2:00 p.m. New York Paleontological Society. Room 419. Free.

17 The Department of Education's Fall 1988 Lecture Series begins today. Page 2.

23 1:00 to 4:00 p.m. Caribbean Month at the Leonhardt People Center. Free. Page 7.

30 1:00 to 4:00 p.m. Caribbean Month at the Leonhardt People Center. Free. Page 7.
1:00 and 3:00 p.m. Ghost Stories. Members' family program Kaufmann Theater. Page 3. The American Museum Restaurant will be open from 11:00 a.m. to 4:00 p.m.

Wanted: Volunteer Highlights Tour Guides

The Volunteer Office is on the lookout for people who love the Museum and would like to share their admiration for this institution as Museum Highlights Tour Guides. Guides, who undergo extensive training in the history of the

Museum and its exhibitions, are needed to conduct weekend and weekday tours. Take a Museum Highlights Tour and see what they're like, if you wish to apply as a volunteer guide, call (212) 769-5566 for an application.

5 7:30 p.m. Marie Brooks Caribbean Dance Theater. Main Auditorium. Free. Page 6.

4 2:00 p.m. Dance in Every Land, a performance by All Nations Dance Company. Kaufmann Theater. Free. Page 5.

3 6:00 to 7:15 p.m. Members' private viewing of Magnificent Voyagers. Page 5.
7:30 p.m. Sea Chanties. Hall of Ocean Life, first floor. Free, and open only to Members. The Gallery 3 Shop, which will be open during the Members' private viewing, features items for purchase related to the exhibition. The cash bar in Ocean Life will be open from 5:45-8:15 p.m.

10 Columbus Day. The Museum is open.

11 8:00 p.m. Linnaean Society. Kaufmann Theater. Free.

12 7:00 p.m. New York Mineralogical Club. Leonhardt People Center. Free.



25 7:00 and 8:30 p.m. Night of the Martians at the Hayden Planetarium. \$4 for Members. \$5 for non-Members. and tickets are required. Page 6
8:00 p.m. Linnaean Society Leonhardt People Center. Free.

26 7:00 p.m. Met Grotto. National Speleological Society. Room 319. Free.
7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.
7:30 p.m. Son de la Loma Main Auditorium. Free. Page 6

31 Halloween.

The Department of Education is seeking volunteers to teach in its weekday-morning program for school classes. If you enjoy working with young people and are available at least twice a month between the hours of 10:00 a.m. and 1:00 p.m., this could be the opportunity for you.

Volunteers are also needed to assist in the Discovery Room, where children and their parents can examine selected items from the Museum's collections.

Discovery Room volunteers are needed on Saturday and Sunday afternoons from noon to 4:30 p.m.

Previous teaching experience for both of the Education Department volunteer programs is welcome but not required. You do need a willing spirit and an interest in working with children in short, informal teaching sessions.

To apply, call the Volunteer Office at (212) 769-5566 for an application.

14 7:00 p.m. Long Journey Home, a documentary about Appalachian migrants. Kaufmann Theater. Free. Page 4.

15 11:00 a.m. to 12:30 p.m. Films of Life. Kaufmann Theater. Free. Page 4.
1:00 to 4:00 p.m. Caribbean Month at the Leonhardt People Center. Free. Page 7.
2:00 p.m. Appalachians and Migration. Kaufmann Theater. Free. Page 4

22 1:00 to 4:00 p.m. Traditional Music of Jamaica. Merengue: Dominican Music of Social Commentary: Free Black Immigration. Caribbean Month at the Leonhardt People Center. Free. Page 7.

28 7:30 p.m. Ghost Stories. Members' evening program (for adults). Kaufmann Theater. \$3 for Members. \$5 for non-Members, and tickets are required. Page 3.
The American Museum Restaurant will be open prior to the Members' program.

27 7:00 p.m. Night of the Martians at the Hayden Planetarium. \$4 for Members, \$5 for non-Members, and tickets are required. Page 6.

29 11:00 a.m. New York Map Society. Room 419. Free.
1:00 to 4:00 p.m. Music and Dance of Trinidad: Ethnobotany in Caribbean Curing Practices: Role of Women in the Migration of Onisha Religions. Caribbean Month at the Leonhardt People Center. Free. Page 7.
2:00 and 4:00 p.m. Caribbean Jump-Up Kaufmann Theater. Free. Page 7

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 10 November 1988



Robert M. Peck

Scientists collect the abundant but little-known fish of the Orinoco.

Ten Weeks on the Río Orinoco

Thursday, November 17
7:30 p.m.
Main Auditorium
\$5 for Members, \$8 for non-Members

The temperatures are in the humid 90s for most of the year, and there's a relentless rainfall from June to September. Monstrous swarms of mosquitos and black flies, termed *plaga* (the plague) by locals, sometimes darken the sky. It is here in the most isolated part of Venezuela that a team of American and Venezuelan scientists sought new species of fish in one of the world's greatest but least-understood rivers, the Río Orinoco.

In his ten-week sojourn through the isolated Amazonas Territory, naturalist

Robert McCracken Peck found a vast area of wild beauty that has remained virtually unchanged since the explorations of Alexander Von Humboldt in 1800. Using photographs and recordings from a recent expedition, Peck will transport Members to a tropical wilderness for an in-depth look at cultural and scientific aspects of South America's second-largest river.

A Fellow of the Academy of Natural Science of Philadelphia, Peck has traveled extensively in South America, most recently in conjunction with a coopera-

tive U.S.-Venezuelan research project that investigated the plentiful but relatively unknown species of fish that inhabit the Orinoco and its tributaries. Peck will compare his own experiences with those of his predecessors — Von Humboldt, Alfred Wallace, and other explorer-naturalists of the nineteenth century — to offer a historical perspective on an obscure and intriguing corner of the world.

To register for *Río Orinoco*, please use the November Members' programs coupon on page 3.

Prehistoric Art

Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight commemorates the work of a distinguished artist and his contribution to the portrayal of prehistoric life.
Page 4

Behind the Scenes

An exclusive tour takes Members inside the Department of Herpetology and Ichthyology, where resident scientists will describe their studies of reptiles, amphibians, and fish.
Page 3

'Tis the Season

Avoid the last-minute crush of holiday shopping with a stop at the Museum Shop, where dozens of unusual gifts — from reproduction scrimshaw clocks to dinosaur ties — are available. And for armchair shoppers, the gift of membership is just a phone call away.
Page 5

Bring 'em Back Alive

Naturalist Andrew Simmons returns to the Museum for a Members' family program with live guest stars, including a bear, a python, and a leopard.
Page 4

Go for Baroque

A not-to-be missed concert of classical music in the Kaufmann Theater features a performance by Ensemble Sèpia.
Page 6

Exploring Western China

Thursday, December 8

7:30 p.m.

Main Auditorium

Free, and open only to Members

Rare glimpses of exotic wild-life from a long forbidden land are newly available to American eyes. Ornithologist Ben King will conduct Members on a spectacular slide-illustrated expedition — one that highlights many of the unusual sights that have been off-limits to Western naturalists for over half a century.

In 1984 King conducted the first Western expedition ever permitted to camp in the People's Republic. Since then, he has headed three expeditions and two tours and has vis-

ited seven of the twelve panda reserves in Sizchuan Province, including the preserves at Wolong and Jiuzhaigou.

Sizchuan Province, which covers an area the size of France, is one of the richest and most diverse landscapes on earth and ranges from subtropical forests to alpine grassland. Seventy-four percent of mainland China's endemic bird species live in Sizchuan, a far higher percentage than any other province.

King will recount his adventures in western China — scal-

ing mountainsides, roughing it in tented camps, and lodging at Buddhist monasteries. He'll also discuss the threats posed to Chinese birds by the deforestation of their habitats.

A field associate at the Museum, King has studied Asian birds for 27 years. He's observed 1,912 species throughout Asia and is the author of *A Field Guide to the Birds of Southeast Asia*.

To register for *Exploring Western China*, please use the November Members' programs coupon on page 3.



Tales from the Sizchuan woods

Holiday Origami Workshops

Saturday, December 3

10:30 and 11:30 a.m., 2:00, 3:00, and 4:00 p.m.

School Lunch Rooms

Free, and open only to Participating, Donor, and Contributing Members

The Members' tenth annual Holiday Origami Workshops provide an opportunity for Members of all ages to learn how to fold enchanting origami models. To register, please use the November Members' programs coupon on page 3.

Young Children's Workshop (ages 4-6). Youngsters may make swans, jumping frogs, candy canes, purses, boxes, and sailboats

Beginners' Workshop (age 6 and older). All participants will fold a whale or a blow-up bunny rabbit or a strawberry.

Intermediate Workshop (age 7 and older; anyone who can fold the flapping bird qualifies for this class). All participants will learn how to fold the brilliant eight-pointed star called Shining Alice or a dove and, time permitting, another intermediate-level fold.

All workshops are taught by Museum volunteers and members of The Friends of The Origami Center of America, the same people who fold models for our Origami Holiday Tree each year. At the conclusion of the workshops, which have been organized by origami specialists Alice Gray and Michael Shall, all Members will receive origami paper and origami instructions.

Here Come the Holidays

The Museum's annual Origami Holiday Tree goes on display in the Roosevelt Rotunda on Monday, November 21. The 3:00 p.m. lighting of the tree will be accompanied by a reception.



ROTUNDA

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Tiger Moon

Monday, December 19

7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members

The symbols of power, strength, and untrammelled freedom, tigers are shy and elusive creatures. Few biologists have been lucky enough to study them in the wild, and even fewer have been acquainted with individual tigers.

Rare insights into the lives of the great cats await Members who attend a program by Fiona and Mel Sunquist, who will recount their adventurous two-year study of tigers in the Royal Chitwan National Park of Nepal. The Sunquists' investigation of tiger social behavior and life history is spiced by unusual anecdotes of working in the wilds of Nepal. They'll describe a chance encounter with a near-sighted rhinoceros, the hazardous crossings of sloth bears, the prowling of the campsite's perimeter by leopards, and the increasing familiarity of local elephants.

Wild tigers are not easily observed — these solitary and secretive creatures are nocturnal



Tracking the tigers of Nepal

ramblers, traversing miles of dense jungle and tall grasslands. The Sunquists' studies are based on data gathered from radio transmitters strapped around the tigers' necks. The cats' travels were transcribed on field maps each night, and with

the eventual establishment of their patterns of movement, valuable information about the tigers was gradually acquired.

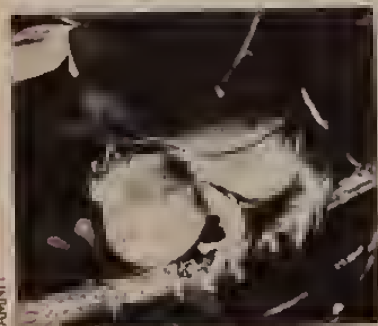
To register for *Tiger Moon*, please use the November Members' programs coupon at night.

Participating, Donor, and Contributing Members are invited to a

Behind-the-Scenes Tour of the Department of Herpetology and Ichthyology

Wednesday, December 7, and Sunday, December 11

\$10, and open only to Participating, Donor, and Contributing Members



Once again Members will have the opportunity to step behind the scenes at the Museum — this time for a look at a major international research center in the study of fishes, amphibians, and reptiles. The Department of Herpetology and Ichthyology possesses outstanding collections of approximately 1.25 million fishes and 280,000 specimens of amphibians and reptiles, including live colonies of lizards, kingsnakes, and dart poison frogs.

The tour will take Members to collection areas and research offices that are never open to the general public. Staff members from the department will explain how specimens are gathered in the field and prepared for the Museum's collections. They'll also describe some of their current research, which includes investigations of tropical frogs and snakes, unisexual lizards, and giant sea tur-

tles as well as coelacanths, the "living fossils" that were once thought to be extinct, and Madagascar silversides, a newly discovered species of primitive

fish.

To register for the tour, please use the coupon below. Early registration is advised for the limited number of places.

Behind-the-Scenes Tour of the Department of Herpetology and Ichthyology. \$10, and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

_____ Wednesday, December 7, between 5:15 and 6:00 p.m.
_____ Wednesday, December 7, between 6:30 and 7:30 p.m.
_____ Sunday, December 11, between 10:30 a.m. and noon
_____ Sunday, December 11, between 1:15 and 2:30 p.m.

Number of tickets at \$10 each: _____

Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Behind-the-Scenes*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

November Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *November Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Rio Orinoco. Thursday, November 17, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Predators. Saturday, November 19, 11:00 a.m., 1:00 and 3:00 p.m. \$2.50 for Members, \$4 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$4.

Number of Members' tickets at \$2.50: _____

Number of additional tickets at \$4: _____

Total amount enclosed for program: _____

Ensemble Sépia. Sunday, November 20, 3:00 p.m. \$5 for Members, \$7 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$7.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

Drawn from the Sea. Tuesday, November 29, 7:30 p.m. Free, and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.

Number of tickets: _____

Origami Workshops. Saturday, December 3, 10:30 and 11:30 a.m., and 2:00, 3:00, and 4:00 p.m. Free and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 10:30 a.m. _____ 11:30 a.m. _____ 2:00 p.m.
_____ 3:00 p.m. _____ 4:00 p.m.

Number of tickets for Young Children's Workshop (children must be accompanied by an adult): _____

Number of tickets for Beginners' Workshop: _____

Number of tickets for Intermediate Workshop: _____

Exploring Western China. Thursday, December 8, 7:30 p.m. Free, and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.

Number of tickets: _____

Tiger Moon. Monday, December 19, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

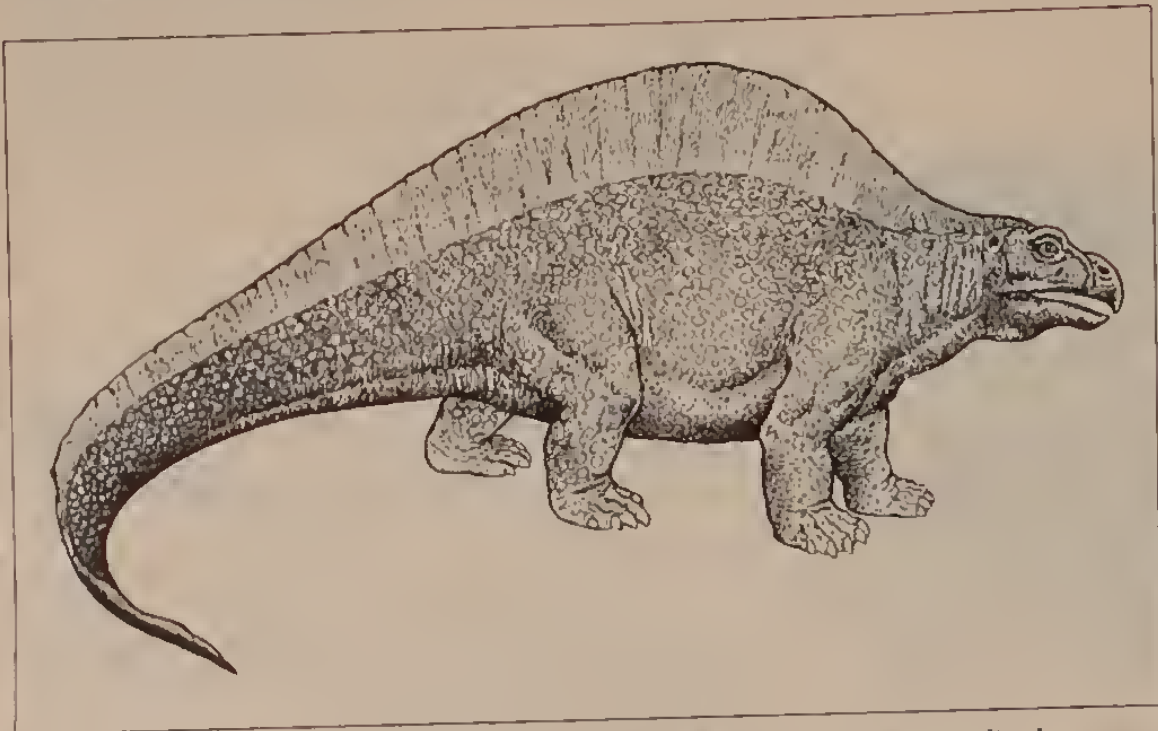
Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

From the Land of Dragons

Gallery 1
Through January 2



Spinosaurus, one of the creatures whose fossilized remains are on display.

Stare straight into the gaping skeletal jaws of a 35-million-year-old rhinoceros. The colossal skull of the largest land mammal ever known reposes nearby; this primitive rhino was 29 feet long, stood a towering 16 feet at the shoulder, and probably weighed more than 30 tons.

These gargantuan fossils are on display along with daintier specimens, such as the walnut-size skulls of rabbits and rodents and their early relatives. Their common ground is China, and the discovery of these bones contributed greatly to fleshing

out the scientific understanding of vertebrate evolution. *From the Land of Dragons* is a unique portrayal of the evolution of dinosaurs, mammals, and their early relatives.

The most comprehensive collection of Chinese fossils ever displayed outside the People's Republic, the exhibition was produced through the cooperation of the American Museum and the Institute of Vertebrate Paleontology in Beijing. The exhibition on display include turtles, crocodiles, dinosaurs, mammals, and their early relatives. Each of the skel-

etons is accompanied by a drawing or model of its appearance in life. Wall displays diagram the animals' evolutionary history over the last 300 million years, and a video program narrated by Michael Douglas traces the American Museum's history of field research in China.

The exhibition is supported by the American Museum and the Institute of Vertebrate Paleontology and Paleoanthropology in Beijing. Additional support is provided by an indemnification grant from the Federal Council on the Arts and Humanities.

Dinosaurs, Mammoths, and Cavemen The Art of Charles R. Knight

Naturemax Gallery
Through January 31

A great American artist is saluted in a stunning new exhibition of prehistoric art. *Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight* features approximately 75 paintings and illustrations and eight sculptures that were created by an artist whose extraordinary vision captured lifelike images of long-extinct creatures.

Charles Knight (1874-1953) was among the first artists to offer realistic depictions of dinosaurs, prehistoric mammals, and early man. The Brooklyn-born artist's lifelong fascination with the portrayal of animals led him to spend many hours studying the musculature and skeletal structure of exhibits at the

Bronx Zoo and here at the American Museum. In fact, some of the paintings of dinosaurs in the Naturemax Gallery were painted from skeletal models that are still on display elsewhere at the Museum.

Knight's professional association with the Museum began in 1894, when he was asked to create lifelike restorations of Tertiary mammals. The highly regarded results of his commission marked the start of a more than 40-year period during which Knight painted numerous giant murals and smaller illustrations at the Museum's request. The items on display offer just a glimpse of Knight's long and prolific career, but it's a vital and memorable view.



Tyrannosaurus rex and Triceratops is among the paintings on display in the Naturemax Gallery.

Drawn from the Sea

Tuesday, November 29

7:30 p.m.

Main Auditorium

Free, and open only to Members

Art and science are triumphantly joined in a fascinating new exhibition, the history and significance of which will be explored in a special Members' program.

Drawn from the Sea, the temporary exhibition in the Akeley Gallery, consists of 95 fish illustrations that date from 1838 to 1988 and were created by artists whose backgrounds range from the self-taught to the professionally trained. The exhibition depicts the step-by-step process of scientific illustration, from the initial specimen to the final portrait, along with the history, techniques, and uses of scientific illustration.

The beauty of the watercolors and pen-and-ink drawings of fish tends to obscure their less obvious value — their scientific importance. In terms of accuracy, some biologists feel that illustration is superior even to photography in portraying intricate color patterns and anatomical details. The Members' program will emphasize the illustrations' contribution to science.

The program will be pre-

sented by Michael Smith, Kalbfleisch assistant curator in the Department of Herpetology and Ichthyology and resident curator for *Drawn from the Sea*. Dr. Smith will highlight items from the exhibition, emphasizing their scientific significance in addition to their aesthetic appeal. He'll explain the relevance

of the exhibition's subtitle, *Art in the Service of Ichthyology*, and he'll describe the various ways in which illustration has helped to improve the science of ichthyology.

To register for *Drawn from the Sea*, please use the November Members' programs coupon on page 3.



The process and results of scientific illustration are the subjects of an exhibition and Members' program.

Let Them Eat Meat

Saturday, November 19

11:00 a.m., 1:00 and 3:00 p.m.

Kaufmann Theater

\$2.50 for Members, \$4 for non-Members

Carnivorous creatures take center stage this month in a Members' family program that offers a lively look at predators. The live meat-eaters making guest appearances include a 75-pound Burmese python, a baby cougar, a black leopard, a bear cub, and a golden eagle.

The animals will be presented by naturalist Andrew Simmons, who will describe their lives in the wild. He'll explain their adaptations for survival and discuss the conservation measures enacted to protect them.

Simmons' wildlife programs are a treat for audiences of all ages. His skill in handling wild animals and his extensive knowledge of their ecology are the result of 20 years' experience in the field. Simmons' work on behalf of endangered species, including his exciting and realistic programs, have won him widespread acclaim in television and print.

To register for *Predators*, please use the November Members' programs coupon on page 3.

Holiday Hunter-Gatherers Collect at the Museum Shop

The infinite variety of life on this planet is reduced to a manageable microcosm for holiday shoppers. Here at the Museum, a superlative assortment of unusual gifts from all parts of the globe are available at the Museum Shop.

In keeping with our premier dinosaurian collections, the Museum Shop boasts an extensive array of dinosaur gifts. Dinosaur items include T-shirts (\$10 to \$12.50), tote bags (\$19.50), and lucite sculptures suitable for office or desktop decor (\$10.75 to \$150). Kits for assembling your own dinosaur are available in wood, fabric, and plastic.

The Shop is now offering its popular dinosaur ties in a handsome new pattern and fabric. Four familiar dinosaur motifs (*Stegosaurus*, *Brontosaurus*, *Tyrannosaurus*, and *Triceratops*) are all available on one tie and in red, burgundy, and navy silk (\$22.50). The attractive pattern is also available on scarves (\$25).

Shoppers can purchase items related to Museum exhibition

themes. For instance, there is a wealth of items corresponding to the *Magnificent Voyagers* expedition to the South Seas and Antarctica: a selection of globes (\$10 to \$336), Northwest Coast jewelry (\$37.50 to \$105), min-



erals (\$5 to \$1,000), a catalog (\$21.95), and an attractive poster (\$8). Reproduction scrimshaw, which resembles ivory, will be available in the form of decorative key holders, boxes, jewelry, and clocks (\$16 to \$125).

Items inspired by the soon-to-be-opened Hall of South American Peoples include baskets from Venezuela (\$20 to \$100); Peruvian pottery figures, bowls, and boxes of glass and wood (\$20 to \$200); and gold-plated jewelry from Colombia made by the lost-wax process (\$35 to \$300).

Handcrafted jewelry from around the world is available, including Native American, South American, Chinese, and Indian pieces. Prices range from \$15 for a pair of earrings to \$900 for a fetish necklace. There is also a wide range of unusual mineral gifts in quartz, onyx, amethyst, and pyrite, including clocks (\$26 to \$56), bookends (\$42 to \$312), and pen sets (\$32 to \$77).

The Shop's book department

has an outstanding selection of books on natural history, as well as posters, globes, and greeting cards with images of the natural world.

The Junior Shop offers many entertaining and educational items for children. Kids can find gifts that won't strain a junior-size budget, such as coloring and activity books, jewelry, and animal reproductions.

The Museum Shop is located on the first floor, near the Great Canoe, in the 77th Street lobby. It's open from 10:00 a.m. to 5:45 p.m. every day of the week except Wednesday, when it's open till 7:45 p.m. The Junior Shop, located on the lower level near the subway entrance, is open every day from 10:00 a.m. to 4:45 p.m. For further information, call (212) 769-5150.



Members' Book Program

"Outside of a dog, a book is a man's best friend," Groucho Marx once declared. "Inside of a dog," he added, "it's too dark to read." A delightful variety of new best friends is available through the 1989 catalog of the Members' Book Program, whose selections range from how-to books on photographing animals and planning your own African safari to lavish travelogues of Hawaii, Alaska, and Bali. In addition, the catalog features biographies, books about wildlife, and children's books, all available to Members at substantial discounts off the publishers' prices.

The life and work of an extraordinary scientist are explored in *Woman in the Mists: The Story of Dian Fossey and the Mountain Gorillas of Africa*. Fossey's impassioned and controversial attempts to protect this endangered species are profiled, and the lasting value of her research is documented. Explorer Jacques-Yves

Costeau's travels across the oceans of the world are vividly illustrated in *The Whale*, a meditation on the lordly creatures of the deep. Researcher Cynthia Moss's 13-year study of the complexities of elephant society is recorded in *Elephant Memories*, an engaging memoir of life in the pachyderm family circle.

The mysteries of astrophysics, time, and the universe are unraveled for nonspecialists within *A Brief History of Time*.

Stephen W. Hawking's masterful work is refreshingly free of excessive jargon and equations, and it transcends space and time to guide readers on an unforgettable tour across the universe.

The Power of Myth, an illustrated dialogue between scholar Joseph Campbell and television journalist Bill Moyers, sums up the lifework of the world's foremost authority on mythology. The Book Program also offers videocassettes of the acclaimed six-part PBS series *Joseph Campbell and the Power of Myth* (available individually or as a set).

For Museum lovers, there's *Dinosaurs in the Attic: An Excursion into the American Museum of Natural History*, a behind-the-scenes view of the Museum's history and collections by Douglas Preston, a former columnist for *Natural History* magazine. *Life Pulse: Episodes from the Story of the*

Fossil Record by Niles Eldredge, respected author and curator in the Department of Invertebrates, unearths the clues to extinction, survival, and regeneration that are buried in fossil and rock the world over. And one of the Museum's most famous personalities is explored in *Margaret Mead: A Life*, a biography of the distinguished anthropologist.

For a colorful perspective on the new year, three brilliantly hued calendars are available. *Crystals*, highlighting minerals and gems from the Museum's outstanding collections, *Totems and Talismans: The Northwest Coast Indian Art Collection at the American Museum of Natural History*, which juxtaposes stunning color artworks with historical field photographs; and *Dinosaurs!*, a treat for dinosaur lovers of all ages.

To order a free Members' Book Program catalog, please use the coupon below.

Members' Book Program

☐ Please send me the free book catalog, featuring books in all areas of natural history and anthropology, with special discounts off the publishers' prices.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____

Please mail this coupon to: *Members' Book Program*, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The Gift of Membership

Members wishing to give gift memberships can do so at a special holiday rate: only \$30 for a Participating Membership and \$15 for an Associate Membership. All Members receive *Natural History* magazine, free Museum admission, and numerous discounts. Associate Membership is perfect for individuals and people who live outside the New York area. Participating Membership is ideally suited to families and anyone who wants to take part in all our exciting programs.

Take care of your gift orders today. Just use this coupon to place your order, or save time by calling our toll-free number: 1-800-234-5252. Once we receive your order, we will announce your gift of Membership with a beautiful card.

☐ YES! A gift of Membership is a wonderful idea. Please enroll the following as:

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Mail this coupon to *Gift Membership*, Membership Office, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192.

Space Art: The Universe through the Eyes of the Artist

Wednesday, November 9
7:00 p.m.
Sky Theater
\$4 for Members, \$5 for non-Members



William Hartmann

The explosive formation of Saturn's rings, pictured above, is the vision of astronomer and space artist William Hartmann. This month, Dr. Hartmann and artists Brian Sullivan and Dennis Davidson will discuss the portrayal of outer-space landscapes and phenomena during an illustrated and otherworldly program in the Planetarium's Sky Theater.

Dr. Hartmann, an adviser to NASA and a senior scientist at the Planetary Science Institute in Tucson, will focus on the universe as an inspiration to both

the astronomer and the artist. He'll display several of his paintings that envision worlds both known and imagined.

Brian Sullivan will demonstrate how he constructs and photographs models of spacecraft for the Planetarium's Sky Shows. Sullivan has designed covers for such magazines as *Discover* and *OMNI*, and he's created space art for NASA and the European Space Agency. Before joining the staff at Hayden, he worked as an artist for the Smithsonian National Air and Space Museum and the

Flandrau Planetarium.

Dennis Davidson will discuss and demonstrate the use of imagery from satellites, probes, and Earth's geological formations to create space art as well as landscape panoramas and special effects for Sky Shows. The newest member of the Planetarium's show production team, Davidson has created artwork for NASA and a variety of aerospace companies and has acted as a consultant to the California Space Institute.

For ticket information, please call (212) 769-5920.

Haydn at the Hayden

Tuesday, December 13,
and Thursday, December 15
7:00 and 9:00 p.m.
Sky Theater
\$10 for Members, \$13 for non-Members

For the fifth consecutive year, the Hayden Planetarium will offer a holiday concert of classical music under the stars. This year's offering, which features works by Haydn, will be performed by the New York Philomusica and called (you guessed it) *Haydn at the Hayden*.

The New York Philomusica is a chamber music organization of distinguished local artists. For the past 17 years they have appeared at Alice Tully Hall and Merkin Hall as well as throughout the United States and Europe. The *New York Times* characterized their performances as "everything one could possibly ask for. All the musicians involved are among the

best in the city. Collectively they delineate the music's charm, delicate instrumental hints, and tuneful infectiousness with expert ensemble precision and beautiful tonal blend."

This year's concert will encompass masterpieces of the single-instrument repertoire from a modest trio to a full-scale concerto. As always, the Planetarium staff guarantees a clear night under the magnificent stars of the Sky Theater and will add the magic of environmental special effects and laser imagery to create a feast for the eyes as well as the ears.

Performances are sure to sell out early, so please call (212) 769-5920 for ticket information today.



Carol Rowley

The New York Philomusica will perform holiday concerts on December 13 and 15 in the Planetarium's Sky Theater.

Contradanza and Quadrille Transformation of European Social Dance in the Americas

Wednesday, November 16
7:00 p.m.
Main Auditorium
Free

Few listeners would guess that a Cuban mambo bears a historical relation to a Panamanian-West Indian quadrille or to a Haitian contradance. The evolution of these dances over the past two centuries in a variety of social and cultural settings is the subject of *Contradanza and Quadrille*, a lecture/performance program hosted by anthropologist Morton Marks.

Most countries throughout the Americas have some version of eighteenth- and nineteenth-century European court and social dances — the contradance, quadrille, schottische, and mazurka. The quadrille is perhaps the most significant of these dances, and its impact is still felt throughout Caribbean popular music. A cousin of the American square

dance, the quadrille has been subject to varying degrees of African influence throughout the Caribbean.

In addition to Africanization, the quadrille and related forms were reshaped for popular dance music. In eastern Cuba, for example, the contradance arrived with French planters and slaves fleeing the Haitian slave rebellion of 1791. Other European dance forms such as the cuadrillas and the lanceros entered urban Cuban society in the mid-nineteenth century. With the evolved contradance, these European forms led to the habanera, which led in turn to the development of the danzón, a three-themed couple dance that became particularly associated with charanga orchestras. A mambo section was eventually added to the end of the

danzón, the cha-cha ultimately developed from the mambo, and both of these dances evolved from the contradance-quadrille family.

Contradanza and Quadrille will explore these and other remarkable connections in the dances of the New World. Performing groups will include Troupe Shango, the Comelia Square Dance Society, Grupo Folklorico de Panama, the Charles Moore Dance Theater, and Something Positive.

This program is made possible by the Henry Nias Foundation and the Samuel and May Rudin Foundation. For further information, call (212) 769-5315.

An Education Department
Public Program.

Mozart and More

Sunday, November 20
3:00 p.m.
Kaufmann Theater
\$5 for Members, \$7 for non-Members

Classics from the Baroque to the present will be performed by Ensemble Sèpia in a Members' Sunday afternoon program of music at the Museum. The concert of strings, woodwinds, and brass instruments will feature a variety of musical selections.

The ensemble is dedicated to bringing classical and modern music to audiences of diverse cultural backgrounds. The group is under the direction of Milton Jones, who founded the

ensemble in 1981 with Arnold and Melvin Greenwich.

Ensemble Sèpia has performed abroad as well as throughout the New York area, including appearances at Carnegie Hall, Trinity Church, and on WQXR-FM. They have also accompanied performances by Opera Ebony and the Dance Theater of Harlem.

To register for *Ensemble Sèpia*, please use the November Members' programs coupon on page 3.

Happenings at the Hayden

Sky Shows

Encounter: The Search for Extraterrestrial Life tells the true story of the quest for life beyond the stars. The show explores the use of robot-operated spacecraft, high-speed computers, and ultrasensitive listening devices in scanning outer space and presents a scientific view of a "close encounter of the third kind." Through November 21.

What led the Wise Men to Bethlehem — a special star, a comet, a meteor, or something else? *The Star of Christmas*, from November 23 through January 2, is the story of how historians, theologians, linguists, and astronomers worked together to unravel an ancient mystery.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard

Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, November 12, and Saturday, December 10. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central

Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

South American Peoples

Members' Preview



The Museum's newest permanent exhibition hall, *The Hall of South American Peoples*, will open to the general public in early 1989. In the meantime, Participating, Donor, and Contributing Members are invited to a preview of the magnificent new hall. The preview will take place on Thursday, November 3, from 6:00 to 8:30 p.m. Please call the Membership Office at (212) 769-5606 for ticket availability.

The Museum Is Open

Hours Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times. For suggestions regarding alternative parking lots in the area, please call the Membership Office at (212) 769-5606.

Coat Checking From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30

p.m. on Wednesday, Friday, and Saturday. Located on the second floor, \$.50 per item.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday, Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations, call (212) 874-3436.

Native American Month

November is Native American Month at the Leonhardt People Center, where Indian dances, crafts, and customs will be explored in a series of weekend performances, talks, and demonstrations. The programs, which will take place on Saturdays and Sundays from 1:00 to 4:30 p.m., are presented by the Department of Education and made possible in part by a gift from the family of Frederick H. Leonhardt. For a schedule of events, please see the calendar on page 8 or call (212) 769-5310 for further information.



Naturemax

Two new movies are currently being shown on New York City's largest indoor movie screen.

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film that re-creates the islands' discovery. *Behold Hawaii* is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 2:30, 3:30, and 4:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown at 6:00 and 7:30 p.m. on a double-feature bill with *Dance of Life*, a film that portrays Indonesian life and culture from a Western perspective.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

Special Exhibitions and Highlights

An exhibition of Chinese fossils, *From the Land of Dragons*, is on display in Gallery 1. The skeletons of reptiles and mammals are presented within an evolutionary framework, and they constitute the most comprehensive collection of fossils from China ever exhibited in the Western Hemisphere.

Through January 2. Page 4
The Magnificent Voyagers: The U.S. Exploring Expedition,

1838-1842, chronicles the scientific and maritime achievements of a team of explorers who circumnavigated the globe in a four-year journey. In Gallery 3, through January 1.

Drawn from the Sea: Art in the Service of Ichthyology examines the history of scientific illustration with dozens of drawings and paintings of fish. In the Akeley Gallery, through December 11. Page 4.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday, 1:00 to 4:30 p.m.; Closed Sunday, Monday, and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk.

Museum Birthday Parties. Young Members can let the good times roll with the dinosaurs or the blue whale, in Africa or on another planet. Children between the ages of 5

and 10 can choose from five exciting birthday party themes: a Dinosaur Party; a Star Party; a Safari Party; an Aquanaut Party in the Hall of Ocean Life; or a Naturemax Party.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor bags. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5606.

Sun November 1988

Mon

Tue

1

Wed

Thu

Fri

Sat



6 1:00 to 4:30 p.m. Thunderbird Dancers, Tiospaye: The Extended Family and Sioux Pow-Wows, a presentation by Nadema Agard; Southwestern Water Jars, a slide-talk and demonstration of pottery techniques by Diosa Summers-Fitzgerald. Native American Month at the Leonhardt People Center. Free. Page 7.

7

8 8:00 p.m. Linnaean Society. Kaufmann Theater. Free. Election Day.

9 7:00 p.m. The Universe through the Eyes of the Artist. Planetarium Sky Theater. \$4 for Members, \$5 for non-Members, and tickets are required. Page 6.

7:00 p.m. New York Mineralogical Society. Leonhardt People Center. Free.

Veterans Day.

11

10 7:00 p.m. New York Microscopical Society. Dr. Jerome Metzner, past president of NYMS, discusses "Microbe Hunting." Room 419. Free.

12 1:00 to 4:30 p.m. Shawls, Feathers, and Turtle Shells, a dance demonstration by Jamie Bradford and Brendan James Ferraro; Potlatches of the Northwest Coast, a slide-talk by Mary Jane Lenz; Native American Storytelling with Dolls, a presentation by Ina McNeil. Native American Month at the Leonhardt People Center. Free. Page 7.

13 1:00 to 4:30 p.m. Shawls, Feathers, and Turtle Shells: Potlatches of the Northwest Coast, a slide-talk by Mary Jane Lenz; Native American Storytelling with Dolls, a presentation by Ina McNeil. Native American Month at the Leonhardt People Center. Free. Page 7.

2:00 p.m. New York Shell Club. Room 419. Free.

14

15 6:00 to 9:00 p.m. Taste of New York. Radio personalities from WOR 710 AM will sign autographs and the station will broadcast from the Hall of Ocean Life. Tickets are \$7, and can be purchased at the door. Call (212) 642-4500 for further information.

16 7:00 p.m. New York Lapidary and Gem Society. Leonhardt People Center. Free.

7:00 p.m. Met Grotto, National Speleological Society. Room 323. Free.

7:00 p.m. Contradanza and Quadrille. Main Auditorium. Free. Page 6.

18

17 7:30 p.m. Rio Orinoco. Members' evening program. Main Auditorium. \$5 for Members, \$8 for non-Members, and tickets are required. Page 1.

19 11:00 a.m., 1:00 and 3:00 p.m. Predators. Members' family program. \$2.50 for Members, \$4 for non-Members and tickets are required. Kaufmann Theater. Page 4.

1:00 to 4:30 p.m. Little Rabbit Dancers, storytelling through dance; Tiospaye: The Extended Family and Sioux Pow-Wow; American Indian Jewelry. Native American Month at the Leonhardt People Center. Free. Page 7.

24 Thanksgiving Day. The Museum is closed.

23 The Star of Christmas opens at the Hayden Planetarium.

22 8:00 p.m. Linnaean Society. Linder Theater. Free.

21 3:00 p.m. The lighting of the Onigami Holiday Tree takes place in the Roosevelt Rotunda. Page 2.

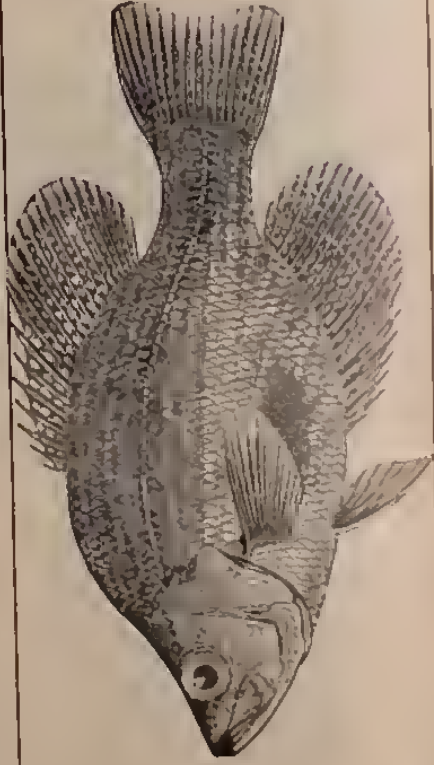
Last chance to see Encounter: The Search for Extraterrestrial Life at the Hayden Planetarium.

20 1:00 to 4:30 p.m. Little Rabbit Dancers; Tiospaye: The Extended Family and Sioux Pow-Wow; American Indian Jewelry. Leonhardt People Center. Free. Page 7.

2:00 p.m. New York Paleontological Society. Room 419. Free.

3:00 p.m. Ensemble Sèpia, a Members' concert. Kaufmann Theater. \$5 for Members, \$7 for non-Members. Page 6.

27



29 7:30 p.m. Drawn from the Sea. Members' evening program. Free, and open only to Members. Tickets required. Page 4.

The American Museum Restaurant will be open prior to the Members' program.



Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturamax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 13, No. 11 December 1988



Columbia Mammoths, on display in the Naturemax Gallery

Dinosaurs, Mammoths, and Cavemen The Art of Charles R. Knight

A spear-wielding Neanderthal confronts a wild boar, lake dwellers of the Bronze Age pursue a great stag, and a desperate pair of tyrannosaurs are locked in a tooth-and-claw struggle for supremacy in a current exhibition of prehistoric art. The walls of the Naturemax Gallery are alive with bold visions of the paleontological past in *Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight*, which presents highlights from the career of an artist famed for his re-creations of dinosaurs, prehistoric mammals, and early humans. The exhibition features approximately

75 paintings and illustrations and eight sculptures by Charles Robert Knight (1874–1953), who was among the first artists to offer realistic depictions of prehistoric creatures. Knight's youthful imagination was fired by his first visit to the American Museum in 1879, but the 5-year-old could scarcely have guessed that this great treasure house would become his professional home for over 40 years and that his work would delight millions of Museum visitors in future generations. Knight's art has also served as an inspiration for countless paleontological artists, who commonly use his

work as a reference in their own portrayals of prehistoric life.

"I never think of a fossil animal as being dead," Knight once remarked, "but always picture it in my mind's eye as alive — an animated, breathing, moving machine which stands, walks, fights, or otherwise conducts itself after the fashion of a living creature." His dynamic perspective is evidenced by the paintings and drawings on display, which are arrestingly vivid and lifelike.

This temporary exhibition of his work will be on display in the Naturemax Gallery through January 31.

Rocking in the USA

Sidney Horenstein will conduct Members on *A Whirlwind Tour of the Geology of the United States*, a trip through some of the Museum's halls that will travel through geologic time to relive the evolution of North America. Horenstein will also lead Members on a look at *The Museum: Inside and Out*, tours that explore the institution's natural history.

Page 8

African Pride

Celebrate Kwanzaa this month at the Museum, where the Department of Education offers three days of fun-filled events that spotlight African music, dance, and culture.

Page 2

Hold the Tiger

Members can get the inside story on the behavior and life patterns of the elusive tigers of Nepal. Join Fiona and Mel Sunquist for *Tiger Moon*, a wild program that tracks the great cats through jungles and grasslands.

Page 8

River Deep, Mountain High

Rare glimpses of China's Sichuan Province will be sighted in a Members' program that takes a hiker's perspective of a long-forbidden land. *Exploring Western China* will re-create an expedition through rugged terrain for a fascinating view of a remote region.

Page 3

Universal Knowledge

Calling all stargazers: it's time to register for the Planetarium's courses in astronomy, aviation, and navigation, and other celestial pursuits. The courses range in levels from basic to advanced.

Page 10

Celebrate Kwanzaa

Tuesday, December 27, Wednesday, December 28, and Thursday, December 29
See below for specific events, times, and locations
Free (some programs require tickets)

Tuesday, December 27

Marie Brooks Caribbean Dance Theater. 2:00 and 4:00 p.m., Kaufmann Theater. An energetic, colorful music-and-dance presentation highlights the culture, spirit, and pride of African peoples. The program looks back at the African diaspora and celebrates cultural continuities as well as unique regional identities. It features the dances and rhythms of Shango, the Yoruba deity of thunder and lightning, as well as other Afro-Caribbean rhythms and dances performed during rites of passage and social occasions.

African Music. 1:00 and 3:00 p.m., Linder Theater. Ngoma Sasa performs a diverse repertoire that ranges from classical African melodies to the irresistible beat of contemporary African dance music.

***Comrows.** 1:00 to 4:00 p.m., Leonhardt People Center. Camille Yarborough, author of the award-winning book *Comrows*, conducts a lecture/demonstration on the art of comrowing that explores the African tradition of braiding hair and its significance in America

today.

***Caribbean Folktales.** 1:00 to 4:00 p.m., Leonhardt People Center. Cheryl Byron and Company take the audience on a journey through dramatized musical presentations of African, African-American, and Caribbean folktales.

African Playtime. 1:00, 2:00, 3:00, and 4:00 p.m. Blum Lecture Room. Young participants listen to and create stories and play traditional games with Selina Akua Ahoklui.

Stenciling. 1:00, 2:00, 3:00, and 4:00 p.m. Room 319. In an exciting participatory workshop, Quassia Tukufu teaches an ancient African tradition of cloth design.

Wednesday, December 28

Sankofa Music. 2:00 and 4:00 p.m., Kaufmann Theater. Kimati Dinizulu and His Kotoko Society use traditional instruments from a variety of African cultures to perform Sankofa music. Sankofa music's traditional techniques add new rhythmic, harmonic, and melodic progressions to contemporary music.

African-American Dances. 1:00 and 3:00 p.m., Linder Theater. The Camel Walk, Lindy Hop, and Charleston were popular American dances derived from African sources. Mellow Moves Plus One demonstrate a variety of African-American dances.

***Folkloric Dance.** 1:00 to 4:00 p.m., Leonhardt People Center. Obara Wali Rahman and Company demonstrate and discuss folkloric dance steps that are popular in Senegambia.

***Kwanzaa Foods of the Diaspora.** 1:00 to 4:00 p.m., Leonhardt People Center. Using foods from Africa, the American South, and the Caribbean, Empress Akweke will demonstrate how to prepare traditional dishes that observe the Nguzo Saba (Seven Principles) during Kwanzaa and throughout the year.

African Culture through Dance. 1:00, 2:00, 3:00, and 4:00 p.m. Blum Lecture Room. A mini workshop conducted by Pat Hall features the rhythms of African instruments and dance movements from Africa, Brazil,

and Haiti.

Tie-Dye. 1:00, 2:00, 3:00, and 4:00 p.m. Room 319. Carmen Lowe conducts a hands-on mini workshop in which participants learn the West African technique of tie-dyeing.

Thursday, December 29

What is Kwanzaa? 2:00 p.m. Kaufmann Theater. A family holiday musical exploring the significance and meaning of Kwanzaa. Performed by Medicinally Yours Productions; written and produced by Waliyaya Coulter.

In Praise of the Community. 7:30 p.m. Main Auditorium. African-Americans have drawn upon African creative expressions to form unique dance and music styles. These musical expressions have, in turn, transplanted African cultures to new lands. A program of music, dance, and song will highlight musical styles that have developed in the diaspora cultures.

For free tickets to *In Praise of the Community*, send a self-addressed, stamped envelope by December 15, 1988 to: De-

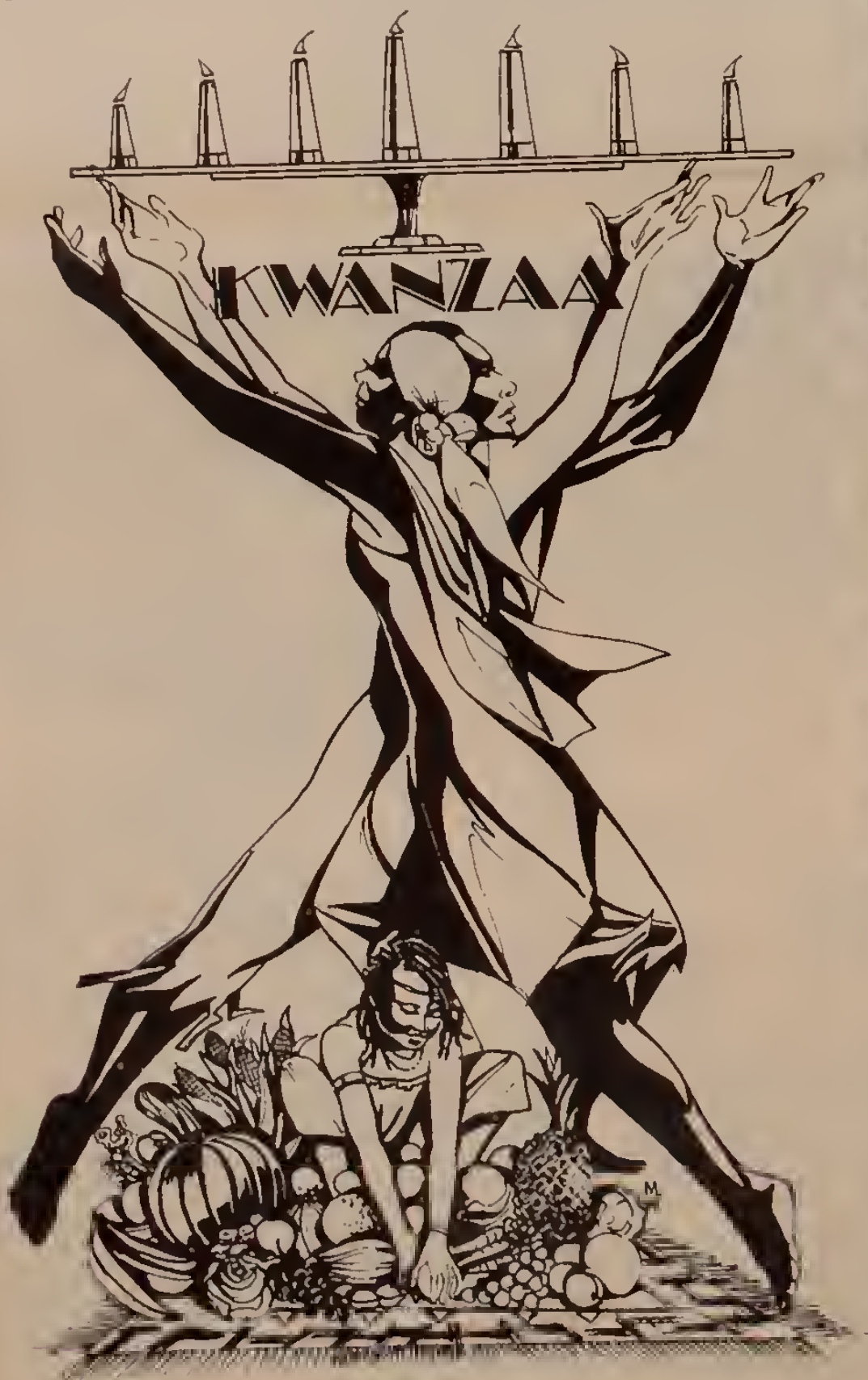
partment of Education, Community Programs, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. No more than two tickets per request, please.

*Leonhardt People Center programs take place periodically between 1:00 and 4:00 p.m. and are repeated throughout the afternoon.

Free tickets to events on December 27 and 28 will be distributed starting at 11:00 a.m. on the day of the performance at the first-floor Kaufmann Theater ticket booth. Tickets are available on a first-come, first-served basis, and only two tickets per adult will be issued.

For further information about the Museum's celebration of Kwanzaa, call (212) 769-5315. These programs have been made possible in part by a gift from the Vidda Foundation and are cosponsored by the New York Urban Coalition.

An Education Department Public Program.



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Exploring Western China

Thursday, December 8
7:30 p.m.
Main Auditorium
Free, and open only to Members

The snow-capped mountains on the eastern edge of the Tibetan Plateau in southwest China are both spectacular and extremely rugged. Home of the giant panda and some of the world's most exotic pheasants, this area was closed to Western travelers and scientists until the early 1980s.

Ornithologist Ben King has since spent nine months in studying the birds of western Sichuan Province. His experiences operating three ornithological expeditions to four giant panda reserves in western Sichuan are the focus of *Exploring Western China*. Members can discover this remote area for themselves as they travel with him in this slide-illustrated program, which retraces the routes of the only tour groups ever allowed to camp out on any of China's natural reserves. King's slides feature the magnificent scenery, the expedition's activities, the local people, and a few of the native birds. He will discuss his experiences among the people of China as well as the Chinese attitudes toward conservation, attempts to establish ecologically sound programs, and the long-term prospects of conservation in China.



Leslie Hogan

A field associate at the Museum, King has studied Asian birds for 29 years and knows the birds of China better than any other ornithologist. In addition to leading numerous birding tours, he's done extensive exploratory birding all over China and has seen all but 69 of China's 1,220 species and all but 11 of Sichuan's 600-plus species. King seeks field notes

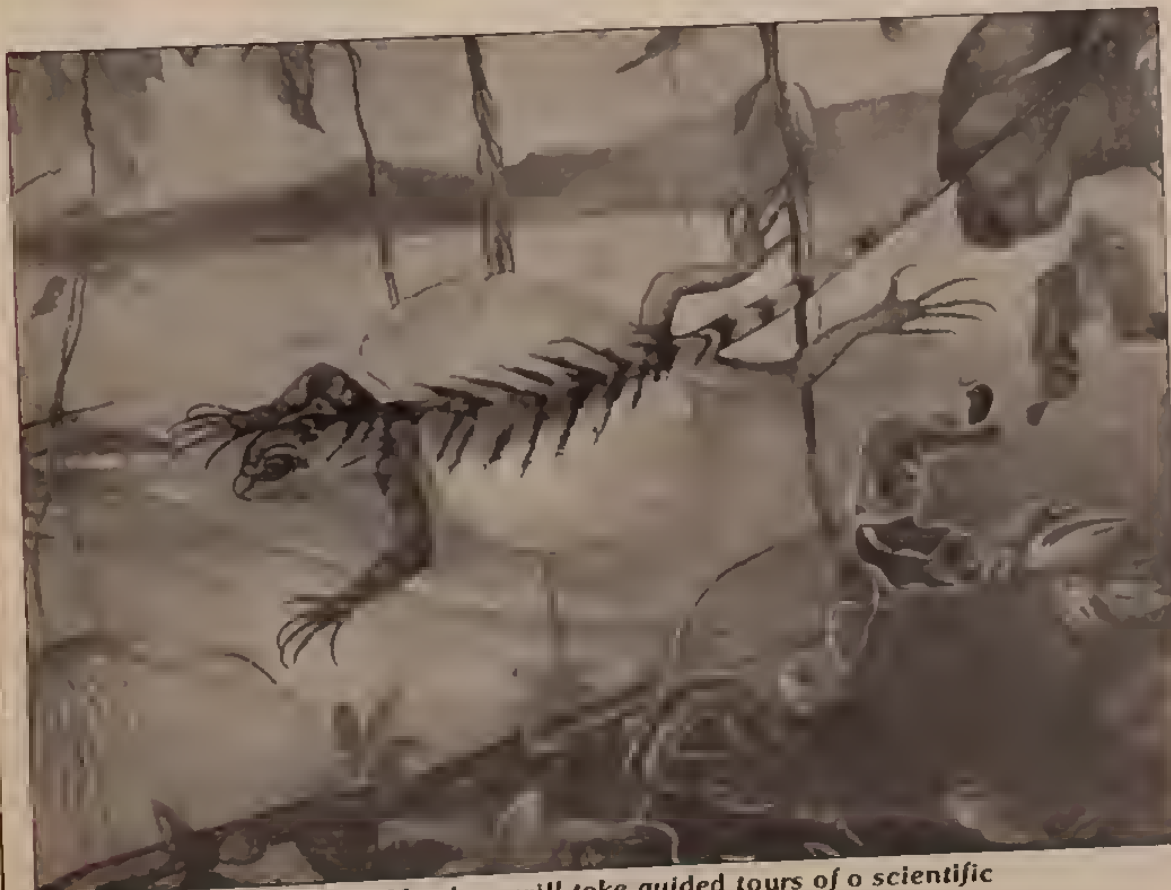
and tape recordings of as many species of birds as possible for his series of field identification books on the birds of Asia — he's the author of *A Field Guide to the Birds of Southeast Asia* and is researching books on the birds of India and China.

Please call the Membership Office at (212) 769-5606 for ticket availability for *Exploring Western China*.

Participating, Donor, and Contributing Members are invited to a

Behind-the-Scenes Tour of the Department of Herpetology and Ichthyology

Wednesday, December 7, and Sunday, December 11
\$10, and open only to Participating, Donor, and Contributing Members



AMNH

This month Members will take guided tours of a scientific department of the Museum to learn about ongoing studies of fishes, amphibians, and reptiles. Call (212) 769-5606 for ticket availability.

December Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *December Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Tiger Moon. Monday, December 19, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Inside and Out. Wednesday, January 11, 3:00 and 6:00 p.m. \$8, and open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of times, if possible:

_____ 3:00 p.m. _____ 6:00 p.m.

Number of tickets at \$8: _____

Total amount enclosed for program: _____

Frozen in Time. Thursday, January 19, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Sharks. Monday, January 23, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Shoestring Players. Saturday, January 28, and Sunday, January 29, 1:00 and 3:00 p.m. \$5 for Members, \$7 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$7.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

Whirlwind Tour. Wednesday, February 1, 3:00, 4:30, 6:00, and 7:30 p.m. \$8, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:

_____ 3:00 p.m. _____ 4:30 p.m.

_____ 6:00 p.m. _____ 7:30 p.m.

Number of tickets at \$8: _____

Total amount enclosed for program: _____

Please look over your coupon before mailing it to the Museum. Have you included your name and address? Does the total amount enclosed equal the sum of the amount enclosed for each program? In order to avoid confusion, please do not send coupons addressed to different Museum departments in the same envelope. Thank you for checking.

Music Talks A Children's Concert

Sunday, December 11
3:00 p.m.
Kaufmann Theater
Free

The Bloomingdale Chamber Orchestra will make its seventh annual appearance at the Museum this month to present a special concert for young people. The program is designed to introduce the works of Rossini, Mozart, and Beethoven in an imaginative and exciting way.

The ensemble will perform Rossini's *Overture to the Italian in Algiers*, Mozart's *Piano Concerto No. 23 in A Major, K. 488*, and Beethoven's *Symphony No. 1 in C Major*. Joining the orchestra for the Mozart piano concerto will be pianist Abdullah Felipe Hall, who is the winner of the 1986 Dean Dixon Memorial Award and has toured extensively in Europe, Latin America, and the United States.

The orchestra's newly appointed music director, David Briskin, is an active conductor who has performed throughout the United States and in New York City in addition to directing the Falmouth Chamber Orchestra. The Bloomingdale House of Music is a nonprofit community music school named for the Dutch colonial settlement Bloemendaal.

This concert is made possible by a gift from Madolyn Y. Babcock, in tribute to the memory of Ann Webster d'Autremont Dearborn. For information, call (212) 769-5305.

An Education Department
Public Program.

Sharks: Magnificent, Mysterious, and Misunderstood

Monday, January 23
7:30 p.m.
Main Auditorium
\$5 for Members, \$8 for non-Members



A noted zoologist will present a Members' program on one of the most elusive and intriguing denizens of the deep. Eugenie Clark, an ichthyologist with a special interest in sharks, will describe her latest research on the little-known deep-sea sharks.

Clark is a professor of zoology at the University of Maryland, where she joined the faculty in 1968. The recipient of

awards from the Underwater Society of America, the American Littoral Society, as well as the Gold Medal Award of the Society of Women Geographers, she is author of *Lady with a Spear*, *The Lady and the Sharks*, and more than 100 scientific and popular articles.

To register for *Sharks: Magnificent, Mysterious, and Misunderstood*, please use the coupon on page 3.

The Shoestring Players

Saturday, January 28, and Sunday, January 29
1:00 and 3:00 p.m.
Kaufmann Theater
\$5 for Members, \$7 for non-Members

A unique and energetic adventure in children's theater returns to the Museum next month. The ever-popular Shoestring Players, Rutgers University's acclaimed national children's theater company, will present another Members' family program of dramatized folktales from around the world.

The troupe derives its name from their innovative brand of theater, which makes sets, costumes, and props superfluous. With the imaginative participation of the audience, the ten actors and a percussionist create

the scenery, the sound effects, and myriad animal and human characters—performance on a shoestring! The players themselves become caves and castles, tunnels and mountains, animals and people, moving from one faraway land to another.

Their dramatizations are original adaptations of folktales that are certain to captivate young audiences. The tales are chosen for their unfamiliarity and for their ability to stimulate a child's thought and imagination.

The Shoestring Players are under the artistic direction of

Joseph Hart, associate professor of theater arts and master teacher of creative dramatics. The New Jersey-based troupe has performed at museums, civic centers, and schools throughout the Greater New York area. Each performance is one hour long and includes an intermission adventure in which the audience participates with the players in a creative dramatics exercise.

To register for *The Shoestring Players*, please use the December Members' programs coupon on page 3.



Holiday Concerts

Tuesday, December 13,
and Thursday, December 15
7:00 and 9:00 p.m.
Sky Theater
\$10 for Members, \$13 for non-Members

Classical music under the stars awaits Members with *Haydn at the Hayden*. The New York Philomusica, a distinguished chamber music ensemble, will perform works by Haydn at this year's program. The holiday tradition of Planetarium concerts is now in its fifth year.

The musicians of the New York Philomusica have been featured performers at Alice Tully Hall and Merkin Hall for

the past 17 years and have appeared throughout the United States and Europe. Their performance at the Hayden will include masterpieces of the single instrument repertory, from a modest trio to a full-scale concerto. Accompanying the music will be a spectacular panorama of starry skies with dazzling laser imagery and Planetarium special effects.

Please call (212) 769-5920 for ticket availability.

Frozen in Time

Thursday, January 19
7:30 p.m.
Main Auditorium
\$3 for Members, \$5 for non-Members

One of the greatest expeditions Britain had ever mounted set sail with confidence and high spirits on a fine May day in 1845. The Franklin Expedition intended to circumnavigate America, to discover the long-sought Northwest Passage, and to win the admiration of the world. Instead, the explorers met with starvation, scurvy, and cannibalism. Not one of the 129 crewmen survived, and both expedition ships were lost.

Although no man lived to tell the tragic tale, new light has been cast on one of the great mysteries of British and world exploration. Forensic anthropologist Owen Beattie will present an astonishing Members'

program that exposes the secrets of the Franklin disaster — secrets revealed through the examination of the corpses of three Victorian seamen.

Beattie, an assistant professor of anthropology at the University of Alberta, believed that the truth about the expedition's failure might still be hidden on Canada's King William Island, where three graves marked the expedition's final campsite. Assisted by an Arctic archeologist, research assistants, and Inuit hunters, Beattie used the latest methods of physical anthropology to exhume the sailors 133 years after their burial.

The investigators chipped, broke, and shoveled through

the permafrost, reaching deep into the frozen ground to find the mummified remains of the three crewmen. Unlike the desiccated and eviscerated Egyptian mummies, these corpses were not stiff but limp and startlingly lifelike. The Arctic cold that once worked to destroy the Franklin Expedition had also helped to reveal the secret of the expedition's destruction by preserving the victims' bodies.

Beattie, the author of *Frozen in Time: The Fate of the Franklin Expedition* (Bloomsbury Press), will report the surprising results of the autopsies. To register, please use the December Members' programs coupon on page 3.

Members' Tour of the Month

Celebrating 20 Years of Ocean Life

Free, and open only to Participating, Donor, and Contributing Members

When the Hall of Ocean Life opened on February 26, 1969, beaches were relatively clean, commercial fishing was booming, and marine life was thriving. Then came the summer of '88, when phrases like "red tide" and "medical debris" covered the news the way pollution was covering the seas. Many marine creatures are now threatened species.

What happened?

The January/February Members' Tour of the Month, *Celebrating 20 Years of Ocean*

Life, is both an anniversary salute to one of the Museum's most popular halls and a meditation on the future of the world's oceans. Rediscover the diversity of life that's magnificently represented in the hall's dioramas, from the tiny krill to the gigantic blue whale. Explore the beguiling range of behavior patterns these animals exhibit: the Pacific sea otter, which uses its chest as a combination workbench/dining table; the nomadic polar bear, which can travel upwards of 20 miles a

day, even with cubs in tow; and the giant manatee, whose gentle, nuzzling kisses to humans belie its fearsome looks.

Learn how these animals have adapted to environments ranging from Arctic to tropical and from bright, shallow waters to the darkest ocean depths. Observe the fragile and complex balance of nature that binds these creatures together, and recognize the threat posed by pervasive abuse of our waters to the beauty that the Hall of Ocean Life so wonderfully

celebrates.

All Members' tours are conducted by professionally trained volunteer Museum Highlights Tour guides and last approxi-

mately one hour. The tour is not recommended for children under 12. To register for the tours of Ocean Life, please use the coupon below.

Members' Tour of the Month: Ocean Life. Free, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of tours, if possible:

| | | | |
|------------------------|-------|-------|-------|
| Thurs., Jan. 12 (p.m.) | 2:00 | 2:30 | |
| Sat., Jan. 14 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Jan. 18 (p.m.) | 6:15 | 6:45 | 7:15 |
| Sat., Jan. 21 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Jan. 22 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., Jan. 25 (p.m.) | 6:15 | 6:45 | 7:15 |
| Sun., Feb. 5 (a.m.) | 10:30 | 11:00 | 11:30 |
| Thurs., Feb. 9 (p.m.) | 2:00 | 2:30 | |
| Wed., Feb. 15 (p.m.) | 6:15 | 6:45 | 7:15 |
| Wed., Feb. 22 (p.m.) | 6:15 | 6:45 | 7:15 |
| Sat., Feb. 25 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., Feb. 26 (a.m.) | 10:30 | 11:00 | 11:30 |

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Number of people: _____

Please mail with a self-addressed, stamped envelope to: Ocean Life Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.



Year in Review

The Sciences of Many Worlds

The American Museum of Natural History is situated on only four blocks of Manhattan, yet its research and educational concerns span all the earth's continents and reach far out into the solar system. Areas of the world visited by Museum scientists this year included Canada, Bolivia, Brazil, Kenya, Liberia, the People's Republic of China, New Guinea, and Madagascar — to name just a few. The Museum's concerns span not only different continents but also different levels of existence. Because of our limited space, the following paragraphs tell only a small part of the story of what has occurred within the Museum's walls and far beyond them.

— Ruth Q. Leibowitz

On the Ground

- Spiders are popular subjects of study by Museum entomologists. One genus of sand-dwelling spiders, *Cyriocetes*, was previously known only from Chile and Argentina. A new paper by Norman Platnick (Curator, Entomology) and Eryn Griffin (State Museum, Namibia) for the first time presents records of this group in Africa and Australia. Members of the genus are easy to recognize, says Platnick, because between their two rows of eyes they have a series of peculiar spines sticking out toward the front. These spines, he says, are almost certainly used to help them burrow in the sand.

- The mouse *Zygodontomys* might be considered "the rodent of the future of Latin America," says Robert S. Voss (Assistant Curator, Mammalogy), who studies distribution and variation within this genus. These brown, short-tailed mice of the northern Neotropics thrive in the savanna and other open habitats, "moving into pastures that result when rain forests are cut down." Thus, this little rodent benefits from the continued destruction of rain forests that wreaks havoc upon many other species.

The mouse also provides an interesting situation for scientists who wish to study variation within and between populations of related rodents. During the Pleistocene, says Voss, many areas that are now rain forest were open savanna. *Zygodontomys* thus had a continuous distribution. As the climate changed and rain forest came to dominate the area, spreads of savanna became isolated from one another, as did the mice. Now, as isolated savanna patches become once again continuous, mice are reunited with mice. How has this process affected *Zygodontomys* and related animals? That question will keep Voss busy for some time to come.

In addition to studying wild mice, Voss and colleagues have established a breeding colony of *Zygodontomys* at the Museum so that mice of known age, sex, and genealogy can be observed.

- To the hundreds of species of rats throughout the world, Guy G. Musser (Chairman, Mammalogy) has added three more. These rodents were found on the islands of Talibu and Pelang (east of Sulawesi) and the Moluccan Islands (east of Talibu and New Guinea). This work was part of a longstanding study of members of the genus *Rattus*, native to Southeast Asia.

- Most travelers are glad not to be rained on, but during Richard Zweifel's field trip to New Guinea in the middle of a drought, he found himself wishing it would rain. Zweifel (Curator, Herpetology and Ichthyology) wanted to record the voices of a group of small microhylid frogs who "tend to shut up when it doesn't rain." Even when it does rain, they're hard to find since they are as small as good-size flies, dull in color, and they hide beneath leaves and in trees. Their peeps are often the only sign of their presence. As with most frogs, their calls are excellent indicators of their species.

Despite the dry weather, Zweifel did find and record many frogs as he covered ground from sea level up to at least 7,000 feet above sea level. Back at the Museum, Zweifel's tapes were fed into a sonograph, which "draws a picture of the sound," helping scientists to analyze features of a frog's call and compare them with those of other species and individuals.

Beneath the Surface

- One doesn't have to journey beneath the earth to see rocks that were once far below the earth's surface. Edmond A. Mathez (Curator, Mineral Sciences) studies large, layered igneous complexes that were uplifted and are now exposed in the mountains of southern Montana. The rocks formed as magmas that originated tens of kilometers deep in the Earth's mantle, and crystallized in large chambers five to ten kilometers below the Earth's surface. Some of the rocks that Mathez studies are more than 2 billion years old.

The physical and chemical properties of the crystals and the enclosing melt, and the vapors trapped within them, raise many questions that Mathez seeks to answer. What was the original magma like before it cooled? At what temperature did the different minerals equilibrate? Why are certain elements — platinum, for instance — distributed the way they are? With the help of mapping, sampling, and chemical and structural analysis, Mathez is searching for the answers.

- Beneath the lovely translucent surface of amber many ancient forms of life are preserved. Amber is formed when the resin from trees solidifies, becoming extremely inert (nonreactive with other substances). Insects caught inside the hardening resin may thus remain intact for millions of years. When David Grimaldi (Curator, Entomology) recently looked into a piece of amber, he found various insect specimens. One, a tiny scuttle fly barely one millimeter in length, is the oldest in its family known. It lived and died approximately 80 million years ago, trapped inside the hardening resin of a primitive conifer growing in what is now New Jersey.

Grimaldi first suspected the fly's identity at a magnification of 65x. After comparison with other specimens from Mexico and the Dominican Republic and further studies of its morphology, he ascertained that it was a new species belonging to the genus *Metopina* and the family Phoridae. Although the family — consisting of small flies with distinctive wing venation — persists to the present time, the newly discovered species is extinct.

- The fossil history of Chinese mammals was further studied through an NSF-funded expedition coordinated by Richard H. Tedford (Curator, Vertebrate Paleontology). Scientists studied the mammalian remains found in various rock strata of the Yushe Basin of North China. The scientists monitored the succession of small-mammal communities through geological time. One important result obtained from these studies: the appearance of murid rodents and the immigration of North American camelids and canines were narrowed down to a more specific time period.

- Recent archeological finds by David Hurst Thomas (Curator, Anthropology) and cohorts on St. Catherine Island (off the Georgia coast) may contradict what was previously thought about Spanish missionary life in the eastern United States. Based on excavations at other nearby sites, Spanish colonists in the area were thought to have "gone native," relying almost completely on Native American foods for sustenance — mostly corn and marine resources, with very few large animals such as deer. However, kitchen remains of the seventeenth-century Franciscan mission on St. Catherine revealed that the friars, perhaps the elite Gualé Indians who

worked with them, and their guests dined in largely European fashion on fare that included pigs and chickens.

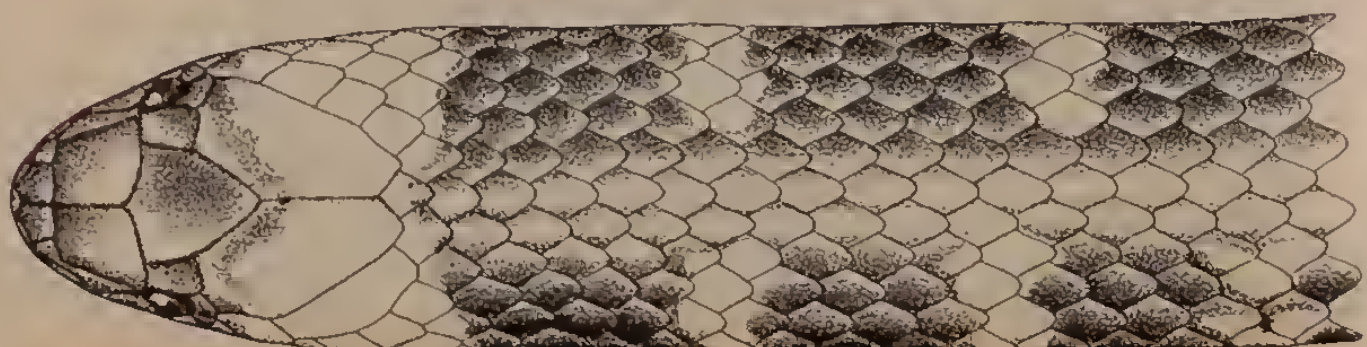
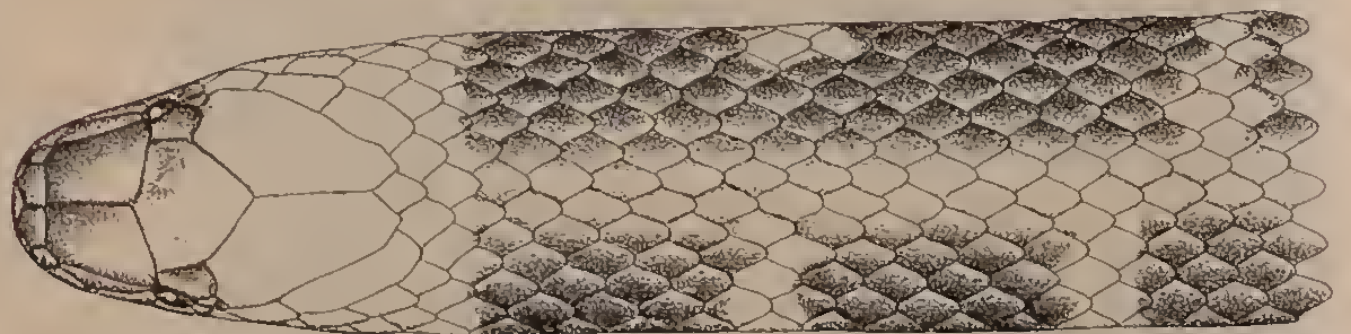
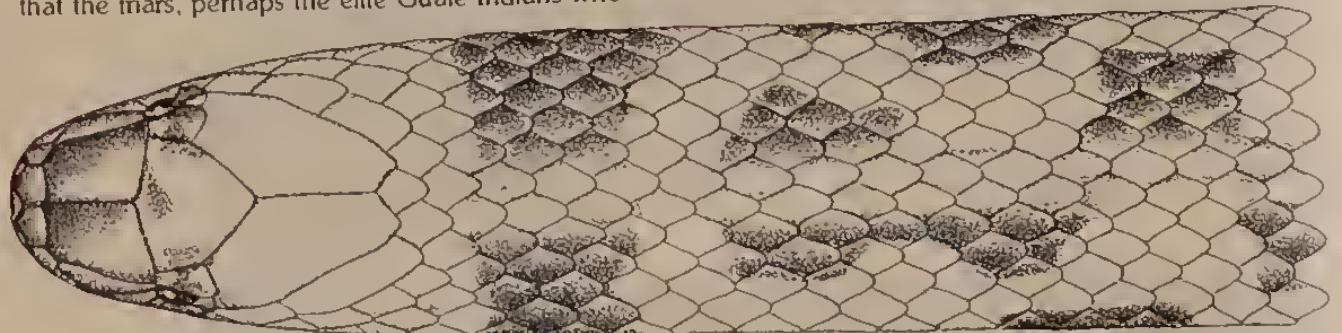
Archeologists are currently exploring the mission's well. Objects "preserve best in either totally dry or totally wet environments," says Thomas, who hopes to find excellently preserved goods made of leather, plant fiber, and other materials that will give further clues about life at the mission.

- La Centinela, capital of an ancient kingdom in Peru's Chincha Valley, was captured by the Inca empire just before the Spanish conquest. During their most recent trip to the area, Craig Moris, Joseph Jimenez (Chairman and Scientific Assistant, respectively, Anthropology), and Peruvian colleagues studied plant, animal, and ceramic remains that have been unearthed there. Moris developed a ceramic code for computerizing pottery shards, a system that will help archeologists to date the localities in which the pieces were found. The system will also assist archeologists in categorizing the shards in terms of which cultural groups designed them.

The ceramics of this area are particularly fascinating, says Moris, because they show an integration of styles between those of earlier Chincha Valley residents and the Inca state that conquered them. This integration may point to a more peaceful coexistence at this site than in other areas conquered by the Inca, where stylistic breaks were much more abrupt.

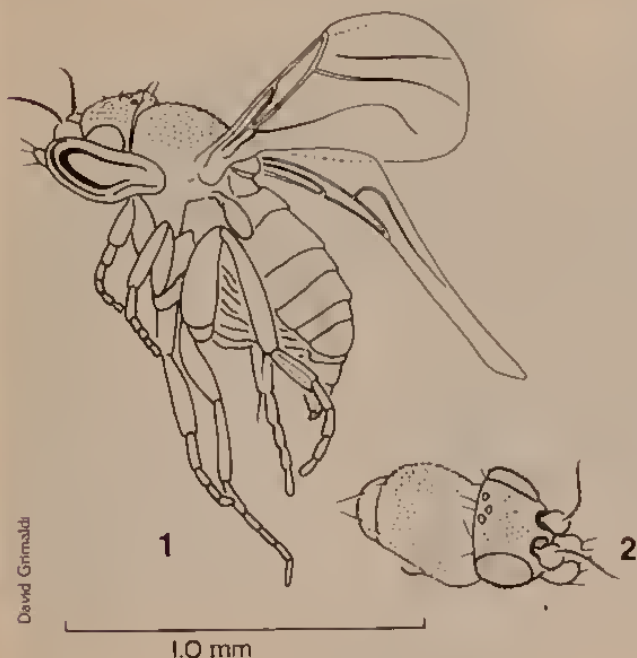
- Some snakes are seldom seen exposed above ground. Frances J. Irish (Kalbfleisch Research Fellow, Herpetology and Ichthyology) is studying two genera of South American snakes that burrow beneath the ground and feed heavily on earthworms. By looking at the neck musculature, teeth, skulls, head muscles, scales, and salivary glands of these reptiles, Irish hopes to clarify the systematics of these animals. Among other morphological details of interest, the animals' neck muscles show modifications that are rarely found among snakes and may provide a clue about the way these snakes burrow.

This drawing shows the differentiation of color markings between *Atractus multicinctus* (on the bottom) and two other *Atractus* species. These burrowing South American snakes are seldom seen above ground.



In the Air

• The stereotypical moth is somewhat dull to look at (compared with a butterfly) and flies at night. James S. Miller (Kalbfleisch Curatorial Fellow, Entomology) has continued his studies of a group of moths that defies this image. The family Diptidae includes about 400 species of diurnal (day-flying) brightly-colored moths. These moths, however, seem to have arisen from another group that better fits the common image. The 2,500 species of *Notodontidae*, the Diptidae's probable ancestors, are nocturnal and drably colored. While on the surface the Diptidae and *Notodontidae* look different, the structures in both the adults and caterpillars are remarkably similar. Both, for instance, have a hearing organ on the thorax. How did the differences between these two groups evolve? This question is a major focus of Miller's work.



Five views of a species of scuttle fly. These flies are fossils that were found in amber from Chiapas, Mexico.

• The lesser snow goose nests up north and spends its winters in Texas and Louisiana. Robert F. Rockwell (Research Associate, Ornithology) and colleague Fred Cooke (Queen's University, Canada) are studying a population of these geese that nests in Canada's Hudson Bay and Fox Basin to learn about factors that affect the species' population density, fecundity, and survival rates and strategies. Lesser snow geese have a healthy population, although they are often hunted and their wintering grounds are undergoing rapid environmental change. Other birds that face similar situations (ducks, for example) also face dwindling populations.

The question, says Rockwell, is: What are these birds doing right? One part of the answer is undoubtedly related to their feeding behavior. A duck's menu is mostly limited to aquatic plants, but a goose's is not. Geese can adapt to become "the ecological equivalent of bison," says Rockwell. Instead of languishing when their characteristic food sources are unavailable, they move inland, gaining sustenance from "rice fields, wheat fields, golf courses . . ."

• Although the roseate tern has been declared an endangered species, about 1,200 pairs of the birds nested on Great Gull Island in 1988. Helen Hays (Staff Member, Ornithology) reports that the population on Gull Island (located at the eastern end of Long Island Sound) and that of Bird Island in Massachusetts constitute 85 percent of roseates breeding in North America.

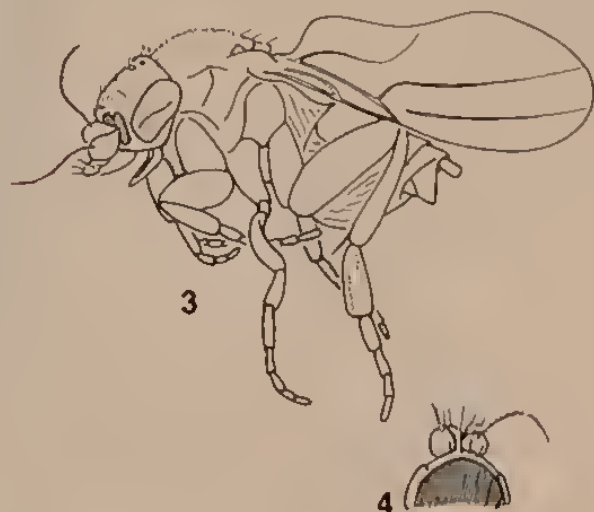
Field workers banding on Gull Island this summer tagged and released a 26-year-old common tern, which represents a longevity record for the species.

• The traditional view about bats, the only flying mammals, holds that they all originated from a single group. That view was recently challenged by scientists who, based on studies of the comparative brain structures of bats and primates, asserted that fruit bats (of the suborder Megachiroptera) are more closely related to primates than they are to the other groups of bats. Michael J. Novacek (Chairman, Vertebrate Paleontology) and John Wible (University of Chicago) have taken a back-to-the-basics stance on the issue. Based on details of wing structure and skull anatomy, these scientists have defended the viewpoint of a single origin for all bats.

In the Water

• According to Norman D. Newell and Leslie F. Marcus (Curator Emeritus and Research Associate, respectively, Invertebrates), the carbon dioxide buildup, with its disastrous effects on climate, precisely matches the human population explosion. In a recent article in the journal *Palaos*, the scientists infer from this correlation that this significant cause of environmental degradation results from the pressing demands for more agriculture, the burning of wood, and the production of power for industry and transportation. Reduction of population pressure should result in a significant decrease in carbon dioxide production, the authors suggest.

• Madagascar, an island off the east coast of Africa, has been geographically, and thus evolutionarily, separate from the African mainland for more than 100 million years. Its flora and fauna are therefore unique and provide us with many species seen nowhere else in the world and fascinating clues about evolutionary change. Unfortunately, the results of human settlement on the island will wipe out many of these species if efforts are not made to preserve them.



Scientists from many different disciplines are working to survey Madagascan species while this can still be done. This past summer, Melanie Stiassny and Peter Reinthal (Assistant Curator and Visiting Scientist, respectively, Herpetology and Ichthyology) collected a wealth of Madagascan fish during a six-week intensive survey. Among the live specimens brought back to the Museum are several primitive specimens of cichlid fish and a previously unknown species of silverside. The new species is colorful and reaches up to four inches in length. It was found in a freshwater stream in one of Madagascar's last remaining areas of rain forest. Stiassny hopes this find and others will provide added incentive for the Madagascan government to establish a park in the region.

• When C. Lavett Smith (Curator, Ichthyology) is not out in the field, he and his colleagues are often watching blennies on television. With the cooperation of the Smithsonian, Smith has obtained videotapes shot with an underwater camera placed in shallow water near a colony of blennies 15 miles off the coast of Belize. The male fish linger in holes within rocks, where they guard eggs. They pop out every so often to wave their dorsal fins back and forth. The rate of this activity shows a daily cycle, with long intervals between episodes when the sun is high and an increase in signaling rate during the early morning and late afternoon.

"Who are they waving to?" Smith wants to know. "Are they warning off other males, or inviting females?" Smith also wonders about the nature of the fish's territorial and dominance behavior. To learn more, he is constructing a "bionic blenny." This creation will be placed among living blennies to see how (and if) they react to it.

Out of this World

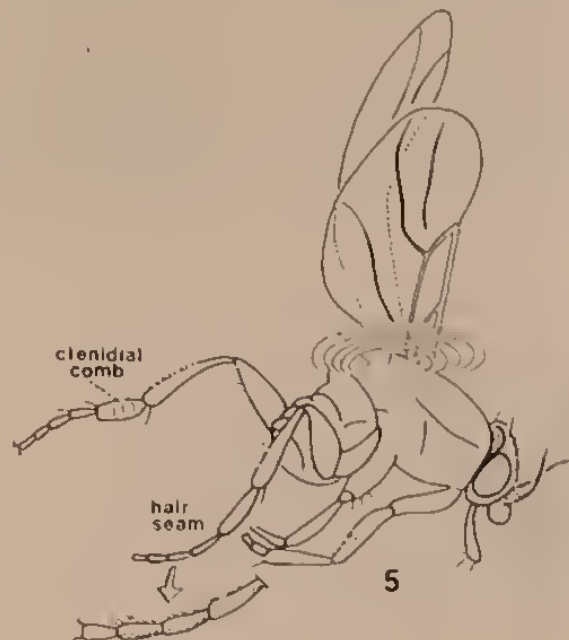
• Hayden Planetarium Sky Shows and other educational programs once again took Planetarium visitors to far-off worlds and galaxies. In the Sky Show *The Seven Wonders of the Universe*, viewers went on a tour of spectacular events and places, from the grand canyon of Mars to the mysterious black holes of our universe. Children delighted in *The Secret of the Cardboard Rocket*, a Sky Show in which two children take a magical trip across the solar system. Other educational experiences included a lecture on the search for extraterrestrial life and a special lecture series entitled *Space Futures*.

Visitors to the Planetarium can now enjoy a permanent monument to the stars and planets. The Celestial

Plaza, recently installed in front of the Planetarium, contains more than 300 cast bronze pieces that represent astronomical bodies.

• Martin Prinz (Chairman, Mineral Sciences) and collaborators have conducted a study of two small meteorites recently found in Antarctica. Both of these meteorites are quite unusual. A primary component of one of the meteorites is microchondrules. Chondrules are small, round, relatively common objects that formed in the solar nebula 4.5 billion years ago, prior to the formation of differentiated planets. The chondrules contained in this meteorite are barely visible to the naked eye and much smaller than those previously known. The specimen represents a new type of meteorite, says Prinz, and will add to our understanding of the origin of the solar system.

A consortium of specialists has been organized to further study different aspects of the sample, including the rare gases and the radiogenic and stable isotopes it contains. These studies will provide further information about the meteorite and the processes that formed it.



For the Mind

• The Museum's library has expanded its hours, giving additional access to more users. The library is now open to the public from 11:00 a.m. to 4:00 p.m. every weekday, except Wednesday, when it stays open until 7:30 p.m. It contains a wealth of information, including books, journals, archival films, photographs, and more. Sorry, but books cannot be removed.

• Exciting exhibitions at the Museum this past year reached thousands of viewers, young and old. Among the temporary highlights was *Carthage: A Mosaic of Ancient Tunisia*, which told the story in words and objects of Carthaginian civilization from 800 B.C. to the seventh century A.D. Another popular exhibition was *Dinosaurs Past and Present*, a collection of visualizations of dinosaurs by different artists. Perhaps most exciting of all is the completion of the new Hall of South American Peoples, which will open to the public in 1989. The new hall portrays the aboriginal cultures of South America from Colombia to the southern tip of Chile.

• Dinosaurs, ocean life, Eastern Woodland and Plains Indians, and peoples of Africa were favorite topics of the nearly 20,000 schoolchildren who benefited from the knowledgeable guidance of Department of Education staff members. The department is responsible for myriad other educational courses, programs, and events, including the internationally renowned Margaret Mead Film Festival and lectures on everything from mushrooms and moss to human sexuality.

• The Membership Office sponsored numerous programs throughout the year, including presentations by Museum curators on their ongoing research as well as lectures by other distinguished scientists, such as Richard Leakey's discussion of his field work in Africa and Shirley Strum's programs for children and adults on her long-term study of baboons. Members attended previews and private viewings of new exhibitions in addition to taking guided behind-the-scenes tours of the Departments of Vertebrate Paleontology and Herpetology and Ichthyology.

• Learn more about research, public programs, exhibitions, collections, funding, and other aspects of the Museum. A copy of the Museum's Annual Report is available free. Just call the Membership Office at (212) 769-5606.

A Whirlwind Tour of the Geology of the United States

Wednesday, February 1
3:00, 4:30, 6:00, and 7:30 p.m.
\$8, and open only to Participating, Donor, and Contributing Members

Explore the mountains, volcanoes, plains, and plateaus of our vast country and learn about their scientific significance with *A Whirlwind Tour of the Geology of the United States*. Urban geologist Sidney Horenstein will guide Members on a geological odyssey through the United States that begins and ends within the Museum's walls.

The tours will observe the major geological provinces of our continent by traveling from

diorama to diorama, focusing on exhibitions that illustrate the principal geological features of North America. Stops on the cross-country flight will include the halls of North American Forests, Mammals, and Birds.

These earthy looks at the Museum promise to be popular tours, so Members are advised to use the coupon on page 3 to register promptly. For information about other Members' tours, please see the related article below.

The Museum: Inside and Out

Wednesday, January 11
3:00 and 6:00 p.m.
\$8, and open only to Participating, Donor, and Contributing Members

The natural history of the American Museum of Natural History is highlighted at *The Museum: Inside and Out*. Sidney Horenstein, senior scientific assistant in the Department of Invertebrates and urban geologist, will lead Members on a fascinating walk around this celebrated landmark to explore the history of its construction.

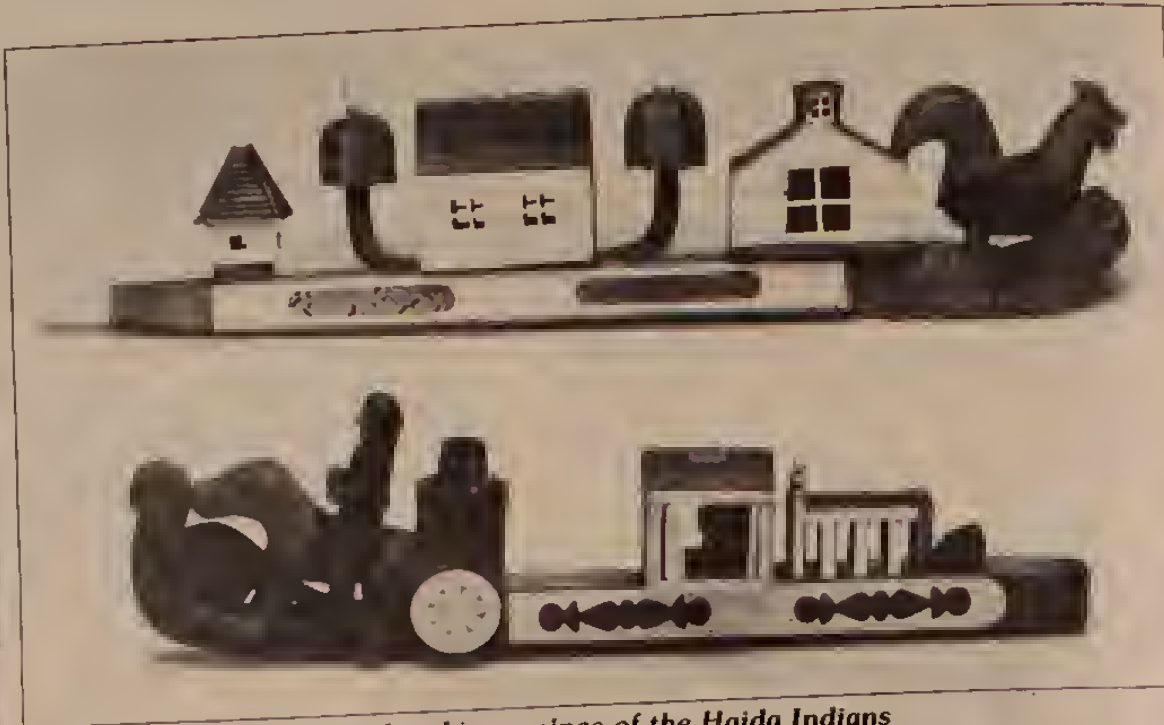
The tours will step outside for an overview of the Museum's geology, geography, and varieties of architectural style. Back

inside, they'll survey the variety of stones used in the building's construction and inspect the fossils that are trapped in the very walls.

The Museum: Inside and Out is an encore presentation of last year's well-attended tours, and early registration is advised for the limited number of places. Please use the December Members' programs coupon on page 3 to register for these and other tours (see the related article above).



Magnificent Voyagers The U.S. Exploring Expedition, 1838-42



Wood and ivory pipes of the Haida Indians

The panoramic view of nineteenth-century vessels afloat in a frigid sea of icebergs and penguins contrasts sharply with the cramped and claustrophobic re-creation of a ship's stateroom. The 42-foot-long mural of Antarctica and the narrow cabin are two views from a many-faceted exhibition that celebrates the far-flung accomplishments of a historical American adventure.

Magnificent Voyagers: The U.S. Exploring Expedition, 1838-42, retraces the route of an adventurous party of nineteenth-century explorers who made major contributions to the emerging study of the natural sciences in this country. Their four-year, 87,000-mile journey ranged in scope from an analysis of Hawaii's active volcanoes to the mapping of more than 15,000 miles of the Antarctic coast. Their achievements included the preparation

of 241 scientific maps and charts and the confirmation of the hitherto-legendary existence of Antarctica.

In addition to naval officers and crewmen, the expedition included nine civilian naturalists and artists, called scientifics. For the first time in American history, civilian and naval personnel combined their talents in a peacetime voyage of discovery. Some of the scientifics later became giants in their respective fields, including zoologist and painter Titian Ramsay Peale, botanist William Brackenridge, mineralogist James Dwight Dana, and anthropologist Horatio Hale.

Paintings and models of the expedition's six ships are on display along with paintings and engravings of the explorers. Instruments similar to those used by crew members for navigational astronomy and magnetic and gravity measurements are

exhibited, as well as several of the expedition's maps and illustrations of the exotic fish, frogs, birds, and coral that the explorers encountered. A profusion of ethnological artifacts are featured, including shell and bird-bone necklaces from Tierra del Fuego, elaborately painted and carved wooden stirrups from Peru, and bamboo flutes from Polynesia that are played with the nose.

Don't miss this grand exhibition, which will be in Gallery 3 until January 1. *Magnificent Voyagers* was organized by the National Museum of Natural History, Smithsonian Institution, and circulated by the Smithsonian Institution Traveling Exhibition Service. The exhibition has been made possible in part by a generous grant from the Atlantic Richfield Foundation, the Smithsonian Special Exhibitions Fund, and Johnson and Higgins.

Tiger Moon

Monday, December 19
7:30 p.m.
Main Auditorium
\$5 for Members,
\$8 for non-Members



Formerly the tiger-hunting grounds of the nobility, Nepal's Royal Chitwan National Park is a safe haven for the great cats. The behavior of these wild felines and its hazardous documentation are the subjects of *Tiger Moon*, a Members' program by Fiona and Mel Sunquist.

The Sunquists will discuss their two-year study of the wild tigers that dwell in the national park. They'll describe the study's historical development — why research was needed and the problems and logistical difficulties of obtaining it. The slide-illustrated program will offer a lively portrait of the tigers' habitat, with cameo appearances by deer, rhinos, sloth bears, and monkeys.

The cats' delicately balanced coexistence with their human neighbors will also be profiled. Most of the local people are farmers who raise a variety of crops on small plots and take a dim view of having their carefully planted fields destroyed by marauding tigers. Peace between the humans and animals was established through compromises such as giving the villagers seasonal access to the park, when they are permitted to cut thatch grass. The sharing of a renewable resource between farmers and tigers helps to cut down on the incidences of poaching.

Catching a dangerous animal that hides in dense cover is a risky undertaking that the

Sunquists will outline in an account of their capture operations. Once caught, the tigers are outfitted with radio transmitters about their necks so that their movements can be traced and transcribed on field maps. From these painstakingly acquired data, a comprehensive view of the tigers' ranges is slowly acquired.

Females establish and maintain relatively small, exclusive home ranges of six to eight square miles, in which they hunt and raise their cubs. Males occupy ranges two to seven times larger than those of females, overlapping several female ranges but not the ranges of neighboring males. Tigers maintain their territorial arrangements with a combination of visual signals, scent marks, and vocalizations. The precise meaning of these olfactory signals to other tigers is unknown, but it's thought that they denote information about individual identity, sex, and reproductive condition.

For these and other intriguing insights into the lives of the great cats, please use the coupon on page 3 to register for *Tiger Moon*.

Holiday Origami Workshops

Saturday, December 3
10:30 and 11:30 a.m., 2:00, 3:00, and 4:00 p.m.
School Lunch Rooms
Free, and open only to Participating, Donor,
and Contributing Members

Members of all ages will be instructed in the art of folding at the tenth annual Holiday Origami Workshops. Museum volunteers and members of The Friends of The Origami Center of America will share their paperfolding expertise at the workshops. Call (212) 769-5606 for ticket availability.



Picture This

Throughout the holiday season Kodak 35mm cameras will be available to all Museum-goers to use during their visit. The easy-to-operate cameras will be available at the first- and second-floor Information Desks, and Museum staff will be

able to answer any questions about their use.

Kodak film is available for purchase at both the Information Desks and the Museum Shop. In exchange for use of the camera, borrowers will leave a credit card impression.

Cinema and Society: Asian Perspectives

Friday and Saturday, December 2 and 3
Friday and Saturday, December 9 and 10
2:00-8:30 p.m.
Kaufmann Theater
Free

The interrelationships between cinema, art, and society are explored in a film festival that debunks the myths surrounding Asia and Asian cinema. *Cinema and Society: Asian Perspectives*, presented by the Education Department in association with Asian CineVision, offers four days of films on Japan, Korea, the Philippines, and Taiwan that illustrate current social issues, values, and concerns.

A scholarly panel discussion of the films in this series will be held on Saturday, December 10, at 2:00 p.m. in the Linder Theater. This film program is made possible in part by a grant from the Helena Rubinstein Foundation. For further information, call (212) 769-5305.

Korea: Reunification of Families, North and South

These films portray the problems of families trying to reunite after the 30-year separation caused by the Korean War. Such estranged families have been a major concern in Korea. In 1983, KBS-TV started a special program to help the Korean Red Cross in tracing relatives. The program met with a massive response and aroused long-hidden emotions.

In *Gilsodan*, by Im Kwon-Taek, a Korean couple are reunited by chance after the war, and they set off to find their long-lost son (105 mins.).

The Man with Three Coffins, by Chan-Ho Lee. A surrealist postmodern folktale about families split between North and South Korea.

Discussions of these films will be conducted by Hong Joon Kim of Temple University's Department of Anthropology.

Joon Kim is a member of the Philadelphia Film/Video Association and the Seoul Cinema Collective (Seoul Young-hwa Jip-clan).

Philippines

In *Miracle*, Ishmael Bernal presents the story of a very poor village that believes itself to be cursed. When a young woman is rumored to have seen a vision of the Virgin, she attains nationwide fame and the village experiences a business boom. Misfortunes ensue, however, and the revelation of the truth bears catastrophic results.

Playgirl, by Mel Chionglo. From one of the Philippines' most noted directors comes this elegant story of an aging prostitute, her young lover, and her growing daughter — a tale of disillusionment and romantic love.

Discussions of the two films will be led by Nick De Ocampo, an active presence in Philippine independent cinema.

Japan: Technology, Ideology, and the Mask of Animation

These films use animation as a powerful tool to criticize Japanese life. The militaristic policy of extraterritoriality is interpreted through the work of Japanese animators, who use animals and fantasy characters to express a thought-provoking critique of their society.

In *Warriors of the Wind*, by Hayao Miyazaki, a battle between two groups of animals portrays a nation's attempts to dominate foreign territories. Miyazaki is considered Japan's

foremost animator.

Twilight of the Cockroaches, by Hiroaki Yoshida, is an ironic allegory that pits animated cockroaches against a compulsively clean woman and her lover.

Akira Tochizi will direct the discussions of these films. A film program curator at Kyoto University, Tochizi is involved in Japanese avant-garde cinema and documentaries.

Filmmakers in Taiwan: The Next New Wave

A new wave of Taiwanese filmmakers depict the youth of Taiwan, who seek to establish their identity in the present rather than pursue the older generation's nostalgic desire to "go back home" to the mainland.

Super Citizen, by Wang Yen, is a portrait of Taipei through the lives of losers in a modern, prosperous city, who have none of the usual credentials of "super citizens."

The Terrorizer, by Edward Yang, was hailed as a major step forward in Taiwanese cinema. The story revolves around the pranks of a bored young fugitive who makes random calls to strangers and recounts bizarre, licentious stories. From these acts of emotional terrorism comes the convergence of three very different couples.

The moderator of the discussions on Taiwan — with special focus on the cinema of China and Hong Kong — will be journalist Vivian Huang, a columnist for *Center Daily News*.

**An Education Department
Public Program.**

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy

Eight Thursdays, beginning Jan. 12; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include Earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes.

Stars, Constellations, and Legends

Five Thursdays, beginning Jan. 12; 6:30-8:10 p.m.
Fee: \$65 (\$58.50 for Members)

An introduction to the lore of the sky. Using the Zeiss projector in the Sky Theater, this course identifies the prominent stars, constellations, and other sky objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated.

Life Beyond Earth: The Search for Life in the Cosmos

Eight Mondays, beginning Jan. 9; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

This course examines why many scientists believe there is intelligent life elsewhere in the universe. Topics include stellar evolution, theories of planet formation and development, the origin of life, intelligence, problems of communications, and current investigations.

Celestial Highlights

Four selected Mondays, Jan. 23, Feb. 27, Mar. 27, Apr. 24; 6:30-7:40 p.m.
Fee: \$40 (\$36 for Members)

This course will focus on upcoming events in the skies over the tristate area. Using the Zeiss Star Projector in the Sky Theater, the night sky will be accurately simulated. Students will learn how to find prominent

constellations, planetary groupings, and more. During each session, special attention will be given to unusual phenomena such as meteor showers, eclipses, occultations, and planet-moon groupings expected in the coming month.

Charting the Cosmos

Five Thursdays, beginning Jan. 12; 6:30-8:40 p.m.
Fee: \$65 (\$58.50 for Members)

How do astronomers map the universe? This course will explore some of the interesting and unusual aspects of the "geography" of the heavens. Starting with the lore of the earliest constellations and star names, the course covers the increasingly sophisticated techniques by which the innumerable celestial objects have been pinpointed.

Cosmic Mysteries

Five Tuesdays, beginning Jan. 10; 6:30-8:40 p.m.
Fee: \$65 (\$58.50 for Members)

Each night new and exciting things are discovered about the universe. Yet for each new answer we get, there are frequently many new questions. In this new course, we invite you to come along for cosmic detective work as we look at some of the most challenging mysteries facing astronomers today.

Astronomy with Computers

Two Tuesdays, Feb. 21 and Feb. 28; 6:30-8:40 p.m.
Fee: \$25 (\$22.50 for Members)

As the microcomputer has become more affordable, amateur astronomers and other hobbyists have been able to use many astronomy-related software packages and books to have the night sky "at their fingertips." Products range from simple sunrise and sunset predictors to sophisticated almanac and home planetarium programs. Using video projection, this course will give you the chance to see many of these programs in operation and provide information on where you can obtain them.

AVIATION

Ground School for Private and Commercial Pilots

Fifteen sessions, Tuesdays and Thursdays, beginning March 7; 6:30-9:00 p.m.
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotters, and computers; basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. Other topics include communications, federal aviation regulations, and aviation safety. Students will also have an opportunity to try a flight simulator. The course is FAA approved.

Ground School for Instrument Pilots

Fifteen sessions, Tuesdays and Thursdays, beginning March 7; 6:30-9:00 p.m.
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters

Eight Wednesdays, beginning Jan. 11; 6:30-9:00 p.m.
Fee: \$110 (\$99 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road.

Electronic Navigation and Communications

Eight Mondays, beginning Jan. 9; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

This is a basic course for those interested in learning about marine electronic navigation and communications. The course examines the types of electronic equipment used in navigation and communications, including VHF-FM, single-sideband transceivers, radio direction finders, OMNI Systems, hyperbolic navigation systems, Loran, Omega, Decca, fathometers, echo sounders, and radar.

Introduction to Celestial Navigation

Ten Mondays, beginning Jan. 9; 6:30-8:40 p.m.
Fee: \$110 (\$99 for Members)

This intermediate course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. The course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized.

FOR FAMILIES

The courses listed below are intended for the family, so that parents and children may learn together about astronomy and the space age. The courses may be taken by children 10 years and older without a parent if desired; much of the subject matter may not be appropriate for children under the age of 8. The tuition fees are per person. For additional information about family courses, please write to the address appearing on the coupon or call (212) 769-5900 (Monday through Friday, 9:30 a.m.-4:30 p.m.).

Introduction to the Sky

Ten Saturdays, beginning Jan. 7; 9:30-10:20 a.m.
Fee: \$40 (\$36 for Members)

Meeting in the Sky Theater, this course discusses and illustrates the various stars and constellations, some of their lore, and several of the many interesting objects found in the sky.

The Solar System

Ten Saturdays, beginning Jan. 7; 10:45-11:35 a.m.
Fee: \$40 (\$36 for Members)

This course includes a brief history of astronomy and considers the many theories on the origin of the solar system, as well as the geology of the planets and their satellites, including Earth and the moon. Other topics include meteors and meteorites, asteroids, tides, eclipses, and the star of our solar system — the sun. This course, together with *Stars, Black Holes, and Galaxies*, serves as excellent preparation for the Boy Scout Merit Badge in astronomy.

Stars, Black Holes, and Galaxies

Ten Saturdays, beginning Jan. 7; 12:00-12:50 p.m.
Fee: \$40 (\$36 for Members)

Topics include the evolution of the cosmos, the different types of stars and their life cycles, nebulae, black holes, galaxies, and quasars. Methods and instruments used by astronomers to collect information will be emphasized. This course, together with *The Solar System*, serves as excellent preparation for the Boy Scout Merit Badge in astronomy.

COURSES FOR STARGAZERS

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note that discount prices apply only to Participating, Donor, and Contributing Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: *Courses for Stargazers*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, 9:30 a.m.-4:30 p.m. **No credit cards accepted.**

Happenings at the Hayden



The Star of Christmas

Sky Shows

What led the Wise Men to Bethlehem — a special star, a comet, a meteor, or something else? *The Star of Christmas* is the story of how historians, theologians, linguists, and astronomers worked together to unravel an ancient mystery. Through January 2.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, December 10, and Saturday, January 14. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street

Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium Information, call (212) 769-5920.

Special Exhibitions and Highlights

An exhibition of Chinese fossils, *From the Land of Dragons*, is on display in Gallery 1. The skeletons of reptiles and mammals are presented within an evolutionary framework, and they constitute the most comprehensive collection of fossils from China ever exhibited in the Western Hemisphere. Through January 2.

The Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842, chronicles the scientific and maritime achievements of a team of explorers who circumnavigated the globe. In Gallery 3, through January 1. Page 8.

Drawn from the Sea. Art in the Service of Ichthyology examines the history of scientific illustration with dozens of drawings and paintings of fish. In the Akeley Gallery, through December 11.

Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight features paintings, sketches, and sculptures by a celebrated American artist



Charles Knight sculpting a Stegosaurus

whose depictions of prehistoric life have delighted and awed generations. In the Naturemax Gallery, through January 31. Page 1.

Don't miss the *Ongani Holiday Tree*, an eye-filling Museum tradition. In the Roosevelt Rotunda, through January 8.

For an inside story of the Museum's history and exhibits,

take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after

6:00 p.m. A guard is not on duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5606.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, Thursday, and Sunday; from 10:00 a.m. to 8:30 p.m. on Wednesday, Friday, and Saturday. Located on the second floor. \$5.00 per item.

The Museum Shop. Daily, 10:00 a.m. to 5:45 p.m. and till 7:45 p.m. Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations: (212) 874-3436

Naturemax

Two new movies are currently being shown on New York City's largest indoor movie screen.

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film that re-creates the islands' discovery. *Behold*

Hawaii is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 2:30, 3:30, and 4:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown at 6:00 and 7:30 p.m. on a double-feature bill with *Dance of Life*, a film that portrays Indonesian life and culture from a

Western perspective.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby. For additional information, call (212) 769-5650 or stop by any information desk.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday, 1:00 to 4:30 p.m. Closed Sunday, Monday, and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk.

Museum Birthday Parties. Young Members can let the good times roll with the dinosaurs or the blue whale, in

Africa or on another planet. Children between the ages of 5 and 10 can choose from five exciting birthday party themes: a Dinosaur Party, a Star Party, a Safari Party, an Aquanaut Party in the Hall of Ocean Life, or a Naturemax Party.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor

bags that are full of surprises. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5606.

FACES is an innovative anthropology magazine for 8- to 14-year-olds that features a variety of activities, including games, stories, and puzzles.

Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order to *FACES* (add \$5 for foreign orders) to: *FACES*, Dept. 722, 20 Grove St., Peterborough, NH 03458.

Sun

Mon

Wed

Thu

Fri

Sat



4 Hanukkah

1:00 to 4:30 p.m. Bulgarian Dances; Polish Christmas Tree Ornaments; Folklore and Music of the Balkans Winter Celebrations at the Leonhardt People Center. Free.

12

11 10:30 a.m. Behind-the-scenes Tours of the Department of Herpetology and Ichthyology. Tickets required. Page 3.
1:00 to 4:30 p.m. Winter Celebrations at the Leonhardt People Center.
2:00 p.m. New York Shell Club. Room 419. Free.
3:00 p.m. Music Talks. Kaufmann Theater. Free. Page 4.
Last chance to see *Drawn from the Sea* in the Akeley Gallery

19 7:30 p.m. Tiger Moon. Members' evening program. \$5 for Members, \$8 for non-Members, and tickets are required. Page 8

The American Museum Restaurant will be open prior to the Members' program.



18 1:00 to 4:30 p.m. To Life, to Light, a Hanukkah celebration; Christmas Eve in Poland; Seven Principles of Kwanzaa. Winter Celebrations at the Leonhardt People Center. Free.

2:00 p.m. New York Paleontological Society. Room 419. Free.

25 Christmas Day. The Museum is closed.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

7 7:15 p.m. Behind-the-scenes Tours of the Department of Herpetology and Ichthyology. \$10, and open only to Participating, Donor, and Contributing Members. Tickets required. Page 3.

8 7:30 p.m. Exploring Western China. Members' evening program. Main Auditorium. Free, and open only to Members. Tickets required. Page 3.

10 1:00 to 4:30 p.m. Aguinaldo music; Piñatas; Pesebre, a construction of a miniature Colombian village at Christmas. Winter Celebrations at the Leonhardt People Center. Free.
2:00 to 8:30 p.m. Cinema and Society: Asian Perspectives, a film festival. Kaufmann Theater. Free. Page 9.

13 7:00 and 9:00 p.m. Haydn at the Haydn, a concert at the Planetarium. \$10 for Members, \$13 for non-Members, and tickets are required. Page 5.

8:00 p.m. Linnaean Society. Kaufmann Theater. Free.

14 7:00 p.m. New York Mineralogical Society. Leonhardt People Center. Free.

7:30 p.m. Amateur Astronomers Association. Dr. Stanley Schmidt, speaker: "An Editor's View of Science Fiction, Astronomy, and SETI." Linder Theater. Free.

15 7:00 and 9:00 p.m. Haydn at the Haydn, a concert at the Planetarium. \$10 for Members, \$13 for non-Members, and tickets are required. Page 5.



16

17 1:00 to 4:30 p.m. To Life, to Light, a Hanukkah celebration; Christmas Eve in Poland; Seven Principles of Kwanzaa. Winter Celebrations at the Leonhardt People Center. Free.

20 7:00 p.m. New York Entomological Society. Room 319. Free.

23

24 The Leonhardt People Center is closed.
Museum closes at 5:45 p.m.

27 The Museum celebrates Kwanzaa. See page 2 for details of programs throughout the Museum.

30

The Museum celebrates Kwanzaa. See page 2 for details of programs throughout the Museum.

31 The Leonhardt People Center is closed.
Museum closes at 5:45 p.m.

December 1988
American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 14, No. 1 January 1989



This photograph of a young Yanamamä woman, who is wearing parrot feathers, eagle down, and sections of cane through her nose and around her lower lip, is among the items on display in the new hall.

Hall of South American Peoples

**Open to the general public:
Friday, January 20**

The Museum is proud to present the opening of its fortieth permanent exhibition hall, the Hall of South American Peoples, which explores the aboriginal cultures of South America from Colombia to the southern tip of Chile.

More than 2,300 objects are on display in the new hall, which spans more than 12,000 years in its depiction of the subsistence, social organization, political structure, religious beliefs, ceremonial practices, technologies, and artistic expression of native South Americans. Brilliantly colored textiles, polychrome

pottery, and intricately worked gold and silver ornaments are prominent among the hall's attractions, along with life-size mannequins and music of the Andes that was recorded from some of the instruments on display.

The hall is organized into three parts: the initial section introduces the geography and cultures of South America, the archeological section emphasizes the prehistoric cultures of the Andes, and the ethnological section is devoted mainly to the culture of the Indians of Amazonia.

Craig Morris, chairman and curator in

the Department of Anthropology, is curator of the section on Andean archeology. Robert L. Carneiro, curator in the Department of Anthropology, is curator of the section on Amazonian ethnology. The designer is Eugene B. Bergmann in the Department of Exhibition and Graphics.

The Hall of South American Peoples is funded by the National Endowment for the Humanities, The Anschutz Foundation, and the City of New York.

For further details of the new hall, see the related article on page 10.

Play It Again

The Shoestring Players return to the Museum this month with an all-new Members' family program of dramatized folktales from around the world.

Page 3

Animal, Vegetable, and Mineral

The evolution of birds, the Arctic flora of New England, and the aesthetic and scientific value of gems are all examined in the Department of Education's *Spring 1989 Afternoon and Evening Lecture Series*. The courses also cover a range of historical topics, from the ancient city of Ur to the Tower of London and the architectural landmarks of New York City.

Pages 5-8

Grave Undertakings

Three Victorian sailors were resurrected from their frozen coffins in the Canadian Arctic to reveal the truth about their failed expedition — a shocking tale of starvation, poisoning, and cannibalism. The forensic anthropologist who uncovered the chilling fate of the Franklin Expedition will discuss his findings in the Members' program *Frozen in Time*.

Page 2

In Praise of a Predator

*Oh, the shark has teeth like razors!
And he shows them pearly white*

... From "The Ballad of Mac the Knife" to "Jaws" (Parts I-IV), sharks have been the focus of some rather unflattering media attention. Eugenie Clark, a noted zoologist and diver, will offer Members a more objective view of the much-maligned deep-sea sharks.

Page 2

The Face of Death

Thursday, January 19

7:30 p.m.

Main Auditorium

\$3 for Members,

\$5 for non-Members

"A startling sight!" the scientist declared. "He looked more alive than dead." But 20-year-old John Tomington was dead indeed, and had been buried in the Arctic permafrost for more than a century. The mysterious circumstances of his death, and the deaths of his comrades, are the focus of an extraordinary Members' program, *Frozen in Time*.

Torrington was a crew member of the Franklin Expedition, an adventure in North American exploration that ended in a tragic puzzle. The doomed expedition set out in 1845 to discover the legendary Northwest Passage; within three years, the entire crew of 129 men had perished in the Canadian Arctic.

The expedition's commander, Sir John Franklin, died two years into the voyage, and the only written record of his fate was a scrawled note found years later. The rest of his men had simply vanished. Franklin's devoted wife financed four expeditions to discover the fate of her husband and his crew, but the would-be rescuers came back with very little — scattered bones that showed evidence of cannibalism, some personal effects, and reports from Eskimo of a starving, ragtag band of white men.

On a desolate spit of tundra and gravel, the searchers located three graves at the site of the expedition's winter 1845-46 campsite. The three men buried there — John Tomington, John Hartnell, and William Braine — had died during the expedition's first winter in the Canadian Arctic.



One hundred thirty-three years after their burial, forensic anthropologist Owen Beattie exhumed the frozen bodies of the three sailors and found

them remarkably well preserved. His autopsies of the Victorian "icemen" cast new light on the fate of the Franklin Expedition, and he'll discuss his as-

tonishing conclusions with Members.

Beattie, an assistant professor of anthropology at the University of Alberta, is the author of

Frozen in Time: The Fate of the Franklin Expedition (Bloomsbury Press). To register, please use the January Members' programs coupon on page 3.

Sharks: Magnificent, Mysterious, and Misunderstood

Monday, January 23

7:30 p.m.

Main Auditorium

\$5 for Members, \$8 for non-Members

Goblin sharks, thresher sharks, requiem sharks, catsharks, and houndsharks — there's just no getting away from these deep-sea divers. The dogfish sharks dwell in the Arctic, the sub-Antarctic, and numerous places in between, in habitats that range from cool and temperate to sultry and tropical.

Members can get to know

these ubiquitous but secretive creatures when Eugenie Clark describes her latest research on deep-sea sharks. An ichthyologist with a particular interest in sharks, Eugenie Clark is professor of zoology at the University of Maryland, where she joined the faculty in 1968. The recipient of awards from the Underwater Society of America, the American Littoral Society, and

the Gold Medal Award of the Society of Women Geographers, she is author of *Lady with a Spear*, *The Lady and the Sharks*, and more than 100 scientific and popular magazine articles.

To register for *Sharks: Magnificent, Mysterious, and Misunderstood*, please use the January Members' programs coupon on page 3.

ROTUNDA

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The Shoestring Players

Saturday, January 28, and Sunday, January 29

1:00 and 3:00 p.m.

Kaufmann Theater

\$5 for Members, \$7 for non-Members



Freddie's got a fiddle, and it's no ordinary instrument. He calls the tune when he plays, and willy-nilly, his listeners must dance. Why? Because this gift from the Troll Queen is a magic fiddle that makes hypnotic music. This Norwegian folktale, in which Freddie exacts his hilarious revenge on a wicked sheriff, sets the stage for a Members' family program of exciting, creative theater.

The Shoestring Players will perform four folktales from a variety of cultures with humor, wit, and surprise in a style that offers a whole new dimension to children's theater. They perform on a shoestring, relying on the company's talent and the young audience's imagination to make entertainment. One storyteller narrates to the audi-

ence while the other players dance, sing, and pantomime in rhythmic choreography. It's theater that depends on the actors, the audience, and the shared imagination of both.

After Freddie's through with his fiddling around, "Conquering John" will make an appearance. He's big and strong and handsome (and modest), and with the assistance of sparkly little Dee, he wins a bet with the devil for a happily-ever-after windup to this Haitian folktale. In "The Arrow from the Sun," a drama from the lore of the Pueblo Indians, a boy climbs the Bridge of the Rainbow to find his father, the Lord of the Sun. "The Skunk in the Oven" is a tale from Quebec in which only the village simpleton knows how to evict a skunk

that's lodged in Tante Odette's oven.

Shoestring works as an ensemble, developing comic and serious pieces from the world's folk literature. The players are under the artistic direction of Joseph Hart, associate professor of theater arts and master teacher of creative dramatics. The New Jersey-based troupe has performed at museums, civic centers, and schools throughout the Greater New York area.

The extraordinary energy of the players and the creative and humorous scripts promise to make the hour of entertainment pass all too quickly. To register for *The Shoestring Players*, please use the January Members' programs coupon at right.

Love Stories

Saturday, February 11

1:00 and 2:30 p.m.

(for families)

\$3 for Members, \$5 for non-Members

Thursday, February 16

7:30 p.m.

(for adults)

\$6 for Members, \$8 for non-Members

Kaufmann Theater

Romance blooms in the dead of winter when *The World Story Ensemble* presents a pair of Members' programs. A family program of world myths and other magical tales is geared toward young valentines aged 6 and older, and a program for adults features an entrancing tale of love lost and found.

Native American and Greek myths, a Japanese fairytale, and Chinese, Korean, and Middle Eastern folktales will be recounted in the family program. Margaret Wolfson will perform the tales to the original musical accompaniment of Paula Chan Bing, who will play silver and bamboo flutes, harp, and Afri-

can, Asian, and South American folk instruments.

In the musical drama for adult audiences, the ensemble will perform their celebrated version of the romantic Middle Eastern legend of Majnun Layla. Listeners will be transported by the spellbinding tale of joy, sorrow, and spiritually redemptive love of the seventh-century minstrel, Qays ibn al-Mulawwah, for the unforgettable Layla. The performance blends highly charged storytelling, handpainted scenery of the Arabian desert, and evocative music by Simon Shaheen and others on lute, flutes, violin, medieval harp, bells,

drums, tambourines, and other instruments.

Margaret Wolfson, the founder of the World Story Ensemble, is an authority on literature and the performing arts and has spoken on the art of storytelling in schools, universities, and on National Public Radio. Paula Chan Bing is a teaching artist for the Lincoln Center Institute of the Arts in New York City. Simon Shaheen has performed throughout the United States, Europe, and the Middle East.

To register for *The World Story Ensemble*, please use the January Members' programs coupon.

January Members' Programs Coupon

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: January Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Frozen in Time. Thursday, January 19, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.
Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____

Sharks. Monday, January 23, 7:30 p.m. \$5 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$8.
Number of Members' tickets at \$5: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

Shoestring Players. Saturday, January 28, and Sunday, January 29, 1:00 and 3:00 p.m. \$5 for Members, \$7 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$7.
Number of Members' tickets at \$5: _____
Number of additional tickets at \$7: _____
Total amount enclosed for program: _____

Whirlwind Tour. Wednesday, February 1, 3:00, 4:30, 6:00, and 7:30 p.m. \$8, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of times, if possible:
_____ 3:00 p.m. _____ 4:30 p.m. _____ 7:30 p.m.
Number of tickets at \$8: _____
Total amount enclosed for program: _____

African Honeyguides. Tuesday, February 7, 7:30 p.m. Free, and open only to Members. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. All additional tickets are \$3.
Number of tickets: _____

World Story Ensemble. Saturday, February 11, 1:00 and 2:30 p.m. (for families), \$3 for Members, \$5 for non-Members; and Thursday, February 16, 7:30 p.m. (for adults), \$6 for Members, \$8 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price for each show. Associates are entitled to one for each show. All additional tickets are at the non-Members' price. Please indicate a first and second choice of shows for February 11.
February 11 (for families): _____ 1:00 p.m. _____ 2:30 p.m.
Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____
Thursday, February 16 (for adults): _____ 7:30 p.m.
Number of Members' tickets at \$6: _____
Number of additional tickets at \$8: _____
Total amount enclosed for program: _____

Leatherbacks. Tuesday, February 14, 7:30 p.m. \$3 for Members, \$5 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$5.
Number of Members' tickets at \$3: _____
Number of additional tickets at \$5: _____
Total amount enclosed for program: _____

The African Drum. Monday, February 20, 1:00 and 3:00 p.m. \$5 for Members, \$7 for non-Members. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are \$7.
Number of Members' tickets at \$5: _____
Number of additional tickets at \$7: _____
Total amount enclosed for program: _____

The African Honeyguides

Tuesday, February 7

7:30 p.m.

Main Auditorium

Free, and open only to Members

Members can discover the ecology and behavior of remarkable birds whose activities include tricking other birds into rearing their young and encouraging people to rob beehives. Ornithologist Lester Short will describe his studies of the African honeyguides, nest-parasitic species with a hearty appetite for wax.

Short is Lamont Curator and former Chairman of the Department of Ornithology and has studied honeyguides in Kenya for over a decade. He'll describe the *what* and *why* of his research — the ways in which the honeyguides are identified and their behavior studied as well as the study's significance to the history of Africans. He'll discuss how he handles the birds — marking them, banding them, and radio-tagging them. He'll also explain the bluff that researchers use to lure honeyguides into the study site (for further details of the technique, see "A View from the Field" below).

Chief among Short's studies is the honeyguides' curious breeding behavior, wherein males and females "conspire" to trick barbets and other species into raising honeyguide chicks. The male honeyguide relentlessly annoys a barbet pair while his current mate conceals herself nearby. When the barbets are teased into chasing the

male, the female darts into their nest to lay her egg.

Although they're blind and naked when they hatch, the honeyguide babies possess a deadly bill hook during their first 6 to 14 days of life. They use the bill hook to destroy every small thing within reach, including the young of their foster parents. Without rivals for food, honeyguide chicks develop quickly enough to survive on their own after their first tentative foray away from the nest. This is fortunate for the chicks, because once the foster parents see the honeyguides' characteristic tail feathers, they recognize the chicks as impostors and prevent their return.

The vicissitudes of working in the African wilderness will also be detailed in the program, including lively accounts of the honeyguides' neighbors and their reactions to the researchers. Because their work brings them out before dawn and keeps them out until dark, the researchers meet with a wide range of animals in the course of a day's work — from an elderly buffalo whose rapid approach could only be broken by throwing stones in his face to a charging mother elephant initiating a wild chase through the bush.

To register for *African Honeyguides*, please use the January Members' programs coupon on page 3.



A young greater honeyguide carries off its prize: an appetizing chunk of beeswax.

A View from the Field Following the Indicator indicator

The greater honeyguide was given the apt scientific name of *Indicator indicator* because of its tendency to lead humans and other mammals to beehives. This unique creature has learned to solicit assistants in its constant search for wax, its favorite food (honeyguides are one of the relatively few birds that can digest wax). The mammals take the honey, the birds take the leftover honeycomb's wax, and everyone goes away happy — except, perhaps, the bees.

Since 1984 ornithologist Lester Short has conducted the Honeyguide Project at Gallman Memorial Foundation (Ol' Ari Nyiro) Ranch on the Laikipia Plateau in Kenya. The project gathers information on the biology and relationships of this little-known group of birds. With the assistance of his wife, Fellow of the National Museum of Kenya and bioacoustician Jennifer F.M. Home, Short is conducting the first study to use ringed honeyguides in combined ecological, ethological, and comparative investigations.

When Short and Home began their investigations, very few details of the honeyguides'

lives were known. Since individual birds cover vast areas, fly rapidly, and concentrate their feeding at beeswax or other sites over short periods of time, honeyguides are difficult to track. The scientists had been studying barbets, honeyguides' colorful, fruit-eating kin, when they discovered that honeyguides were attracted by their playbacks of tape-recorded barbet calls.

Since the start of their study, Short and Home have attracted four species of honeyguides to their feeding station and have color-banded 435 birds. The trapping and color-marking of the birds provide data on the habits, movements, and interactions of individual honeyguides as well as other information on their population dynamics. Radio tags allow the birds to be traced to their roosting sites and their movements to be followed between singing, patrolling their small territories, and feeding. It appears that the males of the key species are very song-site bound, while females wander considerably, depending upon weather and wax sources.

To entice the honeyguides to

appear, the researchers act out a charade in which they pretend to be tribal bee hunters, in a ritual that's certainly thousands of years old. Each time they visit the site, they make as much noise as possible while walking from their Land Rover to an abandoned beehive. Then they build a fire with green, wet branches, which duplicates the smoke that hunters use to drive out the bees. While the fire smokes and they add new beeswax pieces (combs) to the hive, they pound on the base of the tree with a heavy stick, to simulate the sounds of an axe cutting open a hive. Then they retreat to their blinds and prepare mesh nets for capturing the birds. The ruse works virtually every time. Unless it's very rainy and windy, the honeyguides appear within a half hour, "indicating" the old beehive and comb to the researchers and gorging themselves on the wax.

Lester Short is a former Chairman and is Lamont Curator of the American Museum's Ornithology Department. Please see the related article above for information about his upcoming Members' program on the honeyguides.

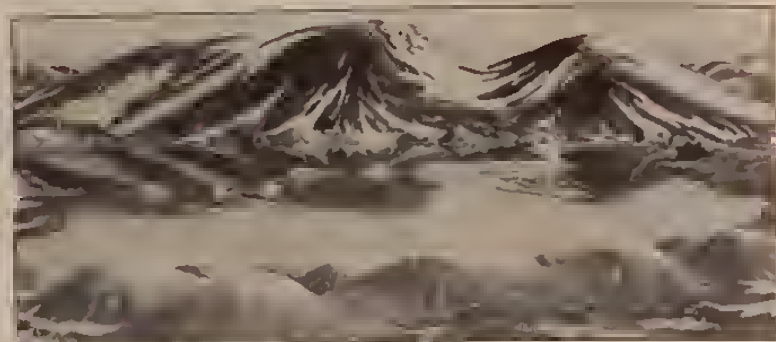
A Whirlwind Tour of the Geology of the United States

Wednesday, February 1

3:00, 4:30, 6:00, and 7:30 p.m.

\$8, and open only to Participating, Donor, and Contributing Members

The 6:00 p.m. tour is **SOLD OUT** from the December issue of *Rotunda*



Views of prehistoric North America

Join geologist Sidney Horenstein for an imaginary trip across the continent that takes place entirely within the Museum's walls. *A Whirlwind Tour of the Geology of the United States* explores the major geological provinces of our continent — mountains, volcanoes, plains, and plateaus — by focusing on Museum exhibitions that illustrate the principal geological features of North America.

The tours will examine several dioramas in various halls, including North American Forests, Mammals, and Birds. In the forestry hall, Members can view the country's geological diversity through the dioramas' accurate depictions of the rocks and landscapes characteristic of each region. The formation and evolution of mountains, calde-

ras, and canyons will be discussed — how, for example, the hilly Ozarks were once at the bottom of a tropical sea.

In the Hall of North American Mammals the tours will view the high basins of the western states that were filled with debris from the eroding Rockies, and Members will speculate on the enigmatic origins of Devil's Tower in Wyoming. The Pacific Rim will be toured in two different halls, including a sighting of the endangered California condor in the Hall of North American Birds. Closer to home, the tours will scale the Palisades and observe how it tells the story of the early geology of the Atlantic Ocean.

To reserve a place in the *Whirlwind Tours*, please use the January Members' programs coupon on page 3.

The Museum: Inside and Out

All tours **SOLD OUT** from the December issue of *Rotunda*



Members are invited to join geologist Sidney Horenstein for a look at the Museum as they've never seen it before — its geology and geography, its varieties of architectural style, the diversity of its building stones, and the fossils in its floors and walls. The tours will take place on Wednesday, January 11, at 3:00 and 6:00 p.m.

Spring Afternoon and Evening Lecture Series

The Evolution and Future of Human Sexuality

Three Thursday evenings, starting Feb. 23
7:00–8:30 p.m.
Fee: \$25 (\$22.50 for Members)

These slide-illustrated lectures are presented by **Helen Fisher**, an associate in the Department of Anthropology. Dr. Fisher is the author of numerous books and articles, including *The Sex Contract*, a study of gender and culture.

Feb. 23: The Origin of Marriage, Adultery, and Divorce. Comparing human courting behavior, infatuation, and sexual attachment around the world.

March 2: Women, Men, and Power. This lecture examines power relationships in other primates and male/female relations in egalitarian cultures to explain the evolution of the "double standard."

March 9: Future Sex. The Industrial Revolution and recent historic events have had indelible consequences for modern relationships between the sexes. This lecture looks at modern trends in biotechnology and social life, with predictions about the future of the family.

Can the Lemurs Save Madagascar?

Three Tuesday evenings, starting Feb. 21
7:00–8:30 p.m.
Fee: \$25 (\$22.50 for Members)

Madagascar is a microcosm of the planet. Rain forests and granite mountains towering out of prairie and desert make it a world complete in itself. The flora and fauna evolved in isolation after the island broke from the African continent 100 million years ago. Over 90 percent of the Malagasy forest species are found nowhere else in the world.

In these three slide-illustrated lectures **Alison Jolly**, professor of biology at Princeton University and author of *A World Like Our Own: Man and Nature in Madagascar*, discusses this realm, its unique biological communities, and the scientific importance of its endangered species.

Feb. 21: Evolution of Life in an Alternate World.

Feb. 28: Lemur Society and Female Priority.

March 7: The Necklace of Pearls: New Hope.

The Crown Jewels and the Tower of London

Two Wednesday evenings, May 10 and 17
7:00–8:30 p.m.
Fee: \$20 (\$18 for Members)

The Tower of London is an ancient system of buildings and towers, surrounded by a now-dry moat. Begun in the year 1066, the Tower has served as a fortress, palace, prison, arsenal, armory, zoo, and home to the Crown Jewels. Relive the Tower's intriguing history and view the picturesque towers, gardens, drawbridge, moat, and galleries for yourself. Learn of the Bloody Tower, the Traitor's Gate, and the Waterloo Block, and share the experiences of such notable residents as Sir Thomas More, Sir Walter Raleigh, and Queen Anne Boleyn.

The Crown Jewels of England are monuments to the British royal and cultural past. Most of them were manufactured after 1660, since few survived the systematic destruction of royal jewels and valuables that followed the execution of Charles I in 1649. From the Swords of Justice to the State Trumpets and King Charles II's Golden Spurs, see these historical heirlooms and the regal traditional rites in which some of them are still used today.

Brigadier Kenneth Mears, former director of the British Army Intelligence Corps, was deputy governor at Her Majesty's Tower of London, where he was responsible for the safety of the Crown Jewels from 1980 to 1989. He lived in Saint Thomas' Tower with his wife, Elizabeth, and — he says — an amicable ghost. While there, he wrote a souvenir handbook, "The Crown

Jewels" (1986), and a book, *The Tower of London* (Phaidon Press, 1988). Using magnificent slides of the Crown Jewels, reputed to be the most brilliant of the collection, Mears has lectured all over the world.

May 10: The Tower of London

May 17: The Crown Jewels in the Tower.

New York City's Architectural Landmarks

Monday evening, March 6
7:00–8:30 p.m.
Fee: \$10 (\$9 for Members)

From the original Dutch trading post of New Amsterdam, settled in the seventeenth century, New York City has grown to be a premier metropolis — one of the world's great cities! Noted for its fast-paced cycle of continuous change, the city has evolved from forests and swamps to buildings and streets. In this lecture you will see a sample of what has been preserved from the past 300 years of this marvel on the Hudson.

Barbaralee Diamonstein, writer, television interviewer, producer, and the first director of the Department of Cultural Affairs, presents this glimpse of New York City's history. Diamonstein is chairperson of The New York City Landmarks Preservation Foundation and is the author of fifteen books, including *The Landmarks of New York*.



Kenneth Chambers



Kenneth Chambers

North American Mammals

North American Mammals

Five Monday afternoons, starting Feb. 27
2:30–4:00 p.m.

or

Five Monday evenings, starting Feb. 27
7:00–8:30 p.m.

Fee: \$35 (\$31.50 for Members)

In spite of the exploitation of its wildlife, the North American continent still offers an exciting abundance of wild animals. Swamps and marshes, deserts, mountain ranges, forests, plains, and sea coasts all provide homes for a fascinating assortment of mammals. Discussion, using color slides, includes identification, life histories, habitats, and economic importance.

Kenneth A. Chambers, author of *A Country Lover's Guide to Wildlife*, is lecturer in zoology at the Museum and leads the Museum's Alaskan wildlife tours.

Feb. 27: The World of Mammals; Moles and Shrews; Bats; Rabbits and Their Relatives

March 6: Gnawing Mammals; Beavers, Porcupines, and Their Kin

March 13: The Fascinating Story of the Northern Fur Seal; Other Marine Mammals.

March 20: The Meat Eaters and Their Role in Nature.

March 27: Wild Sheep; Mountain Goats, The Deer Family and Other Nonpredatory "Big Game" Mammals.

The World of Birds

Five Thursday evenings, starting Feb. 23
7:00–8:30 p.m.
Fee: \$35 (\$31.50 for Members)

This series focuses on the evolution and adaptations of birds, with special emphasis on avian biology as it relates to flight. Topics include evolution from reptiles, feathers and molt, migration, and behavior. **Jay Pitocchelli**, graduate researcher in the Department of Ornithology, uses slides, films, tape recordings, and Museum exhibits and collections. A behind-the-scenes tour of the Department of Ornithology shows how scientists investigate and determine the relationships of birds based on anatomical, biochemical, and behavioral analyses.

Feb. 23: *Evolution of Birds.*

March 2: *Migration and Orientation.*

March 9: *Bird Song, Function, and Production.*

March 16: *Behavior.*

March 23: *Bird Architecture.*



The World of Birds

Island of the Ancestors

Two Monday evenings, March 20 and 27
7:00–8:30 p.m.
Fee: \$20 (\$18 for Members)

The richness of Malagasy culture is as unexpected as its unique animal and plant life. Although only 250 miles from the African mainland, it has cultural connections that weave together African, Middle Eastern, and Asian traditions. There are 18 officially recognized ethnic groups and many dialects. These two slide-illustrated lectures are in conjunction with the temporary exhibition *Madagascar: Island of the Ancestors*, opening March 25.

March 20: **John Mack**, assistant keeper at the British Museum's Department of Ethnography at the Museum of Mankind, introduces the island culture and the exhibition themes.

March 27: **Conrad P. Kottak**, author of *The Past in the Present: History, Ecology, and Variation in Highland Madagascar* and professor of anthropology at the University of Michigan, examines the cultural and social elements of the highland people.



Island of the Ancestors

Animal Myth in Eastern Art

Three Tuesday evenings, starting Feb. 21
7:00–8:30 p.m.
Fee: \$25 (\$22.50 for Members)

The symbolic relationship between humans and animals is central to Hindu, Buddhist, and Islamic cultures. These rich narrative and mythic traditions will be visually presented to show how animal allegory is used for ritual, political, and social purposes. The illustrated lectures are presented by **Jill S. Cowen**, professor at Manhattan College and author of *Kalila wa Dimna: An Animal Allegory of the Mongol Court*.

Feb. 21: *Hindu Southeast Asia and India.* Some animals through their deeds and character have become immortal in Hindu culture. Their characteristics will be explored through a look at the role of the monkey-king, Hanuman, in the *Ramayana* and *Mahabharata*. Two film segments of these classics as presented in Indonesian and Indian theatrical performances will be used to illustrate Hanuman's mythological and symbolic nature.

Feb. 28: *Buddhist India.* The stupa railings at Barhut and Sanchi are carved with *Jataka* tales showing the Bodhisattva incarnated in animal form. Endowed with ennobling characteristics, the animals provide moral lessons of early Buddhism. In the later cave paintings at Ajanta, scenes from the *Jataka* feature royal themes as a reminder of the power of their patron king.

March 7: *Islamic Asia.* The animal fables of the *Kalila wa Dimna*, second only to the Koran in popularity, are an adaptation of the *Panchatantra*, the Indian classic of the fourth century. Its stories, intended as a mirror for magistrates, provided inspiration for some of the most dynamic and original manuscript illumination. The Mongol fourteenth-century Istanbul version reflects the ethical and political concerns of its vizier patron. Its quality set the standards for production throughout the Islamic world.



Island of the Ancestors

Anthropology on Film

Three Monday evenings, starting Feb. 27
7:00-9:00 p.m.
Fee: \$30 (\$27 for Members)

Malcolm Arth, anthropologist and one of the programmers for the annual Margaret Mead Film Festival, presents films selected for their beauty as well as their ability to illuminate our understanding of human behavior. Following a screening, Dr. Arth is sometimes joined by the filmmakers for a lively exchange with the audience.

Feb. 27: To be announced.

March 6: *In the Grip of the Polar Ice: Endurance*. 1917/1937. Director, Frank Hurley. (55 mins.) The surviving film record from the Australian Film Archives of the grueling Shackleton Expedition to the Antarctic in 1914-16. Some of the most extraordinary footage focuses on the struggle for survival of a ship's crew and their leader. The narration added in the 1930s perfectly reflects a period in film history.

Second film to be announced.

March 13: *The World Is Watching*. 1987. Director, Peter Raymont. (59 mins.) Canadian director Peter Raymont poses some tough questions about news-casting in the West. His film crew follows news teams in Central America and finally turns its camera on the ABC newsroom in New York City. A study in communications. **Special Guest: Peter Raymont.**

Gems and the Earth

Six Tuesday evenings, starting Feb. 21
7:00-8:30 p.m.
Fee: \$40 (\$36 for Members)

Members of the Department of Mineral Sciences discuss gems, their origins and characteristics, cultural history, aesthetic and scientific values. This is not a course in gem identification or recognition, but is intended to enhance gem appreciation and understanding.

These lectures are presented by **Dr. George E. Harlow**, curator, **Dr. Demetrius Pohl**, assistant curator, and **Joseph Peters**, senior scientific assistant.

Feb. 21: *What Is a Gem?*

Feb. 28: *Diamonds and Rubies*.

March 7: *Emeralds and Other Gem Beryls*.

March 14: *Tourmalines and Gem Pegmatites*.

March 21: *Quartz, Opal, and a Potpourri of Colored Stones*.

March 28: *Jades and Carving Materials*.



Gems and the Earth

The Ancient City of Ur

Three Thursday evenings, starting Feb. 23
7:00-8:30 p.m.
Fee: \$25 (\$22.50 for Members)

In three slide-illustrated lectures, the third-millennium city of Ur is discussed. It is the site of recent excavations that shed new light on the role of this center of the Sumerian civilization. Architecturally, the city is a prime example of the typical urban layout of its day. Powerful fortifications and spectacular public buildings, temples, and palaces were surrounded by double walls enclosing warehouses and sacred spaces.

Feb. 23: *The Glory of Ur: The Royal Cemetery*. **Susan Pollock**, professor of archeology, SUNY-Binghamton, will discuss the rich burials with their gold and bejeweled gifts and the tombs that define so much of this ancient urban center. She'll also discuss how the rich architectural features of Ur compare with those of other cities.

March 2: *The Metropolis*. The Great Ziggurat, or temple tower, with its spacious precincts of courtyards, tower-flanked gateways, and one of the world's earliest museums is the focus of this talk by **Trudy S. Kawami**, a professor in the Department of Classics at New York University.

March 9: *Abraham, Ur, and the Hebrew Bible*. Our knowledge of the Israelites is derived from literary sources and archeological studies of fortified cities. **Barch Levine**, a professor in the Department of Hebrew and Judaic Studies at New York University, explores the impact of Mesopotamian civilization on biblical Israel.



The Ancient City of Ur



Animal Drawing

Beasts of the Middle Ages

Four Thursday evenings, starting Feb. 23
7:00–8:30 p.m.
Fee: \$30 (\$27 for Members)

People of medieval Europe lived in a world where they felt themselves to be (and indeed they were) at the mercy of nature. How did they perceive domestic, wild, and fabled beasts? Was the whale a monster? Was the louse related to the dragon? Why did thirteenth-century bishops object to hawks and monkeys?

Looking at medieval writing and art, this series examines that period with occasional comparison with the contemporary world. Presented by **Marie A. Lawrence**, senior scientific assistant in the Department of Mammalogy.

Feb. 23: *World View of Medieval Europeans: Biblical Beasts.*

March 2: *Beasts of Manor and Hunt*

March 9: *Beasts of Heraldry and War.*

March 16: *Bestiaries.*



Beasts of the Middle Ages

Travel Photography

Four Thursday evenings, starting Feb. 23
6:30–9:00 p.m., and one Saturday, March 11,
10:30 a.m.–12:30 p.m.
Fee: \$80
Limited to 22 adults

This series is designed for the traveler who wants to photographically record peoples and places, near and far. The course covers the role of travel photography, the special problems related to photographing while traveling, basics of camera technology and lighting, proper exposure, selection and use of equipment, and how to see photographically. Weekly assignments will be followed by a class critique. The course includes a two-hour field trip. **Willa Zakin**, a professional photographer trained in anthropology, presents lectures, slides, and class demonstrations of lighting and camera mechanics.

Animal Drawing

Eight Tuesday evenings, starting Feb. 21
7:00–9:00 p.m.
Fee: \$90 (materials not included)
Limited to 25 adults

Join a Museum artist to sketch subjects such as gazelles on the African plains and timber wolves in the snowbound north. After the Museum has closed to the public, students draw using the famed habitat groups as well as individual mounted specimens. **Stephen C. Quinn**, assistant manager in the Department of Exhibition, discusses drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant, whether beginner or professional.

The following exhibition halls serve as studios: the Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and Hall of Ocean Life.

Wildflowers of the North

Five Monday afternoons, starting Feb. 27
2:30–4:00 p.m.
or
Five Thursday evenings, starting Feb. 23
7:00–8:30 p.m.
Fee: \$35 (\$31.50 for Members)

From Alaska and the Pacific Northwest across to New England stretch wild areas of northern coniferous forest, wetlands, mountains, and tundra. Complex orchids, colorful lilies, dwarf Arctic creepers, and ancient cushion plants are among the spectacles in the northern web of life. This series of slide-illustrated lectures will examine northern wildflowers and discuss identification and ecology. Presented by **William Schiller**, lecturer in botany at the Museum.

Families of Northern Wildflowers.

New England's Arctic Flora: Above the Timberline on Isolated Mountaintops.

Arctic Wildflowers in Alaska and the Pacific Northwest.

Wildflowers of Northern Wetlands; Bogs, Marshes, and Swamps.

Wildflowers of Northern Coniferous Forests.

Registration

Please use the adjacent coupon for advance registration. Advance registration is requested, but registration will be accepted on the opening night if the course is not filled. No single lecture tickets are sold, and there are no refunds. Children are not admitted to lectures, workshops, or field trips.

For further information, call (212) 769-5310.

Spring 1989 Field Trips

For a weekend field trip itinerary and application, call (212) 769-5310.

Weekend for Bird Enthusiasts

Saturday and Sunday, May 13 and 14
Limited to 36 adults

Two-day bus trip covering wooded areas near New York City and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen.

This trip is led by **Joseph DiCastanzo**, research assistant on the Great Gull Island Project and past president of the Linnaean Society.

Weekend Whale Watch off Cape Cod

Friday, Saturday, Sunday, May 19, 20, and 21
Limited to 45 adults

A weekend of whale watching off the rich feeding grounds off Stellwagon Bank, near Cape Cod, where several species of whales are commonly seen at close range. Our search for these magnificent creatures involves 3 four-hour whale cruises by private charter from Provincetown. In addition to the marine biologists aboard the boat, two Museum staff members will accompany the group: **Alison Laerke** and **Stephen C. Quinn**, naturalists, who will assist in identifying the many species of coastal birds that may be seen.

Other features of the weekend include optional guided nature walks along the dune and marsh areas of the Cape Cod National Seashore, an exploration of historic Provincetown, an evening marine mammal slide-talk by **Dr. Charles "Stormy" Maya**, and a stop at the Mystic Aquarium in Connecticut. Cost includes transportation, two nights' accommodation, meals, and lectures.

DEPARTMENT OF EDUCATION Afternoon and Evening Lecture Series

I enclose a stamped, self-addressed envelope and a check (or money order) payable to the American Museum of Natural History in the amount of: \$_____

Mail to: Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

NOTE: Registration will be delayed if daytime phone number and self-addressed, stamped envelope are missing. Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown. There are no discounts on limited-enrollment series. Associate Members are not eligible for the discount.

Please print

Course: _____

Day: _____ Hour: _____

Course: _____

Day: _____ Hour: _____

Name (last) _____ (first) _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

The African Drum

Monday, February 20
1:00 and 3:00 p.m.
Kaufmann Theater
\$5 for Members, \$7 for non-Members

Young Members between the ages of 2 and 15 will delight to a musical puppet show that weaves four African folktales into one exciting adventure.

The Shadow Box Theater will perform *The African Drum*, the story of a little girl named Kijana, her animal friends, and the Zimwe (bad man) who tricks Kijana. Traditional creation myths are incorporated into Kijana's adventure (How the Animals Got Their Colors, How

the Turtle Got Its Shell, and other fables), which is accompanied by the irresistible beat of the African drum. The evil Zimwe is justly punished in the end, and the audience helps reunite Kijana with her parents by singing the magic password song, "Abiyoyo."

Shadow theater is an ancient tradition, thought to have originated in China in 121 BC, that has remained popular to the present day. The participatory

theater of *The African Drum* promotes an understanding of African mythology and encourages the development of children's innate creativity. The tales convey important values — individuality, determination, respect, and cooperation — in an entertaining and nondidactic format.

To register for *The African Drum*, please use the January Members' programs coupon on page 3.



Sky's the Limit

Double-Feature Sky Shows at the Planetarium

This month, the American Museum-Hayden Planetarium premieres a new double feature of Sky Shows. *Gateway to Infinity*, narrated by veteran film and stage actor James Earl Jones, commemorates the age-old human fascination with the sky. In *Gateway*, audiences will travel through time and space to explore the most fascinating and distant corners of the universe. The voyage includes views of the planets and examinations of star clusters, supernovas, colliding galaxies, and mysterious black holes.

The cofeature is *Destination: Mars*, which explores the history of our neighbor planet from the myths of yesterday to the Martian colonies of tomorrow.

Members can attend a private viewing of *Gateway to Infinity* and *Destination: Mars* on Tuesday, March 28, at 6:00 and 7:30 p.m. Tickets for the private viewing will be available next month with the February Members' programs coupon. For those who can't wait, please see "Happenings at the Hayden" on page 11 for current Sky Show times.

Leatherbacks

Tuesday, February 14
7:30 p.m.
Main Auditorium
\$3 for Members, \$5 for non-Members

After dragging her enormous body out of the water and onto the beach, she uses her rear flippers to carve out a cavity in the sand while her eyes overflow with tears. She's not heartbroken; her tears are for keeping the sand out of her eyes. The female leatherback turtle deposits about 100 billiard-ball-size eggs into the freshly dug nest. Two months later, tiny hatchlings will emerge and scurry toward the water, where they will grow to 6,000 times their original size.

The problem with this scenario is that only about 1 in 1,000 eggs produces a hatchling that survives to adulthood.

This egg-laying cycle has gone on for millions of years, but the endangered leatherbacks are succumbing to a flaw in their evolution: like other sea turtles, they must leave the water to nest, which makes them — and their eggs — vulnerable. Poaching and habitat loss have drastically reduced the number of leatherbacks in some areas; nearly half of the entire population nest along Mexico's Pacific coast, where they are losing beach sites to developers.

Members can learn about the most intensive leatherback turtle study ever undertaken when New York Zoological Society researcher Robert Brandner

and his wife, biologist Susan Basford, present *Leatherbacks*. The program will highlight their research on Sandy Point, a mile-and-a-half peninsula in the southwest corner of Saint Croix, which hosts the largest aggregation of nesting female leatherbacks in US territory.

Each year, from mid-March to early August, anywhere from 15 to 50 turtles come ashore under the cover of darkness to lay their eggs, some nesting live to ten times over the course of the season. Since 1982, Brandner and Basford have been there to study and safeguard the animals. The Saint Croix leatherback population is relatively small, which enables the researchers to collect detailed data on individual turtles. It's hoped that this information will help to protect the large leatherback populations in Mexico and Malaysia.

To register for *Leatherbacks*, please use the January Members' programs coupon on page 3.

Music from the Age of Chivalry

Monday, February 13
7:00 p.m.
Tuesday, February 14
7:00 and 9:00 p.m.
Planetarium Sky Theater
\$10 for Members, \$13 for non-Members

The internationally acclaimed Ensemble for Early Music returns to the Hayden for a special musical program beneath the Planetarium's magnificent starry sky. The ensemble, which performed at the Planetarium's fourth annual holiday concert in 1987, will commemorate Valentine's Day 1989 with *Music from the Age of Chivalry*.

As in the past, the ensemble will play romantic instruments, such as the lute, recorder, and harpsichord. And as in the past, the Planetarium staff will create a feast for the eyes as well as the ears, transporting audiences back to the Middle Ages. Working again with the Metropolitan Museum of Art, the Musée Conde near Paris, and others, the Planetarium's unique projection systems will surround

concert-goers with the pagentry of the Middle Ages, from medieval castles, gardens, and villages to bold knights and

lovely ladies in waiting.

To register for *Music from the Age of Chivalry*, please use the coupon at right.



Live concerts of early music at the Planetarium

Music from the Age of Chivalry

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category and number: _____

Please make check payable to the Hayden Planetarium and mail with a self-addressed, stamped envelope to: *Music from the Age of Chivalry*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192

Please indicate a first and second choice of shows:

Monday, Feb. 13: _____ 7:00 p.m. _____ 9:00 p.m.
Tuesday, Feb. 14: _____ 7:00 p.m. _____ 9:00 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$13: _____

Total amount enclosed for program: _____

Orders cannot be processed without the inclusion of a self-addressed, stamped envelope. Sorry, no credit cards accepted.

A Walk through the Hall of South American Peoples

The Hall of South American Peoples, which opens on Friday, January 20, is a breathtaking walk through ancient and contemporary cultures. A wealth of archeological and ethnological items are on display, from curiously painted ceramics and finely wrought metal figurines to shrunken heads whose lips are sewn shut to lock their avenging souls inside.

An introductory section offers an overview of the geography and cultures of South America, and within the main part of the hall archeological exhibits range from items recovered from coastal areas to those of the Andean highlands. A winding path through the back of the hall brings visitors face to face with mannequins and photographs of the aboriginal people of Amazonia, who demonstrate traditional pursuits such as making a fire without matches and casting clay vessels without the help of a potter's wheel.

Textile design is considered the most important of ancient Andean art forms, and among the introductory displays are fragments of Peruvian textiles that date from 3000-2000 BC. Painstaking work by specialists revealed that these decaying bits of colorless fabric were woven and embroidered with rich designs. From these unprepossessing scraps and shreds of cotton yarn that were twined by fingers thousands of years ago emerged intricate patterns of animals, human figures, and geometric motifs.

Within the archeological section of the hall is a profusion of wondrously preserved fabrics that offer a clear view of the complex imagery of Andean textiles. The collection is highlighted by textiles from Paracas, a peninsula on the south coast of Peru that extends nine miles into the Pacific Ocean. For six centuries Paracas was the richest of the Andean burial grounds, and it was here in 1925 that a Peruvian archeologist uncovered one of the region's most significant discoveries: more than 400 mummies from at least 2,000 years ago. The finely preserved Paracas textiles include a huge burgundy-and-blue burial mantle embroidered with gold-and-green figures of birds and cats.

Other archeological treasures include an impressive array of pottery from various prehistoric cultures, some pieces of which are painted with elaborate scenes of ceremonial life. Many of the brightly colored ceramic bottles and jars are in the shapes of human and animal figures — and sometimes fantastic combinations of the two. Condors, foxes, crayfish, and winged creatures appear alongside people sprouting fangs, spewing serpents, and wearing expressions that run the emotional gamut from shock to serenity. Ancient instruments of the Andes are also displayed — bamboo panpipes, flutes of bone and cane, and shell trumpets that range from 2,200 to 450 years old.

The archeological section concludes with a study of the Inka civilization. There is the best-known of the Andean cultures because it was the Inka that the European explorers encountered upon arrival in 1532. Among the Inka artifacts are *quipus*, the complex counting devices they used to keep census and accounting records. Because they had no written language, the Inka recorded important information on knotted strings, the color, order, and position of which could be "read." A model of an Inka city, Huánuco Pampa, depicts one of the largest of their administrative, religious, and warehousing centers and the vast Inka road network along which it was built.

In the course of the thousands of years of their cultural development, the Indians of Amazonia invented and discovered items that were subsequently adopted for worldwide use, from cultivated plants such as manioc, peanuts, and pineapples to rubber and tobacco products, the hammock, and the backyard barbecue. The inhabitants of the largest tropical rain forest on earth are portrayed in the hall as they were at the time of their first contact with Europeans. Although many of the customs illustrated in the hall persist among modern-day Amazonians, the increasing influence of outsiders is changing their culture, and it's all too likely that one day all of these ethnic practices will survive only in museums.

Despite the vastness of Amazonia, the cultural similarities between tribes are so great that the hall's exhibits are grouped according to subject rather than region. Aspects of Indian culture from birth to death are portrayed: ceremonial items such as gourd rattles and palm-leaf crowns from coming-of-age and marriage rituals are displayed as well as everyday items such as the palm-wood clubs and curare-tipped darts for warfare and hunting. The exhibits are highlighted by color pho-

tographs of the artifacts in action and life-size casts of people engaging in everyday activities — women weaving and planting, men hunting and preparing for battle, a shaman healing an ailing child.

The Indians' means of subsistence are shown, from a view of the specialized technologies for hunting to the process of preparing food. Enormous blowguns, ranging in length from 8 to more than 13 feet, are displayed (contrary to popular belief, blowguns are used only for hunting monkeys and other animals and are never used in warfare). The elaborate preparation of manioc, a staple in the Amazonian diet, is explained. Most varieties of this tuber contain deadly amounts of prussic acid; over the centuries Indians have discovered numerous imaginative methods of removing the poison and rendering manioc edible.

Little clothing is worn in the steamy environs of the Amazon, but natives are richly adorned with face and body paint, necklaces, armbands, and other ornaments. Fine feathers from the plumage of parrots, toucans, macaws, and other tropical birds provide the stuff of magnificent headdresses. The exhibits show how fibers and fabrics are created from the raw materials of

the forest and transformed into cord and thread for the making of hammocks, bags, nets, and other tools and household items. All but a few Amazonian tribes make pottery, and the step-by-step process is illustrated, from obtaining and tempering clay to the final product.

Hunting with spears and blowguns, weaving palm fiber, harvesting manioc, and other activities are given a real-life context in "To Survive: The Indians of Amazonia," a 30-minute video presentation that concludes the ethnological section of the hall. The film depicts the Indians' adaptations to the rain forest and their struggle to retain their culture and lands.

Environmental sounds accompany visitors throughout the Amazonian section of the hall, where bird calls and tribal chants evoke a jungle ambiance. The archeological section features traditional music of the Andes performed on whistles, rattles, flutes, drums, and other instruments that are exhibited in the hall.

It's an amazing walk through South American Peoples, a stroll that spans more than 12,000 years and explains subjects ranging from prehistoric textiles to modern-day shamanism. Come explore the vanished and vanishing cultures of South America.



Cotton cloth mantle with embroidered costumed figures of camelid wool. It is from the Paracas culture (1000-100 BC) of Peru.



Two Mekranoti Indian girls of Brazil wear body paint and an elaborate ceremonial back ornament of oropendola and macaw feathers.

Museum Notes

Special Exhibitions and Highlights

Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight features paintings, sketches, and sculptures by a celebrated American artist whose depictions of prehistoric life have delighted and awed generations. In the Naturemax Gallery, through January 31.

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

Members of the Sohomi Tochibano Dance Company are among the performers in the Leonhardt People Center's Jopon Month celebrations. See the colendar on page 12 for a schedule of events or call (212) 769-5168 for further information.



The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on

duty at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5606.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, and Thursday; from 10:00 a.m. to 8:30 p.m. on Wednesday and Friday. Located on the second floor. \$5.00 per item. On Saturday and Sunday, coat-checking facilities are available on the lower level near the subway entrance.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. Till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from

10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday; dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations: (212) 874-3436.

Naturemax

Two new movies are currently being shown on New York City's largest indoor movie screen.

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film that re-creates the islands' discovery. *Behold Hawaii* is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 3:30, and 4:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown

at 6:00 and 7:30 p.m. on a double-feature bill with *Dance of Life*, a film that portrays Indonesian life and culture from a Western perspective.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday, 1:00 to 4:30 p.m. Closed Sunday, Monday, and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk.

Museum Birthday Parties. Young Members can let the good times roll with the dinosaurs or the blue whale, in Africa or on another planet. Children between the ages of 5 and 10 can choose from five exciting birthday party themes: a Dinosaur Party; a Star Party; a Safari Party; an Aquanaut Party in the Hall of Ocean Life; or a Naturemax Party.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m.

on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor bags that are full of surprises. The cake is not included.) For reservations, please call the Membership Office at (212) 769-5606.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, FACES features a variety of activities, including games, stories, puzzles, and recipes. FACES is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order payable to FACES (add \$5 for foreign orders) to: FACES, Dept. 722, 20 Grove St., Peterborough, NH 03458.

Happenings at the Hayden

Sky Shows

The Star of Christmas closes on January 2. On January 4, a new double feature of Sky Shows premieres at the Planetarium. *Gateway to Infinity* takes audiences through time and space to the farthest reaches of the universe to explore star clusters, supernovas, and black holes. *Destination: Mars* profiles the red planet, from the myths and monsters of yesterday to the Martian colonies of tomorrow.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, January 14, and Saturday, February 11.

Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Do-

nor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn. *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes place on Friday and Saturday at 7:30, 9:00, and 10:30 p.m. through January 21. Starting on January 27, showtimes will be at 7:00, 8:30, and 10:00 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

7 11:00 a.m. New York Map Society. Room 419. Free.
1:00 to 4:30 p.m. Folk Dances of Japan, by members of the Sahomi Tachibana Dance Company. Kite Making, a demonstration by Atsushi Moniyasu; Origami, paperfolding by Kyoko Kondo and members of The Friends of The Origami Center of America. Japan Month at the Leonhardt People Center. Free.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

4 Gateway to Infinity and double-feature Sky Show, begins today at the Planetarium. See "Happenings at the Hayden" on page 11 for details

2 Last chance to see From the Land of Dragons in Gallery 1.

Last chance to see The Star of Christmas at the Hayden Planetarium.

The Leonhardt People Center is closed

8 1:00 to 4:30 p.m. Folk Dances of Japan, by the Sahomi Tachibana Dance Company. Kite Making, by Atsushi Moniyasu; Origami, by Kyoko Kondo and members of The Friends of The Origami Center of America. Japan Month at the Leonhardt People Center. Free.
2:00 p.m. New York Shell Club. Room 419. Free.

Last chance to see the Origami Holiday Tree in the Roosevelt Rotunda.

15 1:00 to 4:30 p.m. Oshimai, drama, by Kazuko Moriaki; Bonsai, by Kazuo Fujii of the Brooklyn Botanic Garden; Shodō, the Way of Calligraphy, by Tsuyoshi Takemon and Hiroko Harada. Japan Month at the Leonhardt People Center. Free.
2:00 p.m. Dinosaurs Alive. Linder Theater. Free (see box).

2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free.

22 1:00 to 4:30 p.m. Classical Dance of Japan, by Fujima Nishiki and members of the Miyoko Watanabe Dance Company; The Art of Kimono, a demonstration of traditional Japanese dress by Tomoko Kakihiro; Koto, the Japanese stringed instrument, by Shemie Kato. Japan Month at the Leonhardt People Center. Free.

29 1:00 and 3:00 p.m. The Shoestring Players' Members' family program. \$5 for Members, \$7 for non-Members. Tickets required. Page 3.
1:00 to 4:30 p.m. The Martial Arts of Iaidō, Kendō, and Jōdō, by members of the New York Budōkai; Shokuhachi, flute music of Japan, by Ronnie Nygetsu Seldin. Chadō, the Way of Tea, a tea ceremony with tea master Tomi Inoue. Japan Month at the Leonhardt People Center. Free.

11 3:00 and 6:00 p.m. The Museum. Inside and Out. Members' tours. \$8, and open only to Participating, Donor, and Contributing Members. Tickets required. Page 4

7:30 p.m. Amateur Astronomers Association. Speaker, Dr. Michael Simon of SUNY-Stony Brook. "Lunar Occultation Observation in the Infrared." Linder Theater. Free.

10 8:00 p.m. Linnaean Society. Kaufmann Theater. Free.

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

16 Martin Luther King, Jr. Day.
17 7:00 p.m. New York Entomological Society. Room 319. Free.

Dinosaurs Alive

An entertaining history of dinosaur art, illustrated by color slides, will be presented by author-naturalist Richard Milner on Sunday, January 15, at 2:00 p.m. in the Linder Theater. This free program is open to the general public and is jointly sponsored by the Herpetological Society and the New York Paleontological Society.

24 8:00 p.m. Linnaean Society. Kaufmann Theater. Free.

23 7:30 p.m. Sharks: Magnificent, Mysterious, Misunderstood. Members' evening program. \$5 for Members, \$8 for non-Members. Tickets required. Page 2.

The American Museum Restaurant will be open prior to the Members' program.

30

31 Last chance to see Dinosaurs, Mammals, and Cavemen: The Art of Charles R. Knight in the Naturemax Gallery.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

12 7:00 p.m. New York Microscopical Society. Speaker, Richard W. Harold of Hunter Associates Laboratory: "Analysis of Color and Appearance." Room 419. Free.

13 The Hall of South American Peoples opens to the public. Page 1.

19 7:30 p.m. Frozen in Time. Members' evening program. Main Auditorium. \$3 for Members, \$5 for non-Members. Tickets required. Page 2.

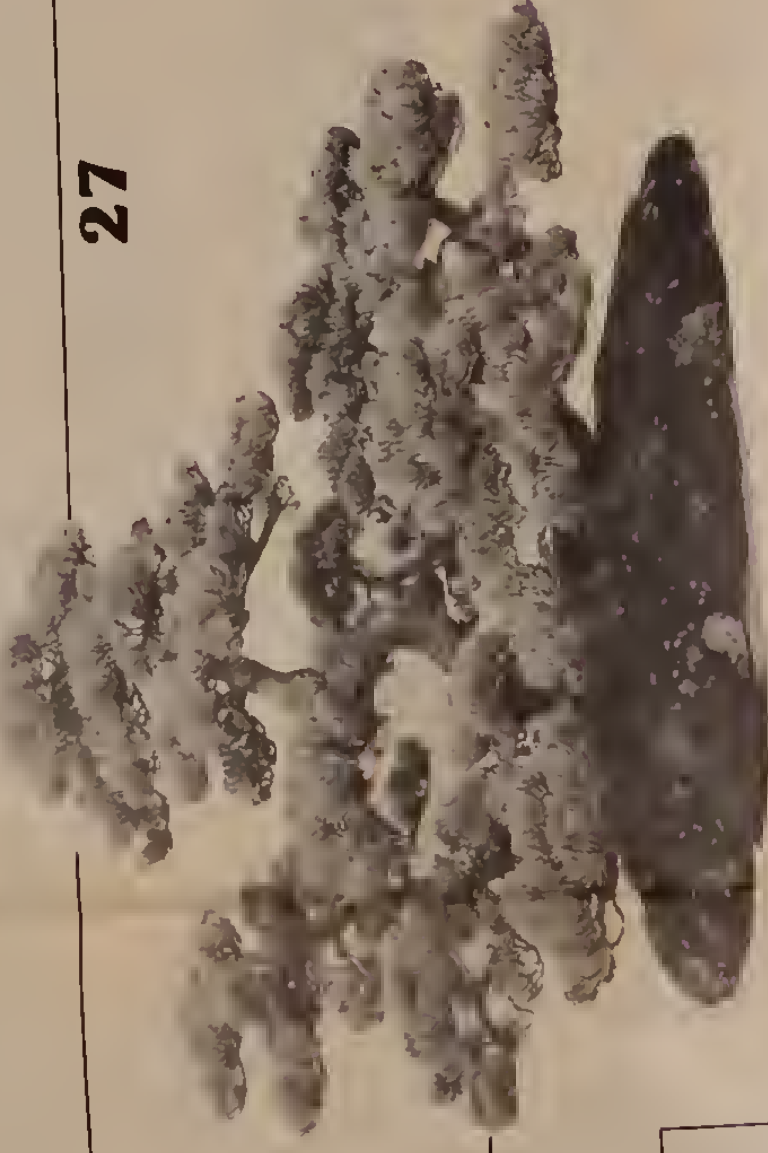
The American Museum Restaurant will be open prior to the Members' program.

21 1:00 to 4:30 p.m. Classical Dance of Japan, by Fujima Nishiki and members of the Miyoko Watanabe Dance Company; The Art of Kimono, a demonstration of traditional Japanese dress by Tomoko Kakihiro and Shinobu Kakihiro; Koto, the Japanese stringed instrument, by Shemie Kato. Japan Month at the Leonhardt People Center. Free.

27

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1:00 to 4:30 p.m. The Martial Arts of Iaidō, Kendō, and Jōdō, by members of the New York Budōkai; Shokuhachi, flute music of Japan, by Ronnie Nygetsu Seldin; Chadō, the Way of Tea, a tea ceremony with tea master Hisashi Yamada. Japan Month at the Leonhardt People Center. Free.



Brooklyn Botanic Garden

January 1989

American Museum of Natural History

POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 14, No. 2 February 1989



The most primitive of the primates, the lemur, is unique to Madagascar.

Myth, Marriage, and Madagascar Spring Afternoon and Evening Lecture Series

From the evolving sociological import of marriage and divorce to the treasures unearthed in an ancient city from the time of Abraham, the subjects featured in the Department of Education's *Spring Afternoon and Evening Lecture Series* are endlessly fascinating.

The origins of marriage and divorce are explored in *The Evolution and Future of Human Sexuality*, a series presented by Helen Fisher, an associate in the Department of Anthropology. The talks will also take a look at the evolution of the "double standard" and modern relationships between the sexes, including some predictions about the future of the family. (February 23, and March 2 and 9)

Can the Lemurs Save Madagascar? profiles the island's unique biological communities and the scientific importance of its endangered species. Alison Jolly, professor of biology at Princeton University, traces Madagascar's isolated

development from its break with continental Africa over 100 million years ago. (February 21 and 28, March 7)

Three hundred years of local history are condensed into a fascinating evening with *New York City's Architectural Landmarks*. Barbaralee Diamonstein, chairperson of the New York City Landmarks Preservation Foundation, highlights the city's transformation from the seventeenth-century settlement of New Amsterdam to the modern-day Gotham. (March 6)

The symbolic relationships within oriental narrative and mythic traditions are explored in *Animal Myth in Eastern Art*. Jill S. Cowen, lecturer at Manhattan College, illustrates the use of animal allegory for ritual and social purposes in Hindu Southeast Asia and India, Buddhist India, and Islamic Asia. (February 21 and 28, and March 7)

The amazing results of recent excavations are explored in *The Ancient City of*

Ur. Susan Pollock, professor of archeology at SUNY-Binghamton, discusses the significance of funerary artifacts unearthed in the city's royal cemetery. Trudy S. Kawami, professor in the Department of Classics at New York University, looks at the Great Ziggurat and one of the world's earliest museums. Barch Levine, professor in the Department of Hebrew and Judaic Studies at New York University, defines the impact of Mesopotamian civilization on biblical Israel. (February 23, March 2 and 9)

These lectures take place from 7:00 to 8:30 p.m. Fees vary, and Participating, Donor, and Contributing Members are entitled to a 10 percent discount on most courses. For further information about the series, call (212) 769-5310.

An Education Department Public Program.

Hurdles for Turtles

A thousand to one: those are the odds against the survival of a hatchling leatherback sea turtle. A pair of biologists who are helping to increase the odds in the turtles' favor will present *Leatherbacks*, a Members' program about the fight to save this endangered species.

Page 4

Black History Month

Profiles of the men and women of the Harlem Renaissance, a look at the evolution of the black community in New York City, and a host of music and dance programs are featured in the Museum's observance of Black History Month.

Page 6

Child's Play

Shadow puppets and singalongs explain creation myths to kids when the Shadow Box Theater presents *The African Drum*, a Members' family program that can't be beat.

Page 5

Out of Africa

Living and working in the wilds of Kenya for over a decade, ornithologist Lester Short has become an authority on a little-known group of wax-eating, nest-parasitic birds. He'll describe his fieldwork to Members in the program *The African Honeyguides*.

Page 2

Emoters of Emotion

The World Story Ensemble presents a pair of Members' Valentine's Day programs — for adults, a timeless Middle Eastern tale of romance, and for children, a potpourri of international myths and fairytales.

Page 2

All You Need Is Love

Saturday, February 11
1:00 and 2:30 p.m.
(for families)
Kaufmann Theater
\$3 for Members, \$5 for non-Members

Thursday, February 16
7:30 p.m.
(for adults)
Kaufmann Theater
\$6 for Members, \$8 for non-Members

In commemoration of Valentine's Day, *The World Story Ensemble* will present a pair of Members' programs of romantic myths and legends from around the world. These timeless tales are derived from the world's oral traditions and transmit universal truths from generation to generation — tales about the magic of the imagination, the power of love, and the beliefs and traditions of many cultures.

The family program is geared toward children 6 years of age and older and features Native American and Greek myths, a Japanese fairytale, and Chinese, Korean, and Middle Eastern folktales. Margaret Wolfson will recount the stories with original musical accompaniment by Paula Chan Bing, who will play silver and bamboo flutes, harp, and African, Asian, and South American folk instruments.

The musical drama for adult audiences is a performance of the Middle Eastern story of Majnun Layla. In an entrancing tale of joy, sorrow, and spiritually redemptive love, a seventh-century minstrel named Qays ibn al-Mulawwah is transformed by his passion for the legendary Layla. The performance blends evocative storytelling, handpainted scenery of the Arabian desert, and spellbinding music by Simon Shaheen and others on lute, flutes, violin, medieval harp, bells, drums, and tambourines.

Margaret Wolfson, the founder of the World Story Ensemble, is an authority on literature and the performing arts and has spoken on the art of storytelling in schools, universities, and on National Public Radio. Paula Chan Bing is a teaching artist for the Lincoln Center Institute of the Arts in New York City. Simon Shaheen has performed throughout the United States, Europe, and the Middle East.

To register for *The World Story Ensemble*, please use the February Members' programs coupon on page 3.



The World Story Ensemble presents myths and folktales for children and a Middle Eastern legend for adults.

The African Honeyguides

Tuesday, February 7
7:30 p.m.
Main Auditorium
Free, and open only to Members

The tricksters of the bird world will be profiled by the man who knows them best in *The African Honeyguides*, a Members' program by ornithologist Lester Short. The little-known honeyguides are the con artists of the avian world: they not only fool other birds into rearing their young, they craftily enlist the help of humans (and other mammals) in raiding beehives. The birds "guide" mammals to wild honey sources and bide their time while the mammals clean out the bees and the honey. The birds are left with a feast of their favorite food — a waxy honeycomb.

Since 1984, Short has conducted the Honeyguide Project at Gallman Memorial Foundation (Ol Ari Nyiro) Ranch on the Laikipia Plateau in Kenya. Short's co-worker on the project is Jennifer F.M. Horne, a bioacoustician and fellow of the National Museum of Kenya (she's also Lester Short's wife). The pair gather information on the biology and relationships of this little-known group of birds, and their study is the first to use color-banded honeyguides in combined ecological, ethological, and comparative investigations.

Short will discuss how they handle the birds — marking them, banding them, and radio-tagging them. He'll also describe the researchers' long-standing ploy to lure honeyguides into the study site. After building a small but smoky fire, the researchers establish a feeder-site for beeswax and make chopping sounds, imitating the noises of honey-hunting



tribesmen cutting into a beehive. This attracts the honeyguides and enables researchers to observe their behavior and identify them individually and trap additional previously unmarked birds.

Since the start of their study, Short and Horne have attracted four species of honeyguides to their feeding station and have color-banded more than 435 birds. Chief among their interests is the honeyguides' unusual breeding behavior. The females generally remain aloof from the males, approaching only to breed or to drive males away from hives (females are dominant in all four species studied). Occasionally a male leads a pair of woodpeckers or barbets away from their nest so that the female can lay her egg there. By the time that the hosts realize they've been duped, the honeyguide chicks are usually old enough to fend for themselves.

Lester Short is Lamont curator and a former chairman of the Ornithology Department. Call the Membership Office at (212) 769-5606 for ticket availability to *African Honeyguides*.

ROTUNDA

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Drunkards and Watercarriers

Wednesday, March 8
7:30 p.m.
Main Auditorium
\$10 for Members, \$12 for non-Members

Purim is the official holiday of stones — the tale of Esther and Haman, good and evil, hell and paradise, and the stories of drunkards and watercarriers. It's the one day of the year when there is no evil in the world, when we walk around giving gifts, drunk with the joy and beauty of the world. Purim is the day that cleanses our minds and thoughts so that we can connect ourselves with a deeper source.

The stories Rabbi Shlomo Carlebach and Diane Wolkstein will tell at *Drunkards and Watercarriers*, a Members' family program, will give listeners vessels to receive the light of Purim. Rabbi Shlomo Carlebach, a Hasidic folksinger and composer of world renown, and master storyteller Diane Wolkstein will create a compelling atmosphere of joy, humor, and deep spirituality. Join them for a special occasion when they'll combine their spirits to enter the world of Purim, a rarefied world in which you'll walk in sober and walk out intoxicated.

With his music, stories, and profound Hasidic teachings, Reb Shlomo touches the heart of his listeners. He has composed thousands of melodies



Diane Wolkstein

and recorded 25 albums and published two songbooks. "His appeal," reported *Life* magazine, "is as wide as his heart and as great as his soul." He and his brother are rabbis at congregation Kehileth Jacob in New York City.

Diane Wolkstein is a remarkably gifted storyteller who has performed and lectured at universities, libraries, theaters, and festivals since 1967. She has written 12 books on mythology and has made 12 recordings.

Wolkstein is one of the country's only storytellers to research and present ancient oral literature. Her grace and clear, resonant voice have captivated audiences here and abroad. Her re-telling of the Song of Songs and the tale of the Sumerian goddess Inanna were performed before sold-out crowds at the Museum.

To register for *Drunkards and Watercarriers*, please use the February Members' programs coupon.



Rabbi Shlomo Carlebach

Members' Private Viewing

Gateway to Infinity and Destination: Mars

Tuesday, March 28
6:00 and 7:30 p.m.
\$2.75 for adults, \$1.50 for children
Planetarium Sky Theater

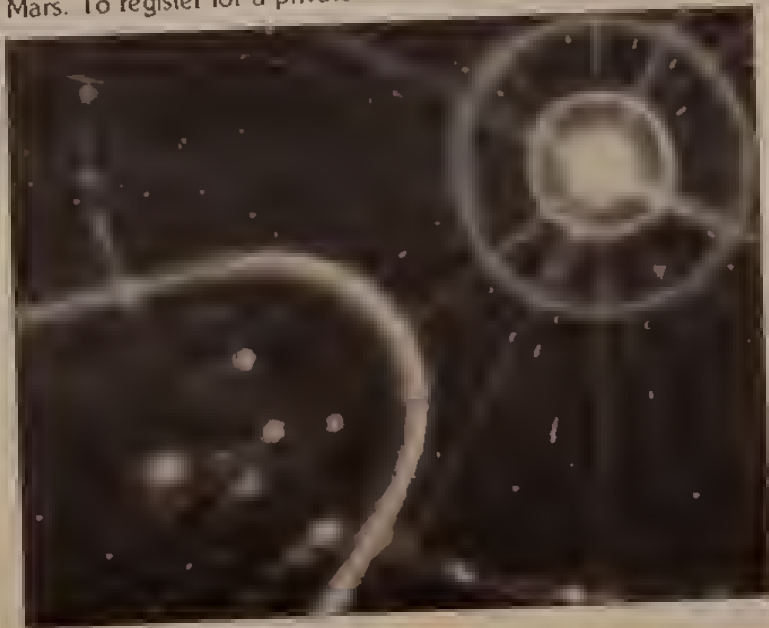
Members will transcend space and time to experience the marvels of the most remote corners of the universe with a private viewing of *Gateway to Infinity*. The new Sky Show, which is narrated by veteran film and stage actor James Earl Jones, commemorates the age-old human fascination with the sky. Star clusters, supernovas, colliding galaxies, and mysterious black holes are among the show's extraterrestrial attractions, along with views of the planets.

Preceding *Gateway* will be *Destination: Mars*, which traces the history of the red planet from the myths and monsters of yesterday to the Martian colonies of tomorrow.

The private viewing will be complemented by a new multi-image program in the Planetarium's Guggenheim

Space Theater and an exhibition of original art depicting Mars. To register for a private

viewing of the Sky Shows, please use the February Members' programs coupon



Outer-space spectacles await at the Planetarium's new double feature of Sky Shows.

February Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: February Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are at the non-Members' price.

World Story Ensemble. Saturday, February 11, 1:00 and 2:30 p.m. (for families); and Thursday, February 16, 7:30 p.m. (for adults). Please indicate a first and second choice of shows for February 11

February 11 (for families): _____ 1:00 p.m. _____ 2:30 p.m.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

Thursday, February 16 (for adults): _____ 7:30 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Leatherbacks. Tuesday, February 14, 7:30 p.m.

Number of Members' tickets at \$3: _____

Number of additional tickets at \$5: _____

Total amount enclosed for program: _____

The African Drum. Monday, February 20, 1:00 and 3:00 p.m.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

Whales Alive. Sunday, March 5, 1:00 and 3:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Drunkards and Watercarriers. Wednesday, March 8, 7:30 p.m.

Number of Members' tickets at \$10: _____

Number of additional tickets at \$12: _____

Total amount enclosed for program: _____

Dinosaurs. Friday, March 10, at 6:30 p.m.; Saturday, March 11, and Sunday, March 12, at 11:00 a.m., 1:00 and 3:00 p.m. Please indicate a first, second, and third choice of times, if possible

March 10: _____ 6:30 p.m.

March 11: _____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

March 12: _____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Members' private viewing: Gateway to Infinity and Destination: Mars. Tuesday, March 28, 6:00 and 7:30 p.m. \$2.75 for adults, \$1.50 for children. Open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of shows, if possible:

Tuesday, March 28: _____ 6:00 p.m. _____ 7:30 p.m.

Number of adult's tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

Members' preview: Madagascar. Thursday, March 23, 6:00-8:15 p.m. Free, and open only to Participating, Donor, and Contributing Members. The viewing will take place in two sessions, please indicate a first and second choice of times

_____ 6:00-7:00 p.m. _____ 7:15-8:15 p.m.

Number of tickets: _____

Peru. Thursday, March 30, 7:30 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

In the Rain Forests of Peru

Thursday, March 30

7:30 p.m.

Main Auditorium

\$6 for Members, \$7 for non-Members

The statistics are staggering: 2,500 species of trees, 1,700 species of birds, and millions of species of insects. Why is there such diversity in the Peruvian rain forest? An equable climate, allowing year-round growth, and a relatively long history without drastic climatic change are part of the answer. The site of some of the richest ecosystems on earth, the rain forests are also some of the least-examined areas on our planet.

In 1960 there were no protected areas in Peru; today there are 22, and some are as large as 2 million acres. Eight endangered species of macaws and hundreds of species of lishes are protected within the confines of Manu National Park, and 90 species of orchids flourish at Macchu Picchu in southeastern Peru.

Terry Erwin, who is the direc-

tor of the Biological Diversity Program and a member of the Department of Entomology at the Smithsonian Institution, will introduce Members to the amazing variety of wildlife within the Peruvian rain forest. He'll use slides to illustrate the use of biodegradable insecticides on tropical trees, which enabled him to classify the insect species in the uppermost canopy. Erwin's findings astounded biologists and gave new dimensions to previous estimates of the numbers of species: from 19 specimens of a single species of tree, he collected more than 1,200 different kinds of beetles. By his estimate, the world's rain forest canopies host 30 million species of insects or more.

To register for *In the Rain Forests of Peru*, please use the coupon on page 3.

Whales Alive

Sunday, March 5

1:00 and 3:00 p.m.

Kaufmann Theater

\$4 for Members, \$6 for non-Members



The heart of a full-grown blue whale, Ozzie explains, is as big as a Volkswagen Rabbit, and a 5-year-old could crawl through its aorta. The whale's tongue would stretch across the Kaufmann Theater's stage and weigh as much as an average-size elephant, and the ten varieties of toothless whales strain their food through baleen plates the way Mom and Dad strain spaghetti.

Ozzie Tollefson will introduce young Members to the giants of the ocean in *Whales Alive*, a program designed for children in kindergarten through sixth

grade. Tollefson's sound teaching methods are reinforced by stage antics that appeal to young imaginations (old imaginations can appreciate them, too).

The show opens with a classroom drill starring two puppets, the sperm whale and the blue whale. The children respond in a chorus of new terms: flipper, flukes, baleen, and krill. The puppets explain all about whales — their physiology, feeding, communication, and their endangered status. A six-foot humpback jawbone is displayed, along with a tremen-

dous vertebra, sperm whale teeth, and an exceptional piece of baleen.

The audience participates in a creative dramatics adventure that explores the history of whaling (nowadays, Ozzie explains, the practice of commercial whaling is condemned). A giant-screen slide presentation takes viewers to the New Bedford Whaling Museum, the Mystic MarineLife Aquarium, and the tip of Cape Cod for an exciting afternoon of whale watching.

Ozzie Tollefson was a classroom instructor for 15 years before starting his participatory theater productions. Since 1975 he has presented highly praised programs on dinosaurs, American Indians, and the Vikings, and he's given over 4,000 performances in 1,300 schools for well over a million children.

To register for *Whales Alive*, please use the February Members' programs coupon on page 3.

The Ancient Mariners

Tuesday, February 14

7:30 p.m.

Main Auditorium

\$3 for Members, \$5 for non-Members

They're among the largest living reptiles on this planet, weighing anywhere from 600 to 1,000 pounds and measuring as long as six feet. Their reproductive story is millions of years old. And compared with their cousins, we know practically nothing about them.

Unlike green turtles, leatherback sea turtles simply can't survive in captivity, so it's virtually impossible to study them under controlled circumstances. Thus, basic facts — when they mate or how long it takes them to reach maturity — remain unknown. They tend to nest on some of the most secluded and remote of the world's tropical beaches.

The island of Saint Croix, however, presents an exception. Conservation biologists Robert Brandner and Susan Basford will present *Leatherbacks*, a Members' program that describes their conservation work with the endangered ancient reptiles at Sandy Point National Wildlife Refuge in Saint Croix. Brandner and Basford, with the assistance of Earthwatch volunteers, are conducting the most intensive research in the world on the nesting and reproductive biology of leatherbacks.

Each season female leatherback turtles migrate to Sandy

Point, where they emerge from the ocean under the cover of darkness to dig a trench in the sand with their huge front flippers. After depositing their eggs in the nest, the leatherbacks return to the safety of the sea and reemerge ten days later to repeat the process. Because of severe beach erosion, more than half of these laboriously created nests must be transferred to a safe location.

Sixty nights after the eggs are deposited, hatchlings exert a team effort to erupt from the surface of the sand. They pause to orient themselves, and then they scramble toward the sea, running the gauntlet of active night predators — ghost crabs, yellow-crowned night herons, and coastal fishes. Through the efforts of dedicated volunteers, over 10,000 hatchlings made it into the waters surrounding Sandy Point during the 1988 season.

Susan Basford is affiliated with Fordham University, and Robert Brandner is an associate field researcher with the New York Zoological Society. Both are contracted to the Virgin Islands Division of Fish and Wildlife. To register for their program, please use the February Members' programs coupon on page 3.



These tiny hatchlings will grow to 6,000 times their original size.



Brandner, Basford, and one of their gargantuan subjects.

Shadow Box Theatre

Monday, February 20

1:00 and 3:00 p.m.

Kaufmann Theater

\$5 for Members, \$7 for non-Members



Shadow puppets recount African creation myths.

Shadow Box Theatre will perform *The African Drum*, a musical puppet show that's geared toward children between the ages of 2 and 15. This Members' family program combines traditional creation myths — How the Animals Got Their Colors, How the Turtle Got Its Shell, and other fables — with the adventures of a little girl named Kijana, her animal friends, and the villainous Zimwe who tricks Kijana. The irresistible beat of the African drum accompanies the performance, and the audience helps to save the day by singing "Abiyoyo," the password song.

The participatory theater of *The African Drum* introduces African mythology and empha-

sizes the importance of individuality, respect, cooperation, and other values. From the ancient tradition of shadow puppetry, Shadow Box has developed brilliantly colored, two-dimensional see-through figures that delight children and adults alike. The animated puppets are operated with rods and lit from behind, casting multicolored shadows onto a large translucent screen. The stories, both original and folk in origin, are all musical plays that blend shadow puppetry and live theater into a unique multimedia theatrical experience.

To register for *The African Drum*, please use the February Members' programs coupon on page 3.

The Best of Dinosaurs Part I

Friday, March 10

6:30 p.m.

Saturday, March 11, and Sunday, March 12

11:00 a.m., 1:00 and 3:00 p.m.

Kaufmann Theater

\$6 for Members, \$8 for non-Members

Dinosaur lovers, gather round! The man who brought you *The Rollicking Dinosaur Revue* and *Wanted: Dinosaurs Dead or Alive* will return to the Museum next month for a Members' family program of his greatest hits. *The Best of Dinosaurs, Part I* presents highlights from Mike Weilbacher's previous shows, including such classics as the singalong *Tyrannosaurus Chorus* and the Name That Dinosaur contest.

The action-packed programs, which are geared toward 4- to 10-year-olds, teach young audiences about dinosaurs in a vaudeville-style format. Magic, juggling, and other surprises keep listeners spellbound while they learn about the Age of Reptiles.

Before and after each show, young Members can play Dinosaur Bingo, make *Tyrannosaurus rex* masks from paper bags, and draw dinoscapes — illustrations of the comets, tidal waves,



Mr. Rex's Neighborhood

earthquakes, and other natural disasters that may have caused the dinosaurs' extinction.

Educator Mike Weilbacher has taken his shows on the road throughout the eastern United States, and *The Best of Dinosaurs* will mark his fifth annual appearance at the Museum. His popular programs always sell out, so be sure to use the February Members' programs coupon on page 3 to register early.

Madagascar: Island of the Ancestors

Members' preview: Thursday, March 23

Open to the general public: Saturday, March 25
Gallery 3

Off the southeast coast of Africa lies one of the biggest islands in the world, an almost Texas-size chunk of the continent that broke off and drifted away from the mainland well over 100 million years ago. Over the ages this island developed an exotic flora and fauna, which flourished in isolation from the rest of the world, and later welcomed a human population that accepted foreign influence but retained its unique identity.

Madagascar: Island of the Ancestors, which opens in Gallery 3 next month, explores the origins, history, and culture of the Malagasy people. More than 500 artifacts will be on display, including gold and silver jewelry, elaborate burial cloths, ornate funerary sculpture, weapons, and royal regalia.

The people of Madagascar bear strong cultural links with Africans and Southeast Asians.

Over the centuries, manners and migrants from the eastern side of the Indian Ocean took up residence on the island, along with settlers from Africa and, later, Islamic peoples. European pirates of the seventeenth century made Madagascar their remote headquarters, and in the nineteenth century missionaries arrived.

The exhibition will focus on a central theme of Malagasy culture: the relationship between the living and the dead and the importance of the ancestors. Funerary practices and other ceremonies that invoke the ancestors will be depicted and their significance explored.

Members' Preview

Participating, Donor, and Contributing Members are invited to a preview of *Madagascar: Island of the Ancestors* on Thursday, March 23, between 6:00 and 8:15 p.m.

Ian Tattersall, curator in the Department of Anthropology and exhibition consultant, will be on hand to answer questions about the exhibition. Tattersall has conducted extensive research on the primates of Madagascar, including the lemurs, which bear the closest resemblance of any living creatures to our own ancestors of some 50 million years ago.

Melanie Stiasny, assistant curator in the Department of Herpetology and Ichthyology, will also be present for informal discussions with Members on a live display of Madagascan fishes. One of these fish is a silverside, a primitive species that was discovered only last year. Its reproductive biology and development are being studied at the Museum.

To reserve your place at the Members' preview, please use the February Members' programs coupon on page 3.



Raffia textile that may have served as an awning, a masquita net, or a burial shroud.



Silver and beaded amulets in the form of crocodile teeth.

Black History Month

Jazz Celebration Wednesday, February 1

Composers Workshop Ensemble presents a jazz concert that celebrates contemporary African and African-American heroes. Formed in 1966, the ensemble promotes the development and performance of original jazz compositions. Its repertoire includes tributes to Dr. Martin Luther King and Marcus Garvey and rhythms reflecting the struggle against apartheid and the rise of black consciousness. Main Auditorium, 7:30 p.m.

African Ceremonial Dance Sunday, February 5

MFOA (Message from our Ancestors), a group dedicated to preservation of African and African-American cultures, performs traditional music and dance from Mali, Senegal, Nigeria, and Guyana. Their ritual dances include a circumcision dance, a stilt-walk masquerade, and a wedding dance. Kaufmann Theater, 2:00 and 4:00 p.m.

A Spiritual Journey Saturday, February 18

In a present-day Harlem church basement setting, a young and a middle-aged couple defend the music of their respective generations. Conceived and developed by Blackberry Productions, this musical blends spirituals, work songs, folktales, and blues to trace the history of African-American music. Kaufmann Theater, 2:00 and 4:00 p.m.

Poets and Peacemakers Sunday, February 19

The Rod Rodgers Dance Company portrays the contributions of noted blacks such as Paul Robeson, Harriet Tubman, and Duke Ellington. Kaufmann Theater, 2:00 and 4:00 p.m.

Drums of Freedom Wednesday, February 22

Village Drums of Freedom presents a concert of original compositions that fuse African music with calypso, soul-funk, raga, samba, reggae, and jazz to produce new rhythms with ancient roots. Steel and skin drums, vocals, and a variety of instruments are featured in the performance of upbeat melodies that inspire and raise socio-political awareness. Main Auditorium, 7:30 p.m.

Folktale Puppetry Sunday, February 26

The Brewery Puppet Troupe presents a spectacular adaptation of the ancient African folktale, "Mufaro's Beautiful Daughter." Amid music and mystery, Nyasha and Manyara rival one another to become the king's bride. Kaufmann Theater, 2:00 and 4:00 p.m.

Leonhardt People Center 1:00 to 4:30 p.m.

February 4 and 5
Seems I'm Always Chasing

Rainbows. Musician Ed Shockley and Ghanaian-born actor Akuyoe use music and dramatization to explore the works of African and African-American poets.

Black Western Heroes. Award-winning author George Tooker uses slides to reveal the hidden heritage of black cowboys, Indians, and pioneers. Slides provided through the courtesy of William Loren Katz.

West African Songs. A musical journey with Amadoma Bediako in which children play African instruments and sing songs that amuse and enlighten (February 4 only)

Traditional Senegalese Music. Papa Banko Susso sings epic griot songs and demonstrates how the kora is made and played. (February 5 only)

February 11 and 12

African Highlife Music. Akeyene Baako African Folk Music Ensemble performs African folk music and folk-inspired songs.

Comparative Look at African Art. Rosalind Jeffries contrasts the art of the ancient Khmet of Egypt and the Meroe of the Sudan with that of the Luba, Asante, Dahomey, and Yoruba.

African Musical Instruments and Their Social Contexts. Juma Santos uses slides and instruments to discuss the traditional music of Africa.

February 18 and 19

Dancing in Time. Mellow Moves Plus One demonstrates dance forms from Africa and Broadway.

Harlem Renaissance: Heroes and Heroines. Hazel Rodriguez profiles personalities of the Harlem Renaissance, including Duke Ellington, Florence Mills, and Langston Hughes.

Evolution of the Black Community in New York City. A slide-illustrated talk by Dr. Ralph Watkins. (February 18 only)

African-American Folktales. Pam Patrick recounts Brer Rabbit and Anansi stories. (February 19 only)

February 25 and 26

Dance of the Mandinka. Kairaba, a West African dance company, performs music and dance of the Mandinka people of Senegal and Gambia.

Games: Africa to America. Selina Ahokui explains musical, mathematical, and artistic games of Africa and their significance to the heritage of African-American children.

Yoruba Religious Tradition in the Americas. Stephanie Robinson discusses aspects of Yoruba religions, including Candomblé in Brazil and Lucumi in Cuba and the United States.

These free programs are made possible in part by gifts from the Vidda Foundation and the family of Frederick H. Leonhardt. For further information, call (212) 769-5315.

An Education Department
Public Program.

Prize Dance Films and Video

Saturday, March 4
Kaufmann and Linder Theaters
Free

An unusual film program will run a gamut of styles from the international dance scene — from a hilarious three-minute experimental dance film to a half-hour portrayal of some of the best Kathak dancers from north India and a one-hour video production of "Daphnis and Chloe" by the Sydney Dance Company of Australia.

Eighteen prizewinning film and video productions selected by the Dance Films Association jury for its 1989 festival will be screened at the Museum on a single afternoon. The order of the program is not yet fixed, but here are some of the films to be screened:

And Still We Dance. (1988, 59 mins.) Ashley James, director. A portrait of the San Francisco Ethnic Dance Festival.

Songs Unwritten: A Tap Dancer Remembered. (1988, 58 mins.) David Wadsworth, director. Documents the life of the late tap dancer Leon Colfins, including his remarkable comeback in the 1970s.

Daphnis and Chloe. (1987, 61 mins.) Graeme Murphy, director. The acclaimed modern ballet production by the Sydney Dance Company.

Paper Dance. (1988, 7 mins.) Abby Luby, director. A short experimental video production with paper as the partner.

Vespuciland: The Great and Free. (1987, 3 mins.) Rock Ross, director. Described by the director as "a celebration of abandon."

Retracing Steps. (1988, 88 mins.) Michael Blackwood, director. Explores American

dance since postmodernism. Nine choreographers speak about their work, including Blondell Cummings, Melissa Fenley, and Bill T. Jones. Includes dance excerpts.

Hiroshima. (1986, 10 mins.) Claire Iwatsu, director. An evocation of the impact of the event through movement and sound.

Circles-Cycles/Kathak Dance. (1988, 28 mins.) Robert Gottlieb, director. One of the classic dance styles of India.

Dance Maker. Choreographer/dancer Judith Jamison at work.

And nine more! For a full listing of times and titles, call (212) 769-5305.

An Education Department
Public Program.

A Living Tibetan Art

January 25 through February
Tuesday through Sunday
10:30 a.m.—5:00 p.m.
Free



Representatives from the Gyuto Tantric Monastery will create 11-foot-tall decorative sculptures from "butter."

Two of the Tibetan monks pictured above are at the Museum this month to show that there's more to their ritual activities than spectacular performances of chants and music. Together with six of their colleagues from the Gyuto Tantric Monastery, they'll conduct a

live demonstration/exhibit of a rarely seen Tibetan art form — the sculpting of lotus flowers and other figures from "butter." The monks will talk informally about this art and its meaning in Tibetan Buddhism as they go about their work.

This special demonstration/

exhibit is a cooperative venture presented by Tibet House in New York and the Education Department. For further information, call (212) 769-5305.

An Education Department
Public Program.

Museum Notes

Highlights Tours

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.



A fanciful notion of the elephant exhibit in the off-hours, by Henry Fairfield Osborn, Museum president from 1908 to 1933.

Naturemax

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film that re-creates the islands' discovery. *Behold Hawaii* is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 3:30, and 4:30 p.m.

Audiences go white-water rafting down the raging Colorado River and discover the wildlife of one of our country's natural wonders in *Grand Canyon: The Hidden Secrets*, which is shown daily at 2:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown at 6:00 and 7:30 p.m. on a double-feature bill with *Dance of Life*, a film that portrays Indonesian life and culture from a Western perspective.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday, 1:00 to 4:30 p.m. Closed Sunday, Monday, and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open week-ends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk.

Museum Birthday Parties. Young Members can let the good times roll with the dinosaurs or the blue whale, in Africa or on another planet. Children between the ages of 5

and 10 can choose from five exciting birthday party themes: a Dinosaur Party; a Star Party; a Safari Party; an Aquanaut Party in the Hall of Ocean Life; or a Naturemax Party.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m. on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor bags that are full of surprises. The cake is not included.) For information and reservations, please call the

Membership Office at (212) 769-5606.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, FACES features a variety of activities, including games, stories, puzzles, and recipes. FACES is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order payable to FACES (add \$5 for foreign orders) to: FACES, Dept. 722, 20 Grove St., Peterborough, NH 03458

The Museum Is Open

Hours. Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty at all times.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, and Thursday; from 10:00 a.m. to 8:30 p.m. on Wednesday and Friday. Located on the second floor. \$.50 per item. On Saturday and Sunday, coat-checking facilities are available on the lower level near the subway entrance.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. Till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from 10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday, dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations: (212) 874-3436.

Happenings at the Hayden

Concerts

The internationally acclaimed Ensemble for Early Music will perform *Music from the Age of Chivalry* in the Planetarium's Sky Theater on February 13 and 14. Live music performed on lute, recorder, and harpsichord will be accompanied by panoramas of scenes from the Middle Ages — medieval castles, gardens and villages, bold knights and lovely ladies in waiting. It's a special Valentine's Day treat.

The concerts will take place on Monday, February 13, at 7:00 p.m., and on Tuesday, February 14, at 7:00 and 9:00 p.m. Tickets are \$10 for Members and \$13 for non-Members. Please mail ticket requests with your check and a self-addressed, stamped envelope to: Valentine Concert, Hayden

Planetarium, 81st Street at Central Park West, New York, NY 10024-5192, or call (212) 769-5907.

Sky Shows

Gateway to Infinity takes audiences through time and space to the farthest reaches of the universe to explore star clusters, supernovas, and black holes. *Destination: Mars* profiles the red planet, from the myths and monsters of yesterday to the Martian colonies of tomorrow.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.; and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for chil-

dren. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, February 11, and Saturday, March 11.

Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special

Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes,

and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes place on Friday and Saturday at 7:00, 8:30, and 10:00 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

4 1:00 to 4:30 p.m. Seems I'm Always Chasing Rainbows: Black Western Heroes: West African Songs Black History Month at the Leonhardt People Center. Free. Page 6.

3

2

1 3:00, 4:30, 6:00, and 7:30 p.m. A Whirlwind Tour of the Geology of the United States: Members' guided tours. \$8, and open only to Participating, Donor, and Contributing Members. **Sold out** from January issue of Rotunda. **7:30 p.m.** Jazz Celebration. Main Auditorium. Free. Page 6.



11 1:00 and 2:30 p.m. World Story Ensemble. Members' family program of world myths and magical tales. Kaufmann Theater. \$3 for Members, \$5 for non-Members, and tickets are required. Page 2. **1:00 to 4:30 p.m.** African Highlife Music: Comparative Look at African Art: African Musical Instruments and Their Social Contexts Black History Month at the Leonhardt People Center. Free. Page 6.



9

8 7:30 p.m. Amateur Astronomers Association. Speaker, Dr. Gerit Verschur of the University of Maryland: "The Search for Extraterrestrial Intelligence: Daring, Dumb, or Dangerous?" Linder Theater. Free.

7 7:30 p.m. African Honeyguides. Members' evening program. Main Auditorium. Free for Members, \$3 for non-Members, and tickets are required. Page 2.

The American Museum Restaurant will be open prior to the Members' program.

Moon at perigee.

6 New moon.

5 1:00 to 4:30 p.m. Seems I'm Always Chasing Rainbows: Black Western Heroes: Traditional Senegalese Music. Black History Month at the Leonhardt People Center. Free. Page 6. **2:00 and 4:00 p.m.** African Ceremonial Dance. Kaufmann Theater. Free. Page 6.

15

14 7:30 p.m. Leatherbacks. Members' evening program. Main Auditorium. \$3 for Members, \$5 for non-Members, and tickets are required. Page 4. **7:00 and 9:00 p.m.** Music from the Age of Chivalry. See "Happenings at the Hayden" on page 7.

13 7:00 p.m. Music from the Age of Chivalry. Planetarium concerts. See "Happenings at the Hayden" on page 7.

12 1:00 to 4:30 p.m. African Highlife Music, Comparative Look at African Art: African Musical Instruments and Their Social Contexts Black History Month at the Leonhardt People Center. Free. Page 6.

2:00 p.m. New York Shell Club. Room 419. Free.

Lincoln's Birthday.

First-quarter moon.

19 1:00 to 4:30 p.m. Black History Month at the Leonhardt People Center. Free. Page 6.

2:00 and 4:00 p.m. Poets and Peacemakers. Kaufmann Theater. Free. Page 6.

2:00 p.m. New York Paleontological Society. Room 419. Free.

2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free.

27

26 1:00 to 4:30 p.m. Dance of the Mandinka: Games: Africa and America: Yoruba Religious Tradition in the Americas. Black History Month at the Leonhardt People Center. Free. Page 6. **2:00 and 4:00 p.m.** Folktale Puppetry. Kaufmann Theater. Free. Page 6.

Last-quarter moon.

28 8:00 p.m. Linnaean Society. Room 419. Free.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors.

17

16 8:00 p.m. New York Microscopical Society. Speaker, Dr. Mary McCann of Polaroid Corporation: "New Products in Photomicrography." Room 419. Free.

7:30 p.m. Layla, a Members' evening program by the World Story Ensemble. Kaufmann Theater. \$6 for Members, \$8 for non-Members, and tickets are required.

24

Moon at apogee.

23

22 7:30 p.m. Drums of Freedom. Main Auditorium. Free. Page 6.

7:00 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

Information, please

Membership Office: (212) 769-5600
Museum Information: (212) 769-5100
Planetarium Information: (212) 769-5920
Naturemax Information: (212) 769-5650
Restaurant Information: (212) 874-3436
Department of Education: (212) 769-5310
Discovery Tours: (212) 769-5700; toll-free outside NY State: (800) 462-8687

Evening Hours

The Museum is open every Wednesday, Friday, and Saturday evening until 9:00 p.m. Thanks to a generous grant from Mobil, there is no charge for admission after 5:00 p.m. on Friday and Saturday. The American Museum Restaurant is open till 7:30 p.m.

February 1989

American Museum of Natural History

POTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol. 14, No. 3 March 1989

Madagascar: Island of the Ancestors

Members' preview: Thursday, March 23
Open to the general public: Saturday, March 25
Gallery 3



Ceremonial rice spoon



Silk burial cloth from the Merina kingdom



Tube zither

There is a living museum of natural history on an island in the western reaches of the Indian Ocean. Its story began well over 100 million years ago, when a huge fragment of the ancient southern continent of Gondwana broke off and drifted away. No single climate or type of environment can be said to be characteristic of this island, which ranges from luxuriant tropical forests and grasslands to arid semi-deserts. The combination of its isolated position and its variety of differing ecological circumstances fostered the development of a rare and extraordinary assortment of animals, including many species of colorful chameleons, birds, and insects.

The island's human history is short by comparison, estimated to have begun within the last 1,500 years. The cultural

variations among its inhabitants are as diverse as the island's climate, vegetation, and wildlife. The question of who its natives are is an issue of defining their Southeast Asian, Near Eastern, or African roots.

Madagascar: Island of the Ancestors takes its title from the body of tradition that regulates Malagasy life even today. The diverse cultural practices of the people of Madagascar are united by their foremost point of reference, their constant invocation of the ancestors and ancestral practices. The exhibition explores the origins, history, and culture of the Malagasy people, including an examination of their complex and varied burial customs. More than 500 artifacts will be on display, including gold and silver jewelry, elaborate burial cloths, ornate fu-

nerary sculpture, weapons, and royal regalia. At the heart of the exhibition is a reconstruction of a Malagasy village.

The American Museum is the only museum in the United States that will present the exhibition. It originated at the British Museum (Museum of Mankind) and has been redesigned for its American visit. The cultural materials are supplemented with a new introductory section focusing on the natural history of Madagascar.

The exhibition is supported by the British Museum, the Museum of Art and Archaeology of the University of Antananarivo, Air Madagascar, and the American Museum of Natural History. For details about a Members' preview, Members' guided tours, and a lecture series on the exhibition, please see page 8.

Of Schemers and Redeemers

Observe Purim at the Museum this month with a joyous Members' family program that recounts the story of Esther and Haman. A renowned pair of storytellers will present *Drunkords and Watercarriers*, an evocative evening of holiday fun.
Page 5

Peru Now (Or Have You Ever Been?)

The fishes, flowers, and insects of the tropical rain forest will be spotlighted at a Members' program by entomologist Terry Erwin, who'll discuss his fieldwork in the jungles of Peru.
Page 4

The Old New World

The ancient cultures of South American Peoples will be explored this month at the Museum with a series of programs that will include performances of Andean folk music and Amazonian chants.
Page 9

Moby Shtick

Ozzie Tollefson returns to the Museum for a salute to the giants of the underwater world with *Whales Alive*, an educational and entertaining children's program.
Page 5

Kids' Stuff

Children can learn fun facts about animals or about their own anatomy or about any of a dozen other absorbing subjects at the Education Department's *Workshops for Young People*.
Page 7

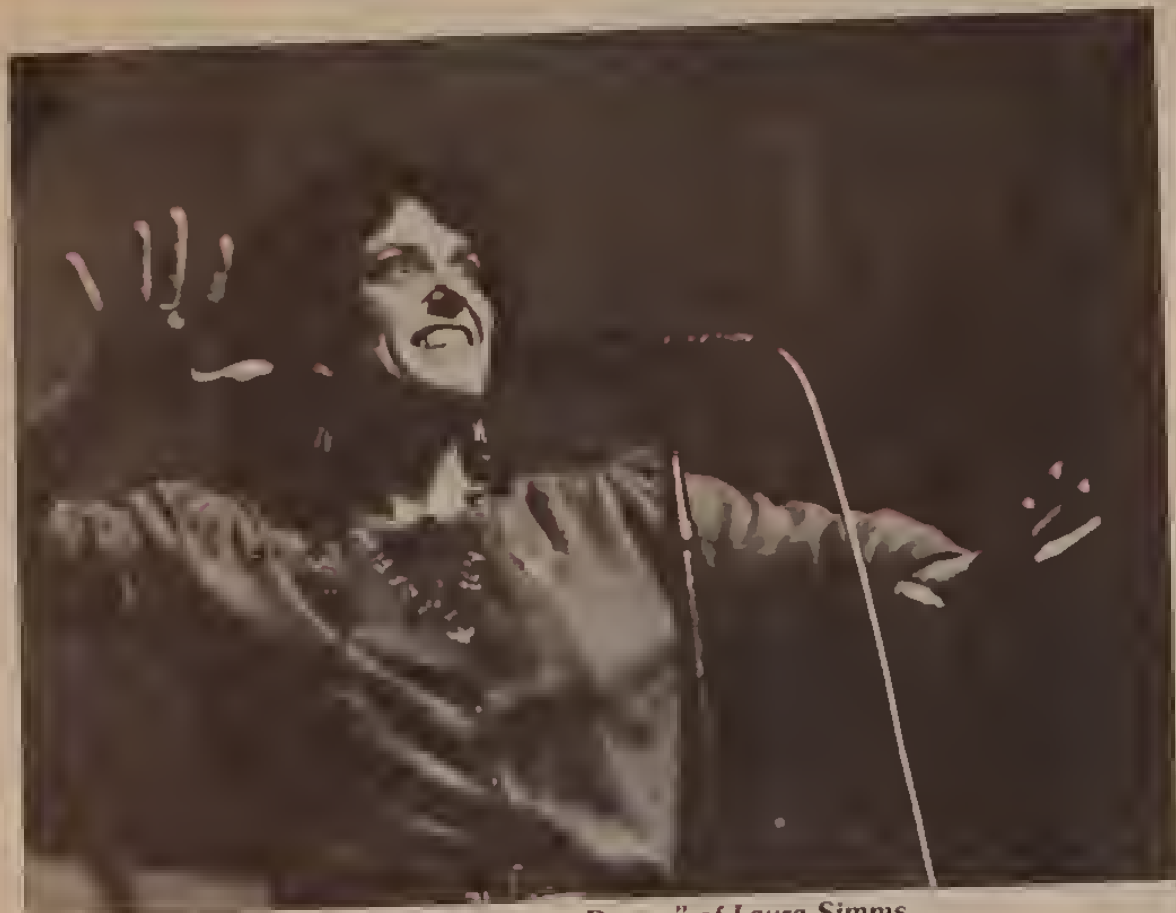
In Praise of Dinosaurs

Tuesday, April 4

6:00 p.m.

Hall of Ocean Life

\$6 for Members, \$8 for non-Members



Hear the "Dinosaur Dream" of Laura Simms



Rafe Martin tells tales of whales and wooly mammoths

For the one hundred twentieth anniversary of the American Museum, renowned storytellers Laura Simms and Rafe Martin will recount tales of dinosaurs, mammals, great whales, and seals in the Hall of Ocean Life. Their stories celebrate the joyful and all-powerful connection between humans and nature, a kinship that's at the very heart of the Museum's philosophy.

Laura Simms' repertoire will include "Dinosaur Dream" and "The Sea Maiden," a story based on an ancient Scots legend about a fisherman's abduction of a creature who's half-woman and half-animal. Rafe Martin's performance will feature "The Whale Hunter" and his recently published "The

Wooly Mammoth," a tale that was inspired by his boyhood memories of the Museum's murals and exhibits.

This program is Martin's first appearance at the Museum. For the last five years he's been storyteller-in-residence for the Rochester City Schools, and he's also a master teacher and storyteller for the Aesthetic Education Institute, the Rochester affiliate of the Lincoln Center for the Performing Arts.

Laura Simms is among the Museum's most popular performers, and her numerous appearances here include an eight-year tradition of Halloween programs. Simms' search for stories has taken her on journeys across three continents,

and she's performed in theaters, schools, libraries, festivals, and conferences around the world. Credited as a major force behind the revival of storytelling in the United States, Simms recomposes traditional stories so that they're relevant to modern culture while retaining their timeless wisdom.

In Praise of Dinosaurs will be preceded by a short origami session, in which young Members can learn to fold paper models of some of the animals they'll be hearing about in the program. The origami session will start at 6:00 p.m., and storytelling will begin at 7:00 p.m. To register, please use the March Members' programs coupon on page 3.

The Best of Dinosaurs Part I

Friday, March 10

6:30 p.m.

Saturday, March 11, and Sunday, March 12
11:00 a.m., 1:00 and 3:00 p.m.

Kaufmann Theater

\$6 for Members, \$8 for non-Members

**BOTH 11:00 A.M. SHOWS ARE SOLD OUT
FROM THE FEBRUARY ISSUE OF ROTUNDA**



Mike Weilbacher and colleague

It was the best of dinosaurs, it was the worst of dinosaurs. It was the most awesome of the flesh eaters, and it was the terrible tyrant king. It was *Tyrannosaurus rex*, and young Members can learn all about this towering, toothy carnivore and its contemporaries when Mike Weilbacher returns to the Museum for another festival of dinosaurian delights.

The Best of Dinosaurs, Part I, features highlights from *The Rollicking Dinosaur Revue*, *Wanted: Dinosaurs Dead or Alive*, and other fast-paced, fun-filled programs from Weilbacher's repertoire. Kids sing along with the *Tyrannosaurus Chorus*, participate in the Name That Dinosaur contest, and visit Mr. Rex's Neighborhood. ("Can you say *Stegosaurus*? Sure you can!")

The shows, which are geared toward 4- to 10-year olds, pre-

sent the latest scientific findings about dinosaurs in a vaudeville-style format. Audiences are captivated by magic tricks, juggling, and other stunts while learning fascinating facts about the Age of Reptiles.

Before and after each show, young Members can play Dinosaur Bingo, make *Tyrannosaurus rex* masks from paper bags, and draw dinoscapes — illustrations of the comets, tidal waves, earthquakes, and other natural disasters that may have caused the dinosaurs' extinction.

Educator Mike Weilbacher has taken his shows on the road throughout the eastern United States, and *The Best of Dinosaurs, Part I*, will mark his fifth annual appearance at the Museum. His popular programs always sell out, so please register as soon as possible with the March Members' programs coupon on page 3.

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Correction: The cartoon appearing on page 7 of the February issue of *Rotunda* was incorrectly attributed to former Museum president Henry Fairfield Osborn. The cartoon was one of a series of spoofs on Museum activities created by illustrator Robert Osborn in the 1950s for the Museum cafeteria.

Chemistry for Kids

Saturday, April 15
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$4 for Members, \$6 for non-Members

Bring your budding scientists to the Museum next month for a crash course in the mysteries of chemistry. They'll see an ordinary banana become tough enough to drive nails through wood and a live rose turn fragile as glass and shatter on impact with a table. Then they'll con-

duct safe, easy-to-understand experiments of their own.

This program is not for egg-heads only; it's designed to excite children's interest in the latent chemical magic that lurks in everyday phenomena. Dr. Patricia Ann Redden manufactures nylon on stage, makes

"water" change color on command from the audience, and demonstrates how fireflies produce their glow. Then, young Members conduct their own experiments, including how to create chemical slime.

Dr. Redden, who is a professor of chemistry and departmental chairman at Saint Peter's College in Jersey City, has had many years of teaching experience at all grade levels and frequently addresses high school and college science classes in the New York area. Chemistry for Kids is appropriate for 5- to 12-year-olds. To register, please use the March Members' programs coupon.

Participating, Donor, and Contributing Members are invited to a Behind-the-Scenes Tour of the Department of Mineral Sciences

Wednesday, May 3, and Saturday, May 6
\$10, and open only to Participating, Donor, and Contributing Members



Members can get the inside story on the Museum's research programs in the fields of petrology, mineralogy, and meteoritics. Members of the Department of Mineral Sciences conduct research projects on materials from all over the world, from investigations of rare ore deposits in Montana to analyses of Antarctic meteorites, in order to understand the processes operating in the Earth and the solar system.

The tour will take Members to collection areas and laboratories that are never open to the general public. Staff members from the department will explain what kinds of specimens are collected in the field — including recent examples from Brazil, Guatemala, and Montana — and what measurements are made in the laboratory. While visiting storage areas for minerals and meteorites, curators will discuss recent improvements in collections facilities and computer catalogs. Members will also see some of the sophisticated instruments in the microprobe lab and the X-ray lab.

To register for the tour, please use the coupon at right.

Early registration is advised for the limited number of places; registration for the tours will end on Friday, April 14.

Behind-the-Scenes Tour of the Department of Mineral Sciences. \$10, and open only to Participating, Donor, and Contributing Members.

Tours will leave at 15-minute intervals. We will send you a confirmation card by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- _____ Wednesday, May 3, between 5:15 and 6:00 p.m.
- _____ Wednesday, May 3, between 6:30 and 7:30 p.m.
- _____ Saturday, May 6, between 10:30 a.m. and noon
- _____ Saturday, May 6, between 1:15 and 2:30 p.m.

Number of tickets at \$10 each: _____
Amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Behind-the-Scenes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

March Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: March Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associates are entitled to one. All additional tickets are at the non-Members' price.

Best of Dinosaurs. Friday, March 10, at 6:30 p.m.; Saturday, March 11, and Sunday, March 12, at 11:00 a.m., 1:00 and 3:00 p.m. Please indicate a first, second, and third choice of times, if possible.

March 10: _____ 6:30 p.m.

March 11: _____ 1:00 p.m. _____ 3:00 p.m.

March 12: _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Members' private viewing: Gateway to Infinity and Destination: Mars. Tuesday, March 28, 6:00 and 7:30 p.m. \$2.75 for adults, \$1.50 for children. Open only to Participating, Donor, and Contributing Members. Please indicate a first and second choice of shows, if possible:

Tuesday, March 28: _____ 6:00 p.m. _____ 7:30 p.m.

Number of adult tickets at \$2.75: _____

Number of children's tickets at \$1.50: _____

Total amount enclosed for program: _____

Members' preview: Madagascar. Thursday, March 23, 6:00–8:15 p.m. Free, and open only to Participating, Donor, and Contributing Members. The viewing will take place in two sessions; please indicate a first and second choice of times.

_____ 6:00–7:00 p.m. _____ 7:15–8:15 p.m.

Number of tickets: _____

Peru. Thursday, March 30, 7:30 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

Dinosaur Tales. Tuesday, April 4, 6:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Royal Tombs. Thursday, April 13, 7:30 p.m.

Number of Members' tickets at \$7: _____

Number of additional tickets at \$9: _____

Total amount enclosed for program: _____

Chemistry for Kids. Saturday, April 15, 11:00 a.m., 1:00 and 3:00 p.m. Please indicate a first and second choice of times:

_____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Hummingbirds. Sunday, April 23, 1:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$6: _____

Total amount enclosed for program: _____

Insects in Amber. Thursday, April 27, 7:30 p.m.

Number of free Members' tickets: _____

Number of additional tickets at \$3: _____

Iridescent Acrobats

Sunday, April 23

1:00 p.m.

Kaufmann Theater

\$4 for Members, \$6 for non-Members



Robert Tyrrell

They fly forward, backward, sideways, upside down, and they can even hover. Their shimmering wings beat between 40 and 80 times a second, a kaleidoscopic flutter that the human eye couldn't begin to follow. Until recently, no camera was able to capture an unblurred view of the hummingbird's flight.

Crystalline close-ups of

nature's smallest birds are available from Robert and Esther Quesada Tyrrell, a husband-and-wife team who have devoted the past 12 years to the study of hummingbirds. Their Members' program will feature Robert Tyrrell's high-speed photos of North American hummingbirds. He's considered the world's foremost photographer of these minute creatures, and his pictures portray them in crisp and colorful detail as they preen, nest, feed, and fight. Tyrrell will show some amazing flight sequences that reveal, among other things, that the birds actually begin flying prior to leaving a perch.

Less than three inches long

and weighing less than a penny, hummingbirds have the highest metabolism of any animal on earth. These little creatures must feed about every 15 minutes to stay alive, and they consume half their body weight every day. About 90 percent of what they eat is absorbed, and only 2 percent is excreted. Quesada Tyrrell will discuss fascinating facts about the birds, translating scientific concepts and language into a smooth narrative. She'll describe specific field markings, flight, feathers, anatomy, wildflower pollination, and behavior.

Hummingbirds constitute the second-largest avian family in the Western Hemisphere. Of

the 16 North American species, only one is found east of the Mississippi, the ruby-throated hummingbird. The majority live in tropical and subtropical regions; a few range throughout the temperate zones north and south of the equator. The couple traveled more than 30,000 miles in the United States and Mexico to photograph the birds. The stunning results are captured in *Hummingbirds: Their Life and Behavior*, an extremely well-received volume that's in its tenth printing since its 1985 publication.

To register for *Hummingbirds*, please use the March Members' programs coupon on page 3.

It's a Jungle Down There

Thursday, March 30

7:30 p.m.

Main Auditorium

\$6 for Members, \$7 for non-Members



The fer-de-lance, a poisonous pit viper of tropical America

The extraordinary variety of wildlife within the Peruvian rain forest is the focus of a Members' program that spotlights some of the richest ecosystems on earth. Paradoxically, these same areas are among our planet's least-examined sites. Terry Erwin, director of the Biological Diversity Program and a member of the Department of Entomology at the Smithsonian Institution, will introduce Members to an astonishing frontier of plant and animal life with *The Rain Forests of Peru*.

The diversity of Peruvian rain forest life is immediately apparent from the astounding statistics: 2,500 species of trees,

1,700 species of birds, and millions of species of insects. Erwin will discuss the ways in which the environment supports its varied flora and fauna, and he'll describe the efforts to preserve the jungle from the ever-encroaching outside world. In 1960 there were no protected areas in Peru; today there are 22, and some of the largest cover 2 million acres. Eight endangered species of macaws and hundreds of species of fishes are protected within the confines of Manu National Park, and 90 species of orchids flourish at Machu Picchu in southeastern Peru.

Erwin will use slides to de-

scribe his environmental studies, in which he used biodegradable insecticides on tropical trees to classify the insect species in the uppermost canopy of the rain forest. Biologists marveled at his findings, which gave new dimensions to previous estimates of the numbers of species: from 19 specimens of a single species of tree, Erwin collected more than 1,200 different kinds of beetles. By his estimate, the world's rain forest canopies host 30 million or more species of insects.

To register for *The Rain Forests of Peru*, please use the March Members' programs coupon on page 3.

The Royal Tombs of Sipan

Thursday, April 13

7:30 p.m.

Main Auditorium

\$7 for Members, \$9 for non-Members



At the base of a Moche pyramid on the northern coast of Peru, a warrior-priest was laid to his luxurious rest amid a circle of royal guardians and concubines. Masterworks of gold, silver, and copper were sealed inside the mausoleum, which lay untouched and unknown for 1,700 years.

The recently discovered royal tombs of Sipan were heralded as the richest and most significant of archeological finds in the Western Hemisphere. Members can hear all about the exciting discoveries in a program by Christopher B. Donnan, professor of archeology and director of the Museum of Cultural History at the University of California at Los Angeles. Donnan will describe the archeological work at Sipan and illustrate his talks with slides of the pre-Columbian funeral chambers, whose sumptuous treasures include a solid gold crown, a gold mask with lapis lazuli eyes, strands of peanut-shaped gold and silver beads, a ceremonial rattle made of hammered sheet gold, and gold-and-turquoise ear ornaments. The tombs also contain

one of the largest caches of pre-Columbian ceramics ever excavated — more than 1,000 bowls, bottles, and jars.

The tombs are relics of the Moche civilization, which flourished in Peru from A.D.



100–800. Although they had no written language, the Moche left a vivid artistic record in their ceramic vessels. Modeled with three-dimensional sculpture or painted with fine-line drawings, the ceramics illustrate Moche architecture, implements, supernatural beings, elaborate ceremonies, and activities such as hunting, weaving, and combat. Items from the royal tombs at Sipan have provided an unusual opportunity to correlate actual artifacts with the depictions of their use in Moche art. Donnan will discuss his comparative studies of the newly discovered artifacts and existing collections, including some intriguing speculations about the identity of the warrior-priest.

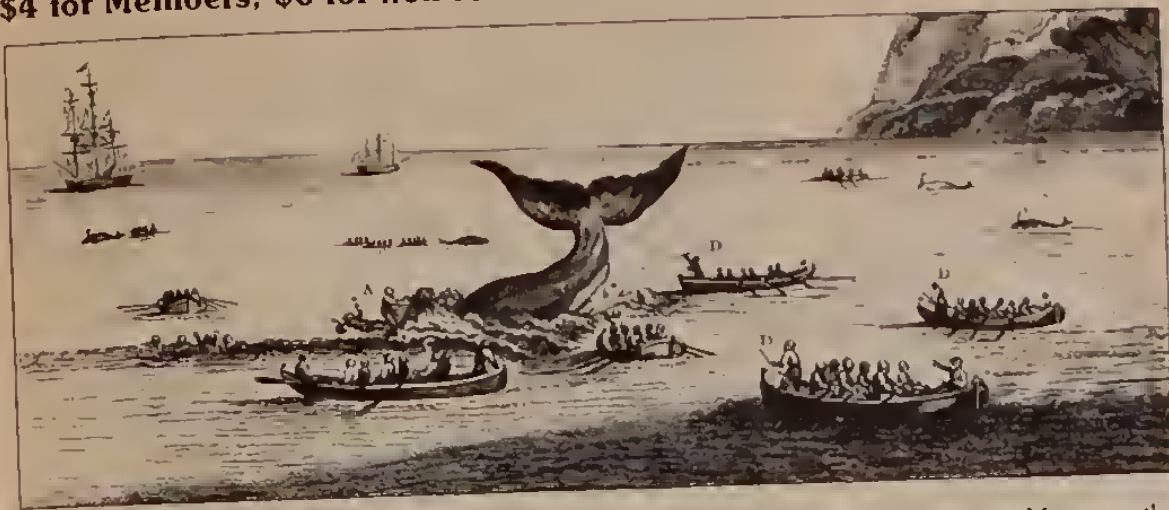
To register for *The Royal Tombs of Sipan*, please use the March Members' programs coupon on page 3.



All About Whales

Sunday, March 5
1:00 and 3:00 p.m.
Kaufmann Theater
\$4 for Members, \$6 for non-Members

(BOTH SHOWS ARE SOLD OUT FROM
THE FEBRUARY ISSUE OF ROTUNDA)



Kids learn about flippers, flukes, baleen, and krill in the action-packed, seafaring adventure *Whales Alive*. This Members' family program plumbs the depths of the ocean for a close-up of the magnificent mammals and an exploration of their physiology, feeding, and communication.

Ozzie Tollefson's program, which is geared toward 5- to 12-year-olds, combines a fact-studded lecture with colorful visual aids that include a six-foot humpback jawbone, a tremendous baleen, and sperm whale teeth. Tollefson's sound teaching methods are reinforced by memorable stage an-

tics. He bellows across the theater to portray the sounds that whales use to navigate through dark water, and he turns his arms and fingers into wiggly squid when describing what whales eat.

The modern practice of commercial whaling, Ozzie explains, is condemned because of the whales' endangered status. Whaling has, however, played an important role in our nation's development, and the audience participates in a creative dramatics adventure that traces the history of whaling. A giant-screen slide presentation transports viewers to New England, where they'll travel to the New

Bedford Whaling Museum, the Mystic Marineland Aquarium, and the tip of Cape Cod for an exciting afternoon of whale watching.

Ozzie Tollefson was a classroom instructor for 15 years before starting his participatory theater productions. Since 1975 he has presented highly praised programs on dinosaurs, American Indians, and the Vikings, and he's given over 4,000 performances in 1,300 schools for well over a million children.

For ticket availability to *Whales Alive*, please call the Membership Office at (212) 769-5606.

Insects in Amber

Thursday, April 27
7:30 p.m.
Kaufmann Theater
Free, and open only to Members

The amber-impsoned insects in entomologist David Grimaldi's cabinets tell stories of morphology, dispersal, evolution, and even continental drift. Among them are the oldest-known stingless bee, the oldest-known scuttlefly, extinct cockroaches, ancient termites, and a praying mantis. They lived and died in lands as distant as the Baltic and as near as New Jersey.

Join Grimaldi next month when he shows Members exquisite slides and drawings of tiny creatures caught in sticky resin as far back as 80 million years ago. While the resin slowly hardened and fossilized into amber, insects and other animals — including small lizards and frogs — were preserved intact. In this form, both gross and microscopic morphological features can be studied with the same detail as animals that died only yesterday.

The nightmares of ancient in-

sects have become fonts of information for modern taxonomists like Grimaldi. Studying the insects "from antennae to genitalia" helps Grimaldi piece together the relationships among different insect families, genera, and species.

Grimaldi's choice of work affirms his conviction that insects tell us more about natural history than any other group of animals because of their diversity, distribution, and sheer number. In the Members' program, he'll share his infectious enthusiasm about insects while discussing the questions and clues that stem from insects in amber. He has seen thousands of amber inclusions and will offer in-depth profiles of a few of the most outstanding ones. He'll also talk about how and where amber is formed.

To register for *Insects in Amber*, please use the March Members' programs coupon on page 3.

Tales of Purim

Wednesday, March 8
7:30 p.m.
Main Auditorium
\$10 for Members,
\$12 for non-Members



A pair of gifted storytellers will present a celebration of Purim at the Museum this month. Rabbi Shlomo Carlebach and Diane Wolkstein will recount the deeds of Queen Esther, which brightened one of Israel's darkest hours, along with tales of good and evil, of hell and paradise, and of *Drunkards and Watercarriers*.

Master storyteller Diane Wolkstein and Rabbi Shlomo Carlebach, an internationally known Hasidic folksinger, will create a compelling atmosphere of joy, humor, and deep spirituality. They'll unite their storytelling expertise at this Members' family program to re-create the rarefied world of Purim, in

which listeners walk in sober and walk out intoxicated.

Diane Wolkstein is a remarkable storyteller who has performed and lectured at universities, libraries, theaters, and festivals since 1967. She has written 12 books on mythology and has made 12 recordings. Wolkstein is one of the country's only storytellers to research and present ancient oral literature. Her grace and clear, resonant voice have enchanted audiences throughout the United States and abroad. She has enthralled Members with her retelling of the Song of Songs and the story of the Sumerian goddess Inanna at previous Museum appearances.

With his music, stories, and profound Hasidic teachings, Reb Shlomo touches the heart of his listeners. He has composed thousands of melodies, recorded 25 albums, and published two songbooks. Whenever Jews gather for important or festive occasions, Reb Shlomo's familiar melodies are almost always sung. He and his brother are rabbis at Congregation Kehileth Jacob in New York City.

Members are invited to join in a Glenlivet tasting prior to the program. Please call the Membership Office at (212) 769-5606 for ticket availability to *Drunkards and Watercarriers*.

The Underwater World

Wednesday, March 15
7:30 p.m.
Main Auditorium
\$7 for Members, \$8 for non-Members

The American Littoral Society's twenty-fourth annual symposium on ocean and coastal topics features an evening of slides and film on underwater subjects.

Speakers will include Eugenie Clark, a University of Maryland zoologist who will report on her experiences two miles down in a submersible, swimming with whale sharks, and her recent rare shark work in deep water off Bermuda.

Henry Keatts, diver, zoologist, and historian, will catalogue freighter, tanker, sailing ship, and submarine wrecks on the New England coast from Main to Block Island.

In addition, the Society will present its Graham Macmillan Award.

To register for *The Underwater World*, please use the coupon below. For further information, call the American Littoral Society at (201) 291-0055.

American Littoral Society

Underwater Worlds
Wednesday, March 15
7:30-9:30 p.m.

Number of Members' tickets at \$7 each: _____
Number of non-Members' tickets at \$8 each: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Please make check payable to the American Littoral Society and mail with **stamped, self-addressed** envelope to: *Underwater Worlds*, American Littoral Society, Highlands, NJ 07732.

Paul Winter Consort

Tuesday, April 11, and Wednesday, April 12
7:00 and 9:00 p.m.
Planetarium Sky Theater
\$16 for Members, \$20 for non-Members

The Paul Winter Consort will return to the Hayden Planetarium next month to perform their unusual style of living music, which combines elements of classical, jazz, and international folk traditions with themes drawn from the natural environment. The concert will feature wildlife visuals, lasers, and other Planetarium special effects.

Paul Winter's career spans three decades, and he's known not only for his numerous recordings but also for his work as an environmentalist. His compositions blend sounds from conventional instruments (particularly wind and percussion) with natural sounds such as those made by dolphins, whales, and wolves. By incorporating environmental themes, natural sounds, and the best in musical traditions, Winter seeks to enhance his listeners' awareness of their environment and their connection with it.

To register for the concert, please send your check payable to the Hayden Planetarium with a stamped, self-addressed envelope to: Paul Winter Consort, Hayden Planetarium, 81st Street at Central Park West, New York, NY 10024-5192. Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price, Associates are entitled to one, and all additional tickets are at the non-Members' price. Members, be sure to indicate



your membership category and number. Don't forget to specify the desired number of tickets, and be sure to include your home telephone number. Orders cannot be processed without inclusion of a stamped, self-addressed envelope. For further information, call (212) 769-5920.

Members' Private Viewing Gateway to Infinity and Destination: Mars

Tuesday, March 28
6:00 and 7:30 p.m.
\$2.75 for adults, \$1.50 for children
Planetarium Sky Theater

Star clusters, supernovas, colliding galaxies, and mysterious black holes are among the spectacular outer-space phenomena featured in the new Planetarium Sky Show, *Gateway to Infinity*. Members can explore our own solar system and worlds far beyond it with a private viewing of the new show, which is narrated by veteran film and stage actor James Earl Jones.

As a warm-up for intergalactic travel, *Gateway to Infinity*

will be preceded by *Destination: Mars*, a historical view of our red neighbor, spotlighting the myths and monsters of yesterday and the Martian colonies of tomorrow.

The private viewing will be complemented by a new multi-image program in the Planetarium's Guggenheim Space Theater and an exhibition of original art depicting Mars. To register, please use the March Members' programs coupon on page 3.

The Changing Roles of Women in Society A Cross-Cultural Perspective



In observance of Women's History Month, the Department of Education in collaboration with the International Women's Council will conduct a four-part program that explores the roles of women in society from a historical, cross-cultural perspective. For further information about these free programs, which are made possible in part by a gift from the Henry Nias Foundation, please call (212) 769-5315.

Women in Society: An Historical Look. Wednesday, March 1. The keynote speaker will offer an overview of the traditional roles of mother, homemaker, and caretaker in various

cultures and discuss the changing roles of women. Kaufmann Theater, 7:00 p.m.

Women in a Dynamic Society. Tuesday, March 14. Necessity and opportunity have moved women away from traditional roles in the home and the workplace, and three panelists will examine some of the effects of this movement. They'll discuss human sexuality and the role of women, the role of women in the family, and the problem of substance abuse as an escape from social pressures. Kaufmann Theater, 7:00 p.m.

Healers. Wednesday, March 22. A panel discussion will consider the role of women in tradi-

tional and contemporary healing practices. Kaufmann Theater, 7:00 p.m.

Contemporary Dance. Wednesday, March 29. The concluding program features the group Urban Bush Women. Inspired in part by African movement, the company investigates the transformation of African dance in the diaspora with songs and choreography that relate to women's issues. Main Auditorium, 7:30 p.m.

An Education Department Public Program.

Science Fiction: Past, Present, and Future

Monday, April 24
7:00 p.m.
Planetarium Sky Theater
\$4 for Members, \$5 for non-Members



"The End of the World"

A special opportunity awaits science-fiction aficionados with an appearance at the Hayden Planetarium by renowned author James Gunn. The nature, history, and distinguishing characteristics of science fiction will be the theme of his program.

The Planetarium's recent Sky Show, *Encounter: The Search for Extraterrestrial Life*, was based in part on Gunn's novel *The Listeners*. A scholar of science fiction as well as a writer, Gunn served as president of the Science Fiction Writers of America and the Science Fiction Research Association. His *Alternate Worlds: The Illustrated History of Science Fiction* won a special award from the World Science Fiction Convention as well as the Science Fiction Research Association's Pilgrim Award. Gunn also received a 1983 Hugo, a Science Fiction Achievement Award, for Isaac Asimov's *The Foundations of Science Fiction*.

For ticket information, please call the Hayden Planetarium at (212) 769-5907.

The Department of Education Presents Workshops for Young People



sented by Gabrielle Tannor of the Education Department.

SATURDAY WORKSHOPS Students should bring a bag lunch.

But Why, Mommy? Fun Facts about Animals

Grades 1 and 2, with one adult
April 1; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

Have you ever wondered why a squirrel has a bushy tail or why a rabbit has long ears? Young learners receive hands-on experience with mounted specimens and hear stories. Presented by Rhonda Young, special education instructor of the Education Department.

Inside Your Body

Grades 2 and 3
April 8; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

What's underneath your skin? In this program, children listen to their heartbeats, examine X-rays, and find out what makes their bodies work. A human skeleton and a transparent anatomical mannequin illustrate discussions. Presented by Dina Cukier, science and art teacher.

Wonderful Whales

Grades 3 and 4
April 8; 10:30-1:30 p.m.
Fee: \$15 (\$13 for Members)

There is a great mystery about whales, creatures that spend most of their lives below the surface of the sea. They can approach 100 feet in length, weigh over 140 tons, and devour 8 tons of food a day. Find out why whales are often hunted by humans. Children learn about these mammals through film, songs, games, artifacts, and a visit to the Museum's Hall of Ocean Life. Taught by Merryl Kafka, educator at the New York Aquarium.

Science Fun

Grades 2 and 3
April 15; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

This workshop features exciting scientific experiments for young people — projects that stimulate their natural curiosity and encourage them to make new discoveries. Find out how

to make rainbows, play tricks with mirrors, and peek around the corner without being seen. Presented by Dina Cukier, science and art teacher.

Body Decorating

Grades 5 and 6
April 22; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

We can learn a lot about people just by looking at the clothes and jewelry they wear and how they decorate their bodies. Investigate the messages in the body decoration of different cultures through Museum exhibits, a hands-on survey of artifacts from the teaching collection, and a face-painting activity. Presented by Ann Prewitt of the Education Department.

Microscopic Adventures

Grades 1 and 2, with one adult
April 22; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

Discover the world of small creatures. Children learn how to use microscopes to enlarge microorganisms and learn about their unusual shapes and movements. A drop of pondwater will come alive with hydra, paramecia, plants, and more! Presented by Andrea Thaler of the Education Department.

FOR THE LEARNING DISABLED

Dinosaurs

(For learning-disabled students functioning at the third- to fifth-grade level)
April 8; 10:30 a.m.-1:30 p.m.
Fee: \$15 (\$13 for Members)

Step back in time to the days of the dinosaurs, the giants of the earth. Where did they live, and what did they eat? Children will make their own dinosaurs while learning about prehistoric life. Presented by Rhonda Young, special education instructor of the Education Department.

MONDAY WORKSHOPS FOR PRESCHOOLERS

Dinosaurs

3- and 4-year-olds, with one parent
April 10; 1:30-2:30 p.m.
Fee: \$10 (\$9 for Members)

Explore the world of dinosaurs through the Museum's collections and film. Discover what foods they ate and what their environment was like. Participants use clay to create their own little dinosaurs. Presented by Alison Loerke, naturalist and educator.

Art and Games

3- and 4-year-olds, with one parent
April 17; 1:30-2:30 p.m.
Fee: \$10 (\$9 for Members)

Food, clothing, games, stories, and holidays are all opportunities for the exploration of art. Children will fold paper into hats, animals, and fans, and they'll make colorful rubbings. Presented by Michelle Stelvelman of the Education Department.

How Things Grow

3- and 4-year-olds, with one parent
May 8; 1:30-2:30 p.m.
Fee: \$10 (\$9 for Members)

Children learn how plants and animals grow — butterflies, apples, pine trees, deer, frogs, and more. Children explore growth through games and hands-on activities at the Alexander M. White Natural Science Center. Presented by Gabrielle Tannor of the Education Department.

These Education Department workshops are made possible in part by a grant from the Louis Calder Foundation. Please use the coupon below to register. For further information, call (212) 769-5310.

Register early. Class sizes are limited.

SUNDAY COURSES

Archeology

Grades 4 and 5
Two Sundays
April 2 and 9; 2:00-4:00 p.m.
Fee: \$20 (\$18 for Members)

Students participate in the excavation of a simulated archeology site in the classroom. Slide presentations, hands-on demonstrations of fossils and artifacts, and a visit to an exhibit of a dig site help youngsters acquire an understanding of the field techniques and approaches used by archeologists. Presented by Anita Steinhart, teacher of anthropology.

Through the Eyes of a Child: Introducing the Museum

5- or 6-year-olds with one adult
Two Sundays
April 9 and 16; 10:15-11:45 a.m.
Fee: \$25 (\$23 for Members)

A museum educator introduces you and a child to this exciting Museum. Minerals, plant and animal specimens, and beautiful objects help children to perceive the world around them. Presented by Marjorie M. Ransom of the Education Department.

Kite Making

Grades 1 and 2 with one adult
Two Sundays
April 9 and 16; 10:30 a.m.-12:30 p.m.
Fee: \$30 (\$28 for Members)

Spring is the time for some high-flying fun! Make your own kite while discovering surprising facts about Japanese fighting kites used in festivals and cele-

brations and about Alexander Graham Bell's kite experiments. Find inspiration for your own designs from the Museum's collections. Weather permitting, you may be able to test your creation. Presented by Carl Szilagi, kite maker and lecturer.

Animated Films

Grades 7 and 8
Five Sundays
April 9, 16, 23, 30, and May 7; 10:30 a.m.-12:30 p.m.
Fee: \$30 (\$28 for Members)

This fun and exciting introduction to filmmaking explores the combination of animation and technology in creating the illusion of movement. Children make a scratch-and-doodle film, an individual film on dinosaurs, and prepare story boards. Objects come to life in this lively program on animation. Presented by David Lasday, animator-educator at the Children's Museum of Manhattan.

Nature Detective

Grades 2 and 3
Two Sundays
April 30 and May 7; 10:30 a.m.-12:30 p.m.
Fee: \$20 (\$18 for Members)

Sharpen your senses and learn how to look for signs of nature. Use your eyes, ears, nose, and hands to watch birds, track down animals, build collections, and more. Young people will make a birch-bark nature diary and plaster casts of footprints, and they'll learn how to press plants. A field trip to Central Park is included. Pre-



DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s)

Workshop(s): _____

Student's last name: _____ First: _____

Parent/guardian's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Amount enclosed: _____

(Please note that only Participating, Donor, and Contributing Members are entitled to discounts shown.)

Please mail a stamped, self-addressed envelope and your check payable to the American Museum of Natural History to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Madagascar: Island of the Ancestors Members' Preview



Trustees of the British Museum

Participating, Donor, and Contributing Members are invited to a preview of the new Gallery 3 exhibition on Thursday, March 23, between 6.00 and 8.15 p.m.

Ian Tattersall, curator in the Department of Anthropology and exhibition consultant, will be on hand to answer questions about the exhibition. Tattersall has conducted extensive research on the primates of Madagascar; his subjects included the lemurs, which bear the closest resemblance of any living creatures to our own human an-

cestors of some 50 million years ago.

Melanie Stiassny, assistant curator in the Department of Herpetology and Ichthyology, will also be present for informal discussions with Members of the live display of Madagascan fishes, including a new species of silverside, a primitive fish that was discovered only last year. Its reproductive biology and development are being studied at the Museum.

To register for the preview, please use the March Members' programs coupon on page 3.

Island of the Ancestors

Monday, March 20, and Monday, March 27
7:00-8:30 p.m.
Fee: \$20 (\$18 for Members)

The richness of Malagasy culture is as unexpected as its unique animal and plant life. Although the island is only 250 miles from the African mainland, the language has close connections with that of Indonesia, the music and weaving follow African and Asian traditions, and Arab influence is evident in areas such as astrology. There are 18 officially recognized ethnic groups and many dialects. These two slide-illustrated programs are presented in conjunction with the temporary exhibition *Madagascar: Island of the Ancestors*, which opens on Saturday, March 25.

The concept of the ancestors is crucial to Malagasy life. All that is considered morally desirable or appropriate in social relations is encompassed and expressed by the idea of the ancestors. On March 20, John Mack, assistant keeper at the British Museum's Department of Ethnography at the Museum of Mankind, introduces the island culture and its representation within the exhibition's themes. Dr. Mack, who has conducted extensive fieldwork in Madagascar, is curator for the exhibition.

On March 27, Conrad P. Kottak examines the cultural and social practices of the Betsileo, rice farmers who inhabit the southern highlands of Madagascar. The Betsileo were conquered by their northern neighbors, the Merina, who forged the island's major indigenous kingdom during the nineteenth century. Because of strong similarities in their traditional economy and social and political organization, the Betsileo adapted well to Merina rule, and today their population is a million strong. Dr. Kottak will use slides to document elements of Betsileo culture, including their colorful funerary ceremonies, which involve reburial and rewrapping of ancestral remains. A professor of anthropology at the University of Michigan, Dr. Kottak is the author of *The Past in the Present: History, Ecology and Variation in Highland Madagascar*.

For registration information, please call (212) 769-5310. See page 1 for further details about the exhibition.

**An Education Department
Public Program.**



Museum of Art and Archaeology, Madagascar

Members' Tour of the Month

The Primate World of Madagascar



Museum of Art and Archaeology, Madagascar

Beaded and embroidered loincloth

Secluded from the mundane and veiled in mystery, the word Madagascar evokes images of swashbuckling pirates and teeming forests of exotic animals. The April/May Members' Tour of the Month offers a guided exploration of this fascinating island.

The tour begins in the temporary exhibition *Madagascar: Island of the Ancestors* with a discussion of the origins and customs of the Malagasy people. Although the island is situated only 250 miles east of Africa, a substantial number of its early inhabitants were Asian. Find out how these pioneers negotiated the arduous trip across the Indian Ocean a thousand years ago and how their descendants live today.

Then it's on to the Hall of Primates for a look at some of Madagascar's unique and most famous denizens, the lemurs. All of the 40 species of these ancient primates that are known are found on Madagascar; only a few live elsewhere. Members learn about the variety, characteristics, and habits of these animals.

All Members' tours are conducted by professionally trained Museum Highlights Tour guides and last approximately one hour. They are not recommended for children under 12. To register for *The Primate World of Madagascar*, use the coupon at right.

Members' Tour of the Month: Madagascar: Island of the Ancestors. Free, and open only to Participating, Donor, and Contributing Members. Please indicate a first, second, and third choice of tours, if possible:

| | | | |
|-------------------------|-------|-------|-------|
| Sat., April 8 (a.m.) | 10:30 | 11:00 | 11:30 |
| Thurs., April 13 (p.m.) | 2:00 | 2:30 | |
| Sun., April 16 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sat., April 22 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., April 26 (p.m.) | 6:15 | 6:45 | 7:15 |
| Sat., April 29 (a.m.) | 10:30 | 11:00 | 11:30 |
| Sun., April 30 (a.m.) | 10:30 | 11:00 | 11:30 |
| Thurs., May 4 (p.m.) | 2:00 | 2:30 | |
| Sun., May 7 (a.m.) | 10:30 | 11:00 | 11:30 |
| Wed., May 10 (p.m.) | 6:15 | 6:45 | 7:15 |
| Wed., May 17 (p.m.) | 6:15 | 6:45 | 7:15 |
| Wed., May 24 (p.m.) | 6:15 | 6:45 | 7:15 |

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

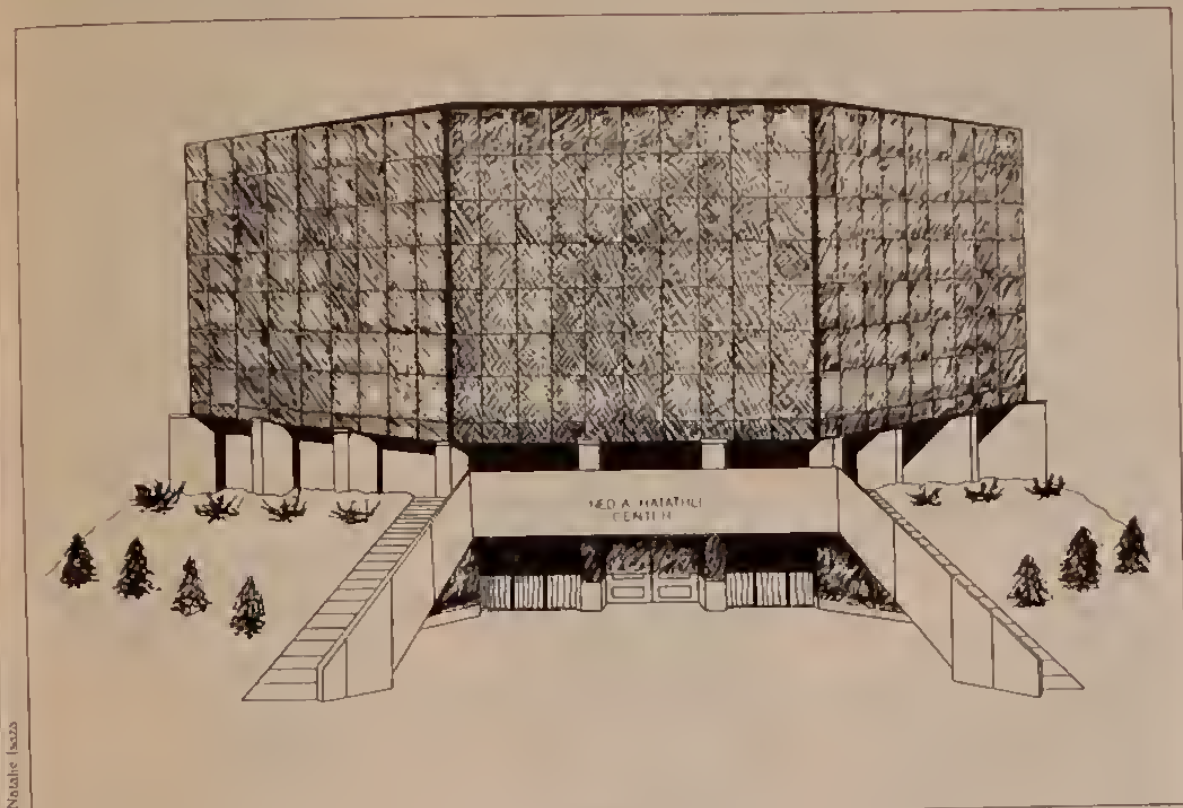
Membership category: _____

Number of people: _____

Please mail with a **self-addressed, stamped envelope** to:
Tour of the Month, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

A View from the Field

The American Museum in Navajoland



The Navajo Community College of Tsaile, Arizona

Visitors from all over the world are drawn to the American Museum, not only to view the public exhibitions but also as guests of the scientific departments. The visiting scientists come here for experience and training or to assist with special programs. Sooner or later they take their leave, and those of us who remain often wonder what happens to them and how they have benefited from their connection with the Museum.

For 15 years biogeologist Norman Newell and his wife, Gillian, have conducted field research in the American West. Joined by research associate Professor Donald Boyd, they seek significant clues from marine fossils and rock strata about the great extinction of animals at the end of the era of ancient life, the Paleozoic, and the beginning of the more recent Mesozoic. This dramatic event took place between 260 and 240 million years ago.

Last summer, after exciting and fruitful visits to fossil sites in Wyoming, Montana, Idaho, and Utah, they shipped 1,500 pounds of Lower Triassic limestone blocks containing marine mollusks to Laramie, Wyoming, for extraction with muriatic acid. Later, in the fall, they returned to sort some of the delicate fossils and fly with them to New York for further study. Here is their story of what happened after they had finished this year's fieldwork.

On the day before we left the Museum for the field, we had a most providential lunch with Joe Sedacca, the manager of graphics in our Exhibition Department. When he heard where we were going, he suggested that we visit the isolated Navajo Community College of Tsaile, Arizona, located in the desert country near Four Corners (Arizona, Utah, Colorado, and New Mexico).

Joe had been invited to spend about a week there in 1975 so that the college could consult with him on the design of their new museum. The Navajo Community College in Tsaile is the main campus serving the Indian residents of Navajoland; there are also two other branches and five community campus centers. The college was founded in 1968 with the goal of integrating Navajo culture and philosophy, enhancing students' self-identity, and fostering respect and appreciation for the Navajo heritage.

After finishing our fieldwork in Utah, we were heading southward, to Flagstaff, Arizona, to visit E. H. Colbert, curator emeritus of the Vertebrate Paleontology Department. From the map, it looked like a brief excursion over the desert to Tsaile (which was not marked on most of our maps, but which we knew lay east of the Canyon de Chelly).

When we arrived within a hundred miles or so, we started making inquiries about directions and the state of the roads — and even more important, about a place to spend the night. After a cou-

ple of hours of driving along dirt roads on false trails, we found a small, isolated Navajo hotel. It was near a surfaced road, but offered neither telephones nor a restaurant. Luckily, the trading post to which it was attached had plenty of Navajo food, so we were able to make up a delicious picnic dinner.

Early the next morning we set off across the stark but beautiful desert, and after two hours we saw the college buildings rising above what appeared to be a small oasis. We were impressed with the campus area's simple but well-designed buildings, many of which had solar heating units.

The museum is situated in the handsome administrative building, built in the hexagonal form of a hogan. We knew our visit would be a great success as soon as we walked through the door. We encountered a tall, distinguished-looking Indian in a business suit who was carrying a briefcase and obviously in a great hurry, but who nevertheless stopped to ask us if we needed help. When we explained our mission, he greeted us warmly and said that indeed he could help us — he was Dean Jackson, the president of the college! He chatted with us about our Museum and his college, and then escorted us to the museum director, Henry Walters.

It was Henry with whom Joe Sedacca had worked on the initial installation for the museum, and Henry had also been at the American Museum for a training program in 1973-74. The program, which was conducted for two years under a grant from the National Endowment for the Arts, provided professionals employed in museums that serve ethnic minorities with the opportunity for six months of training. Four or five individuals participated each year of the program, and their training was tailored to their specific needs. The Education Department wrote the grant application, selected the candidates, and administered the program.

Henry's recollections of the Museum were happy ones, and he sent greetings to Joe, Malcolm Arth, and other staff members. He gave us a fascinating tour of his museum, explaining the philosophy behind the exhibits and suggesting various subjects for us to photograph so that Joe could see where his suggestions had been followed and how Henry's work at the American Museum had helped in the design of his museum.

The only unhappy part of our whole trip was that our camera was having a temperamental day and the results were not very illuminating. But although we came away with few good photographs, we had a vastly enriched idea of the American Museum's influence. We were welcomed with such gratitude and enthusiasm, and we felt proud and happy to be a part of our Museum's working forces.

— Gillian Newell

South American Peoples Month



A series of programs celebrating the culture of South American Peoples commemorates the opening of the Museum's newest exhibition hall. These free programs are made possible in part by gifts from the family of Frederick Leonhardt and the Henry Nias Foundation. For further information, call (212) 769-5315

Leonhardt People Center 1:00 to 4:30 p.m.

March 4 and 5

Music of the Andean Highlands Pepe Santana and Freddy Maranon play native musical instruments and discuss influential elements of Andean folk music.

Pre-Columbian Art and Architecture of the Andes Sue Burgh introduces the major art forms and symbolism of artifacts on display in the new Hall of South American Peoples.

Mystery of the Nasca Lines Maria Fernandez discusses recent findings about one of Peru's oldest enigmas, the Nasca Lines.

March 11 and 12

Thiago de Mello and His Brazilian Roots A performance of Amazonian chants and Brazilian rhythms that can be heard on the streets of Rio and New York as well as in the Amazonian rain forest.

Peoples of the Amazonian Rain Forest Nancy Rosoff examines traditional tropical rain forest cultures and their reliance upon the environment.

Featherwork in the Amazon Dr. Delores Newton illustrates cultural variations in the leather arts in the region of the Brazilian Amazon.

March 18 and 19

Women of the Rain Forest, Mountains, and Rivers Hortensia and Vera Colorado recount stories illustrating the duality of women and their power over the environment. The tales are rooted in South American cultures such as those of the Checu, Shuar, Aymara, and Tikana.

Metalwork in Peru Heidi King describes the development of Peruvian metalwork techniques, emphasizing the form and function of gold and silver.

Wari Myths and Legends in Tapestries Gregorio Sulca, a Wari from the Ayacucho region of Peru, conducts a weaving demonstration and explains the symbolism of the designs.

An Education Department Public Program.

Achuar Jivaro: A Look at Blood Revenge and Warfare Wednesday, March 8

Jane Ross discusses the dynamics of feuding and warfare in the northwest Amazon with emphasis on living conditions, social organization, and ecological concerns. Dr. Ross teaches anthropology at Monclair State College. Kaufmann Theater, 7:00 p.m.

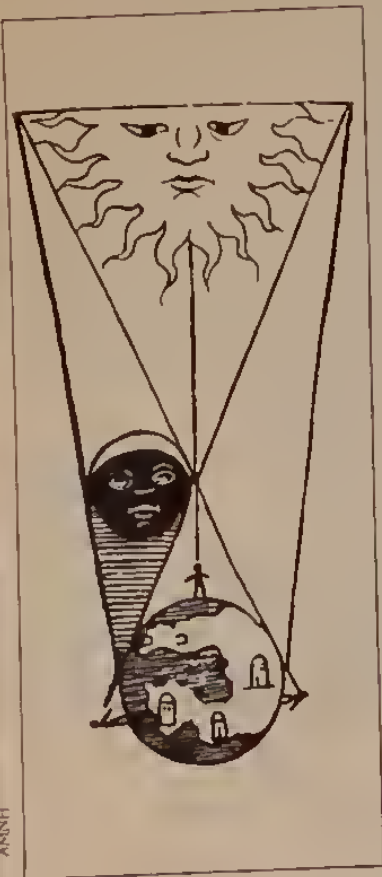
Religion and Revolution: Social Change in the Andes Wednesday, March 15

William Mitchell discusses the impact of religious and social change in the Andes over the last 20 years, including how population growth affected the rise of Protestantism in the region. Dr. Mitchell teaches anthropology at Monmouth College. Kaufmann Theater, 7:00 p.m.

South American Highland Music Sunday, March 19

Inkhay, which means "to lead the line" in Quecha, is an ensemble from the South American highlands devoted to the preservation and performance of their traditional music. Both South American Indian and European influences are evident in their performance, which features 26 different instruments, including panpipes, whistles, harps, and guitars. Inkhay also includes a group that performs colorful dances from Bolivia, Ecuador, Colombia, Chile, and Argentina. Kaufmann Theater, 2:00 and 4:00 p.m.

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy
Eight Tuesdays, beginning April 4; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

A first course in astronomy, designed to introduce the many interesting aspects of the universe to persons with no math or physics background. Topics include Earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes. The course explains common observations such as planet motions and the rising and setting of the sun and moon. No previous knowledge of astronomy is assumed.

Stars, Constellations, and Legends

Five Tuesdays, beginning April 4; 6:30-8:10 p.m.
Fee: \$65 (\$58.50 for Members)

An introduction to the lore of the sky. Using the Zeiss projector in the Sky Theater, this course identifies the prominent stars, constellations, and other sky objects of both Northern and Southern hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated. No prerequisites.

How to Use a Telescope

Eight Wednesdays, beginning April 5; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

An introduction to the selection and use of a small amateur telescope. Topics include basic optics of telescopes, equatorial and altazimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other aids for observation. No previous knowledge of astronomy is assumed. This course is particularly recommended for those considering the purchase of a telescope.

Understanding the Sky

Seven Thursdays, beginning April 6; 6:30-8:40 p.m.
Fee: \$85 (\$76.50 for Members)

Why do things occur in the sky the way they do? Why does the length of the day change during the year? What is the midnight sun, and where and when can it be seen? What determines the visibility of the moon and planets? In this course we will discuss these and other topics, in both the classroom and the Sky Theater, where the amazing capabilities of our Zeiss projector will recreate and explain these "heavenly happenings."

The Search for Extraterrestrial Intelligence

Five Mondays, beginning April 3; 6:30-8:10 p.m.
Fee: \$65 (\$58.50 for Members)

Through science fiction novels, movies, and television, we are often treated to fantasy encounters with aliens from space. This new course presents a detailed look at our past and present quest to find visitors from beyond the stars. Where and how are scientists searching for life in space? What is the likelihood of success? And what type of contact might we expect?

Celestial Highlights

Four selected Mondays: May 22, June 19, July 24, Aug. 28; 6:30-7:40 p.m.
Fee: \$40 (\$36 for Members)

This new course will focus on upcoming events in the skies over the tristate area. Using the magnificent Zeiss Star Projector in the Sky Theater, the night sky will be accurately simulated. Students will learn how to find prominent constellations, planetary groupings, and more. During each session, special attention will be given to unusual phenomena such as meteor showers, eclipses, occultations, and planet-moon groupings expected in the coming month.

ASTRONOMY: INTERMEDIATE COURSES

Survey of the Planets

Eight Thursdays, beginning April 6; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

Information supplied by spacecraft in the past several years has made the planets an exciting subject for scientific study. This course will introduce the planets both as parts of the entire structure of the solar system and as individual, unique bodies. Topics include structure, composition, weather, rings, and satellite systems of the various planets. Images from the many planetary spacecraft will be used to complement the class lectures and discussions. Prerequisite: *Introduction to Astronomy* is recommended but not required.

The Future of Space Exploration

Eight Mondays, beginning April 3; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

For more than 20 years, humans have probed the realm beyond the Earth's atmosphere. By the end of 1989, all but one of the known planets in the solar system will have been observed by spacecraft at close range. Illustrated by means of the new laser disk/video projection system now available in the classrooms, this course begins with an extensive overview of what space probes have shown us and then turns to the future. Topics will include the efforts to bring the American space program back into full operation, the attempts by other countries at space exploration, and the plans to extend our senses and ourselves into the final frontier.

FOR TEACHERS

Tuesday, March 14; 4:30-7:00 p.m.
Fee: \$35 (\$31.50 for Members)

A special 2½-hour workshop for teachers, school A/V administrators, and school librarians, designed to familiarize participants with many of the audio-visual materials available to schools for teaching astronomy and space science. Among the topics covered and materials demonstrated will be slides, optical laser discs, films, posters, books, charts, and software programs designed for use on popular home and school computers. Source and price lists will be provided, as well as information on observatories and astronomy clubs in the metropolitan area.

METEOROLOGY

Weather and Climate

Eight Thursdays, beginning April 6; 6:30-8:40 p.m.
Fee: \$95 (\$85.50 for Members)

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

AVIATION

Ground School for Private and Commercial Pilots

Fifteen sessions, Tuesdays and Thursdays, beginning March 7; 6:30-9:00 p.m.
Fee: \$185 (\$166.50 for Members)

Introduction preparatory to the FAA written examination for a private or commercial license. This course will also help as a refresher for biennial flight reviews and survey some of the practicalities of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance; visual and electronic navigation (VOR, ADF, DME, and Loran); use of charts, publications, plotter, and computers, basic principles of flight and aerodynamics; weather; flight instruments; and engine operations. The course is FAA approved.

Ground School for Instrument Pilots

Fourteen sessions, Tuesdays and Thursdays, beginning March 7; 6:30-9:00 p.m.
Fee: \$185 (\$166.50 for Members)

Intended for those planning to take the FAA written examination for an instrument license. The course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, ILS, and Loran), weather analysis, aircraft performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight simulator. The course is FAA approved. Twelve sessions meet concurrently with Ground School for Private and Commercial Pilots.

NAVIGATION: BASIC COURSES

Navigation in Coastal Waters

Eight Tuesdays, beginning April 4; 6:30-9:00 p.m.
Fee: \$110 (\$99 for Members)

An introduction to piloting and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites.

NAVIGATION: INTERMEDIATE COURSES

Piloting for Sailboat Operators

Eight Tuesdays, beginning April 4; 6:30-9:00 p.m.
Fee: \$110 (\$99 for Members)

This course draws upon and

reviews material covered in *Navigation in Coastal Waters* and is geared to the sailboat navigator with some experience who wishes more information on position-determination techniques and methods. Topics include the mariner's compass with a review of compass error and deviation, dead reckoning, determination of speed, position-finding methods with vertical sextant angles, the use of ranges and other lines of bearing for fixes and running fixes, sailing in currents, and estimation and application of leeway. The equipment kit obtained for *Navigation in Coastal Waters* will be used in the course. Prerequisite: *Navigation in Coastal Waters* or equivalent experience with the permission of the instructor.

NAVIGATION: ADVANCED COURSES

Advanced Celestial Navigation

Eight Mondays, beginning April 3; 6:30-9:00 p.m.
Fee: \$95 (\$85.50 for Members)

This course includes subject matter not covered in *Introduction to Celestial Navigation* with additional practice problems for the solution of the celestial line of position, latitude by meridian transit of the sun and other celestial bodies, latitude by observation of Polaris, computations of sunrise, sunset, moonrise, moonset, and twilight phenomena. Other subjects include navigational astronomy, star identification by altitude and azimuth methods, azimuth computations for determining compass error and deviation at sea, comparison of sight-reduction tabular methods using marine navigation and air navigation tables, and sight reductions by formula methods. Prerequisite: *Introduction to Celestial Navigation* or equivalent experience with the permission of the instructor.

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____

Price: _____ (Please note that discount prices apply only to Participating, Donor, and Contributing Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: *Hayden Planetarium, Central Park West and 81st Street, New York, NY 10024-5192*. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, between 9:30 a.m.-4:30 p.m. **Please, no credit cards.**

For the Children

The Natural Science Center introduces young people to the wildlife and geology of New York City. Open Tuesday through Friday, 2:00 to 4:30 p.m.; Saturday, 1:00 to 4:30 p.m. Closed Sunday, Monday, and holidays.

The Discovery Room offers natural history specimens that kids can touch. Open weekends from 12:00 to 4:30 p.m.; free tickets are distributed at the first-floor information desk.

Museum Birthday Parties. Young Members can let the good times roll with the dinosaurs or the blue whale, in Africa or on another planet. Children between the ages of 5 and 10 can choose from five birthday party themes: a Dinosaur Party; a Star Party; a Safari Party; an Aquanaut Party in the Hall of Ocean Life; or a Naturemax Party.

The parties are two hours long and are held at 4:00 p.m. on Wednesdays and Fridays and at 11:00 a.m. or 2:30 p.m.

on weekends. The total group should be no fewer than 10 and no more than 20. The fee is \$225, plus \$12 per child. (The cost includes all materials, decorations, juice, and special favor bags that are full of surprises. The cake is not included.) For information and reservations, please call the Membership Office at (212) 769-5606.

FACES is an innovative anthropology magazine for 8- to 14-year-olds. Published ten times annually in cooperation with the Museum, FACES features a variety of activities, including games, stories, puzzles, and recipes. FACES is available at the Museum's Junior Shop and through subscription. Members receive a discount price of \$15.95 on the annual subscription rate of \$18.95. To subscribe, send your check or money order payable to FACES (add \$5 for foreign orders) to: FACES, Dept. 722, 20 Grove St., Peterborough, NH 03458.

Trustees of the British Museum



Highlights Tours

For an inside story of the Museum's history and exhibits, take a *Museum Highlights Tour*. Conducted by professionally trained volunteer guides, these free tours leave regularly from the entrance to the Hall of African Mammals on the second floor, just inside the main entrance to the Museum. Please ask at an information desk for specific tour times or call (212) 769-5566.

This ceremonial wooden spoon bears the image of two seated people drinking from a bottle and glasses. It's among the more than 500 artifacts that will be on display in Gallery 3 from Saturday, March 25, through Sunday, August 27. For details about the new exhibition, *Madagascar: Island of the Ancestors*, see page 1. For information about special programs and guided tours of the exhibition, see page 8.

Naturemax

A young man explores his Polynesian heritage in *Behold Hawaii*, a spectacular adventure film that re-creates the islands' discovery. *Behold Hawaii* is shown daily at 10:30 and 11:30 a.m. and at 12:30, 1:30, 3:30, and 4:30 p.m.

Audiences go white-water rafting down the raging Colorado River and discover the wildlife of one of our country's natural wonders in *Grand Canyon: The Hidden Secrets*, which is shown daily at 2:30 p.m.

On Friday and Saturday nights *Behold Hawaii* is shown at 6:00 and 7:30 p.m. on a double-feature bill with *Dance of Life*, a film that portrays Indonesian life and culture from a Western perspective.

Members receive a 40 percent discount at all shows, including the double features. Naturemax's box office is located in the 77th Street lobby near the Great Canoe. For additional information, call (212) 769-5650 or stop by any information desk.

The Museum Is Open

Hours: Monday, Tuesday, Thursday, and Sunday from 10:00 a.m. to 5:45 p.m.; Wednesday, Friday, and Saturday from 10:00 a.m. to 9:00 p.m.

Parking. Our lot, operated on a first-come, first-served basis, is open from 9:30 a.m. until midnight every day of the week. Only 110 spaces are available. The entrance is on 81st Street between Central Park West and Columbus Avenue. Rates are \$8 for cars and \$9 for buses and commercial vehicles. Parking is free on Monday, Tuesday, Thursday, and Sunday after 6:00 p.m. A guard is not on duty

at all times. For a list of other parking lots in the area, please call the Membership Office at (212) 769-5606.

Coat Checking. From 10:00 a.m. to 5:30 p.m. on Monday, Tuesday, and Thursday; from 10:00 a.m. to 8:30 p.m. on Wednesday and Friday. Located on the second floor. \$.50 per item. On Saturday and Sunday, coat-checking facilities are available on the lower level near the subway entrance.

The Museum Shop. Daily, from 10:00 a.m. to 5:45 p.m. Till 7:45 p.m. on Wednesday.

The Junior Shop. Daily, from

10:00 a.m. to 4:45 p.m.

The Museum Library. Monday through Friday, 11:00 a.m. to 4:00 p.m., and till 7:30 p.m. on Wednesday. Saturday from 10:00 a.m. to 3:00 p.m.

The Food Express. Daily, from 11:00 a.m. to 4:45 p.m.

The American Museum Restaurant. Lunch from 11:30 a.m. to 3:30 p.m., Monday through Friday, dinner from 5:00 to 7:30 p.m., Wednesday, Friday, and Saturday; brunch from 11:00 a.m. to 4:00 p.m., Saturday and Sunday. Members receive a 10 percent discount. For reservations (212) 874-3436.

Happenings at the Hayden

Sky Shows

Gateway to Infinity takes audiences through time and space to the farthest reaches of the universe to explore star clusters, supernovas, and black holes. *Destination: Mars* profiles the red planet, from the myths and monsters of yesterday to the Martian colonies of tomorrow.

Sky Show times are Monday through Friday, 1:30 and 3:30 p.m.; Saturday at 11:00 a.m., 1:00, 2:00, 3:00, 4:00, and 5:00 p.m., and Sunday at 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Admission to the Sky Show for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for chil-

dren. For non-Member prices, please call (212) 769-5920.

The Secret of the Cardboard Rocket

The Secret of the Cardboard Rocket has been created especially for kids from 6 to 9. In this exciting program, two young children build a cardboard rocket in their backyard and blast off one night with a magical friend for a tour of the planets. *Cardboard Rocket* will be shown at noon on Saturday, March 11, and Saturday, April 8.

Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and

\$1.50 for children. For additional information, call (212) 769-5919.

Wonderful Sky

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and twinkling stars.

Shows are presented on selected Saturdays at 10:00 a.m. and noon. Please call (212) 769-5919 for available dates. Admission for Participating, Donor, and Contributing Members is \$2.75 for adults and \$1.50 for

children. Shows usually sell out two months in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and number as well as a first and second choice of showtimes, and include a self-addressed, stamped envelope.

Laser Shows

Laser visuals and rock music combine to create a dazzling experience of sight and sound in *Light Waves*.

This laser light show takes

place on Friday and Saturday at 7:00, 8:30, and 10:00 p.m. Admission for Participating, Donor, and Contributing Members is \$5 per show, and admission is \$6 per show for non-Members. Call (212) 769-5921 for further information.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Sun

Mon

Tue

Wed

Thu

Fri

Sat



It's dinosaurs galore this month and next: on March 10, 11, and 12, young Members will experience The Best of Dinosaurs; on April 4, they'll hear spellbinding tales of prehistoric life. See page 2 for details.

6

5 1:00 and 3:00 p.m. *Whales Alive.* Members' family program. Kaufmann Theater. \$4 for Members. \$6 for non-Members. Tickets required. Page 5. **SOLD OUT**
1:00 to 4:30 p.m. *Music of the Andean Highlands: Pre-Columbian Art and Architecture of the Andes: Mystery of the Nasca Lines.* South American Peoples Month at the Leonhardt People Center. Free. Page 9.

13

12 11:00 a.m., 1:00 and 3:00 p.m. *The Best of Dinosaurs.* Members' family program. Kaufmann Theater. \$6 for Members. \$8 for non-Members. Tickets required. Page 2
1:00 to 4:30 p.m. South American Peoples Month at the Leonhardt People Center. Free. Page 9.
2:00 p.m. New York Shell Club. Room 419. Free

20

19 1:00 to 4:30 p.m. South American Peoples Month at the Leonhardt People Center. Free. Page 9.
2:00 p.m. New York Turtle and Tortoise Society. Room 319. Free
2:00 p.m. New York Paleontological Society. Room 419. Free.
2:00 and 4:00 p.m. South American Highland Music. Kaufmann Theater. Free. Page 9.

Vernal equinox.

27

26 Easter. The Museum is open.

7 New moon

7

8 7:00 p.m. *Achuara Jivaro.* Kaufmann Theater. Page 9.
7:30 p.m. *Drunkards and Watercarriers.* Members' family program. Main Auditorium. \$10 for Members. \$12 for non-Members. Page 5.
7:45 p.m. *Amateur Astronomers Association.* "Perestroika in Space." Linder Theater.
7:30 p.m. New York Mineralogical Club. Leonhardt People Center.

16

15 7:00 p.m. *Religion and Change in the Andes.* Kaufmann Theater. Free. Page 9.
7:30 to 9:30 p.m. *The Underwater World.* Twenty-fourth annual symposium of the American Littoral Society. Main Auditorium. \$7 for Members, \$8 for non-Members. Page 5.

14 7:00 p.m. *Women in Society.* second in a four-part series. Kaufmann Theater. Free. Page 6.

First-quarter moon.

16

17 Saint Patrick's Day.

18 1:00 to 4:30 p.m. *Women of the Rain Forest.* Mountains, and Rivers: Metalwork in Peru: War Myths and Legends in Tapestries. South American Peoples Month at the Leonhardt People Center. Free. Page 9.

10 6:30 p.m. *The Best of Dinosaurs.* Members' family program. Kaufmann Theater. \$6 for Members. \$8 for non-Members. Tickets required. Page 2.

9 7:00 p.m. The New York Microscopical Society hosts a video-microscopy workshop. Speakers are Chuck McGum of Ikegami Electronics and Marty Eber of New York Scientific. Room 419. Free.

11 11:00 a.m., 1:00 and 3:00 p.m. *The Best of Dinosaurs.* Members' family program. Kaufmann Theater. \$6 for Members. \$8 for non-Members. Tickets required. Page 2.
1:00 to 4:30 p.m. *Thiago de Mello and His Brazilian Roots; Peoples of the Amazonian Rain Forest; Featherwork in the Amazon.* South American Peoples Month at the Leonhardt People Center. Free. Page 9

3

4 11:00 a.m. New York Map Society. Room 319. Free.
Prize Dance Films and Video. Dance film festival. Kaufmann and Linder Theaters. For information, call (212) 769-5305.
1:00 to 4:30 p.m. *Music of the Andean Highlands: Pre-Columbian Art and Architecture of the Andes; Mystery of the Nasca Lines.* South American Peoples Month at the Leonhardt People Center. Free. Page 9.

2

1 7:00 p.m. *Women in Society.* the first in a four-part series. Kaufmann Theater. Free. Page 6.

24

23 6:00 to 8:15 p.m. *Madagascar: Island of the Ancestors.* Members' preview. Gallery 3. Free, and open only to Participating, Donor, and Contributing Members. Tickets required. Page 8.

25 Madagascar: Island of the Ancestors opens in Gallery 3. Page 1.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 490,000 members, and numerous individual contributors

31

30 7:30 p.m. *In the Rain Forests of Peru.* Members' evening program. Main Auditorium. \$6 for Members, \$7 for non-Members. Tickets required. Page 4.

Last-quarter moon.

29 7:30 p.m. *Women in Society.* last in a four-part series. Main Auditorium. Free. Page 6.

28 6:00 and 7:30 p.m. *Gateway to Infinity and Destination: Mars.* Members' private viewing. Planetarium Sky Theater. \$2.75 for adults, \$1.50 for children. Tickets required. Page 6.

The American Museum Restaurant will be open prior to the Members' private viewing.
8:00 p.m. Linnaean Society. Kaufmann Theater. Free

March 1989

American Museum of Natural History





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