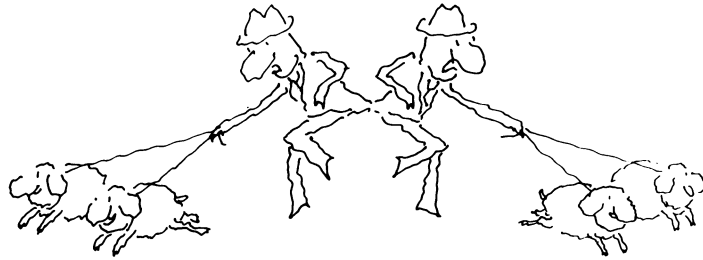


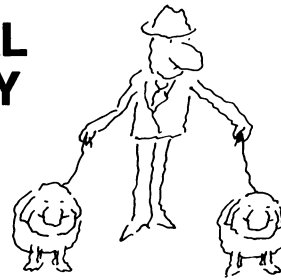
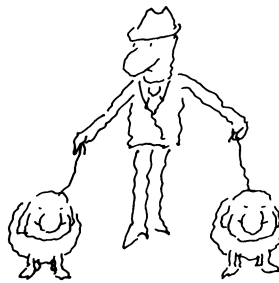
1974 / 1975

THE AMERICAN MUSEUM OF NATURAL HISTORY
106th ANNUAL REPORT

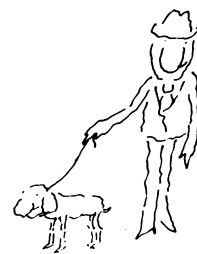
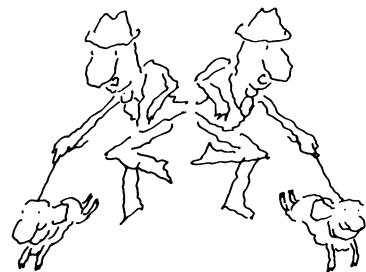
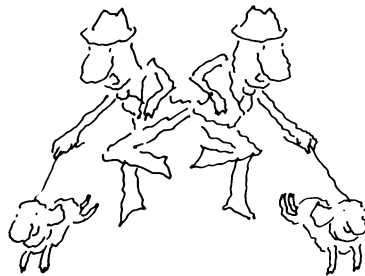




**THE
AMERICAN
MUSEUM
OF
NATURAL
HISTORY**



106TH ANNUAL REPORT / JULY 1974, THROUGH JUNE 1975



Cartoon drawings by Robert O. Blechman illustrate biological concepts in "Human Variety," the new section of the Hall of the Biology of Man. The drawings on the reverse page depict the last stages of the reproductive-cell process called meiosis, and can be seen in the "simple genetics" exhibit.

Report of the President	4
Report of the Director	6
Review of the Year 1974-1975	10
Science, Education and Exhibition	12
Department of Animal Behavior	13
Department of Anthropology	13
Department of Astronomy & The American Museum-Hayden Planetarium	14
Department of Entomology	15
Department of Fossil and Living Invertebrates	17
Department of Herpetology	17
Department of Ichthyology	18
Department of Mammalogy	18
Department of Mineralogy	20
Department of Ornithology	20
Department of Vertebrate Paleontology	20
Field Stations	
Archbold Biological Station	21
Great Gull Island	21
Kalbfleisch Field Research Station	21
Lerner Marine Laboratory	23
Southwestern Research Station	23
Department of Education	23
Department of Exhibition and Graphics	24
Library	24
Publications	25
Development and Communications	26
Administration	29
Attendance	31
Treasurer's Report	32
Financial Statements as of June 30, 1975 and 1974:	
The American Museum of Natural History	35
The American Museum of Natural History Planetarium Authority	41
Board of Trustees	45
Officers	45
Management Board	45
Standing Committees	46
Special Advisory Committees	46
The Staff	47
Members Elected by the Board of Trustees	52
Corresponding Members	52
Contributors	53

**ONE-HUNDRED-AND-SIXTH ANNUAL REPORT OF THE PRESIDENT
To the Trustees of The American Museum of Natural History
and to the Municipal Authorities of the City of New York.**

The chronology of progress at The American Museum of Natural History cannot be restricted to a specific time period such as a calendar year. New exhibitions and other innovations are the results of meticulous planning and careful work, much of which takes months or years. This has been a year of gratifying progress in both the intellectual and physical spheres of the Museum, a year in which projects that were started some time ago rapidly became tangible and visible. The Hall of the Peoples of Asia was completed structurally and is scheduled to open in 1978. The Harry F. Guggenheim Hall of Minerals and Gems, which will house the Morgan-Tiffany gem collection, the William Boyce Thompson collection of minerals and other unique specimens from the Museum collection will be opened to the public in May.

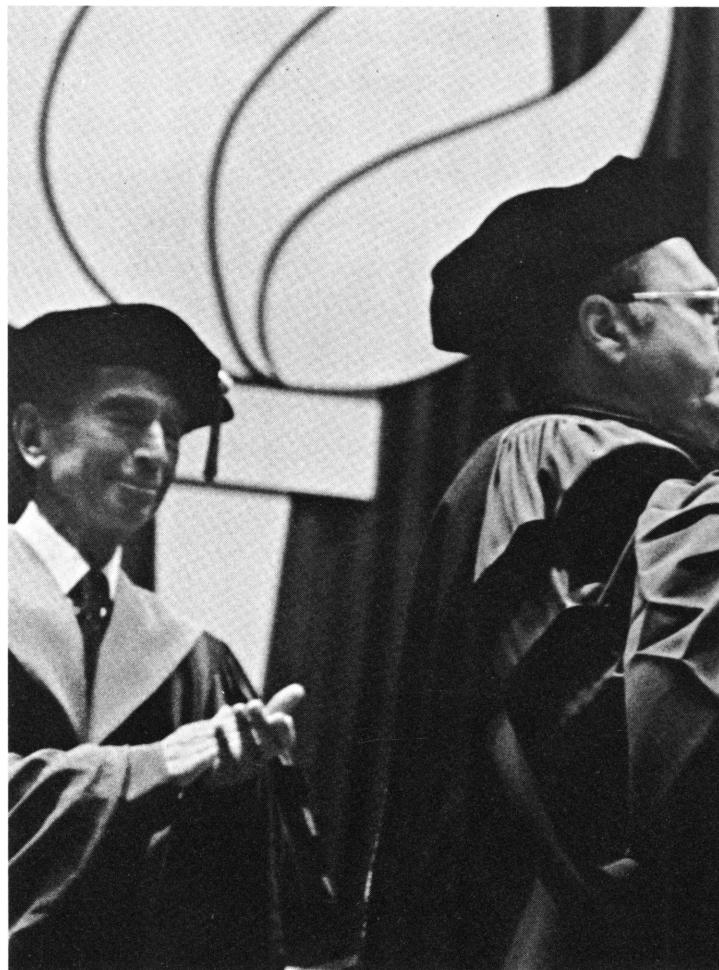
The beautiful Hall of Mollusks and Mankind will be opened in December. In it, the Museum will present a dynamic exposition of the profound role the "magical mollusk" has played in the cultural and economic history of human beings. (From early times in traditional cultures, people have used shellfish for food and the shells for utensils, musical instruments, money, weapons and personal adornment. As civilizations developed, shells have been utilized as cult and religious symbols, and as the subjects for art and mythology. Shells have inspired artists through the ages, reaching a zenith with the art treasures of the Renaissance.) The biological and technical aspects of malacology will also be presented, including the processes of shell growth and coloration which invoke our appreciation for the infinite variety of form and structure found in these lovely creatures.

During the year, there appeared in the Roosevelt Rotunda half a million army ants, flowing around and across a large sandy area, silently carrying out intricate maneuvers. Visitors watched, enthralled, trying to relate the continual drills of the ants to our rather disorganized lives. Later, out of our wonderful collections came a fascinating exhibition in Gallery 77 of colorful Chinese and Indian shadow puppets.

There were many other activities, especially those sponsored by the Department of Education, which demonstrated to our visitors their relation to the natural world and to all races and cultures.

Because we have always been aware of our neighbors and have wanted them to feel that our doors are open for their use, in 1970 we inaugurated a "block party" called West Side Day. This year saw the fifth anniversary of the event—a festival of friendship that attracted about 40,000 visitors. And, of course, there was the origami Christmas Tree, which in two short years has become a glittering tradition in New York. Skillful volunteers of all ages have contributed to its imaginative decoration.

Again this year, among our most financially productive volunteers were members of the Men's and Women's Committees. Chaired by Daniel Ward Seitz and



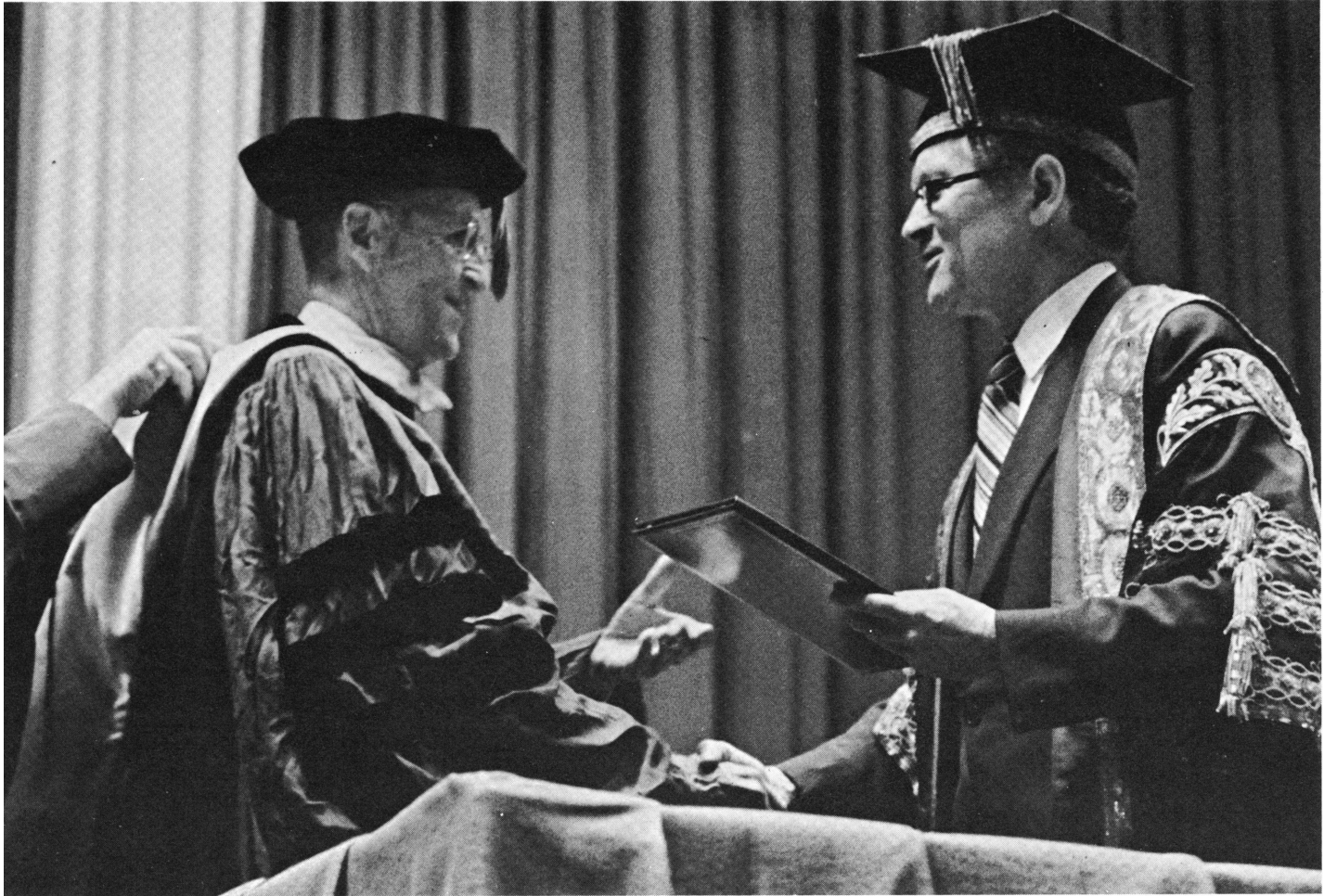
Mrs. John S. Hilson respectively, the two committees provided both exciting entertainment and a substantial profit at the March "Nautical Night of Spring." Mr. Seitz will head the Men's Committee again next year, while the Women's Committee will be chaired by Mrs. Carl C. Ulstrup, with the assistance of Co-chairwomen Mrs. John V. Lindsay and Mrs. Frederic G. Cammann.

Trustee Thomas J. Watson, Jr., successfully guided the Corporate Committee to another banner year: over \$272,000 was raised by this all-volunteer committee composed of leaders of the corporate community, representing a nine percent increase over last year's efforts. I would like to express our thanks to these three committees for their invaluable assistance.

The death, on May 2, of S. Sloan Colt left all of his Museum colleagues profoundly saddened and deprived. Sloan Colt's relationship with the Museum spanned 36 years, during which he served with distinction as a Trustee from 1939 to 1953 and thereafter as a unanimously-elected Honorary Trustee.

New York University conferred on President Gardner D. Stout an honorary Doctor of Science degree in June, citing his successful demonstration of "how a museum can not only reveal the past, but also open a window on the present and the future, and all the

time be a very lively place." Here, Sidney Borowitz, N.Y.U. Chancellor and Executive Vice-President, arranges the hood as President James M. Hester presents the degree to Mr. Stout. John M. Loeb, left, N.Y.U. Trustee, applauds the action.



Three new trustees were elected to the Board. They are Frank Y. Larkin, Thomas D. Barrow and Donal C. O'Brien, Jr.

Late in 1974, I reported to the Management Board my intention not to stand for reelection as President of the Museum at the expiration of my term in 1975. I appointed a four-member Search Committee, chaired by Rodney Cleveland Gott, to identify candidates to succeed me as President. After several months of intensive investigation, the Search Committee reported to the Nominating Committee its unanimous conclusion that Robert G. Goelet was the outstanding candidate for the position. The Nominating Committee unanimously endorsed this recommendation and announced at the Spring Meeting of the Trustees its nomination of Mr. Goelet to succeed me. I heartily endorse this nomination and expect that Mr. Goelet will be elected President by the Trustees at their Annual Meeting on November 24, 1975.

When I was elected President of the Museum seven

years ago, I was not unfamiliar with it because I had been a Trustee and a member of the Management Board for nine years before that. My years as President have been the most productive and rewarding time of my life. I've worked hard, and enjoyed the challenge. I would have worked eight days a week if I could.

Gardner D. Stout, *President*

At a January 23 ceremony held in Stuttgart, West Germany, Director Thomas D. Nicholson, left, awarded the Museum's Gold Medal for Distinguished Achievement in Science to Willi Hennig, an entomologist with the Staatliches Museum für Naturkunde and a Corresponding Member of The American Museum. Dr. Hennig is the originator of a new approach to systematics called cladistic analysis, which emphasizes the phylogenetic history of animals. According to this approach, apparently dissimilar animals such as crocodiles and birds are grouped together because they had a relatively recent common ancestor. In contrast, conventional classification groups crocodiles with lizards and snakes and places birds in a separate category. Many scientists at The American Museum are reclassifying animals according to Hennigian principles.



It is remarkable that a 106-year-old institution has seen its chief executive retire from office only six times. This is the case with the Presidency of The American Museum of Natural History. This year, we face the seventh retirement from that office, that of Gardner D. Stout. His successor, Robert G. Goelet, has been nominated and will be elected our eighth President in November, 1975.

To sum up in a few words what I sense to be the prevailing attitude in the Museum, among the staff and Trustees, toward the forthcoming change, those words are confidence and optimism. I think we owe such an outlook partly to Mr. Stout and what he has made of the Presidency, and partly to the Board's choice of his successor.

It may border on the obvious to say that I have known and worked very closely with Gardner Stout throughout his term as President. I became the Museum's Assistant Director shortly after his election and its Director a year later. But as obvious as it may seem, it does not necessarily follow (in the museum world, at least) that the President and operating personnel will work confidently and closely with one another. That it has happened here is no accident; it is by specific design on the part of our President.

Mr. Stout clearly established a few working principles to govern his relations with the Museum's personnel and Board. I do not know whether he ever consciously enunciated these to us, but they were very clear to me. First, he would be an active President, in residence much of the time, and his work at the Museum would be his principal activity. He made it clear that he wanted to know the Museum, what it was, what it stood for, its people, their strengths and weaknesses and its many audiences. He did this in several ways: by meeting with the staff periodically; by attending meetings of its committees; by touring the Museum regularly, both in public and non-public areas; by simply participating in everything he could. More formally, he met with me and my principal assistants on an unvarying weekly schedule.

Mr. Stout also made it clear that he wanted an active Board of Trustees. He did everything he could to encourage the Trustees to participate in Museum affairs. It was always clear, however, that their participation was as members of a Board, under its President's leadership, and that the liaison between Trustees and operating personnel would be through his office.

Mr. Stout saw very clearly the distinction in function between the Museum's President and its Director. The Director, he so often said, is the Museum's chief operating officer, whose job it is to run the Museum. The President is the chief executive, he would emphasize, and his principal responsibility is to see that the Director does his job effectively. Although he may not so often have expressed it, I know how strongly he also felt that, as President, he should provide the leadership and give direction to the Museum's fund-raising

efforts, and that he should stand firmly as the leader of its Board of Trustees.

In exercising our respective roles as executive officer and operating officer, Mr. Stout left no doubts as to his intent. As he put it, there were to be absolutely no surprises between us. What he meant by this was simple but important: he and I would always keep each other informed of our plans, our successes, our failures. With Mr. Stout, you always knew where he stood and where you stood: no equivocation, no verbosity.

I did not know Mr. Stout at all before I was invited, after fourteen years in the Department of Astronomy, to join the Administration in 1968. Although he had been a Trustee since 1960 and I had served as Curator and Chairman of a department since 1954, I had little opportunity to know or to work with Trustees. That was the way the Museum was then, and it was one of the things that Mr. Stout changed.

The accomplishments of the Museum during Mr. Stout's tenure have been enumerated in the pages of its Annual Reports. They include outstanding success in guiding policy and programs to better realization of their objectives, in fund-raising and in renovating and improving Museum facilities. Mr. Stout took office during the year of the Museum's Centennial, led us in a Centennial program that brought national recognition and then dedicated himself to raising the funds needed to do our work effectively. He met his goals through his own hard work and through the inspiring leadership he gave to others.

Mr. Stout guided us in a renaissance of our educational service to Museum visitors and to the community, one that resulted in new, more meaningful programs and in imaginative, innovative and functional educational facilities. He redirected the approach to management of endowment funds, sought for and realized more effective fiscal controls and reporting and led us to rethink and plan for major changes in the use of space and the maintenance of facilities. During his tenure, the Museum completed the Childs Frick Wing, its most significant addition since the 1930's, and the Perkin Wing, the only addition to the Planetarium since it was founded in 1935.

In exhibition, Mr. Stout has seen the Museum through the most ambitious period of construction, renovation and presentation in its history. The innovative and timely Centennial exhibition, "Can Man Survive?," helped the nation to make its choices on the quality of life we shall have in the future. The permanent exhibition halls—Man in Africa, Mexico and Central America, Ocean Life and the Biology of Fishes, Invertebrate Biology, Peoples of the Pacific and the Biology of Man—were completed during his Presidency; any one of them would stand as the magnum opus in another institution. The halls Mollusks and Mankind, Minerals and Gems, Peoples of Asia and Reptiles and Amphibians were begun and are now well under way. This all adds up to more than 110,000

square feet of exhibition space and approximately one-third of our permanent halls. In addition, there have been introduced the beautiful Gold of the Americas, Gallery 77 for changing exhibitions and a whole new emphasis on temporary, topical displays.

And so, Mr. Stout will leave the Presidency with Museum personnel confident in their work and optimistic for the future. His successor, Mr. Goelet, has already shown that there is every reason for confidence and optimism in his Presidency. In joining us as President, he is well-known to us and we are well-known to him; he has served as an active and interested Trustee since 1960. He has shown, during his years on the Board, a deep interest in current programs and future plans for this institution.

Curiously, though they are many years apart in age and different in personality, Robert Goelet and Gardner Stout share much in common that bears on their service as President. Enthusiastic New Yorkers, both are committed to this city and to the role that its cultural institutions must continue to play. Their mutual interest in the natural world has taken them to distant parts of the globe to enjoy and further their knowledge of the wildlife they love. But most importantly, they share an abiding commitment to the pursuit of knowledge in the natural sciences, as exemplified by this great institution.

Our pride in our past and confidence in our future have never been more evident than now, as we look back on the warmth and accomplishments of our retiring seventh President and forward to the opportunities that our eighth will bring.



Thomas D. Nicholson, *Director*

Seen here camping above the clouds in a jungle on the island of Sulawesi is Guy G. Musser, Archbold Associate Curator in the Department of Mammalogy. Dr. Musser has completed two years of a three-year collecting expedition to remote areas of Indonesia for his taxonomic, distributional and ecological studies. He endures primitive conditions in his quest for animals, especially rodents, that are rarely seen outside this region. Every few months Dr. Musser ships large crates of rodent skulls, skins and pickled or dried carcasses to the Museum, where several scientific assistants in Mammalogy and its Osteology Laboratory clean and match the disassembled parts before cataloging them. Many days of work on the part of skilled technicians are required for this initial processing. Upon his return, Dr. Musser will begin the lengthy task of identifying and classifying the prepared specimens. To assist the studies of his Museum colleagues, he is also collecting insects, fishes, reptiles and other mammals found in Indonesia; more than 3000 specimens have already been received.





REVIEW OF THE YEAR 1974-1975

During the year, the following distinctions and honors were given to members of the staff:

Administration: Director Emeritus James A. Oliver received an Honorary Doctor of Science degree from Southampton College of Long Island University.

Department of Animal Behavior: Ethel Tobach was elected to the Hunter College (University of the City of New York) Hall of Fame in recognition of her achievements as a distinguished alumna. She was also awarded an Honorary Doctor of Science degree from Southampton College of Long Island University. Helmut E. Adler was elected a Fellow of the New York Academy of Sciences. Howard R. Topoff was re-elected to a second term as Trustee of the New York Entomological Society.

Department of Anthropology: Junius B. Bird received the Gran Oficial del Orden "El Sol del Peru" and the Explorers Club Medal "for outstanding contributions to our knowledge of early man in the Americas." Margaret Mead was elected a member of the National Academy of Sciences. She received the 1975 "Woman of Conscience" Award from the National Council of Women of the United States, as well as the Teachers College (Columbia University) Medal for Distinguished Service.

Department of Entomology: Pedro Wygodzinsky was appointed an Honorary Member of the Chilean Entomology Society, and was elected a member of the New York Society of Tropical Medicine.

Department of Fossil and Living Invertebrates: Roger Lyman Batten was nominated a Fellow of the Geological Society of America. William K. Emerson's book, "Wonders of Barnacles," co-authored by Arnold Ross, was selected by the American Association of Science Teachers as an outstanding science book for children. Horace W. Stunkard was awarded a Rudolf Leuckart Medal by the Deutsche Gesellschaft für Parasitologie, and was elected an Honorary Member of the Third International Congress of Parasitology.

Department of Herpetology: Charles W. Myers was reappointed an Associate in the University Seminar on Population Biology at Columbia University.

Department of Ichthyology: Donn E. Rosen was elected a member of the Linnean Society of London. Gareth G. Nelson was elected to membership in the Société de Biogéographie, Paris.

Department of Mammalogy: Hobart M. Van Deusen became an Honorary Associate of the Queensland Museum (Australia) and the Western Australian Mu-

seum. He was also elected an Honorary Member of the Explorers Club.

Department of Mineralogy: Julius Weber was awarded an honorary Doctor of Science degree from Jersey City State College for his work in photo-micrography. D. Vincent Manson was elected a Fellow of the Rochester Academy of Science.

Department of Ornithology: Wesley E. Lanyon was elected Second Vice-President of the American Ornithologists' Union. Dean Amadon was elected an Honorary Member of the Buffalo Ornithological Society. François Vuilleumier was elected a member of the American Society of Naturalists. Ernst Mayr was awarded an Honorary Doctorate from the University of Paris. Walter J. Bock was elected a member of both the International Ornithological Committee and its Executive Committee; he was also elected a Foreign Member of the Deutsche Ornithologen Gesellschaft. Jean Delacour was appointed Director Emeritus of the Los Angeles County Museum. Jared M. Diamond received the Distinguished Achievement Award from the American Gastroenterological Association. Robert W. Dickerman was elected President of the Linnean Society of New York and a Scientific Fellow of the New York Zoological Society. Robert Cushman Murphy was honored posthumously by having his name placed on the World Wildlife Fund's 1974 International Conservation Roll of Honor.

Department of Vertebrate Paleontology: Malcolm C. McKenna was elected Vice-President of the Society of Vertebrate Paleontology. He was also elected Program Chairman of the Society of Systematic Zoology.

Archbold Biological Station: James N. Layne was appointed Chairman of the Technical Advisory Committee on Endangered Species of the Florida Game and Fresh Water Fish Commission.

Lerner Marine Laboratory: James C. Tyler was elected a Fellow of the American Institute of Fisheries Research Biologists.

Library: Nina J. Root was elected Vice-President of the New York Chapter of the Special Libraries Association, as well as Treasurer of that association's Science and Technology Group. She was also invited to serve on the Scientific Publications Committee of the New York Academy of Sciences.

Photography: Robin Lehman was awarded an "Oscar" by the Academy of Motion Picture Arts and Sciences for his short documentary film about the monarch butterfly entitled "Don't."

Staff changes are recorded below, including those effective July 1, 1975:

Department of Animal Behavior: Peter Moller was appointed Research Associate.

Department of Anthropology: E. Craig Morris was appointed Assistant Curator and Gordon F. Ekholm was appointed Curator Emeritus.

Department of Astronomy: Allan Seltzer was appointed Senior Lecturer and Thomas Lee Jones was appointed Public Affairs Coordinator.

Department of Entomology: William A. Shear was appointed Research Associate and James Reddell was appointed Field Associate.

Department of Fossil and Living Invertebrates: Ernst Kirsteuer was promoted to Curator. Stephen Jay Gould was appointed Research Associate, Julia Golden was appointed Curatorial Associate and Judith Booth was appointed Assistant Editor at Micropaleontology Press.

Department of Ichthyology: C. Lavett Smith was appointed Chairman and Curator.

Department of Vertebrate Paleontology: Eugene S. Gaffney was promoted to Associate Curator.

Department of Education: James R. Gross, Jr., was appointed Cultural Voucher Program Coordinator.

Department of Exhibition and Graphics: Ralph J. T. Bauer was appointed Manager of Exhibition.

Library: Miriam Tam was appointed Serials Librarian.

Personnel: Geraldine M. Smith was appointed Personnel Manager.

Photography: Robin Lehman was appointed Associate.

Purchasing: Glen E. Kulawas was appointed Purchasing Manager.

Museum staff and friends were deeply saddened by the deaths of two distinguished colleagues: Antoinette K. Gordon, who died March 24, and Charles Vaurie, who died May 13. Mrs. Gordon, an Associate in the Department of Anthropology, was a world authority on Tibetan religion and art. Appointed to the staff in 1936, her interest was the study and interpretation of Tibetan painted religious banners, of which the Museum has a large and important collection. Mrs. Gordon's fame as a Tibetan scholar and her advocacy of the Tibetan people and their highly-developed culture brought many Tibetan specialists to the Museum. Charles Vaurie, Curator Emeritus in the Department of Ornithology, classified and gave the geographic distribution of the birds of the temperate zones ranging from the British Isles through Europe to Eurasia and Japan. His specific contributions are discussed in the Department of Ornithology report.

Actress Alexis Smith admires the work of science-fiction artist Kelly Freas at a special preview in the Planetarium of an exhibition of his art. The January event was held in conjunction with the beginning of a four-week evening film course for adults, "Beyond Science Fiction." Additional science fiction film courses are planned for the future.



SCIENCE, EDUCATION AND EXHIBITION

We are justly proud of the outstanding events and famous names in the rich 106-year history of this Museum. Pride in the past, however, does not prevent us from believing that our greatest contributions to research, education and exhibition in the sciences should now be in the making. Happily, this year's accomplishments bear witness to the fact that the past excellence is continuing and expanding.

Research

Research excellence depends first and foremost on the quality of the curatorial staff. During the year we were fortunate to add to our staff two scientists of great promise: Randall T. Schuh, who comes to the Department of Entomology from two-and-one-half years of postdoctoral studies in South America with a Ph.D. from the University of Connecticut; and François Vuilleumier, a Harvard-educated Swiss ornithologist. Add these names to other young, energetic members of the scientific staff—anthropologists Schildkrout, Tattersall and Thomas, entomologist Platnick, paleontologists Eldredge and Gaffney—and it becomes apparent that this new generation might well equal the illustrious Simpsons, Meads and Mayrs.

The interactions between these young researchers and other distinguished staff produce dynamic synergism; together they introduce innovative techniques which require new types of tools and they generate novel concepts and methodologies. As evidence of this, the Museum recently installed a spectrophotometer interfaced with a digital computer in the Interdepartmental Laboratory, which already houses the scanning electron microscope, extensively used by a number of the staff. Further, electronic data processing methods and equipment are being used to facilitate the storage, retrieval and manipulation of different kinds of information pertaining to the fossil invertebrate collection. In field work on St. Catherine's Island, newly-developed micro-flotation techniques will enable David Hurst Thomas to recover fragile remains of carbonized botanical material generally overlooked in archeological excavations. The Tektite Habitat, a four room underwater laboratory, is permitting C. Lavett Smith and James C. Tyler first-hand observations of coral reef fishes for periods of days—something never before possible.

Undoubtedly the most stimulating new methodology now diffusing throughout our staff of systematists is cladistic analysis. Brought to the attention of the scientific community by the German entomologist, Willi Hennig, this method takes different rates of evolution into account by separating primitive and derived (or specialized) characteristics and relies solely on the latter as the basis for determining, with a new degree of accuracy, the phylogeny of species and then for classifying them. Because of the significance of this methodology, the Museum awarded its Gold Medal

for Distinguished Achievement in Science to Dr. Hennig in January.

Another reason for confidence in the present and optimism for the future is the continual improvement of our scientific collections. Acknowledgement of the value of the Museum's collections as national and international resources this year came in the form of increased financial support from the National Science Foundation. The Departments of Entomology, Herpetology and Fossil and Living Invertebrates were new recipients of core support grants; six departments now have such grants to facilitate access to and use of the collections. These grants will have the overall effect of making current curatorial work much more effective and making specimens and data more readily available to such fields as evolution, systematics, ecology, medicine and agriculture. Depending on the specific needs of the recipient departments, funds are being used to hire personnel to take care of accumulated curatorial backlog in the accession and preservation of specimens, to purchase specimen cases and associated storage facilities, and to prepare lists of type specimens, references and other documents that will provide information about our collections to the world-wide scientific community.

Exhibition

Talented professionals are found in all departments of the Museum. Our new Manager of Exhibition, Ralph J. T. Bauer, has a background in exhibition techniques acquired during twenty years of association with America's most respected industrial design consultants. Exhibition goals include the efficient utilization of space and the addition of visual impact for maximum involvement of the Museum visitor. To help realize these goals, Mr. Bauer has designed a flexible modular system for temporary exhibits which can incorporate audio-visual equipment and change traffic flow as required.

The yardstick of excellence for exhibitions measures quality, number and diversity. Each viewer must be the judge of their quality; the diversity is reflected in the report of the department. With regard to quantity, I am pleased to report that in the past year, 30 short-term exhibits were opened in the Museum and Planetarium, one section of a permanent hall was opened, seven halls were renovated and three major new halls are racing to completion.

Education

In response to the needs of the immediate community as well as to those of the general body of Museum-goers who visit us from all over the world, the Department of Education developed a variety of new programs in the past year. Most visible is the new Environmental Information Center which offers the

visitor exhibits and information on a number of ecological issues. Staffed by Talbert B. Spence, who has a background in environmental education administration, the Center has focused attention on world population and the food crisis, endangered animal species and solid waste management and recycling. Also noteworthy are the many programs in African-American and Caribbean studies, and the Museum Minority Training Program under which four persons are studying museology, museum administration and restoration of ethnological materials. The department's better-known programs continue to serve thousands of children and adults in structured courses, film programs, slide lectures and gallery talks.

The Museum's threefold functions—research, exhibition and education—are not distinct and separate. The learning that goes on in this institution is by no means confined to the Department of Education. Many of the scientific staff are engaged in the process of educating students in the natural sciences. The Department of Animal Behavior, for example, is extremely active in training students in behavioral theory and in the methodology and techniques of that discipline. This year the departmental staff supervised four post-doctoral fellows, 25 Ph.D. and M.A. candidates, undergraduates and even some high school students. The Department of Exhibition and Graphics is also involved in the educational process: a grant from the New York State Council on the Arts has permitted the inauguration of an apprenticeship program whereby several gifted individuals will learn exhibition techniques from the senior members of the department.

In keeping with the Museum's policy to rotate the chairmanships of the scientific departments every seven years, C. Lavett Smith, Curator in the Department of Ichthyology, was appointed that department's Chairman. Under the leadership of the former Chairman, Donn E. Rosen, the department made substantial contributions in the field and the scope of its scientific research was wide-ranging. Richard G. Zweifel, Chairman and Curator in the Department of Herpetology, was reappointed Chairman for a five-year term.

Jerome G. Rozen, Jr.,
Deputy Director for Research

DEPARTMENT OF ANIMAL BEHAVIOR

Scientific research can be divided into two categories: basic research, which is directed to understanding natural phenomena, and applied research, which attempts to modify these phenomena in ways that will benefit mankind. This department is committed to a program of basic research, but many of the findings made by the staff in their work are relevant to the urgent problems of the day.

Lester R. Aronson and Madeline L. Cooper are studying the neural basis of hypersexuality in cats, an investigation of major interest to clinicians dealing with the same phenomenon in human beings. In her study of desert rodents, Ethel Tobach has found that changes in the environment cause dramatic changes in social behavior. The finding has attracted the attention of scientists concerned with social problems and human environments. Carol Ann Simon, who is observing social behavior in iguanid lizards, is also demonstrating how environmental alterations affect territorial behavior and living space.

Howard R. Topoff is studying the development of the response of young (callow) harvester ants to the alarm pheromone released by disturbed adults. (Pheromones are chemicals given off by one individual that affect the behavior of other individuals.) Dr. Topoff has found that the callows must be in the colony nest for at least three days before they respond normally to the alarm pheromone. Since the biological control of insect pests is largely dependent on knowledge of the nature and functioning of pheromones, Dr. Topoff's discovery that these ants exhibit a differential response at different ages is an important one.

William N. Tavolga is examining the sensory mechanisms that marine catfish use to orient by emitting low-frequency sound pulses. Peter Moller and his associates are studying a method of orientation and communication in aquatic animals that involves the emission of weak electric discharges. Both investigations are pertinent to the general subject of underwater communication.

Much of the behavior in animals as well as in humans is cyclical, but relatively little is known about the physical factors that regulate such behavior. Rae Silver is investigating incubation in the Ring Dove and has found that both parents take turns sitting on the eggs by following a remarkably regular "schedule." When the laboratory lights are off from 8 p.m. to 6 a.m., the males incubate from 10 a.m. to 5 p.m. and the females from 5 p.m. to 10 a.m. When the lights are on continuously, males and females sit together on the nest during various parts of the cycle.

In addition to research, the department sponsored a training program for 51 students, including four postdoctoral fellows, 29 graduate students, thirteen undergraduate students and five high school students. Staff members of the department also worked on several temporary exhibitions, one of which featured live army ants from Panama.

Lester R. Aronson, *Chairman*

DEPARTMENT OF ANTHROPOLOGY

The department had a particularly successful year in terms of its exhibition activities. A major temporary

exhibition, "Puppets: Dance and Drama of the Orient," must be considered one of the finest to which this department has contributed in the past two decades. It was well-received by the public and praised by scholars. Bettie Erda planned and executed it.

A small temporary exhibition directed by Harry L. Shapiro, "In Search of Peking Man," was enormously popular. The combination of science and a cracking good mystery story also proved irresistible to the news media, which gave the exhibition excellent coverage.

Other exhibitions that opened during the year included "Contemporary African Arts," on loan from the Field Museum of Natural History in Chicago, and "Egyptian Tapestries from the Workshop of Ramses Wissa Wassef: An Experiment in Creativity," from the Smithsonian Institution Traveling Exhibition Service. These two temporary exhibitions were coordinated by Enid Schildkrout. Ian Tattersall supervised the completion of a third and final section of the Hall of the Biology of Man dealing with human variation.

Several full-scale, permanent exhibitions are in progress: the Hall of Mollusks and Mankind, the anthropological section of which is under the direction of Stanley A. Freed; the Hall of Peoples of Asia, under the direction of Walter A. Fairervis, Jr.; and the Hall of Peoples of South America, which is being supervised by Junius B. Bird and Robert L. Carneiro. Some minor revisions in the Hall of Man in Africa are under the supervision of Dr. Schildkrout.

The department also had an excellent year in research. Dr. Freed continued his study of the effects of urbanization on the life of a north Indian village and his comparative investigation of the careers of men and women as anthropologists. Gordon F. Ekholm continued his study of the lotus motif in India and Mesoamerica. Dr. Carneiro carried out field research among the Yanomamo and Kuikuru people in South America. Dr. Schildkrout continued her studies of ethnicity and migration in West Africa and began a study of the changing economic roles of West African children. Dr. Tattersall spent the year studying the behavior of lemurs in Madagascar and the Comoro Islands. David Hurst Thomas continued his archeological research at Indian sites in Nevada and St. Catherine's Island, Ga. Dr. Bird returned to Panama to search for Paleo-Indian sites.

Margaret Mead prepared for a return visit to the Manus tribe, Papua New Guinea, and continued her active participation in the Institute for Intercultural Studies, Inc. Dr. Shapiro worked on the Point Hope skeletal series as well as on a book about Polynesia. Dr. Fairervis continued his investigation of the Harappan civilization. Rhoda Metraux pursued her analysis of projective materials collected from the latmul people. Robin Hide, Ogden Mills Fellow, contributed to departmental research with his work on New Guinea materials.

Antoinette K. Gordon, a well-known scholar in the

field of Tibetan studies, died in March. She ably served the department for many years as an Associate in charge of the Tibetan collection.

Stanley A. Freed, *Chairman*

DEPARTMENT OF ASTRONOMY & THE AMERICAN MUSEUM- HAYDEN PLANETARIUM

In February the Planetarium greeted its 20 millionth visitor since opening in 1935. Total paid attendance was 462,000, about 4 percent higher than last year and representing the first increase in attendance in several years. Attendance at 38 regular courses for adults totaled 821. The Planetarium also offered several special courses and lectures for academic and private groups. Attendance by school groups increased seven percent over last year, and the Planetarium instituted a program of providing teachers with the choice of bringing their classes to performances of regular Sky Shows or to one of a half-dozen curriculum-oriented shows.

In October the Planetarium, in conjunction with Laser Images, Inc., began presenting evening Laserium programs, which consist of cosmic light displays accompanied by music. Attendance through June reached 167,000, and income from the special attraction has made a significant contribution to the finances of the Planetarium. The programs will be continued indefinitely.

The Perkin Wing was completed, and the Perkin Library and a new sales shop were opened on the first floor. The second floor houses temporary exhibits from IBM on "Women in Astronomy" and from NASA on the planet Mars; it will also house the major new exhibition, the Hall of the Sun, which will open in the fall of 1976. The Planetarium's permanent exhibition sponsored by IBM, "Astronomia," underwent redesign and enlargement and reopened in September.

The Planetarium Committee of the Board of Trustees was enlarged to include non-Trustee members with an interest in furthering Planetarium activities. A Planetarium Council was formed to work with the staff to advance educational, social and communications activities. A major task of the Council is hosting the "Stars of the Season" parties held at each change of season to raise money and generate publicity. The Council is also involved in planning the celebration of the 40th anniversary of the Planetarium, which occurs this coming fall.

Mark R. Chartrand, III, *Chairman*

DEPARTMENT OF ENTOMOLOGY

This was another year of important change. The National Science Foundation awarded the department a \$537,000 grant for the curation of the collections, the move into new collection-storage facilities got underway, and a new assistant curator was added to the staff.

While continuing his monograph on the rove beetle genus *Bledius*, Lee H. Herman, Jr., began a phylogenetic, distributional and revisionary analysis of the tribes that make up the 40,000 species of rove beetles (Staphylinidae).

Frederick H. Rindge completed a revisionary study of New World geometrid moths of the tribe Bistonini. He also continued revisionary studies of the subfamily Ennominae (Geometridae), working on the fauna of Baja California, Mexico and North America.

Jerome G. Rozen, Jr., has recently been working on the biology and immature stages of two of the three genera of the bee family Fideliidae. This year, on a trip to southern Africa, he studied the biology and larva of a representative of the third genus, *Parafidelia*. The extent of the similarities between this family and the leaf-cutter bee family Megachilidae suggests that they should possibly be combined.

Pedro Wygodzinsky continued his work on black flies, and together with a visiting scientist, Herman

Lent of the Instituto Oswaldo Cruz, Rio de Janeiro, began work on a synopsis of the reduviid subfamily Triatominae. These insects are the vectors of Chagas' disease, which infects an estimated three million people in Latin America; the research is supported by the Rockefeller Foundation.

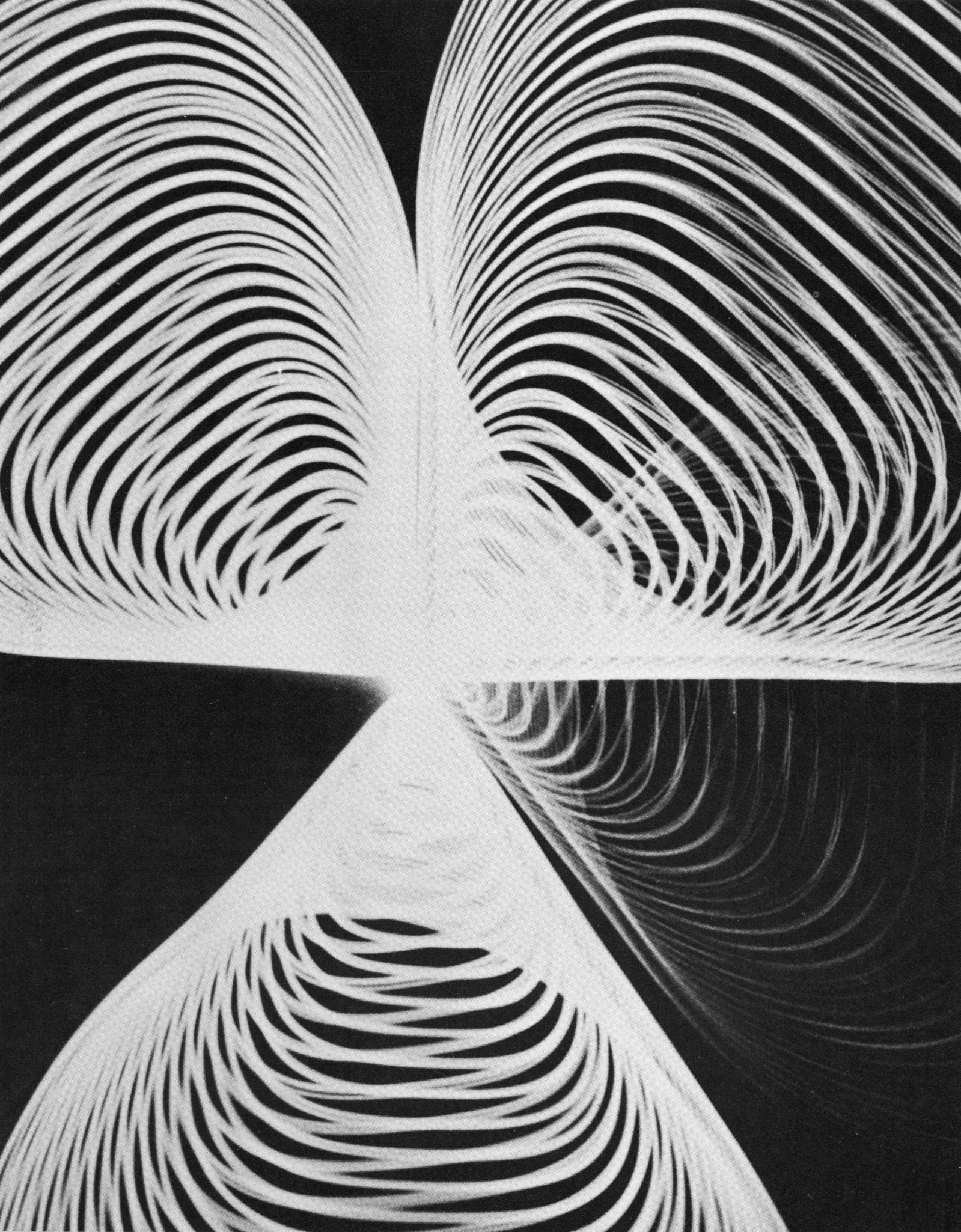
Norman I. Platnick attempted cladistic analyses of the spider genera *Trachelopachys* (South American) and *Callilepis* (Holarctic). In related research, he discovered that four spider genera found on three different continents and previously placed in two different subfamilies actually belong to only one genus, *Ellica*, of the subfamily Laroniinae. He and Willis J. Gertsch also revised *Cyclocosmia*, trapdoor spiders with hard abdominal discs. These serve as false bottoms to the spiders' burrows, thus providing protection against parasitic wasps.

Randall T. Schuh, appointed Assistant Curator to work with the collection of true bugs, is conducting systematic research on the plant bugs (Miridae). Using the scanning electron microscope, he has discovered that they have specialized hairs, known as trichobothria, on their legs. This is only the second time that such structures have ever been recorded on the legs of an insect.

Lee H. Herman, Jr., *Chairman*

Purple land crabs (Gecarcinus lateralis) in the earliest crab stages have recently been discovered well above the high-tide line on an ocean beach at Boca Raton, Fla. This is the first time that such young stages of this species have ever been located, now making them available for study along with the larger, more mature population. The Boca Raton beach is also the only area where these crabs have been found to be active during the day rather than at night. Scientists in the Department of Fossil and Living Invertebrates use this species of land crab for physiological studies.





A new art form, *Laserium*, debuted in New York City at The American Museum-Hayden Planetarium on October 4 and met with great success. *Laserium* uses a krypton laser that projects a powerful but harmless beam of light to create dazzling displays on the Planetarium's domed sky. The production is accompanied by classical and contemporary music. *Laserium* is credited with bringing a new audience of a quarter of a million people to the Planetarium.

17

DEPARTMENT OF FOSSIL AND LIVING INVERTEBRATES

Just a year has passed since two departments, Invertebrate Paleontology and Living Invertebrates, were joined to form the Department of Fossil and Living Invertebrates. This unusual merger of the two disciplines, traditionally kept separate, brings together collections of fossil and Recent animals that range from the protozoans, sponges and worms, to the mollusks, crustaceans and starfishes. In short, the new department is responsible for all invertebrate groups except the living insects and spiders and their closest relatives. The huge time span covered by the combined collections extends from the present back some 3.5 billion years to the pre-Cambrian Era.

The new department gathers into one administrative and functional unit a scientific staff which has a diversity of interests that matches the diversity of the collections. Their research ranges from the systematics and morphology of calmonioid trilobites (Niles Eldredge) to the regulation of salt and water balance in crabs (Linda Habas Mantel); from the systematics of fossil Permian scallops (Norman D. Newell) and the wall structure of scissurellid gastropod mollusk shells (Roger Lyman Batten) to the life cycles of parasitic worms (Horace W. Stunkard) and the factors controlling limb regeneration in crabs (Dorothy E. Bliss and Penny M. Hopkins); from the systematics and evolution of late Cenozoic marine molluscan faunas (William K. Emerson) to the systematics, anatomy and ecology of marine worms (Ernst Kirsteuer) and the systematics and distribution of terrestrial isopods (George A. Schultz).

During the year, resident department members published 22 scientific papers and served in professional positions at Columbia University and the City University of New York. They served on the boards and committees of eight scientific organizations and the editorial boards of seven scientific journals.

They were also active in the field. Dr. Newell led a second expedition to collect Permian fossils in southern Tunisia, Dr. Kirsteuer returned to Belize to complete an ecological study of nemertean worms, Drs. Bliss and Mantel initiated ecological studies of land crabs in Florida and Dr. Eldredge collected trilobites in New York State.

A major five-year program to improve the fossil collections began under the supervision of Dr. Eldredge. Supported by a grant from the National Science Foundation, the program entails extensive curating and cataloging of type and non-type specimens and makes use of a special computer system developed at the Smithsonian Institution.

Work on the Hall of Mollusks and Mankind, in which Drs. Emerson and Batten and other staff members are deeply involved, is now drawing to a close. The hall will open in December.

Micropaleontology Press, which is headed by Tsunemasa Saito and is under the aegis of this department, published more than 4200 pages of text and illustrations in *Micropaleontology*, the *Bibliography* and *Index of Micropaleontology* and supplements to the "Catalogue of Ostracoda" and the "Catalogue of Foraminifera."

Dorothy E. Bliss, *Chairwoman*

DEPARTMENT OF HERPETOLOGY

Work on the Hall of Reptiles and Amphibians was again the dominant activity of the department. Several complex displays on such subjects as reptilian anatomy, growth and sensory mechanisms were either completed or neared completion, and progress continued on numerous other exhibits.

Richard G. Zweifel spent the summer at the Southwestern Research Station continuing his experiments on the temperature tolerances of frog embryos. With Charles J. Cole, he initiated a study of the comparative ecology of two closely-related species of lizards living on St. Catherine's Island, Ga.

Dr. Cole also continued his study of morphologic and chromosomal variation in fence lizards and his examination with the scanning electron microscope of the surface structure of lizard scales in fossil and living species.

Working with Carol R. Townsend, he successfully raised three generations of Chihuahua whiptail lizards in isolation from males in the herpetology laboratory. The experiment proved what had long been suspected, that this is an all-female species. It also paved the way for future laboratory work with these parthenogenetic reptiles, which had proved difficult to raise with consistent reliability in an artificial environment. Dr. Cole also prepared a review of the evolution of all-female species of reptiles and presented it at a symposium in Germany on intersexuality in animals.

Charles W. Myers continued his collaborative studies with John W. Daly of the National Institutes of Health on the systematics of poison-dart frogs. In October and November the two collected numerous specimens in Ecuador and Peru for their studies of the chemical and pharmacological properties of the frogs' skin toxins. They also completed a manuscript evaluating the application of biochemical and acoustical data in taxonomic and evolutionary studies of these frogs.

In January and February, Dr. Myers participated in an expedition to Cerro Tacarcuna in a little-known mountainous area along the border between Panama and Colombia. The expedition produced important collections, including undescribed species of amphibians and reptiles, and constituted an important contribution to Dr. Myers's ongoing herpetofaunal

A historically important exhibition featuring fourteen original folio pages of Leonardo da Vinci's scientific drawings and notes was displayed in the Roosevelt Rotunda early this year. The late fifteenth-century manuscripts are part of the recently rediscovered Madrid Codex I and II, and were loaned to the Museum by the Spanish government. This device to compensate for tension changes in an unwinding clock spring is explained in Leonardo's curious "mirror" writing.

study of Panama and Colombia.

From the standpoint of curation, the most important event of the year was the award of a grant from the National Science Foundation. It provides funds for the salaries of two additional technical assistants and for storage equipment; it will continue for five years if funds remain available. The additional staff will enable the department to respond more rapidly and fully to the needs of scientists outside the Museum and to aid the process of curation within the Museum itself.

Richard G. Zweifel, *Chairman*

DEPARTMENT OF ICHTHYOLOGY

The work of C. Lavett Smith on marine fish community structure, a topic he first began investigating at the Lerner Marine Laboratory in 1964, continues to yield significant findings which also apply to other marine and non-marine communities. With James C. Tyler, Resident Director of the laboratory, Dr. Smith has recently studied the fishes of developing dome reefs. As the reefs mature, the kinds of fishes and their relative abundance change in a predictable way. The study has led them to conclude that habitat size is one of the most important factors determining faunal composition, and hence, community structure.

In addition, they have hypothesized that the hereditary adult size of a species is more important than other characteristics in determining its presence and abundance in a particular reef that has a given range of shelter opening sizes. The hypothesis accounts for the observation that when all of the fishes are removed from a reef, the species which repopulate it will be similar in size range, but not necessarily the same species.

Other department members are actively engaged in systematic and biogeographical studies of fishes that were collected in 1969 in Western Australia by Donn E. Rosen and Gareth J. Nelson. Dr. Rosen is studying the silversides, a group of small, fresh- and brackish-water fishes found not only in Australia but also in New Guinea and Sulawesi (Celebes); their nearest relatives are thought to be in Madagascar. Dr. Nelson and M. Norma Feinberg are examining a group of stinging catfishes, and Richard P. Vari, a graduate student at the City University of New York, is studying a family of perch-like fishes called grunners. Both groups have distributions occupying most of the Indo-Australian and Indian Ocean regions. Dr. Nelson and Mrs. Feinberg have also examined fossil catfish remains collected by Richard H. Tedford of the Department of Vertebrate Paleontology.

Drs. James W. Atz and Smith completed a study of a unique, hermaphroditic short-nosed sturgeon recently discovered in the Hudson River. Drs. Rosen and

Reeve M. Bailey and Lynne M. Hirsch continued their joint studies of Guatemalan fishes.

Donn E. Rosen, *Chairman*

DEPARTMENT OF MAMMALOGY

Field studies were an important activity of the staff this year. Guy G. Musser spent the entire period in Indonesia continuing his long-term research on native rodents. He is discovering new species and working out the details of distribution and ecology for previously-known species in the diverse fauna there. He plans to continue this work for a third year.

Richard G. Van Gelder and José L. P. Tello completed a study of the natural history and behavior of the nyala antelope in Mozambique. Dr. Van Gelder also led a Museum tour in the autumn to several wild-life areas of Africa.

Sydney Anderson continued his collaborative work on the role of raccoons in the ecology of St. Catherine's Island, Ga. More than 400 raccoons have now been marked and released for further study. Because they do not have opossums, skunks, foxes, bobcats, dogs and cats to compete with, they are more numerous on the island than on the mainland and their ecological interactions are different.

Karl F. Koopman published his major paper, "Bats of the Sudan," thus concluding an extensive study of the African bat fauna. He also continued his studies of the distribution and relationships of bats of other major zoogeographical areas in Australia and the American tropics.

Dr. Anderson has continued his theoretical studies on the evolution of faunas and on methods of classification. Using the computer which is now available at the Museum, he has developed a program to predict the probable number of branching points in an evolutionary tree. The computer is capable of running through a sequence of 25,000 evolutionary events and printing the results in a few minutes.

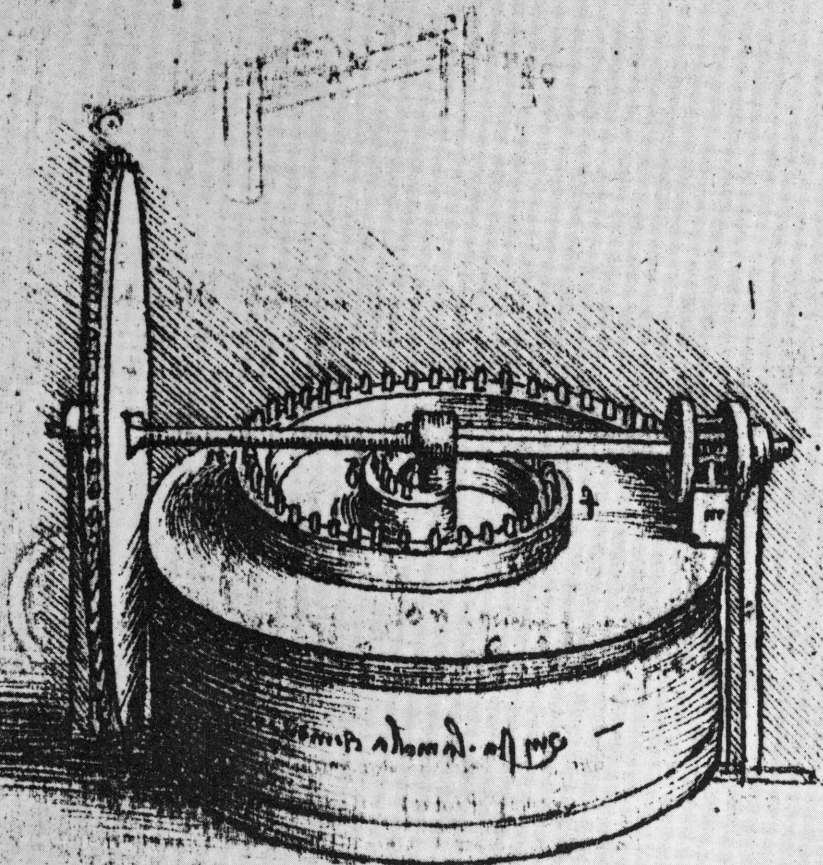
A major and largely unsung activity since 1965 has been the preparation of a quarterly list of the current literature in mammalogy. Marie A. Lawrence acted as Chairwoman of the Committee on Bibliography of the American Society of Mammalogists, and other members of the department also devoted time to reviewing the average 5000 articles and books published each year in the field.

Hobart M. Van Deusen, former Archbold Assistant Curator, officially retired in the spring, but will continue to do some research at the Museum.

Sydney Anderson, *Chairman*

+

Handwritten text in a cursive script, likely a signature or a list of names, written on a piece of paper that is part of a larger document. The text is written in a dark ink and is somewhat difficult to decipher due to the cursive style and the angle of the writing. It appears to be a list of names or a signature, possibly related to the historical figures mentioned in the text above.

[illegible]

DEPARTMENT OF MINERALOGY

During the year, the Administration devoted considerable time to implementing the reorganization of the department, which involves the hiring of two curators—a mineralogist and a meteoriticist—plus supporting staff. Candidates for mineralogist, who will also serve as chairman, were contacted and interviews were held in the fall. The Administration is now about to make a final selection.

The bulk of construction on the new Hall of Minerals and Gems, scheduled to open next spring, was completed in June. D. Vincent Manson, who is responsible for the scientific content, and Robert Middleton, a New York State Council on the Arts Intern in the Earth Sciences, devoted most of their time to work on the hall.

The third major activity concerning the department, the maintenance of its extensive and important collections in minerals and meteoritics, progressed with the able assistance of Mr. Middleton. Anna Sofianides, a part-time curatorial assistant, completed an inventory of all gem materials which has been incorporated into the unified mineral catalog. The collections grew substantially during the year through gifts, exchanges and purchases.

Jerome G. Rozen, Jr., *Acting Chairman*

DEPARTMENT OF ORNITHOLOGY

Colleagues and friends throughout the world were saddened by the death of Charles Vaurie, who began his association with the department in 1942 as a volunteer. He was appointed to the curatorial staff in 1956. His great interest and competence in geography and cartography undoubtedly influenced his selection of research projects, and it was in the meticulous documentation of avian distribution and geographical variation that he made his greatest contribution. Those works for which he will be best remembered are the monumental "Birds of the Palearctic Fauna" and "Tibet and Its Birds." Since his retirement in 1972, Dr. Vaurie had divided his time between the Paris Museum and this department, working on a revision of the large Neotropical family, Furnariidae.

François Vuilleumier was appointed Associate Curator on July 1. A native of Switzerland, Dr. Vuilleumier was educated at the University of Illinois and Harvard University and subsequently held a Chapman Fellowship in this department. He has taught at a number of universities, most recently at the University of Paris. His long-term research concerns the evolution and zoogeography of Old World birds, thus complementing the work of the rest of the staff on New World birds.

The department was well-represented at the sixteenth International Ornithological Congress in Australia in August. Drs. Vuilleumier, Walter J. Bock and

Lester L. Short remained in Australia for extensive field work on the unique avifauna of that continent. Dean Amadon studied birds of prey in Arizona and Florida and completed a checklist of the order Falconiformes. Wesley E. Lanyon made a field trip to Bolivia to gather additional specimens and sound recordings for his revision of the flycatcher genus *Myiarchus*, and Dr. Vuilleumier worked on his study of evolutionary phenomena among high Andean birds in Venezuela.

Projects made possible by a National Science Foundation grant continued to dominate curatorial activities for the third consecutive year. Of particular note was the publication of "Reference List of the Birds of the World," a one-volume registry of 9016 living species of birds. It was designed to satisfy a variety of departmental needs but is also expected to be useful to a broad spectrum of amateur and professional ornithologists.

A new diorama in the Chapman Memorial Hall of North American Birds depicting a section of the Florida Everglades and featuring two of the more unusual birds of the region, the Wood Stork and Limpkin, was completed.

Wesley E. Lanyon, *Chairman*

DEPARTMENT OF VERTEBRATE PALEONTOLOGY

The department's fossil mammal collection, the largest and most comprehensive in the world, continues to be transferred to and arranged in its new quarters in the Childs Frick Wing. While field documentation for the specimens is excellent, it will take many years to catalog the collection properly.

Malcolm C. McKenna has been studying the fossil mammals from the Paleocene and Eocene rocks of the western United States. His summer field program produced new specimens that will add substantially to our knowledge of mammalian diversification in the early Tertiary. They will also supply additional data for the new classification of the mammals that Dr. McKenna, Richard H. Tedford and Susan Koelle Bell have been working on for several years with colleagues in the Department of Mammalogy.

Dr. Tedford has been actively engaged in his study of middle Tertiary marsupials collected on expeditions to the interior of Australia during the past few years. He has also prepared the final draft of a joint paper on the biochronology of late Tertiary North American mammalian faunas.

Dr. Tedford and Beryl E. Taylor are continuing their collaborative research on the relationships of fossil and Recent dogs. Mr. Taylor has been adding to the history of the camels and other artiodactyls of North America.

Both Theodore Galusha and Morris M. Skinner have been investigating late Tertiary deposits in Nebraska. Mr. Galusha is completing a series of papers on these sediments in the western part of the state, and Mr. Skinner is reporting on those found in Sioux County. With F. Walker Johnson, a volunteer geologist, Mr. Skinner is completing field studies in the late Tertiary rocks of the Niobrara River Valley.

Eugene S. Gaffney is continuing his research on the phylogeny and classification of the turtles with detailed accounts of the skull anatomy of the known Jurassic turtles and studies on side-necked and sea turtles. He is also exploring the phylogenetic relationships of the major reptile groups.

As part of his continuing research on Triassic fishes, Bobb Schaeffer, with Marlyn Mangus, finished a paper on specimens collected some years ago in British Columbia. He is also redescribing several poorly-known Triassic fish taxa based on specimens found in Connecticut. He completed a long-term field project in the Jurassic of northeastern Wyoming, and is continuing a study of developmental patterns and their evolutionary significance in early vertebrates.

Bobb Schaeffer, *Chairman*

ARCHBOLD BIOLOGICAL STATION LAKE PLACID, FLORIDA

Staff members and their graduate students and assistants engaged in 29 research projects during the year. The emphasis continued to be on long-term studies of the ecological distribution, population biology and life histories of the station's vertebrate animals, thirteen of which are on the Florida list of rare and endangered species. Knowledge of their biology will aid in the formulation of sound management programs to insure the animals' preservation.

James N. Layne continued his work on the distribution and ecology of Florida mammals and his study of Audubon's Caracara. Austin L. Rand investigated nest-life strategies in passerine birds, and Glen E. Woolfenden continued his comprehensive study of the social organization, ecology and reproduction of the Florida Scrub Jay. Fred E. Lohrer obtained further data on the breeding biology of the Screech Owl and on the growth and development of other hole-nesting birds. Chester E. Winegarner continued his study of the ecology and behavior of the Great-crested Flycatcher. Five graduate students and one undergraduate student also participated in the station's research program.

Thirty-one visiting investigators and seven assistants, representing 23 institutions, conducted research on a wide range of subjects. James E. Carrel of the University of Missouri studied the effect of temperature on basal heart rates in spiders. Warren Abrahamson of Bucknell University investigated the reproduc-

tive adaptations of plants to various environmental factors. Marc Zeigler of the University of Wisconsin conducted thesis research on water relationships of the gopher tortoise. John Fitzpatrick of Princeton University studied dominance-subordinate relationships in Scrub Jays. W. A. Watts of Trinity College, Dublin, carried out a quantitative study of the vegetative composition of the southern Lake Wales Ridge area.

Richard Archbold, *Resident Director*

GREAT GULL ISLAND LONG ISLAND SOUND, NEW YORK

Between 1964 and 1974, the tern colony on the island grew from an estimated 5000 to 8000 birds. Much of the increase is the result of high productivity in the years 1969-71, and the terns hatched at that time are now being re-tagged as breeding adults. Overall, productivity for the past six years has been good despite the occurrence of thin-shelled eggs and abnormal young caused by pollutants in Long Island Sound.

Last fall, to limit vegetation that was encroaching on nesting sites and threatening the continued expansion of the colony, three sections of the island were cleared and flooded with sea water. This treatment succeeded in discouraging new vegetation and will be continued in the fall.

Student projects encompassed a variety of subjects. David Duffy, a senior at Harvard University, worked on seasonal variation in fishes eaten by Common and Roseate Terns. Thomas Van't Hof, a freshman at the University of Michigan, continued his study of incubation temperatures in Common and Roseate Terns. Helen Lapham, a graduate student at Cornell University, studied productivity in the Song Sparrow population.

Besides directing research and other activities on the island, Helen Hays gave several lectures to Audubon Society groups on Long Island and to schools in the New York City area. She also gave a seminar at Brookhaven National Laboratory on the work of Great Gull Island.

Helen Hays, *Chairwoman*

KALBFLEISCH FIELD RESEARCH STATION HUNTINGTON, LONG ISLAND, NEW YORK

The station was the setting this year for the first hand-rearing of Wood Thrushes from the egg stage that has ever occurred. Wesley E. Lanyon used a special technique for hand-rearing songbirds that was developed at the station and is known around the world. He has used the same technique to produce hybrid meadowlarks, his specialty. The rearing of the



The Childs Frick Wing, a ten-story building that houses the world's largest collection of fossil mammals, became fully operational this year. The courtyard structure also contains the laboratories and offices of the Department of Vertebrate Paleontology. Here Earl Manning, a scientific assistant, arranges fossil bison skulls from Alaska on shelves in a fifth-floor storage area. Construction of the new wing is part of a Museum plan to make its collections more readily available to scientists and students.

23

birds takes place in a sound-controlled environment that permits scientists to study how they learn their calls. In other work, Dr. Lanyon continued to analyze the succession of breeding bird populations in relation to plant succession in artificially-controlled areas.

Richard G. Zweifel continued his experimental work on frog embryos. He also pursued his long-term field studies on painted turtles, and garter and milk snakes. Some of the individuals first captured at the start of the project in 1963 are still yielding valuable data on the growth, movement and survival of these animals.

Edward Szalay, Resident Superintendent, provided valuable assistance to Drs. Lanyon and Zweifel by undertaking some of the tasks that were formerly done by students in the Undergraduate Research Participation Program. This is the second year that the station has been forced to function without undergraduate student assistance.

Two graduate students participating in the Evolutionary Biology Program, sponsored jointly with the City University of New York, continued their doctoral research at the station. Jacalyn Madden is completing her study of the southern flying squirrel and David Ewert is continuing his research on the variation and function of songs in the Rufous-sided Towhee.

Wesley E. Lanyon, *Resident Director*

LERNER MARINE LABORATORY BIMINI, BAHAMAS

With the private announcement in May, 1974, that the laboratory was to be closed in the near future, research activities by visiting investigators were brought to a rapid halt. The last non-staff investigator departed on August 30. The only staff investigator on hand since that date was C. Lavett Smith, who joined James C. Tyler to work on several long-term, joint studies of coral reef fish ecology and behavior. George Dale, a graduate student of Dr. Smith at the City University of New York, did research on the ecology and behavior of cardinal fishes during the summer. Other visitors to the laboratory included those who have expressed an interest in purchasing it.

Most of the full-time employees were laid off in September, leaving a skeletal caretaker staff, but the facilities of the laboratory remain in excellent repair. The Miami office of the laboratory is now open only three days a week.

Despite the fact that the laboratory itself is closed, the Lerner Fund for Marine Research will continue to be used for research in marine biology. A program will be developed and announced as soon as the property on Bimini is transferred to other ownership.

James C. Tyler, *Resident Director*

SOUTHWESTERN RESEARCH STATION PORTAL, ARIZONA

The number of visitors to the station remained practically the same as last year: 703, including 101 scientists and their assistants, as well as 282 students. They came from over 40 institutions and their research spanned a broad spectrum of topics.

Carol Ann Simon of the Museum, working with George Middendorf, a doctoral candidate at Hunter College, N.Y., continued a study of the territorial behavior of Yarrow's spiny lizards by examining its development in lizards from birth to three months of age.

Frederick W. Taylor of the University of Chicago compared foraging behavior in harvester and fire ants. Susan E. Riechert of the University of Tennessee compared the development and diversification of feeding behavior in two populations of funnel-web spiders. The two populations belong to the same species; one was examined at the station, the other at Carrizozo, N.M.

Hans C. Winkler, a Museum Chapman Fellow, examined the behavior, vocalization and ecology of the Arizona Woodpecker. Vincent D. Roth continued his studies of the North American Homalonychidae spiders, his revisionary work on the spider genus *Cesonia*, a cataloging of Nearctic spiders and an analysis of the insect and arachnid fauna of the intertidal zone in the Gulf of California.

A notable event was the initiation of a major two-year renovation project designed to upgrade the station's facilities. The collections were increased by the addition of 200 species of insects.

Vincent D. Roth, *Resident Director*

DEPARTMENT OF EDUCATION

A highlight this year was the opening of the Environmental Information Center. The Center answers visitor inquiries and stimulates development of environmental programs in schools by helping to train teachers. It complements programs of the Alexander M. White Natural Science Center, which completed its first full year of operation. These two facilities and the People Center will be joined next year with a fourth teaching area, a "Discovery Room" for children, to be located on the first floor. Through these facilities the department has been broadening the contact visitors have with staff. The Natural Science Center and People Center alone serve nearly a quarter-of-a-million visitors annually. The placement of part-time teaching assistants in several exhibition halls on school days, and an expanded volunteer program similarly serve to personalize the Museum experience for thousands more.

Working closely with the Anthropology Department,

Education organized several special programs which drew large audiences. These included Auditorium performances by a dance company from Bengal, Chinese opera and classical dance of India, Malaysian puppets, the Alvin Ailey Repertory Company, and a Romanian folk troupe. In addition, more than 14,000 persons attended Wednesday and Saturday afternoon film programs, while hundreds more came to regular slide lectures and gallery talks.

Many programs in African-American and Caribbean studies were offered, including bilingual science and history classes for students whose origins are mainly in Spanish- and French-speaking areas of the Caribbean. Courses for teachers were given on Puerto Rican history and culture, as well as evening lectures for adults on Africa. African art, language and dance classes for young people were held both in the Harlem community and at the Museum.

Two new programs were made possible by grants from governmental agencies. The Museum Minority Training Program trained four persons recruited nationally from small museums and cultural centers; the other enabled the department to hire a full-time designer to create new traveling exhibits for loan to schools and libraries.

The department continued to present exhibitions in its two galleries. "Children of Africa" and "Through the Camera Lens" were the two major efforts this year.

Central to the department's offerings are the continuing programs for New York City schools, which reached more than 26,000 youngsters in the World We Live In program and an additional 8000 in Exploring Man and Nature. The Evening School attracted more than 1700 adults. College-accredited courses for teachers drew to capacity. Weekend courses for youngsters, mini-courses for schools, field-study tours and ecology lectures to school assemblies were equally popular.

Malcolm Arth, *Chairman*

DEPARTMENT OF EXHIBITION AND GRAPHICS

The opening of the third section of the Hall of the Biology of Man, "Human Variety," completed this important teaching hall which opened to the public over ten years ago. Work on the Hall of Mollusks and Mankind, due to open in December, 1975, continues under the supervision of Henry Gardiner.

The construction phase of the new Hall of Minerals and Gems was completed; individual exhibits are now being installed. Work on the hall is being coordinated by Ralph J. T. Bauer, newly appointed Manager of Exhibition. The hall will open in May, 1976. The new Hall of the Sun in the Perkin Wing of the Planetarium, funded by the Billy Rose Foundation, is well into the

design and development stage; completion is scheduled for late 1976. The Hall of the Peoples of Asia, which will be the largest exhibition hall in the Museum when it opens, is also in the design stage; its opening is planned for 1978.

A major exhibition in Gallery 77 this year was "Puppets: Dance and Drama of the Orient," based on the Museum's superb collection of Asian shadow and rod puppets. It was designed by Joseph M. Sedacca and members of the Graphics Division. Later in the year, an exhibition on loan from the Field Museum of Natural History in Chicago, called "Contemporary African Arts," was mounted in Gallery 77. Akeley Gallery provided the setting for the exhibition, "Insects and Us," designed by Eugene B. Bergmann. It was followed by "Egyptian Tapestries from the Workshop of Ramses Wissa Wassef," on loan from the Smithsonian Institution Traveling Exhibition Service.

The Museum Showcase program featured many topical displays, including "In Search of Peking Man," "Cans from a Pressured City," "A Half Million Army Ants," the Leonardo da Vinci original manuscripts from the Madrid Codex and a giant free-form pterosaur suspended from the ceiling of the Roosevelt Rotunda. Corner Gallery multimedia presentations included the story of the seventeen-year cicada, "Patterns for Survival," and two shows produced entirely by Museum personnel: "Portraits of New Guinea Birds" and "Forests . . . Our Renewable Resource."

An apprenticeship program, funded by the New York State Council on the Arts, has been extremely successful. Under this program, talented young individuals have been recruited to learn exhibition techniques from senior members of the department.

The year also saw the introduction of a program to redesign the graphics for all directional and information signs in the Museum complex. The first phase of the program, now under way, involves the removal of many obsolete and confusing directional signs and the introduction of a unified, coordinated system to assist visitors in finding their way through the exhibitions with sureness and ease.

George S. Gardner, *Chairman*

LIBRARY

The Library completed a shelflist and inventory of its 17,000 serial titles, and its improved circulation procedures made new materials promptly available to the scientific staff. Reference and reading room areas were painted and brightened by new lighting and a new circulation desk was installed. The former rare book room was remodeled to house Museum memorabilia. Because of the increased cost of scientific books and serials, a stringent acquisition policy was instituted.

Review of the Library's collections continued, with 90 books transferred to the Rare Book Room and \$13,573 received from the sale of duplicates. The Clark Foundation granted additional funds for a second staff restorer and, with the help of two volunteers, 1513 books were restored. "The American Museum of Natural History: Catalog of the Special Film Collection" was printed, with copies priced at \$1.50.

Seven serial titles and 426 monographs were added to the collection. Several important gifts were received, among them: E. Schwechbert's "Salmon of the World," from the author; R. G. Wasson's "Maria Sabina and her Mazatec mushroom velada" from Gardner D. Stout; Morris's "Birds of prey of Australia" from H. Bradley Martin; from the Emperor of Japan, his "Some hydrozoans of the Bonin Islands," and William A. Mackay's photographs and notebook of the Roosevelt Rotunda murals from the Fort Lee Public Library.

The Library circulated 53,805 items; served 8387 readers; filled 3046 interlibrary loan requests; answered 5600 reference questions; copied 24,598 pages; cataloged 682 monographs; added 15,576 serial issues to the collection; recataloged 353 serial titles; prepared 16,966 serial shelflist worksheets; distributed 32,537 Museum scientific publications, and bound 1459 volumes. It continued to serve as a subject referral center for the New York State Interlibrary Loan network and had the highest fill-rate in the state: 89%.

"A Legacy of Lepidoptera" went on view in the Rare Book Room. In this exhibition, manuscripts and watercolor illustrations by Titian Ramsay Peale from his "Butterflies of North America" and "Lepidoptera Americana" (c. 1830-1870) were displayed with specimens from the Department of Entomology.

Nina J. Root, *Librarian*

PUBLICATIONS

Curator

Four issues of *Curator*, composing Volume 17 of this quarterly journal for museum professionals, were published during the year. An attractive new cover and logo were designed for the publication. The first subscription price increase since 1963 was instituted for Volume 18, and subscribers were offered a special price for several forthcoming issues. Subscription renewals remained high, and new subscriptions were substantial.

Thomas D. Nicholson, *Editor-in-Chief*

Scientific Publications

The office put through press a total of 52 papers written and illustrated by members of the scientific staff. Forty of these were printed in *American Museum Novitates*, nine in the *Bulletin of the American Museum* and three in *Anthropological Papers*.

Of the 52 new articles printed, the Department of Anthropology contributed 3, Entomology, 24; Fossil and Living Invertebrates, 5; Herpetology, 2; Ichthyology, 3; Mammalogy, 4; Ornithology, 5, and Vertebrate Paleontology, 6.

The three scientific serials added to the literature descriptions of four new families, one subfamily, nine genera, 115 new species and 12 subspecies.

Nine articles for *Novitates*, two for *American Museum Bulletin* and one for *Anthropological Papers* are in press.

Two papers for the James Arthur Lectures on the Evolution of the Human Brain entitled "Persistent Problems in the Physical Control of the Brain," by Elliot S. Valenstein and "The Role of Human Social Behavior in the Evolution of the Human Brain," by Ralph L. Holloway, were also published.

Florence Brauner, *Editor*

DEVELOPMENT AND COMMUNICATIONS

The American Museum is a complex organization which looks to many sources for support of its work in science, education and exhibition. Without funds generated from the private sector, this great institution would face severe curtailment of essential operations.

This year, notwithstanding the most unfavorable economic climate in recent times, individual and corporate supporters again demonstrated their concerned interest in the Museum with contributions which exceeded any previous year: \$750,000. Adding the contribution of the membership and associate membership programs, the grand total reached \$930,000.

Such a performance in such a year can only be attributed to the dedicated effort of many people working together: Trustees, Men's and Women's Committees, members, volunteers, scientists, educators, exhibition staff, development staff, public affairs staff and editorial-publishing team at *Natural History*.

The importance of innovation is illustrated by Development's corporate fund raising and scientific study tour programs. New concepts in product merchandising are being developed by *Natural History* for testing. A new project, tentatively titled "American Exploration," is proceeding under a development grant from the National Endowment for the Humanities. While it is much too early to predict the final acceptance of this major exhibition-film-publishing project, it holds interesting possibilities for the Museum in the future.

Natural History Magazine

Apart from its thriving success as a publication, *Natural History* is the core of the membership program, and is the direct link between the Museum and its national constituency of more than 350,000 members. This year marks the 75th anniversary of *Natural History* and has been a milestone year in many respects.

The largest group of readers are the Museum's Associate Members. In January the cost of Associate Membership was increased 25 percent to \$10, mainly to cover rising paper and postage costs. The increase was made reluctantly, because wide national circulation is an important part of the Museum's broad educational program. The circulation office conducted renewal and new membership drives which resulted in a circulation increase despite the price rise and a weak economy. The June-July issue had a circulation of some 355,000, a five percent increase over the previous year.

Along with most national magazines, *Natural History's* advertising pages fell off slightly. But an increase in advertising rates and a higher proportion of color advertisements led to a slight increase in revenue over last year. In June the Museum closed its internal advertising sales office and entered into an agreement with Harper-Atlantic Sales Company to

An impressionistic reconstruction of a 51-foot pterosaur, an extinct winged reptile, loomed overhead in the Roosevelt Rotunda for several weeks in the spring. The exhibit was mounted shortly after the fossil remains of a 60-million-year-old giant pterosaur were discovered in Big Bend National Park, Texas. An exhibit of the fossils of five smaller pterosaurs is in the Museum's Hall of Late Dinosaurs.

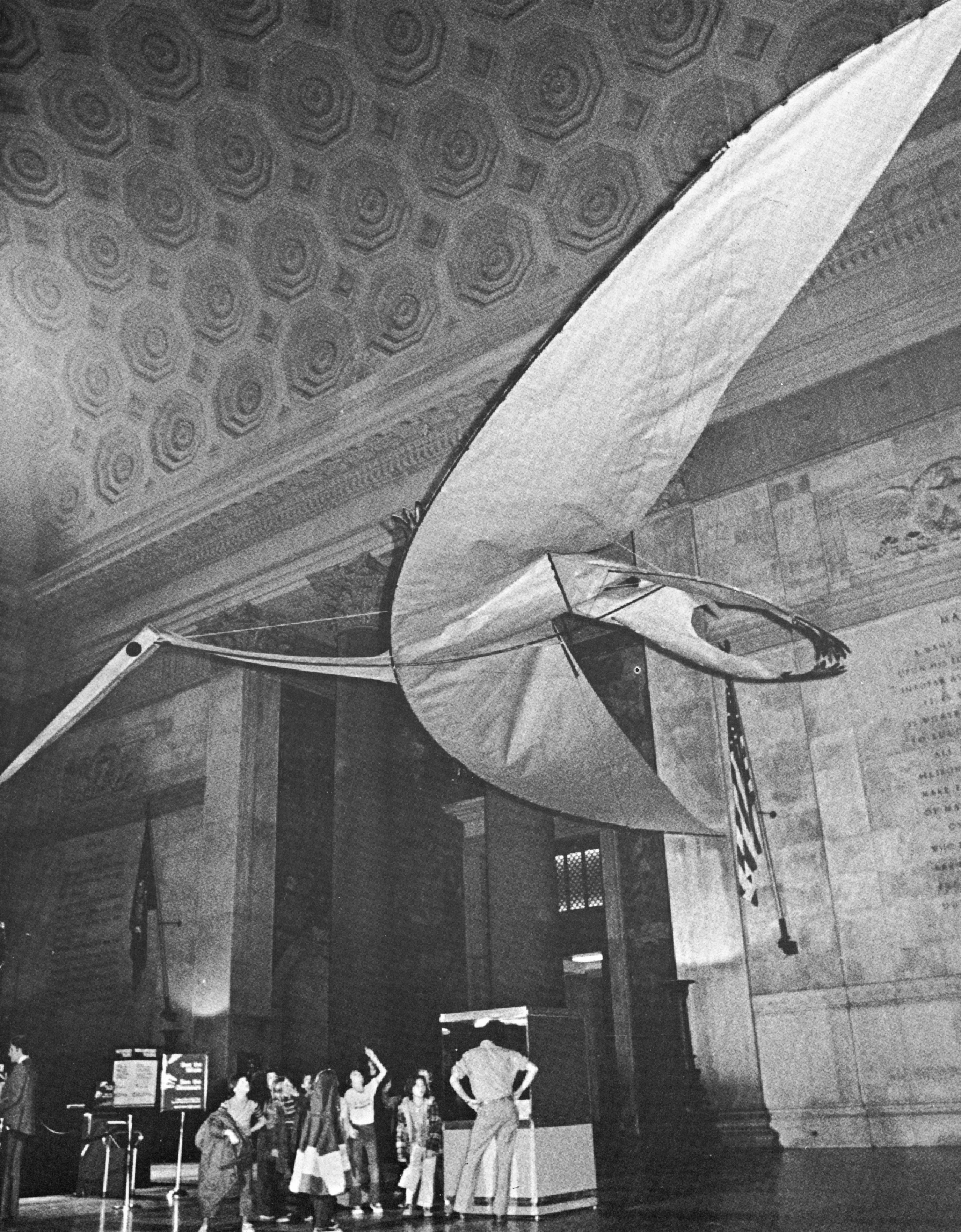
conduct a joint national advertising sales and promotion program. Plans to explore new revenue sources next year include the establishment of a classified

INSIDE NATURAL HISTORY MAGAZINE

Alan Ternes, Editor of *Natural History*, and his colleagues are often asked about the source of the more than 100 articles and other features that are published in the magazine every year. In fact, the routes to publication are quite varied. Some articles are written by Museum staff, such as Niles Eldredge's article on living fossils and Bettie Erda's recent piece on Asian shadow puppets. The editors attend scientific meetings and seminars to seek out ideas and potential authors; they also ask Museum scientists and former authors for promising sources. The magazine's editorial advisers, consisting of eight staff members and a Museum Trustee, often provide helpful information. As the magazine has grown in size and national prominence, the number of unsolicited manuscripts has greatly increased: they arrive by the thousands from Museum members, freelance writers, writers' agents and scholars around the world. (Very few unsolicited manuscripts, however, are published in *Natural History*.) The diversity of the avenues leading to publication helps maintain the magazine's variety and excitement.

In addition to helping to locate appropriate material, Museum staff also reviews most of the articles for content and accuracy. This scientific review distinguishes *Natural History* from most other popular magazines and greatly adds to its reputation among scientists. It also uses the services of the Library, the Photography Department and the Department of Exhibition and Graphics, especially for the production of charts, maps and other illustrations.

Natural History last year continued its editorial tradition of publishing interesting and often provocative articles, ranging in subject matter from archeology to zoology. Some of the interesting themes included urban ecology, food and resources and the weather. One of the most beautiful articles was a color essay on orchids; one of the most unusual contained the first color photographs of the sacred Moslem sites at Arafat, and one of the most moving was an illustrated 32-page supplement on the waning of the American West. Regular columnists such as Stephen Jay Gould and Raymond Sokolov assured the magazine of interesting short essays on its front and back pages.



advertising section and the testing of various merchandising concepts.

In recent years, the number of color pages for editorial and advertising has steadily increased. In the spring the Museum signed a contract with one of the finest printers in the country, Judd and Detweiler, Inc., of Washington, D.C. The press configurations, modern equipment and skilled personnel will allow for an increase in the quality and quantity of color pages.

Traditionally, the Museum gives the Associate Members two bonuses along with ten issues of *Natural History*. Last fall, the bonus was a calendar, "A Photographic Portfolio of Southwest Indians," created by the magazine. Because of favorable response, a 1976 calendar featuring the art of Northwest Coast Indians has been prepared; several of the pictures are of artifacts from the Museum's collections.

Natural History began publication in April, 1900. For the 75th anniversary, Alan Ternes edited a collection of articles for "Ants, Indians, and Little Dinosaurs," a book published by Charles Scribner's Sons, Inc. Paperback copies were sent to Associate Members as the spring bonus.

Development

In this, the third season of the corporate campaign, the business world has increased its annual support by nine percent, with a contribution of \$272,445. Under the leadership of Thomas J. Watson, Jr., a Trustee of the Museum and Chairman of the Executive Committee of IBM, 36 industry Vice-Chairmen and eight Steering Committee members gained contributions from 293 corporations and business leaders; 91 donors are new to the Museum.

In annual giving from individuals and private foundations, economic uncertainty has not caused the well-established Contributors' Program to falter: \$428,983 was contributed (as opposed to \$401,991 last year) through the generosity and efforts of the Trustees and the two large volunteer groups, the Men's and Women's Committees.

As a result of the energy and creativity of these committees, under the respective leadership of Daniel Ward Seitz and Mrs. John S. Hilson, the Museum netted an additional \$50,000 from its benefit party, "The Nautical Night of Spring."

Other special events included two scientific study tours, one last fall to three countries in southern Africa, and another in February which retraced the route of Darwin on The Beagle to the southeastern coast of South America. Participants are asked to make substantial contributions to the Museum in connection with these expeditions, which are an excellent means of raising money and telling potential contributors about the Museum's scientific work. An expanded program of four trips is planned for 1975-1976.

To keep contributors and potential contributors well-informed about the work of the Museum, Development designed and staged 25 invitational events.

Public Affairs

Public Affairs disseminated information on Museum activities to visitors and, through media, to the general public. The office produced an illustrated folder to supply information about the Museum and promote attendance. More than 160,000 folders were placed for distribution by hotels, conventions, airlines, city visitor information centers, libraries and auto clubs.

The office produced an experimental series of sixteen three-minute radio programs on natural history subjects. Dr. Nicholson, as host, interviewed Museum scientists in the taped programs, which were offered free to a select group of broadcasters. More than 270 radio stations in 46 states and two Canadian provinces ran the series, with favorable audience reaction.

All sectors of media carried Museum features: *Sports Illustrated* ran a full-length article on the Museum's curatorial and exhibition activities. The *New Yorker* profiled eleven staff scientists and their research in an article titled "The Hidden Museum." Press and broadcast coverage informed the public about several Museum attractions, including the exhibition of Eastern puppets, an assemblage of rare scientific drawings by Leonardo da Vinci, the army ant exhibition, the research on fossil mammals in the Childs Frick Wing and the impressionistic reconstruction of a giant pterosaur.

Guest Services coordinated and implemented arrangements for 649 special events including receptions, formal dinners, behind-the-scenes tours, fund-raising events, press previews and filming sessions, as well as for lectures and classes. General Museum information was transmitted to 112,248 potential visitors by means of recorded telephone announcements. The Calendar of Events was prepared and distributed to 113,750 members and visitors. More than 221,000 floor plans for guiding visitors around the Museum were made available at the information desks. The Cafeteria served 748,888 visitors and employees and approximately 253,000 children were served in the school lunchrooms.

The results of Development and Communications efforts are evident in rising income from the corporate campaign, the continuing growth of *Natural History*, new fund-raising programs and the steady rise in attendance at the Museum and Planetarium. However, uncertainties surrounding the Museum's public source of support mandate redoubled efforts to increase private-sector income. The achievement of the next year's goal of \$1,200,000 is critically dependent on sustained momentum and growth.

David D. Ryus, Vice-President

Building Services

This year saw the initiation of a formal training program for all Museum attendant-guards. The program began with eight one-hour sessions consisting of classroom lectures, slide presentations and practical demonstrations to supplement on-the-job training. The course covered the organization of the Museum and Building Services, and contents of the exhibition halls; personal conduct, courtesy, appearance and wearing of uniforms; patrolling, surveillance and communications; cleaning methods; handling of emergencies and the laws of arrest and use of force. The program was well-received and was later expanded to eleven sessions. Plans have been made to add more sessions in the fall.

Cameras and monitors were added to the Museum's closed-circuit T.V. surveillance system, which covers key sections of the Museum complex. Plans were approved and bids were received for the installation of Phase II of the fire detection and alarm system; construction will begin during the summer. When completed, the fire detection and alarm system will cover all areas of the Museum complex. A new schedule for cleaning non-public areas has resulted in more consistent service and improved standards of cleanliness throughout the Museum.

Office of the Controller

During fiscal 1974-1975, the office worked with independent consultants to develop an electronic management information system that will meet the reporting requirements of the Museum and those of government and private granting agencies. The results of this survey are currently being reviewed with the Administration, and it is anticipated that the system will be implemented during fiscal 1976-1977. This improvement in reporting will not only yield information on a more timely basis to the Museum and outside agencies, but will also help stabilize the operating costs of the General Accounting Department.

With the retirement of the Purchasing Agent during the year, the functions of that department have been assigned to this office. A new Purchasing Manager has been employed, and he and the Controller are reviewing the purchasing systems and procedures currently in operation and will make recommendations for changes to the Administration during 1975-1976.

General Services

The mail room handled more than 1,000,000 pieces of incoming mail and well over 1,500,000 pieces of outgoing mail; telephone operators handled more than 250,000 calls. The archives and central files continue to be transferred to microfilm.

General Services is also responsible for the processing of *Curator Magazine*, with responsibility for new subscriptions, renewals and quarterly mailings.

Museum Shops

In the first week of March the newly-constructed Museum Shop opened to the public. The selling area in the shop, which is located near the Seventy-seventh Street entrance, is more than twice as large as that of the former shop. That fact, coupled with entirely new furnishings, allows for dramatic display of a greater variety and quantity of merchandise. Attractive new offices are conveniently located on a mezzanine which was built above the selling area, taking advantage of the high ceilings. There is a new entrance to the shop from the Seventy-seventh Street Foyer, which makes it more visible and convenient to Museum visitors in that area. The Junior Shop in the Roosevelt Building basement, which had served as the main Museum Shop during the eight-month construction period, has also been refurbished and reopened to the public.

Personnel Department

Geraldine M. Smith became Manager, succeeding Joanne McGrath who resigned at the end of April. During the year the department continued to devote considerable effort to the improvement of the Museum's safety policies, procedures and practices.

Photography

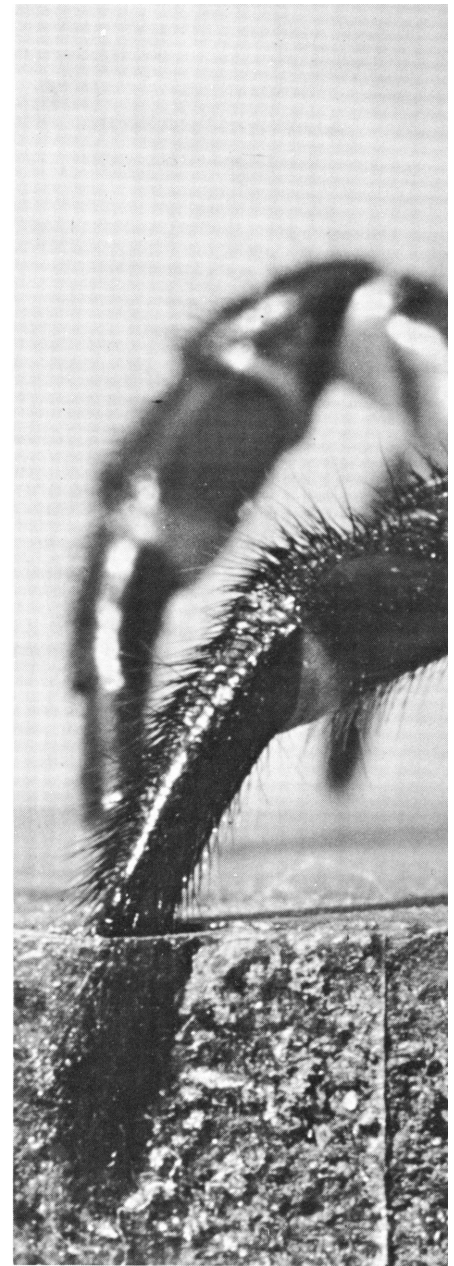
The department cooperated with the New York Zoological Society and the New York Botanical Garden in carrying out a project to replace these two institutions' glass negatives with negatives on safety film, using expertise gained from the recent conversion of its own black-and-white nitrate negatives. Both institutions were enthusiastic about the quality, quantity and low cost of these conversions. Funds for the project were provided by the New York State Council on the Arts.

During the year publishers of trade books, encyclopedias and other publications paid the Museum for the right to reproduce 1014 black-and-white prints and 154 color transparencies. The department also sold 15,500 color slides and 3145 black-and-white prints from its files to universities, high schools, elementary schools and individuals.

Plant Operations, Construction and Maintenance

The department is responsible for all construction and maintenance work performed by in-house craftsmen and for work performed by outside firms under

Willis J. Gertsch and Norman I. Platnick of the Department of Entomology recently collaborated on a classification study of the trapdoor spider genus Cyclocosmia. The abdomen of these spiders ends in a hard disc strengthened by radiating ribs; when the spider retreats head first to the bottom of its burrow, the disc fits tightly against the burrow walls and forms an impenetrable false bottom that protects the spider against predators and parasites. The American Museum has the largest collection of spiders in the world.

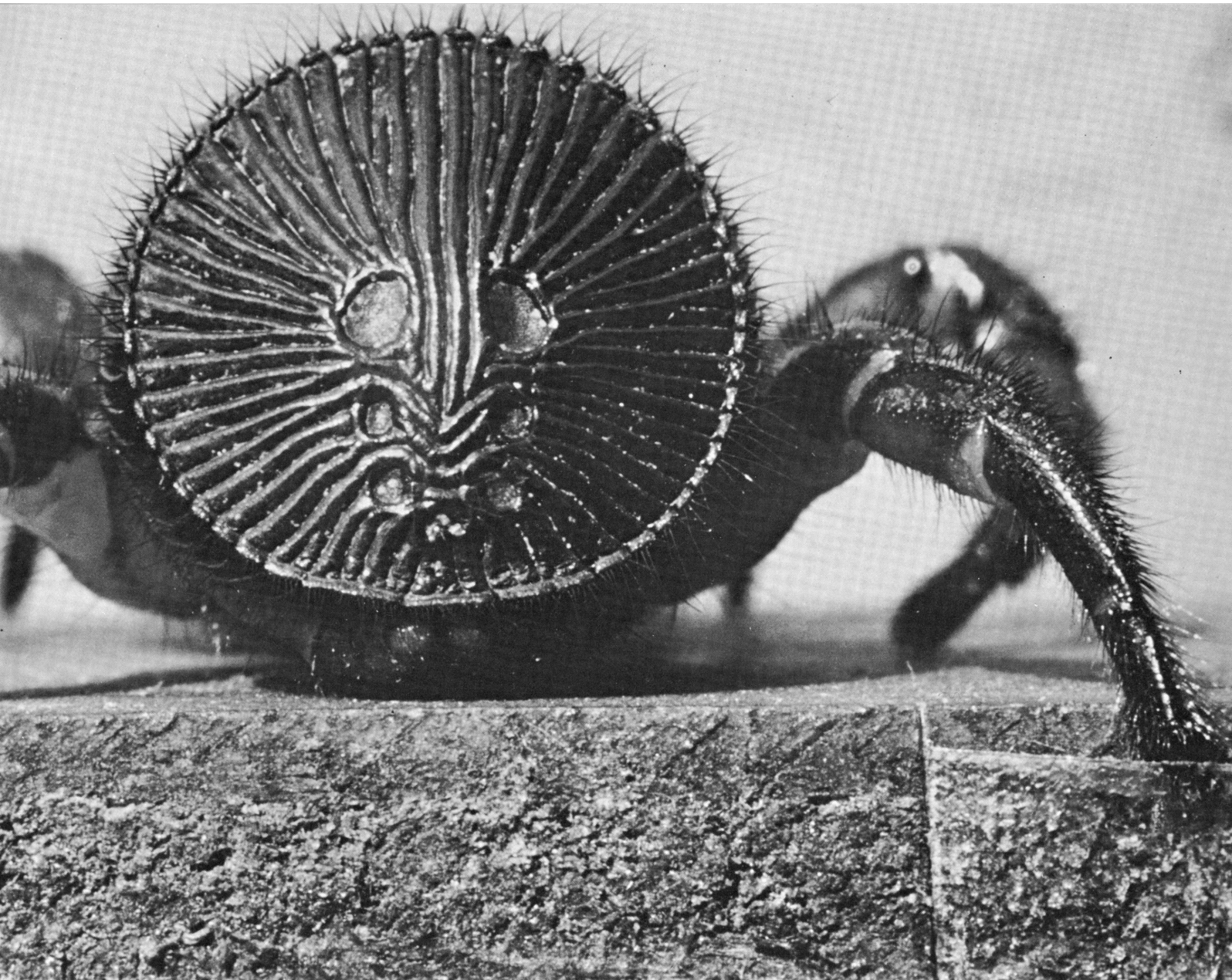


contract. It also represents the Museum's interests in work performed by outside firms under contract with the Parks, Recreation and Cultural Affairs Administration, through capital budget funds provided by the City of New York.

This was a particularly busy year because of the variety and magnitude of construction and maintenance projects. With funds provided under the City of New York's Capital Budget the construction phase of the new Hall of Minerals and Gems, including its air-conditioning system, was completed. Also under City funding, major progress was made on the construction phase of the Hall of the Peoples of Asia. City funds provided for the continuation of a program to upgrade the exterior of the Museum buildings, including replacement of storm water drains, pointing of masonry and replacement of copings, stone, roofing and flashing. Among the projects completed under contract by outside firms were the Perkin Memorial Wing of the Hayden Planetarium, the 200-ton air-conditioning unit for the Planetarium, newly-illuminated arches for large fish models and new lighting

for the blue whale in the Hall of Ocean Life, a structural mezzanine for double-deck storage of entomology collections in the former fifth-floor lecture room and an enlarged Museum Shop. Several major projects were completed by in-house craftsmen, including extensive renovation of offices and laboratories for the restructured Department of Fossil and Living Invertebrates, renovation of the Junior Museum Shop, paneling of the Warburg Hall (which greatly improved its appearance and reinforced the plasterboard walls which were constantly being damaged), installation of a new rear-projection audio-visual exhibit facility, construction of the Corner Gallery and installation of extensive lighting and electrical service improvements throughout the Museum. Security in the courtyard area was significantly improved by eliminating obsolete openings and installing steel frames and doors to replace old and deteriorating doors. This project was funded in part by the National Endowment for the Arts.

Substantial progress was made on two important surveys. The first was a study commissioned jointly



by the City and the Museum in which William Pedersen and Associates, the Museum's consulting architects, developed a master plan for the most efficient use of existing space and for the construction of additional buildings. These provide for needs projected in the next fifteen years for additional public exhibition space, collection storage areas, scientific offices and laboratories and service areas. It is expected that the master plan report will be received by the Administration in early fiscal year 1975-76.

The City of New York provided \$75,000 and the National Endowment for the Arts provided \$25,000 for the cost of surveying the Museum's requirements for heating, ventilating, air conditioning and fire barriers within the 21-building complex.

Projection

The department handled an increasing number of film shows, slide shows, Auditorium programs and special meetings requiring audio-visual equipment; it also maintained a large number of audio-visual ex-

hibits, both permanent and temporary. It developed a multi-screen slide presentation, "Patterns for Survival," for the new three-screen audio-visual Corner Gallery and collaborated with the Department of Ornithology to present "Birds of New Guinea" in the Gallery. It also assisted in the development of an audio-visual presentation for the exhibition, "Insects and Us," in the Akeley Gallery.

ATTENDANCE

During the year 1,808,554 persons visited the Museum and 655,202 (including 462,009 paid admissions) visited the Planetarium, making a total attendance of 2,463,756.

TREASURER'S REPORT

Presented on the following pages are the Financial Statements of The American Museum of Natural History showing its financial condition, results of operations and changes in fund balances. These statements were examined and reported on by Coopers & Lybrand, the Museum's independent auditors.

During 1974-1975, expenses were \$14,681,115 and revenue (from normal sources) was \$13,078,613. Expenses increased by \$1,297,071 (9.7 percent) from the prior year, while revenue remained virtually unchanged. The excess of expenses over revenue in Current Funds, representing the results of both General Fund and Special Funds operations, was \$1,602,502. This was reduced, however, by a support grant of \$800,000 made available from the New York State Council on the Arts to assist the Museum in meeting its operating costs. After applying the proceeds from this grant, the excess of expenses over revenue was reduced to \$802,502, as compared to \$320,416 in the prior year. These figures, for both fiscal years, are further affected by transfers between funds, authorized by the Board of Trustees, as shown in the Statements of Changes in Fund Balances on page 37. The deficit in the General Fund after transfers was \$207,537, as compared to \$174,754 in the previous fiscal year. This will be funded by a transfer from the Endowment Funds during 1975-1976. With respect to Special Funds, the excess of expenses over revenue

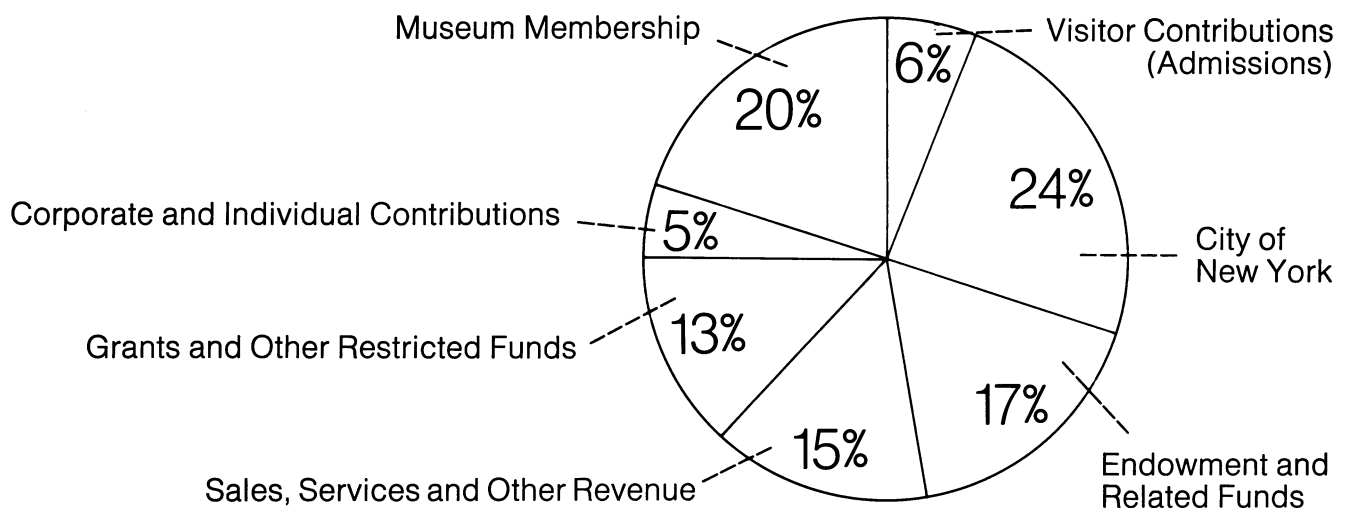
and the fund balance represent the results of activities that are funded, in some cases, by contributions and grants received in prior years, or that may continue to be funded in future years.

Investments are carried at cost in the Balance Sheets (page 35). A comparison of investments' costs and market values as at June 30, 1975 and 1974 is shown in the Notes to Financial Statements on page 38. As shown in these Notes, the market value of the Endowment Funds increased during the year by \$4,522,642 to \$47,414,215 at year-end.

The charts below summarize the various sources of revenue and the major allocations of expenditures as reported in the Statement of Revenue and Expenses in Current Funds. The revenue chart shows the percentage of total revenue that was realized from various sources, public and private. The chart of expenses shows that 67 percent of the Museum's current funds for 1974-1975 was spent in direct support of scientific research, education, exhibition and membership services. Much of the other costs shown were in necessary support for these services. It should again be noted that the deficit represented in these charts was reduced substantially by the aforementioned grant from the New York State Council on the Arts.

Strikingly evident in this year's fiscal operations were the effects of expense increases versus nearly

Total Revenue: \$13,078,613
(Year Ending June 30, 1975)



stable revenue. Cost increases, it should be noted, were held to budgetary limitations and largely reflect the continually inflating cost of operating the Museum. Major increases in costs, this year, occurred in two categories: *Natural History Magazine* and pension costs.

The increase in pension expenses resulted from negotiated improvements in the pension plan which increased past service costs and the improvements that have been made in anticipation of federally mandated changes in the pension plan. *Natural History Magazine* costs increased because of higher costs for paper, printing and mailing and additional funds committed to membership promotion to offset the effect of higher membership fees. It is anticipated that the latter will have a positive effect on membership revenue in future years.

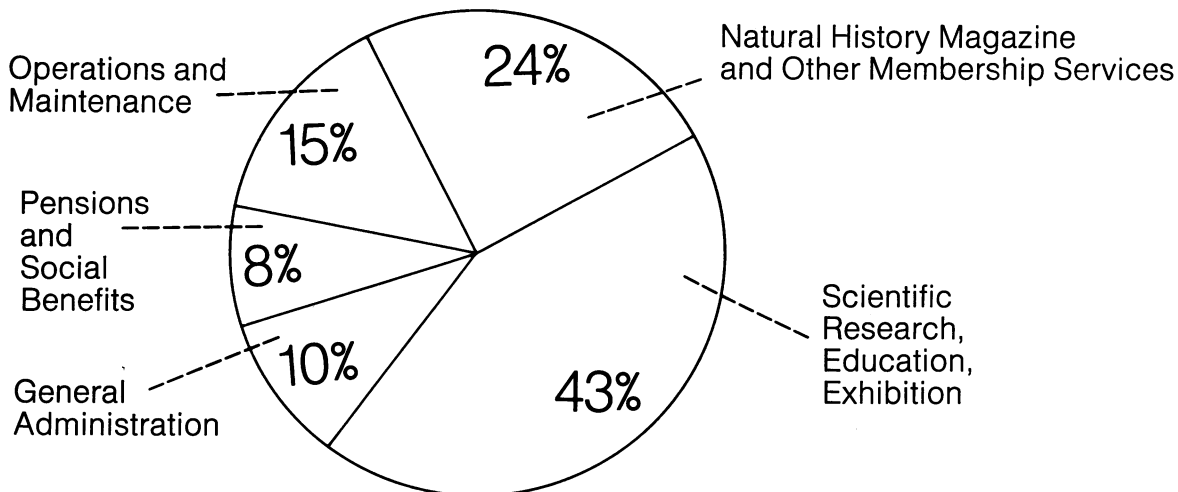
While total revenue from ordinary sources remained very nearly unchanged from year to year, the effect on our operations was mitigated somewhat by the substantial State grant awarded this year for basic support of our program. It is anticipated that a similar award will help meet our obligations next year, but there is no assurance that it will continue annually at the same level. It became clear toward the end of this year, in fact, that any such grant would most likely be in a reduced amount, reflecting increasing demands on this State source of support for cultural institutions.

It was also evident late in the year, based on public knowledge of New York City's financial difficulties, that the Museum might unfortunately be faced with some reduction in the amount appropriated from the City of New York, at least with respect to our budget requests from that source. Although the effect of these trends was not evident in this year's operations, to the extent possible the problems they may raise are being anticipated in the planning and budgeting for the coming year.

We can only hope that the cultural life of the City will justifiably find a high priority in what must, of necessity, be a budget that reflects the dire financial realities of our times. The Museum will continue to enhance its effort to develop new and ongoing sources of revenue as well as to stringently control expenses. Unhappily, these efforts of the private sector will not be able to offset cuts from the public sector, if they should occur. We hope they won't.

Frederick A. Klingenstein,
Treasurer

Total Expenses: \$14,681,115
(Year Ending June 30, 1975)



Operating Deficit:	\$1,602,502
Less Support Grant from New York State Council on the Arts:	800,000
Net Operating Deficit:	<u>\$ 802,502</u>

AUDITORS' REPORT

The Board of Trustees,
The American Museum of Natural History,
New York, N.Y.:

We have examined the balance sheet of THE AMERICAN MUSEUM OF NATURAL HISTORY as of June 30, 1975 and the related statements of revenue and expenses of current funds and changes in fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We previously examined and reported upon the financial statements for the year ended June 30, 1974.

In our opinion, the aforementioned financial statements present fairly the financial position of The American Museum of Natural History at June 30, 1975 and 1974 and the results of its operations for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Coopers & Lybrand

1251 Avenue of the Americas
New York, New York 10020
August 29, 1975

**THE AMERICAN MUSEUM OF NATURAL HISTORY
BALANCE SHEETS, JUNE 30, 1975 AND 1974**

The accompanying statement of significant accounting policies and notes are an integral part of these financial statements.

**STATEMENTS OF REVENUE AND EXPENSES OF CURRENT FUNDS
FOR THE YEARS ENDED JUNE 30, 1975 AND 1974**

	1975		1974
	General Fund	Special Funds	Total
Revenue:			
Appropriation from the City of New York	\$ 3,114,863		\$ 3,114,863
Gifts, bequests and grants	627,698	\$1,672,299	2,299,997
Interest and dividend income	1,821,937	459,965	2,281,902
Visitors' contributions		766,972	766,972
Museum membership	2,688,058		2,688,058
Other revenue	1,435,152	491,669	1,926,821
Total revenue	<u>9,687,708</u>	<u>3,390,905</u>	<u>13,078,613</u>
			\$ 13,063,628
Expenses:			
Educational activities	2,600,725		2,600,725
Exhibition halls and exhibits		1,045,919	1,045,919
Natural History Magazine	3,554,500		3,554,500
Other special purpose programs and projects		2,543,156	2,543,156
Administrative and general	1,249,451	244,332	1,493,783
Plant operating and maintenance	2,265,351		2,265,351
Pension and other social benefits (Note 5)	979,585	198,096	1,177,681
Total expenses	<u>10,649,612</u>	<u>4,031,503</u>	<u>14,681,115</u>
			13,384,044
Excess of expenses over revenue			
before support grant	(961,904)	(640,598)	(1,602,502)
Support grant (Note 6)	<u>800,000</u>		<u>800,000</u>
Excess of expenses over revenue	<u>(\$ 161,904)</u>	<u>(\$ 640,598)</u>	<u>(\$ 802,502)</u>
			(\$ 320,416)

The accompanying statement of significant accounting policies and notes are an integral part of these financial statements.

**STATEMENTS OF CHANGES IN FUND BALANCES
FOR THE YEARS ENDED JUNE 30, 1975 AND 1974**

	Current Funds				Endowment Funds		Pension and Frick Employees Retirement Funds	
	General Fund		Special Funds		Endowment Funds			
	1975	1974	1975	1974	1975	1974		
Balance (deficit), beginning of year	(\$174,754)	(\$234,918)	\$2,642,716	\$2,055,157	\$45,127,464	\$52,277,118	\$7,501,281	\$ 8,463,796
Additions:								
Gifts, bequests and grants								
Interest and dividend income								
Total additions					141,501	1,088,127		
Deductions:								
Net loss on sales of investments								
Excess of expenses over revenue, as annexed	161,904	122,087	640,598	198,329	1,824,111	7,228,038	956,244	493,942
Payments to pensioners and beneficiaries								
General administrative expenses					84,262	106,150	477,873	500,050
Past service contributions to CIRS (Note 5)							36,900	45,710
Total deductions	161,904	122,087	640,598	198,329	1,908,373	7,334,188	86,363	153,915
Transfers between funds:							1,557,380	1,193,617
Financing of:								
1974 and 1973 General Fund deficits	174,754	234,918			(174,754)	(234,918)		
Special Funds activities			390,318	656,804	(390,318)	(656,804)		(64,546)
Other	(45,633)	(52,667)	53,920	129,084	(8,287)	(11,871)		
Total transfers	129,121	182,251	444,238	785,888	(573,359)	(903,593)		(64,546)
Balance (deficit), end of year	(\$207,537)	(\$174,754)	\$2,446,356	\$2,642,716	\$42,787,233	\$45,127,464	\$6,224,560	\$7,501,281

The accompanying statement of significant accounting policies and notes are an integral part of these financial statements.

STATEMENT OF SIGNIFICANT ACCOUNTING POLICIES

The Museum maintains its accounts principally on the accrual basis, except that income from investments is generally recorded as received.

The land and buildings utilized by the Museum (most of which are owned by the City of New York), fixed assets (which are charged off at time of purchase), exhibits, collections and the Library are not reflected in the balance sheet.

To ensure observance of limitations and restrictions placed on the use of the resources available to the Museum, the accounts of the Museum are maintained in accordance with the principles of "fund accounting." This is the procedure by which resources for various purposes are classified for accounting and financial reporting purposes into funds that are in accordance with activities and objectives specified. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund group.

Within current funds, fund balances restricted by outside sources or by the Board of Trustees are so indicated (Special Funds) and are segregated from the General Fund. These

Special Funds may be utilized only in accordance with the purposes established for them as contrasted with the General Fund over which the Trustees retain full control to use in the general operation of the Museum.

Endowment Funds include (a) funds subject to restrictions established by the donor requiring that the principal be invested in perpetuity, and (b) funds established by donors or Trustees (funds functioning as endowments) where the principal may be expended with the approval of the donor or the Trustees.

Income derived from investments of Endowment Funds is distributed to the current funds on a unit basis which reflects the ratio of the related funds invested in the pooled portfolio at market value.

Investments are stated at cost or, if acquired by gift, at fair market value at date of acquisition.

Museum Shop inventory is stated at the lower of cost (first-in, first-out method) or market.

Membership income is recognized as income ratably over the membership term and a portion of that income is allocated to the *Natural History Magazine*.

The Museum accrues and funds annually the normal cost of the pension plan. The unfunded prior service cost, with interest, will be funded over 30 years.

NOTES TO FINANCIAL STATEMENTS

1. Cost and market quotations of investments at June 30 are as follows:

	1975		1974	
	Cost	Market	Cost	Market
Special Funds				
Endowment Funds	\$43,229,062	\$47,414,215	\$ 9,813	\$ 10,000
Pension and Frick Employees Retirement Funds	6,256,109	6,489,010	44,740,713	42,891,573
	<u>\$49,485,171</u>	<u>\$53,903,225</u>	<u>7,306,198</u>	<u>6,715,458</u>
			<u>\$52,056,724</u>	<u>\$49,617,031</u>
The Museum's investments consist of the following:				
Short-term obligations	\$ 3,448,016	\$ 3,448,016	\$ 8,114,999	\$ 8,112,248
Bonds	19,640,094	18,497,362	13,946,589	11,743,515
Preferred stocks	1,005,035	1,004,517	1,030,987	1,024,100
Common stocks	25,392,026	30,953,330	28,964,149	28,737,168
	<u>\$49,485,171</u>	<u>\$53,903,225</u>	<u>\$52,056,724</u>	<u>\$49,617,031</u>

2. The investment in bonds (\$570,000 principal amount) of The American Museum of Natural History Planetarium Authority is carried at cost. The financial statements of the Planetarium, which is operated under the supervision of the Museum, are annexed. Interest income of \$25,650 received from the Planetarium in the years ended June 30, 1975 and 1974 is included in other revenue of the General Fund.

3. The balances at June 30, 1975 and 1974 of Special Funds (funds which are received or appropriated for specific purposes) are net of overdrafts of certain of these funds of approximately \$260,000 and \$290,000, respectively. These overdrafts represent expenditures in anticipation of transfers from Endowment and/or General Funds, receipt of gifts and grants, or the sale of property and equipment utilized by the Special Fund.

4. Endowment Funds (including funds functioning as Endowment Funds) are summarized as follows:

	June 30	
	1975	1974
Endowment Funds, income available for:		
Restricted purposes		
Unrestricted purposes	\$21,062,361	\$21,819,078
Funds functioning as endowment,	8,007,046	8,322,180
principal and income available for:		
Restricted purposes	2,431,148	2,530,887
Unrestricted purposes	11,286,678	12,455,319
	<u>\$42,787,233</u>	<u>\$45,127,464</u>

5. The Pension Fund is composed of two board-designated funds, the "A" and "B" Funds, which, at June 30, 1975, had fund balances of approximately \$3,500,000 and \$2,300,000, respectively.

The "A" Fund has been designated by the Management Board of the Museum to fund the pension benefits of those employees who retired prior to June 30, 1971 or their beneficiaries. In connection with its pension obligation to these employees, the Museum has entered into a contract to purchase a group annuity contract. The anticipated cost of the annuity contract will exceed "A" Fund's assets; the deficiency will be funded by "B" Fund.

All current eligible employees of the Museum are members of the Cultural Institutions Retirement System's (CIRS) Pension Plan. The costs of the CIRS plan charged to the General Fund were \$631,000 (including normal service cost and amortization of unfunded prior service cost) in fiscal 1975, and \$301,000 of normal service cost in fiscal 1974. The increase in pension cost was attributed principally to certain major improvements in the plan's benefits. As a result of these changes, the unfunded prior service cost with CIRS increased from approximately \$1,200,000 at June 30, 1974 to \$4,275,000 at June 30, 1975. The assets of the "B" Fund are available to fund annual prior service contributions to the extent that income from the fund is less than 5% of the fund balance. The excess of unfunded prior service cost over "B" Fund assets is being amortized as a General Fund expense over twenty years.

The Museum has not yet determined the effect, if any, that the Employees Retirement Income Security Act of 1974 (Pension Reform Act) will have upon the cost of the plan.

6. In fiscal 1975 a grant of \$800,000 was received from the New York State Council on the Arts towards the support of the General Fund's operations.

7. Certain amounts in the fiscal 1974 financial statements have been reclassified to conform with the fiscal 1975 presentation.

AUDITORS' REPORT

The Members of The American Museum of
Natural History Planetarium Authority,
New York, N.Y.:

We have examined the balance sheet of THE
AMERICAN MUSEUM OF NATURAL HISTORY
PLANETARIUM AUTHORITY as of June 30, 1975 and
the related statements of income, expenses and deficit
and of changes in contributed capital and restricted
funds for the year then ended. Our examination
was made in accordance with generally accepted
auditing standards, and accordingly included such
tests of the accounting records and such other audit-
ing procedures as we considered necessary in the
circumstances. We previously examined and reported
upon the financial statements for the year ended
June 30, 1974.

In our opinion, the aforementioned financial state-
ments present fairly the financial position of The
American Museum of Natural History Planetarium
Authority at June 30, 1975 and 1974 and the results of
its operations for the years then ended, in conformity
with generally accepted accounting principles
applied on a consistent basis.

Coopers & Lybrand

1251 Avenue of the Americas
New York, New York
August 29, 1975

**THE AMERICAN MUSEUM OF NATURAL HISTORY
PLANETARIUM AUTHORITY
BALANCE SHEETS, JUNE 30, 1975 AND 1974**

ASSETS:		1975	1974	LIABILITIES:		1975	1974
Cash		\$ 6,825	\$ 80,735	Accounts payable		\$ 28,023	\$ 100,366
Accounts receivable, principally from The American Museum of Natural History		92,213	40,441	4½ % Refunding Serial Revenue bonds, past due (Note 2)		570,000	570,000
Inventory (publications and souvenirs)		24,381	25,688	Accrued interest, past due		315,450	315,450
		<u>123,419</u>	<u>146,864</u>			<u>913,473</u>	<u>985,816</u>
CONTRIBUTED CAPITAL, RESTRICTED FUNDS AND DEFICIT:							
Equipment, fixtures, etc.:				Contributed Capital:			
Zeiss planetarium instrument, at cost		221,928	221,928	Charles Hayden		156,869	156,869
Building improvements		109,800		Charles Hayden Foundation		429,455	429,455
		<u>331,728</u>	<u>221,928</u>	The Perkin Fund		<u>400,000</u>	<u>400,000</u>
Less, Allowance for depreciation		(66,560)	(52,715)			<u>986,324</u>	<u>986,324</u>
Furniture, fixtures and equipment		265,168	169,213	Restricted Funds:			
		<u>1</u>	<u>1</u>	Trust Agreement Fund		2,500	2,500
Buildings, at cost		265,169	169,214	Billy Rose Foundation Fund (Note 3)		82,076	
		<u>1,019,210</u>	<u>1,019,210</u>	Other (Notes 1 and 4)		94,440	7,195
		<u>\$1,407,798</u>	<u>\$1,335,288</u>	Deficit, as annexed		<u>(671,015)</u>	<u>(646,547)</u>
						<u>494,325</u>	<u>349,472</u>
						<u>\$1,407,798</u>	<u>\$1,335,288</u>

The accompanying statement of significant accounting policies and notes are an integral part of these financial statements.

**STATEMENTS OF INCOME, EXPENSES AND DEFICIT
FOR THE YEARS ENDED JUNE 30, 1975 AND 1974**

	1975	1974
Income:		
Admission fees, less allowances and commissions	\$472,459	\$442,225
Auxiliary activity, sales booth	92,212	91,013
Special lectures and courses	32,770	29,976
Other income and grants	16,914	82,726
Total income	<u>614,355</u>	<u>645,940</u>
Expenses:		
Preparation, presentation and promotional	269,824	256,435
Operation and maintenance	184,688	170,951
Auxiliary activity, sales booth	81,018	71,736
Special improvements		51,530
Administrative and general	32,422	32,107
Pension and other social benefits	66,376	48,990
Total expenses	<u>634,328</u>	<u>631,749</u>
Income (deficit) before interest and depreciation	(19,973)	14,191
Interest on past due 4½ % Refunding Serial Revenue bonds	(25,650)	(25,650)
Provision for depreciation (straight-line method)	(13,845)	(11,100)
Loss from operations before support grant	(59,468)	(22,559)
Support grant (Note 5)	35,000	
Net loss	<u>(24,468)</u>	<u>(22,559)</u>
Deficit, beginning of year	646,547	623,988
Deficit, end of year	<u>\$671,015</u>	<u>\$646,547</u>

The accompanying statement of significant accounting policies and notes are an integral part of these financial statements.

**STATEMENTS OF CHANGES IN CONTRIBUTED CAPITAL AND RESTRICTED FUNDS
FOR THE YEARS ENDED JUNE 30, 1975 AND 1974**

	Contributed Capital	Restricted Funds	
	The Perkin Fund	Billy Rose Foundation Fund (Note 3)	Other (Note 1)
Balance, June 30, 1973	\$300,000		\$ 30,313
Additions:			
Contributions	100,000		
Expenditures:			
Special purpose programs and projects			(23,118)
Balance, June 30, 1974	<u>400,000</u>		<u>7,195</u>
Additions:			
Contributions and grants		\$100,000	30,512
Proceeds from special presentations (Note 4)			172,672
Expenditures:			
Special purpose programs and projects		(17,924)	(30,668)
Special presentation expenses (Note 4)			(85,271)
Balance, June 30, 1975	<u>\$400,000</u>	<u>\$ 82,076</u>	<u>\$ 94,440</u>

The accompanying statement of significant accounting policies and
notes are an integral part of these financial statements.

STATEMENT OF SIGNIFICANT ACCOUNTING POLICIES

The Planetarium's corporate charter terminates when all its liabilities, including bonds, have been paid in full or otherwise discharged. At that time, its personal property passes to The American Museum of Natural History and real property to the City of New York to be maintained and operated in the same manner as other city property occupied by the Museum. The land utilized by the Planetarium was donated by the City of New York.

The policy of the Planetarium is to capitalize only major plant additions and replacements of equipment, machinery and other items and to depreciate such items over their useful lives. Fully depreciated assets are carried at nominal value. Because of the nature of the ownership of the property, provision for de-

preciation of the buildings is considered unnecessary.

Fund balances restricted by outside sources or by the Management Board are so indicated (Restricted Funds). These restricted funds may only be utilized in accordance with the purposes established by the source of such funds.

The Planetarium and its employees participate in the Cultural Institutions Retirement System's (CIRS) Pension Plan. It is the Planetarium's policy to fund pension expense accrued. Pension expense for fiscal 1975 and 1974 was \$31,722 and \$19,285, respectively.

Inventories are recorded at the lower of cost (first-in, first-out method) or market.

NOTES TO FINANCIAL STATEMENTS

1. In fiscal 1972, the Daniel and Florence Guggenheim Foundation contributed \$188,000 to establish and maintain a space theatre at the Planetarium to replace the Copernican Theatre. Through June 30, 1975, \$185,116 has been expended on this project. The Other Restricted Funds balance at June 30, 1973 and 1974 represents the Guggenheim Foundation fund balance.
2. The Planetarium Authority bonds were purchased by The American Museum of Natural History in 1948. The Charles Hayden Foundation contributed \$200,000 to the Museum toward the purchase of such bonds.
3. During fiscal 1976, the Planetarium will begin construction of the Hall of the Sun. The cost of this project is estimated to be \$400,000 and is being funded by contributions of \$400,000 from the Billy Rose Foundation of which \$100,000 was received in 1975.
4. The Management Board of the Planetarium has designated that the net income from special presentations be set aside in a board designated restricted fund to fund current and future improvements and renovations.
5. In fiscal 1975, a grant was received from the New York State Council on the Arts for the purpose of funding the operating deficit.

OFFICERS

PRESIDENT

Gardner D. Stout

VICE PRESIDENTS

William T. Golden

Mrs. Constantine Sidamon-Eristoff

David D. Ryus

TREASURER

Frederick A. Klingenstein

SECRETARY

L. F. Boker Doyle

MANAGEMENT BOARD

ELECTIVE

Robert R. Barker

Benjamin S. Clark

Sylvan C. Coleman

Henry Clay Frick, II

Elbridge T. Gerry

Rodney Cleveland Gott

Caryl P. Haskins

Mrs. Alfred Lee Loomis, Jr.

Mrs. Francis H. Low

Mrs. John Macomber

Fergus Reid, III

Alfred R. Stern

Oscar S. Straus, II

Carroll L. Wainwright, Jr.

EX OFFICIO

Gardner D. Stout

William T. Golden

Mrs. Constantine Sidamon-Eristoff

L. F. Boker Doyle

Frederick A. Klingenstein

Edwin L. Weisl, Jr., Administrator,
Parks, Recreation & Cultural
Affairs

Irving Anker, Chancellor,
Board of Education

NOMINATING COMMITTEE

Mrs. John Macomber,
Chairwoman

Rodney Cleveland Gott

Robert R. Barker

COUNSEL

Hawkins, Delafield & Wood

BOARD OF TRUSTEES

ELECTIVE

Class of 1975

Sylvan C. Coleman

L. F. Boker Doyle

Henry Clay Frick, II

William T. Golden

Caryl P. Haskins

Fergus Reid, III

Gardner D. Stout

Thomas J. Watson, Jr.

Class of 1976

Nicholas F. Brady

Howard L. Clark

Joseph F. Cullman, 3rd

Mrs. Hart Fessenden

Elbridge T. Gerry

David L. Luke, III

James S. Rockefeller

David A. Shepard

Class of 1977

Mrs. Alfred Lee Loomis, Jr.

Mrs. John Macomber

Gerard Piel

Jack Rudin

Alfred R. Stern

Oscar S. Straus, II

Alan V. Tishman

Henry G. Walter, Jr.

Class of 1978

Frank T. Cary

Benjamin S. Clark

Osborn Elliott

Rodney Cleveland Gott

Arthur Gray, Jr.

Frederick A. Klingenstein

Mrs. John V. Lindsay

Mrs. Constantine Sidamon-Eristoff

Class of 1979

Robert R. Barker

Thomas D. Barrow

Robert G. Goelet

Frank Y. Larkin

Mrs. Francis H. Low

Donal C. O'Brien, Jr.

Edwin Thorne

Carroll L. Wainwright, Jr.

EX OFFICIO

Jacob K. Javits, Senior

United States Senator from
New York State

Abraham D. Beame, Mayor of the
City of New York

Percy E. Sutton, President of
the Borough of Manhattan

Harrison J. Goldin, Comptroller
of the City of New York

Edwin L. Weisl, Jr.,

Administrator, Parks,
Recreation and Cultural Affairs
Irving Anker, Chancellor, Board
of Education, City of New York

HONORARY

Malcolm P. Aldrich

August Belmont

Robert E. Blum

W. Douglas Burden

S. Sloan Colt*

Mrs. Richard Derby

Cleveland E. Dodge

Fredrick M. Eaton

C. DeWolf Gibson

E. Roland Harriman

Michael Lerner

Luke B. Lockwood

John M. Olin

STANDING COMMITTEES* **1974-1975**

AUDITING COMMITTEE

Edwin Thorne, Chairman
James S. Rockefeller
David A. Shepard

BUDGET COMMITTEE

Mrs. Pauline G. Meisler,
Chairwoman
Frederick A. Klingenstein
David L. Luke, III
Thomas D. Nicholson
Fergus Reid, III
James S. Rockefeller

FINANCE COMMITTEE

Frederick A. Klingenstein,
Chairman
Robert R. Barker
Nicholas F. Brady
L. F. Boker Doyle
Elbridge T. Gerry
Mrs. Pauline G. Meisler, Secretary

PENSION BOARD— FINANCE COMMITTEE

L. F. Boker Doyle, Chairman
Robert R. Barker
Nicholas F. Brady
Elbridge T. Gerry
Frederick A. Klingenstein
Mrs. Pauline G. Meisler
Charles A. Weaver, Jr.

SPECIAL ADVISORY COMMITTEES* **1974-1975**

ANNUAL CORPORATE DRIVE COMMITTEE

Thomas J. Watson, Jr., Chairman
Osborn Elliott
David D. Ryus

FRANK M. CHAPMAN MEMORIAL COMMITTEE

Wesley E. Lanyon, Chairman
Dean Amadon
A. H. Brush
James C. Greenway, Jr.
Thomas D. Nicholson
Lester L. Short
Richard G. Zweifel

EDUCATION COMMITTEE

Mrs. Hart Fessenden, Chairwoman
Malcolm Arth
James W. Atz
Mrs. William Chappell
Frank Y. Larkin
Mrs. John V. Lindsay
Mrs. Alfred Lee Loomis, Jr.
Thomas D. Nicholson
Mrs. Constantine Sidamon-
Eristoff
Oscar S. Straus, II
Carroll L. Wainwright, Jr.

COMMITTEE ON EXHIBITS

Mrs. Constantine Sidamon-
Eristoff, Chairwoman
Malcolm Arth
Stanley A. Freed
George S. Gardner
Walter F. Koenig
Thomas D. Nicholson
William F. Pederson
Gerard Piel
Jerome G. Rozen, Jr.
Alfred R. Stern
Henry G. Walter, Jr.
Mrs. Halsted Wheeler

HONORS AND AWARDS COMMITTEE

Mrs. Francis H. Low, Chairwoman
Norman D. Newell
Jerome G. Rozen, Jr.
David D. Ryus
Charles A. Weaver, Jr.
Pedro W. Wygodzinsky

HOUSEKEEPING COMMITTEE

David L. Luke, III, Chairman
William T. Golden
Rodney Cleveland Gott
Jack Rudin
David A. Shepard

LERNER MARINE LABORATORY EXECUTIVE COMMITTEE

Arthur Gray, Chairman
Daniel H. Braman, Jr.
C. DeWolf Gibson
Arthur Gray, Jr.
Michael Lerner
Thomas D. Nicholson
James S. Rockefeller
Thomas J. Watson, III
C. Gordon Zubrod

OGDEN MILLS FELLOWSHIP COMMITTEE

Stanley A. Freed, Chairman
Gordon F. Ekholm
Thomas D. Nicholson

THEODORE ROOSEVELT MEMORIAL COMMITTEE

Mrs. Francis H. Low, Chairwoman
Sydney Anderson
Mrs. Richard Derby
Mrs. Duncan S. Ellsworth
C. DeWolf Gibson
Thomas D. Nicholson
P. James Roosevelt
Jerome G. Rozen, Jr.
David D. Ryus
Susan B. Selden, Secretary

PLANETARIUM COMMITTEE

Alfred R. Stern, Chairman
Oscar S. Straus, II
Thomas J. Watson, Jr.

COMMITTEE ON SCIENCE POLICY

Caryl P. Haskins, Chairman
Lester R. Aronson
Henry Clay Frick, II
Robert G. Goelet
William T. Golden
Wesley E. Lanyon
Ernst Mayr
Thomas D. Nicholson
Jerome G. Rozen, Jr.
David A. Shepard
Richard G. Zweifel
Niles Eldredge, Secretary

COMMITTEE ON VOLUNTEERS

Mrs. John Macomber,
Chairwoman
Mrs. Frederic G. Cammann
Mrs. Hart Fessenden
Mrs. John S. Hilson
Mrs. Miriam Pineo
Mrs. Hector Prud'homme
Mrs. Wesley D. Ransom
Mrs. J. Frederick Van Vranken
Mrs. Gardner Whitman

*The President is an Ex Officio member of all committees

SCIENCE, EDUCATION AND EXHIBITION DEPARTMENTS

Thomas D. Nicholson, Ph.D.,
 Director
 Charles A. Weaver, Jr., B.A.,
 Deputy Director for
 Administration
 Jerome G. Rosen, Jr., Ph.D.,
 Deputy Director for Research
 David D. Ryus, B.A.,
 Vice-President
 Pauline G. Meisler, M.B.A.,
 Controller
 James A. Oliver, Ph.D.,
 Director Emeritus
 Albert E. Parr, Sc.D.,
 Director Emeritus

ANIMAL BEHAVIOR

Lester R. Aronson, Ph.D.,
 Chairman and Curator
 Ethel Tobach, Ph.D., D.Sc., Curator
 Joseph L. De Santis, M.S.,
 Scientific Assistant
 Robert Stolberg, A.B.,
 Scientific Assistant
 Helmut E. Adler, Ph.D.,
 Research Associate
 René-Guy Busnel, Ph.D.,
 Research Associate
 Eugenie Clark, Ph.D.,
 Research Associate
 Lee Ehrman, Ph.D.,
 Research Associate
 Peter Moller, Ph.D.,
 Research Associate
 Jay S. Rosenblatt, Ph.D.,
 Research Associate
 Rae Silver, Ph.D.,
 Research Associate
 Margaret C. Tavalga, Ph.D.,
 Research Associate
 William N. Tavalga, Ph.D.,
 Research Associate
 Howard R. Topoff, Ph.D.,
 Research Associate
 H. Philip Zeigler, Ph.D.,
 Research Associate
 Madeline L. Cooper, M.S.,
 Research Fellow
 W. Douglas Burden, M.A.,
 Honorary Associate
 Carl J. Berg, Ph.D., Associate
 Carol Ann Simon, Ph.D.,
 Associate

ANTHROPOLOGY

Stanley A. Freed, Ph.D.,
 Chairman and Curator
 Robert L. Carneiro, Ph.D.,
 Curator
 E. Craig Morris, Ph.D.,
 Assistant Curator
 Enid Schildkrout, Ph.D.,
 Assistant Curator
 Ian Tattersall, Ph.D.,
 Assistant Curator
 David Hurst Thomas, Ph.D.,
 Assistant Curator
 Junius B. Bird, D.Sc.,
 Curator Emeritus
 Gordon F. Ekholm, Ph.D.,
 Curator Emeritus
 Margaret Mead, Ph.D., D.Sc.,
 H.L.D., Curator Emeritus
 Harry L. Shapiro, Ph.D.,
 Curator Emeritus
 Bella Weitzner, Curator Emeritus
 Philip C. Gifford, Jr., Ph.D.,
 Scientific Assistant

Priscilla Ward, B.S.,
 Scientific Assistant
 Walter A. Fairservis, Jr., Ph.D.,
 Research Associate
 Richard A. Gould, Ph.D.,
 Research Associate
 Morton H. Levine, Ph.D.,
 Research Associate
 Rhoda Metraux, Ph.D.,
 Research Associate
 Jean-Claude Quilici, Docteur en
 Medecine, Research Associate
 Colin M. Turnbull, M.A. (Oxon),
 D. Phil., Research Associate
 Charles F. Brush, Ph.D.,
 Field Associate
 Donald S. McClain, M.S.,
 Field Associate
 Frederick H. Osborn, Litt. D.,
 Sc.D., LL.D., Honorary
 Associate
 Carin Burrows, Associate

**ASTRONOMY AND THE
 AMERICAN MUSEUM-HAYDEN
 PLANETARIUM**

Mark R. Chartrand, III, Ph.D.,
 Chairman and Associate
 Astronomer
 Kenneth L. Franklin, Ph.D.,
 Astronomer
 Franklyn M. Branley, Ed.D.,
 Astronomer Emeritus
 Helmut K. Wimmer,
 Art Supervisor
 Howard Schwartz,
 Chief Technician
 Charles Lucke, B.A.,
 Planetarium Shop Manager
 Jeffrey I. Mennin, Assistant
 Box Office Manager
 Bradford A. Waggoner, B.S.,
 Assistant Box Office Manager
 Allen Seltzer, B.A.,
 Senior Lecturer
 Thomas Lee Jones,
 Public Affairs Coordinator

ENTOMOLOGY

Lee H. Herman, Jr., Ph.D.,
 Chairman and Associate
 Curator
 Frederick H. Rindge, Ph.D.,
 Curator
 Jerome G. Rozen, Jr., Ph.D.,
 Curator
 Pedro Wygodzinsky, Ph.D.,
 (Sc. Nat.), Curator
 Norman I. Platnick, Ph.D.,
 Assistant Curator
 Randall T. Schuh, Ph.D.,
 Assistant Curator

Willis J. Gertsch, Ph.D.,
Curator Emeritus
Mont A. Cazier, Ph.D.,
Curator Emeritus
Marjorie Statham Favreau,
Scientific Assistant
Alice Gray, M.S.,
Scientific Assistant
Mohammad Umar Shadab, Ph.D.,
Scientific Assistant
Sarfraz Lodhi, M.Sc.,
Scientific Assistant
Thomas C. Barr, Jr., Ph.D.,
Research Associate
F. Martin Brown, Sc.D.,
Research Associate
Sixto Coscaron, D. Nat. Sc.,
Research Associate
Alfred E. Emerson, Ph.D., D.Sc.,
Research Associate
C. Clayton Hoff, Ph.D.,
Research Associate
Alexander B. Klots, Ph.D.,
Research Associate
Kumar Krishna, Ph.D.,
Research Associate
Charles D. Michener, Ph.D.,
Research Associate
John C. Pallister,
Research Associate
Cyril F. dos Passos, L.L.B., D.Sc.,
Research Associate
William A. Shear, Ph.D.,
Research Associate
Asher E. Treat, Ph.D.,
Research Associate
Patricia Vaurie, B.A.,
Research Associate
James Reddell, Ph.D.,
Field Associate

FOSSIL AND LIVING INVERTEBRATES

Dorothy E. Bliss, Ph.D., Sc.D.,
Chairwoman and Curator
Roger Lyman Batten, Ph.D.,
Curator
William K. Emerson, Ph.D.,
Curator
Ernst Kirsteuer, Ph.D.,
Curator
Norman D. Newell, Ph.D.,
Curator
Niles Eldredge, Ph.D.,
Associate Curator
Brooks F. Ellis, Ph.D.,
Curator Emeritus
Otto H. Haas, Ph.D., LL.D.,
Curator Emeritus
Michael P. Dumont, A.B.,
Scientific Assistant
Harold S. Feinberg, B.A.,
Scientific Assistant

Sidney S. Horenstein, A.B.,
Scientific Assistant
William E. Old, Jr.,
Scientific Assistant
Julia Golden, M.A.,
Curatorial Associate
G. Robert Adlington,
Specialist
Allan Bé, Ph.D.,
Research Associate
William A. Berggren, Ph.D.,
Research Associate
Donald W. Boyd, Ph.D.,
Research Associate
William J. Clench, Ph.D., Sc.D.,
Research Associate
Robert M. Finks, Ph.D.,
Research Associate
Stephen Jay Gould, Ph.D.,
Research Associate
James D. Hays, Ph.D.,
Research Associate
Eric N. Kjellesvig-Waering,
Research Associate
John J. Lee, Ph.D.,
Research Associate
Linda Habas Mantel, Ph.D.,
Research Associate
Rupert J. M. Riedl, Ph.D.,
Research Associate
Harold B. Rollins, Ph.D.,
Research Associate
Tsunemasa Saito, D. Sc.,
Research Associate
George A. Schultz, Ph.D.,
Research Associate
John D. Soule, Ph.D.,
Research Associate
Donald F. Squires, Ph.D.,
Research Associate
Horace W. Stunkard, Ph.D., Sc.D.,
Research Associate
Anthony D'Attilio, Associate
Morris K. Jacobson, M.A.,
Associate

MICROPALAEONTOLOGY PRESS

Tsunemasa Saito, D.Sc., Editor
Judith Booth, B.A.,
Assistant Editor
Norman S. Hillman, M.S.,
Assistant Editor
Martin Janal, M.S.,
Assistant Editor

HERPETOLOGY

Richard G. Zweifel, Ph.D.,
Chairman and Curator
Charles J. Cole, Ph.D.,
Associate Curator
Charles W. Myers, Ph.D.,
Associate Curator

Charles M. Bogert, A.M., LL.D.,
Curator Emeritus
Carol R. Townsend, B.A.,
Scientific Assistant
James D. Anderson, Ph.D.,
Research Associate
Archie F. Carr, Jr., Ph.D.,
Research Associate
Roger Conant, Sc.D.,
Research Associate
Herndon G. Dowling, Ph.D.,
Research Associate
Carl Gans, Ph.D.,
Research Associate
Sherman A. Minton, Jr., M.D.,
Research Associate
John A. Moore, Ph.D.,
Research Associate
Janis A. Roze, Ph.D.,
Research Associate
Itzchak Gilboa, B.A.,
Associate
Ronald Keith, B.A.,
Associate

ICHTHYOLOGY

C. Lavett Smith, Ph.D.,
Chairman and Curator
James W. Atz, Ph.D., Curator
Donn E. Rosen, Ph.D., Curator
Gareth J. Nelson, Ph.D.,
Associate Curator
Charles M. Breder, Jr., Sc.D.,
Curator Emeritus
Francesca R. LaMonte, B.A.,
Curator Emeritus
M. Norma Feinberg, A.B.,
Scientific Assistant
Lynne M. Hirsch, B.A.,
Scientific Assistant
Reeve M. Bailey, Ph.D.,
Research Associate
P. Humphry Greenwood, D.Sc.,
Research Associate
Klaus D. Kallman, Ph.D.,
Research Associate
James S. Farris, Ph.D.,
Research Associate
Colin Patterson, Ph.D.,
Research Associate
Tyson R. Roberts, Ph.D.,
Research Associate
W. H. Butler, C.B.E.,
Field Associate

MAMMALOLOGY

Sydney Anderson, Ph.D.,
Chairman and Curator
James M. Layne, Ph.D.,
Archbold Curator
Richard G. Van Gelder, Ph.D.,
Curator

Karl F. Koopman, Ph.D.,
Associate Curator
Guy G. Musser, Ph.D.,
Archbold Associate Curator
Marie A. Lawrence, M.A.,
Scientific Assistant
Richard Archbold,
Research Associate
David J. Klingerer, Ph.D.,
Research Associate
Alfredo Langguth, Ph.D.,
Research Associate
Fernando Dias de Avila-Pires,
Research Associate
George B. Schaller, Ph.D.,
Research Associate
Thomas L. Blakemore,
Field Associate
José L. P. Tello, Field Associate

MINERALOGY

Martin Prinz, Ph.D.,
Research Associate
Julius Weber, Associate
D. Vincent Manson, Ph.D.,
Consultant

ORNITHOLOGY

Wesley E. Lanyon, Ph.D.,
Chairman and Curator
Dean Amadon, Ph.D., Sc.D.,
Lamont Curator of Birds
Lester L. Short, Ph.D., Curator
Francois Vuilleumier, Ph.D.,
Associate Curator
Ernst Mayr, Ph.D.,
Curator Emeritus
Charles E. O'Brien,
Curator Emeritus
John Bull, Scientific Assistant
Mary LeCroy, B.S.,
Scientific Assistant
Helen Hays, B.A., Chairwoman,
Great Gull Island Committee
Walter J. Bock, Ph.D.,
Research Associate
Jean Delacour, Lic. Sci.,
Research Associate
Jared Diamond, Ph.D.,
Research Associate
Robert W. Dickerman, Ph.D.,
Research Associate
Eugene Eisenmann, J.D.,
Research Associate
Crawford H. Greenewalt, Sc.D.,
Research Associate
James C. Greenway, Jr., A.B.,
Research Associate
G. Stuart Keith, M.A., (Oxon.),
Research Associate
John Eleuthere du Pont, Sc.D.,
Field Associate

Robert G. Goelet, A.B.,
Field Associate
John Kieran, Sc.D.,
Field Associate
Ruth Trimble Chapin, A.B., M.S.
Associate
Lowrie S. Flagg, Associate

VERTEBRATE PALEONTOLOGY

Bobb Schaeffer, Ph.D.,
Chairman and Curator
Malcolm C. McKenna, Ph.D.,
Frick Curator
Richard H. Tedford, Ph.D.,
Curator
Beryl E. Taylor, Frick
Associate Curator
Eugene S. Gaffney, Ph.D.,
Associate Curator
Edwin H. Colbert, Ph.D., Sc.D.,
Curator Emeritus
George Gaylord Simpson, Ph.D.,
Sc.D., LL.D., Dr. Hon. Causa,
Curator Emeritus
Morris F. Skinner, B.Sc.,
Frick Curator Emeritus
Susan Koelle Bell, A.B.,
Scientific Assistant
Raymond J. Gooris, B.F.A.,
Scientific Assistant
Charlotte P. Holton, B.A.,
Scientific Assistant
George Krochak,
Scientific Assistant
Marlyn Mangus, M.A.,
Scientific Assistant
Earl Manning, B.A.,
Scientific Assistant
Donald Baird, Ph.D.,
Research Associate
David H. Dunkle, Ph.D.,
Research Associate
Robert J. Emry, Ph.D.,
Research Associate
Max K. Hecht, Ph.D.,
Research Associate
Robert M. Hunt, Jr., Ph.D.,
Research Associate
John H. Ostrom, Ph.D.,
Research Associate
Leonard B. Radinsky, Ph.D.,
Research Associate
Frederick S. Szalay, Ph.D.,
Research Associate

COUNCIL OF THE SCIENTIFIC STAFF

Wesley E. Lanyon, Dean
Sydney Anderson,
Assistant Dean

Stanley A. Freed, Secretary,
The Chairmen of Departments
and Six Elected Members at
Large

FIELD STATIONS

Archbold Biological Station

Richard Archbold,
Resident Director
James M. Layne, Ph.D.,
Director of Research
Fred E. Lohrer, B.S.,
Scientific Assistant
Chester E. Winegarner, B.A.,
Scientific Assistant
Thomas Eisner, Ph.D.,
Research Associate
Austin L. Rand, Ph.D.,
Research Associate
Glen E. Woolfenden, Ph.D.,
Research Associate

Kalbfleisch Field Research Station

Wesley E. Lanyon, Ph.D.,
Resident Director

Lerner Marine Laboratory

James C. Tyler, Ph.D.,
Resident Director
Robert F. Mathewson, D.Sc.,
Resident Director Emeritus
C. Lavett Smith, Ph.D.,
Ichthyologist
Perry W. Gilbert, Ph.D.,
Research Associate
Edward S. Hodgson, Ph.D.,
Research Associate
M. Michael Sigel, Ph.D.,
Research Associate

Southwestern Research Station

Vincent D. Roth, M.S.,
Research Director

EDUCATION

Malcolm Arth, Ph.D.,
Chairman and Curator
Donald Hill, Ph.D.,
Assistant Curator
C. Bruce Hunter, M.A., Supervisor
of Program Development
Kenneth A. Chambers, M.S.,
Supervising Instructor
Catherine M. Pessino, B.A.,
Supervising Instructor
Marjorie M. Ransom, M.A.,
Supervising Instructor
Gloria Davis, B.A., Registrar
Sarah E. Flanders, M.D.,
Natural Science Coordinator

Henry Frank, M.S.W.,
Caribbean Studies
Assistant Coordinator
Barbara Dean Williams Jackson,
Ph.D., African-American Studies
Coordinator
Theresa Moore, B.A.,
African-American Studies
Assistant
Talbert B. Spence, M.S.,
Environmental Information
Center Coordinator
Maria Uyehara, M.S.W.,
Caribbean Studies Coordinator
James R. Gross, Jr., B.A.,
Cultural Voucher Program
Coordinator
Robert D. Aylward, B.A.,
Senior Instructor
Grace D. Cormons, B.A.,
Senior Instructor
Juanita M. Munoz, B.A.,
Senior Instructor
Barbara Neill, Senior Instructor
Paul James Sanfacon, M.A.,
Senior Instructor
Helmut W. Schiller, B.S.,
Senior Instructor
Christopher J. Schuberth, M.S.,
Senior Instructor
Mark Soroken, B.A.,
Senior Instructor
Karen C. Bennett, A.B., Instructor
Ismael Calderon, B.S., Instructor
Linda J. Claremon, B.A., Instructor
Nathaniel Johnson, Jr., B.A.,
Instructor
Phyllis Mandel, B.A., Instructor
Farida A. Wiley,
Honorary Associate in Natural
Science Education
Elizabeth A. Guthrie, B.A.,
Associate in Nature Education
John C. Orth, Associate
in Nature Education

EXHIBITION AND GRAPHICS

George S. Gardner, B.I.D.,
Chairman

Exhibition

Ralph J.T. Bauer, B.F.A., Manager
Henry Gardiner, B.A., B.F.A.,
Chief Preparator, Design
Raymond H. deLucia, B.F.A.,
Chief Preparator

Graphics

Joseph M. Sedacca, B.A., Manager

LIBRARY

Nina J. Root, M.S.L.S., Librarian
Mildred Bobrovich, M.S.L.S.,
Readers' Services Librarian
Miriam Tam, M.L.S.,
Serials Librarian
Barbara S. Wurtzel, M.L.S.,
Reference Librarian
Lucienne Yoshinaga, M.S.L.S.,
Cataloging Librarian
J. Frederick North,
Acquisitions Librarian
Russel Rak, M.A.,
Administrative Assistant
Hazel Gay, Librarian Emeritus
Mary V. Wissler, M.L.S.,
Librarian Emeritus

PUBLICATIONS

Curator

Thomas D. Nicholson, Ph.D.,
Editor-in-Chief
Rosamond Dana, B.A.,
Assistant Editor
Joseph M. Sedacca, B.A.,
Art and Production

Scientific Publications

Jerome G. Rozen, Jr., Ph.D.,
Managing Editor
Joseph M. Sedacca, B.A., Manager
Florence Brauner, B.A., Editor
Ruth Manoff, B.A.,
Assistant Editor

DEVELOPMENT AND COMMUNICATIONS OFFICES

DEVELOPMENT

Teresa Martin, Manager,
Contributors Office

NATURAL HISTORY MAGAZINE

David D. Ryus, B.A., Publisher
Alan Ternes, M.Ph., Editor
Thomas Page, Designer
Sally Lindsay, M.F.A.,
Senior Editor
Toni I. Gerber, M.A.T.,
Associate Editor
Christopher Hallowell, M.S.J.,
Associate Editor
Frederick Hartmann, A.B.J.,
Associate Editor
Florence G. Edelstein, Copy Chief
Rosamond Dana, B.A.,
Publications Editor
L. Thomas Kelly, M.B.A.,
Business Manager
Ann Brown, B.A.,
Circulation Manager
Sue Severn, Production Manager

PUBLIC AFFAIRS

Ann Breen, B.A., Manager
Carol E. Patterson, B.A.,
Assistant Manager
Marilyn Badaracco,
Guest Services Coordinator
Ira H. Knaster,
Media Activities Coordinator
Daphne Prior, B.A.,
Public Affairs Correspondent
Sally V. Nolan, Assistant
Guest Services Coordinator

ADMINISTRATIVE AND SERVICE DEPARTMENTS AND OFFICES

ADMINISTRATIVE AND SCIENTIFIC RESEARCH SERVICES

Donna E. Brion, B.A.,
Assistant to the Director
Robert J. Dombroski, Assistant
to the Deputy Director
for Administration
Robert J. Koestler, B.A.,
Scientific Assistant,
Inter-Departmental Laboratory
Andrea Murphy, B.A.,
Assistant to the Deputy
Director for Research
Susan B. Selden,
Executive Secretary

BUILDING SERVICES

Charles L. Miles, Manager
Robert B. Hill, Assistant Manager
Philip C. Miller,
Assistant Manager
Albert C. Potenza,
Assistant Manager
Peter F. Clarke, Supervising
Museum Attendant-Guard
Ralph J. Csencsics, Supervising
Museum Attendant-Guard
Sankar Gokool, Supervising
Museum Attendant-Guard
Franklin W. Hoffman, Jr.,
Supervising Museum
Attendant-Guard
Robert P. Jones, Supervising
Museum Attendant-Guard
Anthony J. Maloney, Supervising
Museum Attendant-Guard
Frank P. Masavage, Supervising
Museum Attendant-Guard
Joseph W. O'Neill, Supervising
Museum Attendant-Guard
Albert J. Sable, Supervising
Museum Attendant-Guard
Harry J. Tappen, Supervising
Museum Attendant-Guard

GENERAL SERVICES

John J. Hackett, Manager

MUSEUM SHOP

Martin Tekulsky, A.B., Manager
Joseph J. Battaglia, B.S.,
Assistant Manager
Eleanor T. Forbes,
Assistant Manager

OFFICE OF THE CONTROLLER

George B. Decker,
Assistant Treasurer
Louis A. Benesh,
Assistant Controller
William H. Humber, B.S.,
Accountant

Richard J. Gaffney,
Assistant to the Controller
Robert Applebaum,
Payroll Manager
Ethel Brill, Manager,
General Accounting
Claudio Lorenzo, M.B.A.,
Assistant to the Controller

PERSONNEL

Geraldine M. Smith, B.A.,
Personnel Manager

PHOTOGRAPHY

Joseph R. Saulina, Manager
Dorothy M. Fulton, B.A.,
Associate Manager
Arthur Singer,
Chief Photographer
Robin Lehman, Associate

PLANT OPERATIONS, CONSTRUCTION & MAINTENANCE

Walter F. Koenig, Manager of
Construction and Maintenance
William J. Barbieri,
Foreman of Carpenters
Anthony W. Gallardo,
Foreman of Electricians
William S. Heslin, Foreman of
Sheet Metal Workers
John S. Ignatieff,
Foreman of Plumbers
Vincent J. Le Pore, Plant Engineer
Klaus A. Wolters,
Foreman of Painters
William A. Graham, Assistant to
the Manager of Construction
and Maintenance

PROJECTION

Arthur L. Grenham, Manager

PURCHASING

Glen E. Kulawas, B.A.,
Purchasing Manager

MEMBERS ELECTED BY THE BOARD OF TRUSTEES TO HIGHER CATEGORIES OF MEMBERSHIP

ENDOWMENT

Dr. Henry Clay Frick, II
Mr. and Mrs. John Stevens, Jr.

BENEFACTOR

Dr. Junius B. Bird
Stephen L. Singer

ASSOCIATE BENEFACTOR

Mrs. Marie Christopho deMenil
John du Pont
Rodney C. Gott
Nixon Griffis
Robert D. Hoffman
Ralph B. Johnson
Mrs. Alfred Lee Loomis, Jr.
Bryant Mather
Dr. Norman D. Newell
Jack Rudin
Mrs. Ray L. Rudolph
Roger Williams

PATRON

Joshua I. Barnes
Donald J. Bruckmann
William L. Butcher
Thomas M. Evans
Mrs. Anne Marie Goelet
Edward P. Hamilton
Dr. John Hessel
David J. Hoffman
Mrs. Nancy Montgomery
Emanuel Shemin
Alfred R. Stern

ASSOCIATE PATRON

Thomas D. Barrow
Harold W. Brown
Mrs. Frederic G. Cammann
Mrs. E. Gerry Chadwick
Arthur N. Dusenbury, Jr.
Mrs. Charles W. Engelhard, Jr.
Mrs. Douglas Hays
Henry H. Hoyt
Miss Mary Janvrin
Dr. Mervyn Kamran
Frank Y. Larkin
Mrs. Anne I. Lawrence
O. H. Perry Lloyd
Gilbert Maggioni
Edward F. McGee
Joan W. Myers
Ms. Kathryn C. Netto
James F. Nields
Miss Brenda Renshaw
Mrs. Daphne Hellman Shih
Hugh M. Traphagen
Henry G. Van der Eb
Mrs. Grafton Wiggins

HONORARY LIFE

Josephine M. D'Orsi
Mrs. Franz Brandenberg
John S. Ignatieff
Walter J. Sorensen

CORRESPONDING MEMBERS

Dr. Frank A. Beach, Professor of Psychology, University of California, Berkeley, California
Dr. Kaj Birket-Smith, National Museum, Copenhagen, Denmark
Dr. Francois Bourliere, Laboratoire de Biologie, Faculte de Medecine de Paris 45, Rue des Saints-Peres, Paris, France
William G. Conway, Director, New York Zoological Park, New York
Dr. G. A. Cooper, Department of Paleontology & Paleobotany, United States National Museum, Smithsonian Institution, Washington, D.C.
Dr. Raymond B. Cowles, Department of Biology, University of California, Santa Barbara, California
Dr. Leon Croizat, Apartado 60262, Caracas, Venezuela
Professor Carl O. Dunbar, Dunedin, Florida
Dr. Frank K. Edmondson, Astronomy Department, Indiana University, Bloomington, Indiana
Dr. Clifford Frondel, Department of Mineralogy, Harvard University, Cambridge, Massachusetts
Professor Dr. Willi Hennig, Staatliches Museum Fuer Naturkunde in Stuttgart-Zweigstelle, West Germany
Dr. J. Allen Hynek, Assistant Director, Smithsonian Astrophysical Observatory, 60 Garden Street, Cambridge, Massachusetts
Dr. Tetsuo Koyama, New York Botanical Garden, New York
Dr. Claude Levi-Strauss, 2 Rue des Marronniers, Paris, France
Dr. Robert Mertens, Senckenberg Museum, Frankfurt A.M., West Germany
Dr. Raymond C. Moore, Department of Geology, University of Kansas, Lawrence, Kansas
Professor Alfred S. Romer, Agassiz Professor of Zoology, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts

Dr. Nikolaas Tinbergen, Department of Zoology, University Museum, Oxford, England
Dr. Ethelwynn Trewavas, British Museum of Natural History, London, England
Dr. Bernardo Villa R, Instituto de Biologia, Ciudad Universitaria San Angel D.F., Mexico
Professor T. S. Westoll, Professor of Geology, University of Durham at King's College, Newcastle-upon-Tyne, England
Dr. Yoshimaro Yamashima, Yamashima Institute for Ornithology, Tokyo, Japan

CORPORATIONS AND CORPORATE FOUNDATIONS

ACCOUNTING

Arthur Anderson & Co.
Coopers & Lybrand
Haskins & Sells
The J. K. Lasser & Company
Foundation
Peat, Marwick, Mitchell & Co.
Price Waterhouse & Co.
Touche Ross & Co.

ADVERTISING

Ogilvy & Mather Inc.
J. Walter Thompson Company
Fund Incorporated
The Young & Rubicam
Foundation

ANONYMOUS

(1)

BANKING

American Bank Note Company
The Bank of New York
Bankers Trust Company
Barclays Bank International
Limited
The Bowery Savings Bank
The Chase Manhattan Bank
Chemical Bank
East River Savings Bank
European-American Banking
Corporation
First National City Bank
Harlem Savings Bank
Irving One Wall Street
Foundation, Inc.
Manufacturers Hanover Trust
Foundation
Marine Midland Bank
Morgan Guaranty Trust Company
of New York
National Bank of North America
"The N.Y.B.F.S. Foundation"
J. Henry Schroeder Banking
Corporation
Union Dime Savings Bank
United States Trust Company
of New York

CHEMICALS

Allied Chemical Foundation
The IFF Foundation Inc.
The Merck Company Foundation
Union Carbide Corporation

COMMUNICATIONS

RCA
Warner Communications Inc.

CONSUMER PRODUCTS

Avon Products Foundation, Inc.
Block Drug Company, Inc.
Bristol-Myers Fund
Burlington Industries Foundation
Carter-Wallace, Inc.
Celanese Corporation
The Constans Culver Foundation
Louise B. and Edgar M. Cullman
Foundation
The Howard Johnson Foundation
Mr. & Mrs. Samuel C. Johnson
Estee and Joseph Lauder
Foundation, Inc.
Leonhardt Foundation, Inc.
Lever Brothers Company
Foundation, Inc.
Melville Shoe Corporation
Olin Corporation Charitable Trust
Pepsico Foundation, Inc.
The Pfizer Foundation, Inc.
Philip Morris Incorporated
Richardson-Merrell Inc.
Ronson Corporation
Simplicity Pattern Co. Inc.
Squibb Corporation
Universal Leaf Tobacco Co.
Carl Zeiss, Inc.

INDUSTRIAL PRODUCTS

ACF Foundation Inc.
ALCOA Foundation
AMAX Foundation, Inc.
American Can Company
Foundation
AMF Foundation
American Standard
Anaconda Company
Container Corporation of America
Foundation
Continental Can Company, Inc.
Crown Zellerbach Foundation
Federal Paper Board Company,
Inc.
Gilman Foundation Inc.
The B. F. Goodrich Company
The Goodyear Tire & Rubber
Company
Grace Foundation, Inc.
Gulf & Western Foundation
Inland Container Corporation
Foundation, Inc.
The International Nickel
Company, Inc.
International Paper Company
Foundation
The N L Industries Foundation,
Inc.
Owens-Corning Fiberglas
Corporation
Phelps Dodge Foundation
The Pittston Company

The Procter & Gamble Fund
Puterbaugh Foundation
St. Regis Paper Company
Sterling Drug Inc.
United States Steel
Foundation, Inc.
Wallace-Murray Foundation
Westvaco Foundation

INSURANCE

The Atlantic Companies
Chubb & Son Inc.
The Continental Corporation
Foundation
Crum & Forster
The Equitable Life Assurance
Society of the United States
General Reinsurance Corporation
G. L. Hodson & Son, Inc.
The Manhattan Life Insurance Co.
Metropolitan Life Insurance
Company
New York Life Insurance Company
Royal-Globe Insurance
Companies
The Starr Foundation

LAWYERS

Sinclair Hatch, Esq.
Tudor Foundation, Inc.

**OFFICE EQUIPMENT/
ELECTRONICS**

General Signal Corporation
General Telephone & Electronics
Corporation
International Business Machines
Corporation
International Telephone and
Telegraph Corporation
Reliance Group, Incorporated
The Singer Company Foundation
Sperry Rand Corporation
Sprague Electric Company

PETROLEUM

Amoco Foundation
Aramco Services Company
Atlantic Richfield Foundation
Exxon Corporation
The Louisiana Land and
Exploration Company
Marathon Oil Foundation, Inc.
Mobil Foundation, Inc.
Occidental Petroleum Corporation
St. Joe Minerals Corp.
Schlumberger Horizons, Inc.
Shell Oil Company
Shell Internationale Petroleum
Maatschappij

FOUNDATIONS, INDIVIDUALS AND OTHERS

Standard Oil Company of
California
Texaco Inc.

PUBLISHING

Book-of-the-Month Club, Inc.
Valerie & George Delacorte
Foundation
The Hearst Foundation, Inc.
William Randolph Hearst
Foundation
Macmillan Foundation
McGraw-Hill, Inc.
The New York Times
Foundation, Inc.
Newsweek
Reader's Digest Foundation
The Scherman Foundation Inc.
Scientific American
Time Incorporated

REAL ESTATE

The Hennessy Foundation, Inc.
Rhode Island Corporation
Rockefeller Center, Inc.
H. Sand & Company, Inc.

RETAILING

Lord & Taylor
J. C. Penney Company, Inc.
The Sperry and Hutchinson
Company, Inc.

TOURISM AND SERVICES

American Express Foundation
Martin Marietta Corporation
TI Corporation (of California)
Foundation
United Airlines Foundation

UTILITIES

American Telephone & Telegraph
Company
Con Edison
New York Telephone Company
Western Electric Fund

WALL STREET

Frances Allen Foundation
Mr. Donald J. Bruckmann
The C.I.T. Foundation, Inc.
The T. M. Evans Foundation
F. D. & S. Fund, Inc.
The Edward F. Hutton Foundation
Kuhn, Loeb & Company
Lerner-Gray Foundation
Merrill, Lynch, Pierce, Fenner &
Smith
Morgan Stanley Foundation
Salomon Brothers Foundation, Inc.
The Smith, Barney Foundation
Wagner, Stott & Co.

The Achelis Foundation
The Robert Alan Foundation, Inc.
Malcolm P. Aldrich
The Annenberg Fund, Inc.
Richard Archbold
Mr. & Mrs. Cecil Armstrong
Ashaway Charitable Trust
Vincent Astor Foundation
George F. Baker, Jr.
The George F. Baker Trust
Robert R. Barker
H. Barnet
Thomas D. Barrow
The Howard Bayne Fund
The Bedminster Fund, Inc.
Dr. & Mrs. Stanley J. Behrman
Mr. & Mrs. William S. Beinecke
August Belmont
Mr. & Mrs. Russell H. Bennett
Walter H. Berlet
The Siegfried & Josephine Bieber
Foundation
Mrs. Harry Payne Bingham
Stephen & Mary Birch
Foundation, Inc.
Dr. Junius B. Bird
Mrs. Elizabeth W. Boeschstein
Mrs. Neville Jay Booker
The Albert C. Bostwick Foundation
Mrs. Bartholomew P. Bouverie
Florence V. Burden Foundation
Bundy Foundation
Mr. & Mrs. Van Vechten Burger
Dr. Peter L. Bittenwieser
The C. T. Foundation
Dr. & Mrs. Amos Cahan
Frank T. Cary
Mary Flagler Cary Charitable Trust
John A. Cashman
The Marie Castro-Cid Charitable
Trust
Mrs. E. Gerry Chadwick
Mr. & Mrs. Hamilton M. Chase
Mrs. Edgar Church
The Clark Foundation
Clark Fund
The Edna McConnell Clark
Foundation
Howard L. Clark
Sylvan C. Coleman
Sylvan C. Coleman Foundation
Miss Brenda Contopoulos
Mrs. Cornelius Crane
Joseph F. Cullman, 3rd
The D. C. Foundation
Charles A. Dana Foundation, Inc.
Miss Natalie M. Dodd
Cleveland E. Dodge
Cleveland H. Dodge Foundation,
Inc.
Dr. Cyril F. dos Passos
Mrs. Robert N. Downs, III

Dublin Fund, Inc.
The Caleb C. and Julia W. Dula
Educational and Charitable
Foundation
The Du Pont Fund
Mrs. W. Gurnee Dyer
The Ferdinand Eberstadt
Foundation
Donald Elliot
A. Whitney Ellsworth
Lincoln Ellsworth Foundation
Mrs. Charles W. Engelhard
Faigel Leah Foundation, Inc.
Federation of Jewish
Philanthropies
Mrs. Hart Fessenden
Mrs. Hildegard Wichert Fife
Mr. & Mrs. George H. Flinn, Jr.
Carl Forstmann Memorial
Foundation, Inc.
Dr. & Mrs. Henry Clay Frick, II
Mrs. Evelyn Funt
Elbridge T. Gerry
Mr. & Mrs. Benjamin D. Gilbert
The Estate of C. Ivor Gilbert
Mrs. Bernard F. Gimbel
Bernard F. & Alva B. Gimbel
Foundation, Inc.
Alfred Glassell, Jr.
The Glazier Foundation
Robert G. Goelet
Mrs. Robert W. Goelet
Mr. & Mrs. William T. Golden
Rodney C. Gott
Edwin Jay Gould
Arthur Gray, Jr.
Mr. Elisha Gray II
James C. Greenway, Jr.
Greenway Fund
The Nixon Griffis Fund for
Ichthyology
Edward P. Hamilton Foundation
The Hanes Foundation
Doris & Ralph E. Hansmann
Foundation, Inc.
E. Roland Harriman
Mrs. Clarence Hay
Miss Janet S. Heyman
Mr. & Mrs. John S. Hilson
Hochschild Fund, Inc.
David J. Hoffman
Honeybrook Foundation, Inc.
Henry H. Hoyt
The Huber Foundation
Trust Under Agreement for
Patricia Kendall Hurd
Mrs. Stuart H. Ingersoll
The Institute for Intercultural
Studies, Inc.
The Estate of Elizabeth Cushing
Iselin
O'Donnell Iselin Foundation, Inc.

Miss Mary Janvrin
 Mrs. B. Brewster Jennings
 R. B. Johnson Foundation, Inc.
 The Killock Fund
 William Thorn Kissell, Jr.
 Robert J. Kleberg, Jr. & Helen C.
 Kleberg Foundation
 Joseph Klingenstein Charitable
 Trust
 The Knapp Foundation
 Miss Olga H. Knoepke
 Dr. Karl F. Koopman
 Mrs. Samuel W. Lambert, Jr.
 Dr. Wesley E. Lanyon
 Miss Helen Stark Lapham
 Frank Y. Larkin
 Mrs. Betty Laughlin
 Mrs. Anne I. Lawrence
 Mrs. Sidney J. Legendre
 Mr. & Mrs. John D. Leggett, Jr.
 Mrs. William Leuchtenburg
 Mr. & Mrs. Dale Linder
 Mrs. John V. Lindsay
 O. H. Perry Lloyd
 Mr. & Mrs. Luke B. Lockwood
 Frances & John L. Loeb
 Foundation
 The Loomis Foundation
 Mrs. Francis H. Low
 The Joe & Emily Lowe Foundation,
 Inc.
 David L. Luke, III
 Mr. & Mrs. Frank Lyon
 James A. MacDonald Foundation
 The Russell Maguire Foundation,
 Inc.
 Mrs. Alan Mandell
 Mr. & Mrs. Hubert Turner
 Mandeville
 Mrs. Hayward F. Manice
 Townsend B. Martin Charitable
 Foundation
 William McC. Martin, Jr.
 Mathewsfeld Foundation, Inc.
 David H. McAlpin
 Edward F. McGee
 Merck Family Fund
 Richard E. Metz
 Barbara & Clifford Michel
 Foundation, Inc.
 Mrs. Carnegie Miller
 Mrs. A. S. Mills
 The Ambrose Monell Foundation
 Edward S. Moore Foundation, Inc.
 Charles F. Morgan
 The Howard Morgens Foundation
 Mostyn Foundation
 Mulber Fund
 Dr. & Mrs. Charles W. Myers
 Mrs. Kathryn C. Netto
 Henry Nias Foundation, Inc.
 Acosta Nichols

James F. Nields
 Edward J. Noble Foundation
 Dr. & Mrs. Harold C. Ochsner
 The Estate of Winifred H.
 O'Connor
 The Ohrstrom Foundation, Inc.
 John M. Olin Foundation, Inc.
 Mrs. Ellen G. Ordway
 The Estate of Elmer C. Otto
 William S. Paley 1968 Charitable
 Trusts
 Charles Shipman Payson
 Perkin Fund
 Bernard Peyton, III
 Pleasantville Foundation
 Prospect Foundation, Inc.
 Quaker Hill Foundation
 Mrs. Stanley F. Reed, Jr.
 Anne S. Richardson Fund
 Dr. & Mrs. Thomas Rees
 Mrs. William C. Ridgway
 The Rockefeller Foundation
 Avery Rockefeller
 James Stillman Rockefeller
 Mr. & Mrs. James A. Roemer
 Billy Rose Foundation, Inc.
 Arthur Ross
 Helena Rubinstein Foundation,
 Inc.
 Jack Rudin
 The Richard & Edna Salomon
 Foundation, Inc.
 Leonard C. Sanford Trust
 Dr. Robert W. Schick
 Victor M. Schneider
 Richard Shields Charitable Trust
 Mrs. Constantine Sidamon-Eristoff
 William A. Slater
 Mrs. Gerard Smith
 Frank B. Smithe
 P. Shaw Sprague
 The Seth Sprague Educational and
 Charitable Foundation
 Mr. & Mrs. Dixon Stanton
 Alfred R. Stern
 John P. Stevens, Jr.
 Lester C. Stone
 Gardner D. Stout
 Oscar S. Straus, II
 Mr. & Mrs. Gerard Swope, Jr.
 Dr. & Mrs. Paul S. Symchych
 The Estate of Jane B. Tannenbaum
 The Ruth & Vernon Taylor
 Foundation
 The Thorne Foundation
 Mr. & Mrs. John L. Tishman
 Hugh M. Traphagen
 Michael Tuch Foundation, Inc.
 The Marcia Brady Tucker
 Foundation, Inc.
 Wellington Vandever
 The Vanneck-Bailey Foundation

The Laura B. Vogler Foundation,
 Inc.
 The Walter Foundation
 Mr. & Mrs. Edward R. Wardwell
 Thomas J. Watson, Jr.
 Thomas J. Watson, III
 Mrs. Murray Wheeler
 Wilmot Wheeler Foundation, Inc.
 Mrs. Alexander M. White
 White Foundation
 White Fund
 Commander (R.N.) & Mrs.
 Langford Whitehouse
 The Honorable John Hay Whitney
 William C. Whitney Foundation
 Mrs. Grafton Wiggins
 The Estate of George N. Willard
 Mr. & Mrs. Rodney W. Williams
 Roger Williams
 Thomas A. Yawkey
 Mr. & Mrs. John C. Young
 Anonymous (4)

CONTRIBUTORS JULY 1, 1974-JUNE 30, 1975
Gifts-in-kind (Gifts of \$1000 and over)

Joshua I. Barnes—A collection of 250 miscellaneous mineral specimens.

William L. Butcher—Two opals.

Arthur N. Dusenbury, Jr.—His personal library.

Dr. John Hessel—5170 assorted butterflies and moths.

Robert D. Hoffman—Two pre-Columbian artifacts (one Maya jade plaque and one Teotihuacan tripod vessel).

International Paper Company—A suite of tourmaline minerals.

Miss Mary Janvrin and Mrs. Grafton Wiggins—A collection of 4987 *Coleoptera*.

Mervyn Kamran—A collection of 9795 insects of various orders.

Fred C. Kennedy—A collection of four mineral specimens (one apatite, one amethyst, one wavellite and one beryl).

Morton Kleinman—Four mineral specimens (one amazonite crystal, one spodumene crystal, and two eosphorite crystallines).

League of American Poles, Inc.—A sculpture of Nicholas Copernicus on a marble pedestal.

Gilbert Maggioni—One house wren sculpted in wood.

Bryant Mather—a collection of 8568 butterflies and moths, and 108 non-lepidopteron.

Mrs. Nancy Montgomery—A collection of assorted butterflies.

Dr. Norman D. Newell—His personal library of reprints on scientific subjects.

Dr. Frederick H. Rindge—A collection of 3417 North American Geometridae, plus 65 genitalic slides.

Mrs. Ray L. Rudolph—One large sculpture of the god Rudra, three Indian wood panels and two musician wood carvings.

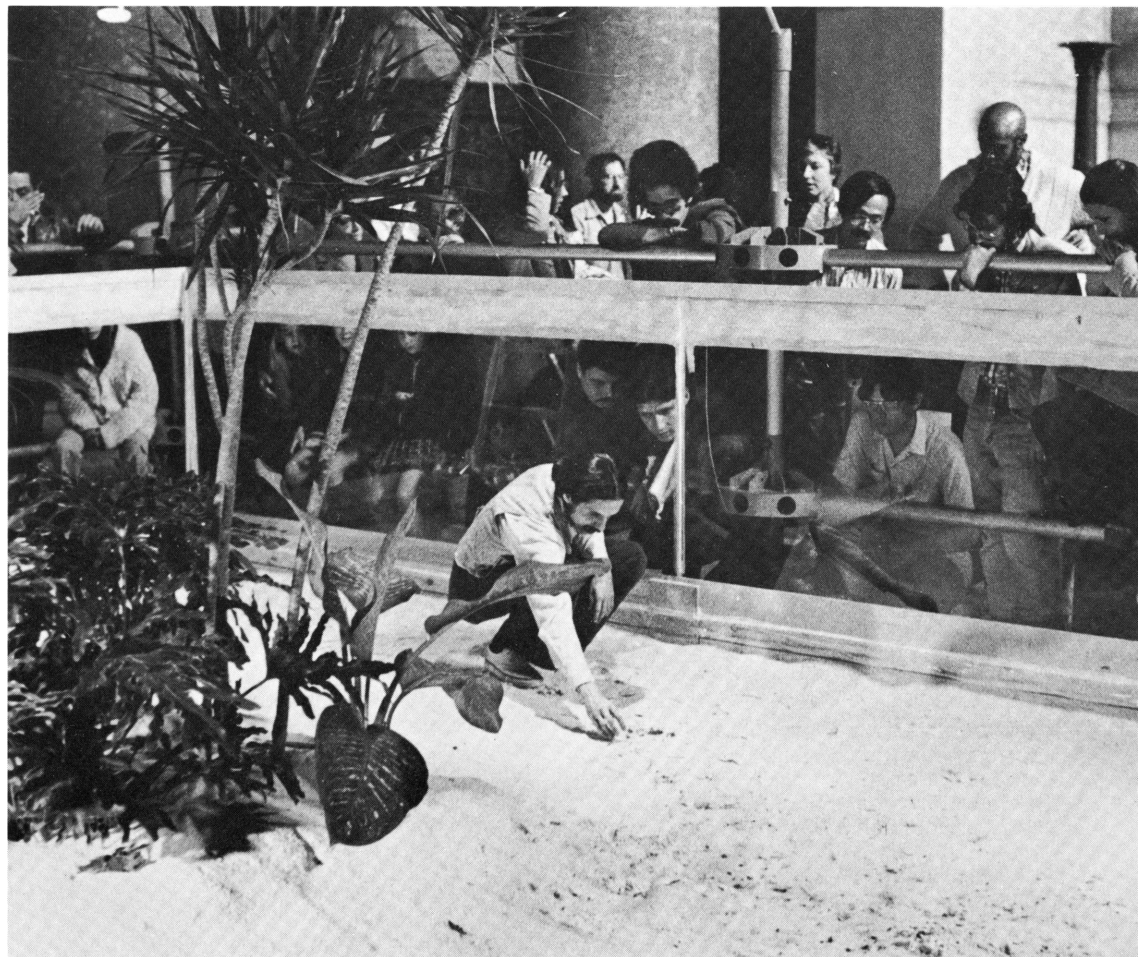
Emanuel Shemin—A collection of personal papers, pictorial materials, field notes and other memorabilia of Thomas Bailey MacDougall.

Stephen L. Singer—Two faceted gemstones (one topaz and one bicolor aquamarine) and a collection of 82 Oriental snuff bottles.

Dr. J. Bolling Sullivan—A collection of 4052 assorted moths.

Lester Wolfe—One Malayan goddess of the twelfth century, and a Mathura fourth-century bust.

A half-million army ants (Eciton hamatum) were installed last October in a Plexiglas enclosure in the Roosevelt Rotunda, and throngs of visitors came to see this Museum Showcase exhibit. It showed these carnivorous ants carrying out their predatory raids in soldier-like columns. The insects were collected in Panama by Howard R. Topoff of the Department of Animal Behavior and Raymond A. Mendez of the Department of Exhibition and Graphics. Dr. Topoff is studying the development of army ant behavior. Here, Mr. Mendez feeds meal worms to the ants.



These Chinese shadow figures are characters in a shadow play of the Ming Dynasty (1368-1644). Last winter an exhibition of more than 200 Asian shadow, rod and string puppets attracted a wide audience in Gallery 77. For three years before the exhibition opened, Museum staff and volunteer researchers identified, selected and restored rare material from the Museum's extensive Asian theater collections. Parchment figures such as these will appear in the Hall of the Peoples of Asia, scheduled to open in 1978.

