



AMERICAN MUSEUM OF NATURAL HISTORY

ROTUNDA

Member Magazine
Spring 2013 Vol. 38 No. 2



WHALES GIANTS OF THE DEEP

NOW OPEN

From the President

Ellen V. Futter



The year 2013 heralds several important anniversaries for the Museum and opportunities to celebrate our work in science, education, and exhibition.

Ten years ago, the Museum opened the gorgeous and completely renovated Irma and Paul Milstein Family Hall of Ocean Life, dominated by one of the Museum’s most beloved icons, the great blue whale. It seems especially fitting then that the Museum’s spring exhibition is *Whales: Giants of the Deep*, on tour from the Museum of New Zealand Te Papa Tongarewa. *Whales: Giants of the Deep* is the first show to open in the newly named LeFrak Family Gallery, named in honor of Richard and Karen LeFrak. Hundreds of thousands of New York City schoolchildren will enjoy free visits to the Museum for years to come, thanks in large part to their generous gift.

The Milstein Hall of Ocean Life is adjacent to the

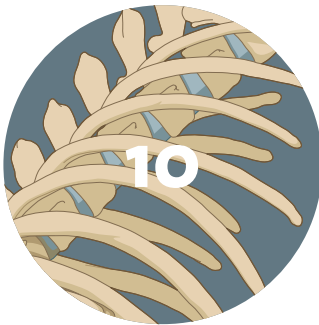
Hall of Biodiversity and, this year, the Center for Biodiversity and Conservation (CBC) also is having an anniversary, celebrating two decades of working to mitigate critical threats to global biological and cultural diversity. The 2013 CBC Spring Symposium, which will be held at the Museum from April 9 through April 11, will focus on the conservation of island systems.

Of course, we offer learning opportunities for all ages, beginning with the Science and Nature Program, which introduces children as young as two to the wonders of nature. The Program just happens to be celebrating its 15th anniversary in 2013!

The Museum has always married legacy with innovation, and these anniversaries offer the chance to salute the past as we extend the reach of our mission onsite and online in entirely modern ways for a vibrant new era.

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ROTUNDA

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Researchers Reconstruct Mammal Ancestor

The world’s 5,000-plus living placental mammal species—which range from bats to whales to humans—can be traced to a small, insect-eating ancestor, according to a new study by an international team of scientists, including a core group of Museum researchers.

In findings published in the February 8 issue of the journal *Science*, the researchers analyzed the world’s largest dataset of genetic and physical traits to find that placental mammals diversified into present-day lineages much later than is commonly thought: after the extinction event 65 million years ago that eliminated about 70 percent of all species on Earth, including non-avian dinosaurs. The mammal ancestor that shared the planet with dinosaurs was a furry-tailed animal that weighed around 250 grams, or nearly 9 ounces.

For their analysis, researchers drew on two sources of data: phenomic data, which includes anatomical and behavioral observations gleaned from physical specimens, and genomic data from DNA analyses.

“Discovering the tree of life is like piecing together a crime scene—it is a story that happened in the past that you can’t repeat,” says lead author Maureen O’Leary, an associate professor in the Department of Anatomical Sciences in the School of Medicine at Stony Brook University and a Museum research associate. “Just like a crime scene, the new tools of DNA add important information, but so do other physical clues like a body or, in the scientific realm, fossils and anatomy. Combining all the evidence produces the most informed reconstruction of a past event.”

For the phenomic piece of the puzzle, researchers harnessed a powerful cloud-based and publicly accessible online database called MorphoBank. They recorded traits for 86 mammal species—mostly placentals, a subgroup of mammals that excludes egg-laying and marsupial species—including 40 species known only from fossils. The effort added more than 4,500 characteristics and more than 12,000 images to produce a dataset 10 times larger than any previously used to study mammal relationships.

“Phenomic data have a major role in the direct reconstruction of trees,” says Museum Provost for Science Michael Novacek, a curator of paleontology who was an author on the study. “Such data include features preserved in fossils where DNA recovery may be impossible. The mammalian record is notably enriched



Researchers traced placental mammals to a common ancestor, depicted above by an artist.

with well-preserved fossils, and we don’t want to build trees without using the direct evidence these fossils contribute.”

The tree of life produced in this study shows that placental mammals arose 36 million years later than what has been projected using purely genomic data.

Reconstructing the anatomy of the common ancestor required researchers to map traits onto the tree and compare features of placental mammals with those of their closest relatives to determine which characteristics appeared first and which were retained from more distant ancestors. The conclusions: the common ancestor had a two-horned uterus, a brain with a convoluted cortex, and a placenta in which maternal blood came in close contact with membranes surrounding the fetus, as in humans.

In addition to O’Leary and Novacek, the research team included Museum curators Nancy Simmons, John Flynn, and Jin Meng and researchers Andrea Cirranello, Andres Giallombardo, Norberto Giannini, Suzann Goldberg, Paul Velazco, and Marcelo Weksler. The team also included colleagues from the Carnegie Museum of Natural History, Florida Museum of Natural History, Institute of Vertebrate Paleontology and Paleoanthropology in China, Minas Gerais Federal University in Brazil, Museu Nacional-UFRJ in Brazil, National University of Tucumán in Argentina, University of Chicago, University of Louisville, University of Tennessee at Chattanooga, University of Toronto Scarborough, Western University of Health Sciences, and Yale University’s Peabody Museum of Natural History.

Watch “Mammal Ancestor Traced,” a video about this research, on the Museum’s website at amnh.org/explore/amnh.tv.



Scientists from several institutions, including the Museum, carried out the study.

Illustration by C. Buell; photo courtesy of M. O’Leary.

A WEALTH OF WHALES

Whale imagery abounds in the Museum’s cultural halls, but nowhere more than in the Hall of Northwest Coast Indians. Here, visitors will find many whale-inspired objects, including a Kwakiutl mask, a Tsimshian helmet, a Tlingit pipe and basket, and a Nootka shaman’s rattle. “The Nootka (Nuu-chah-nulth) were the most famous whalers in the northwest coast of Canada, along with their Makah relatives on the U.S. side,” says Museum Curator Peter Whiteley.

GRAND EXAMPLE

A large, magnificent whale representation can be seen painted on either side of the prow of the Museum’s Great Canoe. The 63-foot-long cedar canoe was purchased by Trustee Heber Bishop in 1883 and now hangs in the Grand Gallery. The whale was most likely painted by Haida sculptor and painter Charles Edenshaw, one of the most influential artists of his time.

TELLING TREASURY

The legend of Māori whale riders has captured public imagination in fiction and film, and the *Whales* exhibition, which was developed at Te Papa Tongarewa, the national museum of New Zealand, is rich in whale-related Māori artifacts. The Museum’s Margaret Mead Hall of Pacific Peoples also boasts a particularly striking example: elaborately carved whales trimming the front gable of a Māori chief’s *pātaka*, an elevated storage house.

RITUAL OF RETURN

A small carved wood whale in the Hunting Sea Animals case in the Hall of Asian Peoples was collected in Siberia in 1901 by Russian ethnographer Waldemar Jochelson for the Museum’s Jesup North Pacific Expedition. Jochelson himself witnessed a Koryak ceremony, in which a similar figurine was used as a charm and whale body parts were “sent home to the sea” to encourage other whales to return.

MYTHIC CREATURE

The Nasca people, who lived from 100 BC to AD 700 along the coast in what is now Peru, are famous for producing immense patterns on the ground, including that of a killer whale holding a human head. A similar mythic whale appears on an early Nasca ceramic trumpet and in the shape of a Nasca ceramic vessel, both on loan to the *Whales* exhibition from the Museum’s Hall of South American Peoples.

Whale Feast Dish

The Kwakwaka’wakw peoples of the Pacific Northwest Coast—roughly 20 diverse communities united by a common language—share a rich oral tradition. Stories passed down from generation to generation tell of ancient encounters between human ancestors and animals such as the bear, raven, wolf, or whale. One such tale inspired this exquisite carved feast dish, now featured in the special exhibition *Whales: Giants of the Deep*.

Animal imagery in Kwakwaka’wakw artifacts may serve to depict a close family association with a species, even common ancestry in Kwakwaka’wakw mythology. The connection is said to confer supernatural powers and special privileges on living human kin, including rank and the right to perform certain dances and songs.

“Individual families will have a totemic identification with a specific creature,” says Peter Whiteley, curator of North American Ethnology in the Division of Anthropology. “But, as well as natural species serving as social symbols, there is also a sense of a fundamental lack of distinction between the human and natural world.”

Aptly, the feast dish depicts a killer whale with a human head and a second human head within its dorsal fin. The human is Siwidi, a mythic hero who travels undersea in a canoe that transforms into a killer whale. The dish was most likely used to serve fish oil, a delicacy, during a potlatch, an elaborate ritual of feasting and gift-giving.

The dish, one of a dozen artifacts from the Museum’s anthropology collections added to the *Whales* exhibition while it is on view in New York, was collected for the Museum in 1901 by ethnologist George Hunt, the son of a Tlingit noblewoman and an English trader. Multilingual and well-versed in the Kwakwaka’wakw culture of his native Fort Rupert on Vancouver Island, Hunt was a uniquely valuable field collaborator with the renowned anthropologist Franz Boas, including during the Jesup North Pacific Expedition from 1897 to 1902. Together, Boas and Hunt built an unrivaled collection for the Museum.

See this feast dish and other artifacts from the Museum’s collection in *Whales: Giants of the Deep*, which is free for Members.



Catalog no. 16/8527

© AMNH/D. Finnin



The 94-foot blue whale model

The Blue Whale

When the Irma and Paul Milstein Family Hall of Ocean Life re-opened to the public in 2003—ten years ago this May—the newly renovated gallery was transformed: 14 dioramas first built in the 1930s had been restored, and brand-new ecosystem displays highlighted the diversity of ocean habitats and the species that lived together within them.

The hall’s famous blue whale was renovated, too. Greeting visitors at the center of the vault-ceilinged space—at 29,000 square feet, an apt stand-in for the open ocean—the model was made more anatomically accurate than before. First constructed in the mid-1960s, based on photographs of a female blue whale that had been found dead in 1925, the blue whale model originally went on display in 1969. “Even though men had walked on the Moon, little was known about what blue whales looked like in their natural habitat,” says Axelrod Research Curator Melanie Stiassny, an ichthyologist, who served as lead curator for the 2003 renovation.

By 2001, Museum artists working on the renovation of the 94-foot, 21,000-pound model had many photographs and footage on which to base their work. They flattened the whale’s once-overly bulging eyes, accurately redesigned the whale’s blowholes, and tapered the tail. Using some 25 gallons of cobalt and cerulean blue paint, the team also recolored and respotted the grayish blue whale.

Since whales are placental mammals—meaning that, like humans, they nourish their developing fetuses inside their bodies through an umbilical cord and bear live young that feed on mother’s milk—a belly button was added. If you stand beneath the model, you can see the navel about four-fifths of the way down the whale’s body, a reminder of just one of the inheritances humans share with this massive, mysterious mammal.

Celebrate the 10th anniversary of the Milstein Hall of Ocean Life in this spring’s Milstein Science Series on April 14 and May 19.

Rotunda / Spring 2013 / AMNH.org

THE ORIGINAL MODEL

Though the current blue-whale model dates back to the 1960s, a life-size model of a blue whale has been on display in the Museum for more than a century. First exhibited in 1907, the original hung in the now-closed Hall of the Biology of Mammals, above land mammals including deer and caribou.

TRIAL AND ERROR

Built from steel, with wooden ribs, the first model was initially covered with plain paper, but the strategy didn’t work. “Our whale looked awful,” recalled Roy Chapman Andrews, then a young assistant at the Museum who later became its director. “It seemed to be in the last stages of starvation.” Eventually, the team successfully sheathed the model in papier-mâché, and the 74-foot whale hung in the hall for decades.

THE GREAT UNKNOWN

Until the 1970s, no one had captured a photo of a live blue whale, says Richard Ellis, an artist and author of many books about marine life. While working on the model first displayed in 1969, Ellis searched for references in the Museum’s library—“the best natural history library in the world,” he says—but found only photos of dead whales and whaling reference books.

BIG AND FAST

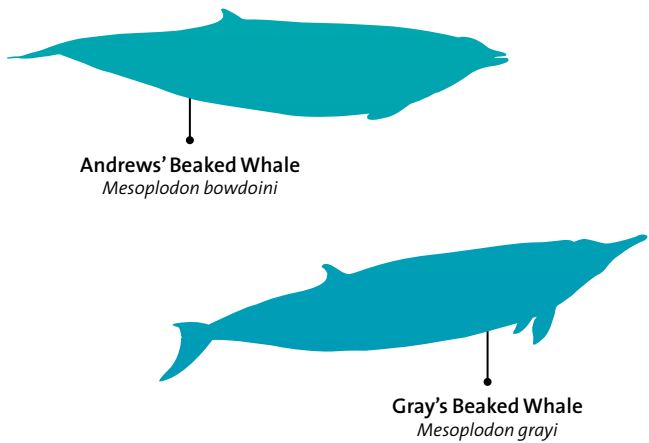
The largest animals ever to live on the planet, blue whales are also fast swimmers—they can swim in bursts of up to 30 miles per hour to outpace most predators, including, at one time, humans. After steam-powered whaling boats were developed in 1864, whale-hunters pursued blue whales for their flesh and bones, used in fertilizer, blubber for oil, and skin and innards for leather, killing more than 350,000 individuals in a century. Hunting blue whales was banned internationally in 1966.

TAILS UP

Female blue whales have gestation periods of about 10 months to a year, far shorter than the nearly two years of another large mammal, elephants. Unlike most mammals, whose babies are generally born head-first, marine mammals, including blue whales, are generally born tail-first to keep the baby connected to the air-supply from its umbilical cord as long as possible. After the birth, the mother quickly pushes her young up to the water’s surface to take its first gulps of air.

The Elusive Whales

New research is revealing more
about beaked whales, which have a
long history of study at the Museum.



In 1908, as an eager young assistant at the Museum, Roy Chapman Andrews got an opportunity that would transform his career as a field naturalist: a chance to travel the world studying whales.

Museum Trustee George S. Bowdoin had donated \$10,000—about \$250,000 today—for the study and collection of cetaceans, the group of marine mammals that includes whales, dolphins, and porpoises.

In later years, Andrews—who was the Director of the Museum from 1935 to 1942—would be best known for his 1920s fossil-hunting expeditions to the Gobi Desert in Central Asia. (There, his team discovered many new mammal and dinosaur fossils, including the first nests of dinosaur eggs.) But as a young man, he was first and foremost interested in whales—including beaked whales, an elusive group that comprises about a quarter of all whale species.

“There was never a more virgin field for an enthusiastic young naturalist,” Andrews would later write. Before the advent of whale hunting by steam-powered ships, starting in the late 1860s, researchers had no way to observe these fast-moving marine mammals in their native habitat. Even in the early 1900s, joining a whaling voyage was virtually the only way to study the animals while they were alive. And so Bowdoin’s donation launched Andrews “on a career of blubber and brine which lasted for eight years and carried [him] twice around the world,” to whaling ships and stations in Canada, Alaska, Japan, and more.

But even during Andrews’ extensive travels he encountered no living beaked whales. The only evidence he observed of the existence of these mammals—which can reach 42 feet long and weigh thousands of pounds—was circumstantial and episodic.

In 1910 in Japan, Andrews saw a photograph of a Baird’s beaked whale (*Berardius bairdii*), the largest of all beaked whales, proof that this rare species swam there, too, and not just off the coast of Alaska as was thought. And once, later on, he was able to examine the skeleton of a beaked whale (*Mesoplodon densirostris*) that had beached along the shoreline of New Jersey.

Most surprising, it was at home, in the Museum’s own collections, that he discovered a new species of beaked whale. Found in 1904 in New Zealand, the skeleton of a small whale had been transported to the American Museum of Natural History. Later, Andrews described the species in a paper; he named it *Mesoplodon bowdoini*, in honor of the trustee who funded his whale work.

“These Strange Whales”

More than a century has passed since Andrews’s explorations of “these strange whales,” as he referred to them. But research into beaked whales’ biology and behavior remains in its infancy, in large part because they favor deepwater habitats.

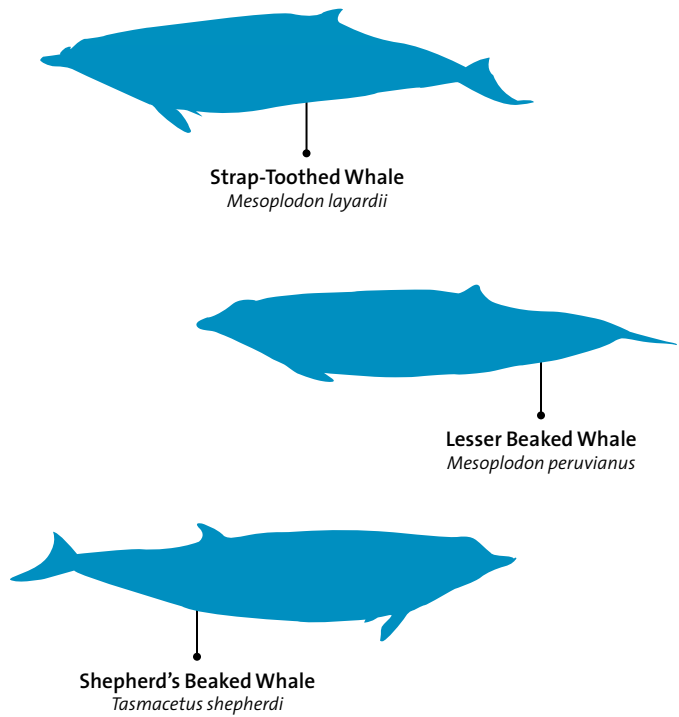
However, new fieldwork is slowly revealing more about where these animals live in the oceans; how they hunt for food; how they choose mates, and more. (The Museum’s special exhibition, *Whales: Giants of the Deep*, includes many beaked whales specimens, often found off the coast of New Zealand, where 11 of the 21 beaked whale species are known to hunt and live.)

Like all living whales, beaked whales spend their lives in the water. They come to the surface to breathe air—not to spew water, as it’s easy to think: the spray you see is the whale exhaling—through a blowhole found atop their heads. Instead of a fur coat of functional hair, which most other mammals have, they are kept warm by a layer of blubber under their skin. Females bear live young and nurse their babies.

But beaked whales differ from their whale relatives. As their name implies, beaked whales’ most distinctive anatomical feature may be their unusual toothy snouts.

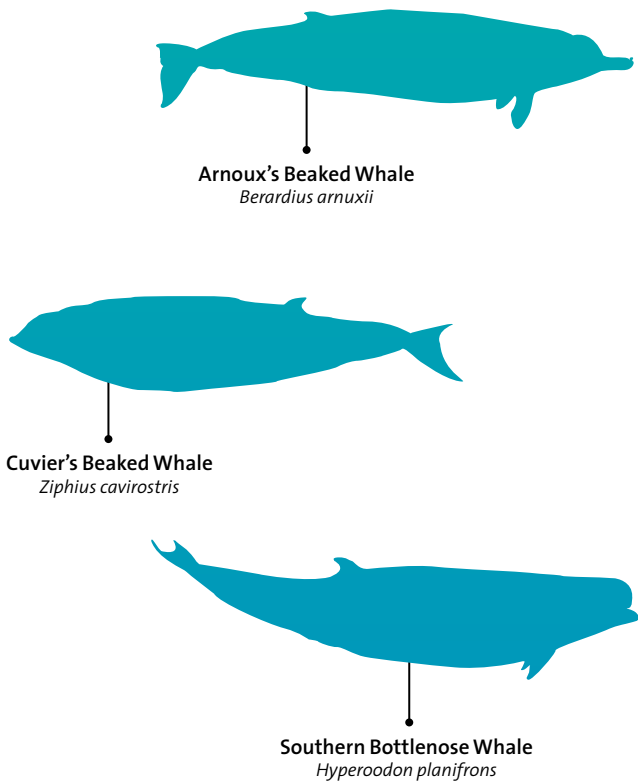
There are two groups of whales: baleen and toothed. Baleen whales, such as blue, humpback, and right whales, are toothless. They feed by using their unique baleen—fringes of keratin in their mouths—to help keep prey in and filter water out. Toothed whales are the bigger group, comprising 70 of the more than 80 whale species living today, including beaked whales along with sperm whales, porpoises, dolphins, and the monodonts—narwhals and belugas.

Many toothed whales have multiple peglike teeth to grasp prey before suctioning it into their mouths. Beaked whales,



These silhouettes depict eight species of beaked whales, including *Mesoplodon bowdoini*, described by Roy Chapman Andrews from a Museum specimen.

Image of Roy Chapman Andrews on pages 6-7 © AMNH Library/219165; whale illustrations © AMNH/Hinterland



on the other hand, have only either one or two pairs of very large, tusklike teeth in the middle of their snouts. (The name of the genus to which most beaked whales species belong, *Mesoplodon*, comes from the Latin for “armed with a tooth in the middle of the jaw”.) Often, neither females nor young beaked whales have any teeth at all; the conspicuous teeth are seen mostly in the sexually mature males.

These males appear to use their teeth for display, not unlike antlers in some deer species, or the curling tusks of male babirusa pigs. Recently, researchers from the U.S., New Zealand, and Australia examined the scarring of tusks in 12 species of beaked whales and found patterns suggesting that the males also used their tusks to spar for potential mates. Furthermore, using DNA data, the same researchers found that multiple beaked-whale species appear to dwell together in the same ocean neighborhoods, and that females may actually be using the males’ distinctive tusks to identify those of their own species.

But it seems that one activity beaked whales don’t use their teeth for is eating. While few, if any, people have observed beaked whales hunting or eating in the wild, evidence suggests that beaked whales likely eat by suction-feeding: moving the muscles in their mouth, throat grooves, and powerful tongue in such a way as to vacuum prey—mainly cephalopods like octopus and squid—into their gullets.

Because beaked whales feed on animals from deep-ocean habitats, it’s no wonder that certain species can dive to great depths. In 1999, researchers off the coast of Nova Scotia studied the dives of bottlenose beaked whales, *Hyperoodon ambullatus*, by tagging a group living in a submarine canyon. While the researchers’ sample was small, they found that the whales spent the bulk of their time diving, not at the surface. On average, they dove more than 2,600 feet (800 meters)—about half a mile—on a single breath.

The Human Connection

Though their deepwater habitat has made studying beaked whales more challenging, it has not fully shielded them from human activity.

One potential threat comes from our shared use of echolocation, or use of sound to detect objects, underwater. Like some other mammal and whale species, beaked whales emit clicks and squeaks that echo off other animals or objects, sounds they then use to navigate, find food, and evade potential predators. Humans rely on the manmade form, sonar, in commercial fishing, naval activities, and more. During the past 15 years, naval sonar exercises have been linked with several fatal mass strandings of beaked whales.

Sound waves travel farther under water and with less diminishment than in air, so sounds produced even miles away from a group of whales may have a disruptive effect, as suggested by a 2011 study supported in part by the U.S. Navy. Researchers tagged beaked whales off the Bahamas to measure their response to military sonar and found that when exposed to sounds at 140 decibels even several miles away, whales interrupted their dives and swam away from the area. Some researchers theorize that certain frequencies of sonar noise resemble the sounds of killer whales, a predator. Or, perhaps, beaked whales’ response to marine noise may be more acute than that of most other whale species.

Conservationists, the Navy, and marine biologists aim to continue this type of research, which is still in its relatively early stages. Perhaps regulations of oceanic noise in known habitat for beaked whales will be tightened.

After all, there is a long, intimate connection between humans and many whale species—a link Roy Chapman Andrews instinctively understood. In a book Andrews wrote for children in 1954, toward the end of his life, he explained, “Writing about whales has again brought back to me the intense interest of their study. You see them for only a few brief moments above the surface. Then they are gone, and you wonder what goes on down in the depths of the ocean. But little by little, naturalists are finding out....Every year we learn a little more of their private lives. All of it is fascinating.”

Visit *Whales: Giants of the Deep*, which transports visitors to the vibrant underwater world of these mighty animals and explores the latest research and the central role whales have long played in human cultures.

Whales: Giants of the Deep
Now on View
Free for Members

Whales: Giants of the Deep was developed and presented by the Museum of New Zealand Te Papa Tongarewa. This exhibition was made possible through the support of the New Zealand Government.

The American Museum of Natural History gratefully acknowledges the Richard and Karen LeFrak Exhibition and Education Fund.

Generous support for *Whales* has been provided by the Eileen P. Bernard Exhibition Fund.

THE LIFE AQUATIC

TRADING LAND FOR WATER, WHALES EVOLVED AMAZING ADAPTATIONS

Fifty-five million years ago, a group of hoofed mammals began a slow move from shore to sea, in time evolving a set of extraordinary features to thrive in their new environment. Today's whales share many anatomical traits with other mammals, but the unique adaptations of species such as *Physeter macrocephalus*, the sperm whale, illustrate how organisms can transform over time as they carve out their place on the planet.

1 HEAD

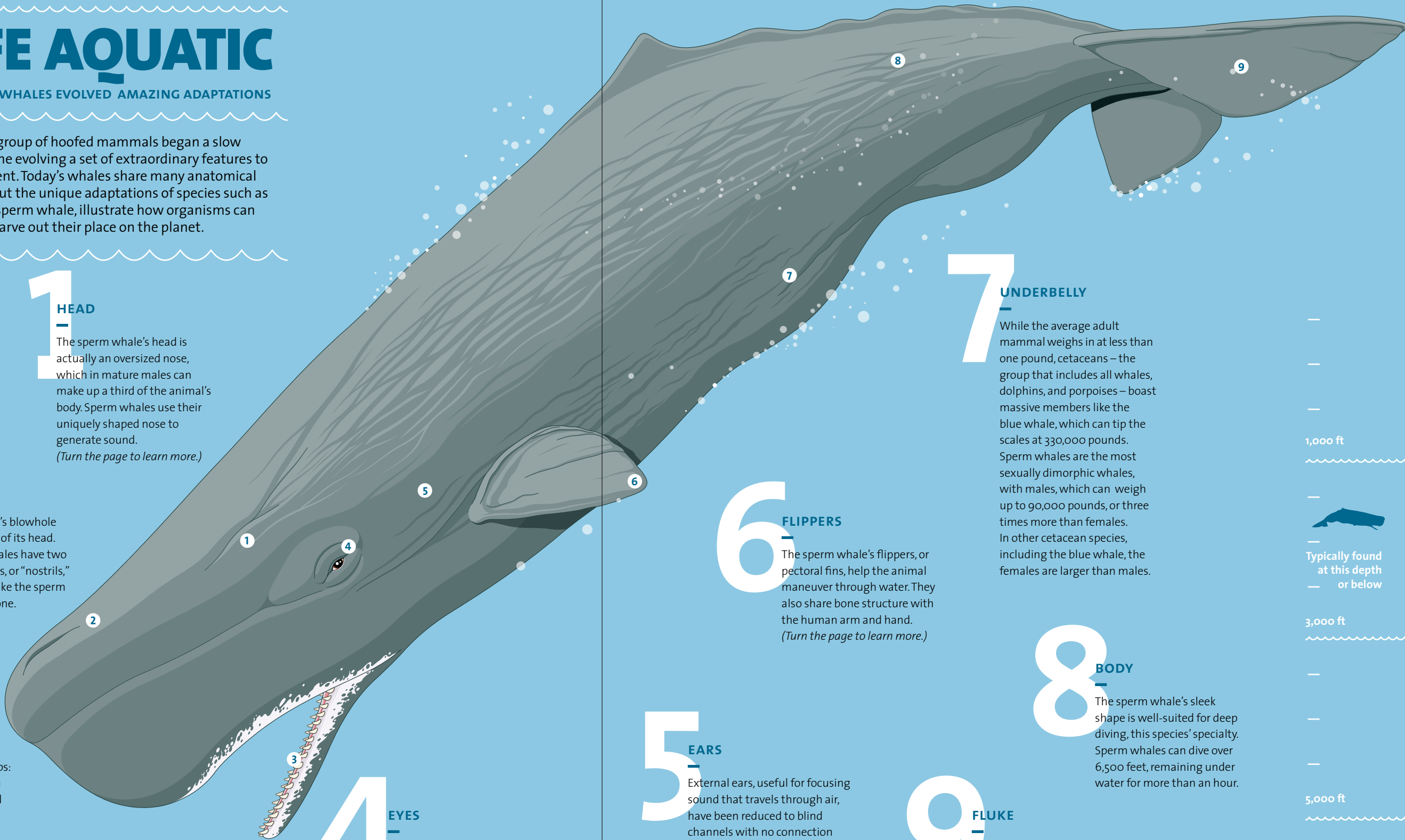
The sperm whale's head is actually an oversized nose, which in mature males can make up a third of the animal's body. Sperm whales use their uniquely shaped nose to generate sound.
(Turn the page to learn more.)

2 BLOWHOLE

The sperm whale's blowhole is on the left side of its head. While baleen whales have two external openings, or "nostrils," toothed whales like the sperm whale have just one.

3 TEETH

Whales fall into two groups: toothed or baleen. Baleen whales have no teeth and feed by straining large gulps of water through fringe made out of keratin, the same material that makes up human finger nails. Toothed whales, including the sperm whale, pursue individual prey, grabbing or using suction to pull it into their mouths.



4 EYES

Relative to their massive heads, the sperm whales' eyes are extremely small. But in dim, deep waters eyesight is not as important as other senses. Like other toothed whales, sperm whales rely on sound to navigate and hunt.

5 EARS

External ears, useful for focusing sound that travels through air, have been reduced to blind channels with no connection to the middle or narrow ear. Sperm whales collect sounds through other means.
(Turn the page to learn more.)

6 FLIPPERS

The sperm whale's flippers, or pectoral fins, help the animal maneuver through water. They also share bone structure with the human arm and hand.
(Turn the page to learn more.)

7 UNDERBELLY

While the average adult mammal weighs in at less than one pound, cetaceans – the group that includes all whales, dolphins, and porpoises – boast massive members like the blue whale, which can tip the scales at 330,000 pounds. Sperm whales are the most sexually dimorphic whales, with males, which can weigh up to 90,000 pounds, or three times more than females. In other cetacean species, including the blue whale, the females are larger than males.

8 BODY

The sperm whale's sleek shape is well-suited for deep diving, this species' specialty. Sperm whales can dive over 6,500 feet, remaining under water for more than an hour.

9 FLUKE

Unlike fish, which swim by moving their tails side to side, whales and dolphins move their flukes up and down. Sperm whale flukes are the largest, relative to body size, of any whale.



ECHOLOCATION

Among toothed whales' most amazing adaptations is echolocation, the use of sound to locate objects based on their echoes—and a way of navigating the world that is also used by some land mammals, including bats. Producing sound and interpreting its reflections helps sperm whales “see” their dark underwater environment and effectively hunt for deepwater prey such as giant squid.

1 NASAL PASSAGES

While the left nasal passage (1a) leads directly to the lone blowhole, the right nasal passage (1b) relays air to the phonic lips, a pair of flaps that vibrate to create sound.

2 PHONIC LIPS

Air is forced through the phonic lips to create a pulse of sound, which then passes through the spermaceti organ to the rear of the skull. There, it bounces off an air sac and is redirected towards the snout, passing through an organ called the melon.

3 SPERMACETI ORGAN

Milky waxes and oils contained here were once thought by whalers to be sperm, giving this species its common name. Prized for commercial use in the 18th and 19th centuries, spermaceti was the major reason why sperm whales were hunted.

5 ACOUSTIC FAT PAD

As echoes bounce back towards the sperm whale, they are received by a deposit of fat in the back of its long, thin jaw. The sound is then transmitted through the ear bones.

4 MELON

Called “junk” by whalers, this organ contains fatty tissue that transmits sound, focusing the pulses in the process and allowing sperm whales to direct, or aim, sound waves.

SKELETAL STRUCTURE

The fossil record shows that as land-dwelling whales became more aquatic, various anatomical structures changed to meet the demands of a new environment and reward more efficient swimmers and divers. Today some features are recognizably mammalian but highly specialized while others have vanished.

7 FRONT LIMBS

The bones of cetacean flippers are the same kinds of bones as in the human arm, with an upper arm bone, two forearm bones, and hand, wrist, and finger bones. In whales, fingers are elongated and may have additional bones. The joint between upper arm and forearm is immobile, creating an effective paddle.

8 RIBS

As in other mammals, sperm whales' ribs support and protect internal organs such as the lungs and heart. But in these extreme divers, ribs are flexible enough to compress under high pressure at great depths.

9 PELVIS AND HIND LIMBS

As whale ancestors moved into the water, the fossil record shows, hind limbs shrank, atrophied, and, along with the pelvis, detached from the spine. Remnants of hind limbs have been observed in modern whales, including sperm whales, reminders of an earlier evolutionary stage. The pelvis above includes a remnant of the femur, or thighbone.

6 VERTEBRAE OF THE NECK

In whales, the vertebrae directly next to the skull are compressed, with all but one fused together. The result: a shorter, more stable neck, a common adaptation in aquatic mammals.

ACKNOWLEDGMENTS

Special thanks to Dr. John Flynn, co-curator of the exhibition, and Dr. Andrea Cirranello for their assistance during the preparation of this feature.

The illustrations were created for *Rotunda* by Samuel Velasco and Pedro Velasco of 5W Infographics.

VISIT
WHALES: GIANTS
OF THE DEEP

TO SEE A
58-FOOT MALE
SPERM WHALE
SKELETON.

Programs and Events

For more programs and to purchase tickets, visit amnh.org/calendar.

For updates and reminders, sign up for monthly eNotes for Members by sending your membership number and request to subscribe to members@amnh.org. The Museum does not trade, rent, or sell this information.

Tickets

Tickets are available by phone at 212-769-5200, Monday–Friday, 9 am–5 pm, or by visiting amnh.org. Please have your Membership number ready.

Availability may be limited. Please purchase tickets in advance.

Please be aware that ticket sales are final for all Member programs. All programs go ahead rain or shine. There are no refunds unless the program is cancelled by the Museum.

APRIL

SciCafe
Tiny Conspiracies: Cell-to-Cell Communication in Bacteria
Wednesday, April 3
7 pm
Free; 21+ with ID
Molecular biologist **Bonnie Bassler** explains how bacteria communicate.

Behind the Scenes in Ornithology
Thursday, April 4
6:30–7:30 pm (family tour),
7–8 pm or **7:30–8:30 pm**
\$35 per person
View specimens from the Department of Ornithology with Collections Manager **Paul Sweet** and learn about how they were preserved and why they’re important today. Ages 10 and up.

The Core of the Moon
Monday, April 8
7:30 pm
\$13.50 Members
Planetary scientist **Ben Weiss** reviews the latest research into the Moon’s formation and composition.

Conservation, Wilderness, and the American Dream
Tuesday, April 9
6:30 pm
\$13.50 Members
Experts discuss Theodore Roosevelt’s conservation legacy and how to expand an American identity forged in an intimate relationship to its natural history. Hosted by **Tom Brokaw**.

Baby Animal Encounter
Saturday, April 13
11 am (for children 5 and under),
1 pm, or **2:30 pm**
\$10 Members
Meet some of nature’s wildest and cutest youngsters in this program with TV host **Jarod Miller**.

Members’ Trip to Brooklyn Grange
Saturday, April 13
10 am–2:30 pm
\$25 per person
Tour a local organic rooftop farming system at the Brooklyn Grange in Long Island City and learn about the farm’s genesis and daily operations. Ages 10 and up.

Milstein Science Series: Island Life
Sunday, April 14
11 am–4 pm
Free for Members
Learn about oceanic islands, which foster an array of wondrous biodiversity, in this family-friendly program, which includes the premiere of *Reefs Illuminated* in the Geodome theater and celebrates the 10th anniversary of the Milstein Hall of Ocean Life.

Sackler Brain Bench: Why We Eat What We Eat
Four Mondays, April 15–May 6
6–8 pm
\$105 for series (**\$35** per session)
In this salon-style course—sessions may be taken individually or as a series—explore the field of neurogastronomy.

Eruptions That Shook the World
Thursday, April 18
6:30 pm
Free for Members (Call 212-769-5200)
Cambridge University volcanologist **Clive Oppenheimer** explores how volcanic eruptions shape human society.

Exhibitions

Admission is by timed entry only.

Whales: Giants of the Deep
Free for Members
Come closer than ever to some of the mightiest, most massive, and mysterious marine mammals. *Whales: Giants of the Deep* features life-size models, interactive exhibits, films, and more than 20 whale skulls and skeletons to examine and investigate.

Our Global Kitchen: Food, Nature, Culture
Free for Members
Celebrate culture and cooking, historic meals and markets, and moments in our lives that we mark with food—as well as the ingredients that we have discovered and shaped over the course of thousands of years.

Frogs: A Chorus of Colors
Opens **Saturday, May 18**
Member tickets are **\$12.50** adults, **\$8** children
This popular live-animal exhibit explores the colorful and richly diverse world of frogs.

The Butterfly Conservatory
Through **Monday, May 27**
Member tickets are **\$12.50** adults, **\$8** children
See up to 500 live, free-flying tropical butterflies in a vivarium that approximates their natural habitat.

Winged Tapestries: Moths at Large
Free for Members
Witness the arresting beauty of night-flying moths in more than 30 large-format prints.

Members’ Trip to Stone Barns Center and Blue Hill Café
Friday, April 19
10 am–2:30 pm
\$125 per person
Visit the farms and fields of the Stone Barns Center, then enjoy a buffet lunch at the popular Blue Hill Café. Price includes bus transportation from the Museum, tour, and lunch. Ages 10 and up.

Family Members-only Highlights Tour
Saturday, April 20
10:30 am–noon
Free (Registration required; call 212-769-5200.)
Join a tour of the Museum’s most popular displays.

Members’ Open House
Tuesday, April 23
6–8:30 pm
Free for Adventurer-level Members and above (Call 212-769-5606)
Join us after hours to meet scientific staff and learn more about our collections and exhibits.

In the IMAX Theater: Flight of the Butterflies
Member tickets are **\$12.50** adults, **\$8** children
Accompany half a billion monarch butterflies on the 3,000-mile journey they undertake each fall through the United States to Mexico—Earth’s longest and most amazing insect migration.

Adventures in the Global Kitchen: The Art of Fermentation
Wednesday, April 24
6:30 pm
\$30 per person
Learn more about fermented delicacies with **Sandor Katz**, best-selling author of *The Art of Fermentation*.

SciCafe Flavor Labs: Demystifying the Science of Taste
Wednesday, May 1
7 pm
Free; 21+ with ID
Join flavor developer **Barb Stuckey** for a discussion of the science and meaning of taste.

Members’ Trip to Science Barge
Thursday, May 2
10 am–noon
\$25
Meet at Yonkers’ floating greenhouse, Science Barge, to learn about sustainable energy and food production. Ages 6 and up.

Hayden Planetarium Space Show: Journey to the Stars
Member tickets are **\$12.50** adults, **\$8** children
Journey to the Stars launches viewers through time and space to experience the life and death of the stars in our night sky.

Anthropology Unmasked
Sunday, May 5
3–4:30 pm
Free for Members (Call 212-769-5200)
Curators Emerti **Ian Tattersall** and **Stanley Freed** discuss Dr. Freed’s book detailing the lively history of the Museum’s Anthropology Division.

Curiosity’s Mission at Gale Crater, Mars
Wednesday, May 8
7:30 pm
\$13.50 Members
Project scientist **John Grotzinger** presents highlights of the *Curiosity* rover now exploring Mars.

Behind the Scenes in Herpetology
Thursday, May 9
6:30-7:30 pm (family tour),
7–8 pm, or **7:30–8:30pm**
\$35
Visit the rarely seen research collections of amphibians and reptiles in the Department of Herpetology with Curatorial Associate **David Kizirian**. Ages 10 and up.

Credits
Whales: Giants of the Deep was developed and presented by the Museum of New Zealand Te Papa Tongarewa. This exhibition was made possible through the support of the New Zealand Government.

The American Museum of Natural History gratefully acknowledges the Richard and Karen LeFrak Exhibition and Education Fund.

Nature’s Compass
Thursday, May 9
6:30 pm
Free for Members. (Registration required; call 212-769-5200)
Authors **James Gould** and **Carol Gould** discuss amazing ways animals navigate around their worlds. A book signing will follow.

Identification Day
Saturday, May 11
Noon-4 pm
Free for Members
Scientists will attempt to identify your rocks, shells, feathers, and more.

Birding and Wine-tasting in Basha Kill
Saturday, May 18
8 am–5 pm
\$90 per person
Ornithology Collections Manager **Paul Sweet** leads this birdwatching trip to a Catskills nature preserve. Following the bird walk, Members will visit the Basha Kill Winery. Fee includes transportation by private coach. Not recommended for children.

Generous support for Whales has been provided by the Eileen P. Bernard Exhibition Fund.

The exclusive corporate sponsor for Our Global Kitchen is J.P. Morgan.

Additional support for Our Global Kitchen and its related educational and online resources has been provided by GRACE Communications Foundation.

Credits continue on page 16

Members-only Highlights Tour
Saturday, May 18
3–4:30 pm
Free (Registration required; call 212-769-5200)
Join a tour of the Museum’s most popular displays.

Milstein Science Series: Whales
Sunday, May 19
11 am–4 pm
Free for Members
Go inside a life-size replica of a humpback whale, meet scientists, and more in this family program about whales, which also celebrates the 10th anniversary of the Milstein Hall of Ocean Life.

Curator Lecture: Our Global Kitchen
Wednesday, May 29
Free for Adventurer-level Members and Above (RSVP by Thursday, May 23; call 212-769-5606)
6:30–8:30 pm
Join a curatorial presentation about the *Our Global Kitchen* exhibition, and enjoy it after-hours and free of crowds.

JUNE

Family Bird Walk
Saturday, June 1
9 am, 11 am, and 1 pm
\$10 per person
Accompany a naturalist on a bird walk in Central Park. For families with children ages 4–10.

Behind the Scenes in Paleontology
Tuesday, June 4
6:30–7:30 pm (family tour)
7–8 pm or 7:30–8:30 pm
\$35 per person
Take part in this exclusive opportunity to visit the Museum’s Division of Paleontology with Senior Scientific Assistant **Carl Mehling** and Scientific Assistant **Alana Gishlick** to learn about these world-class collections and how fossils are preserved and maintained. For ages 10 and up.

SciCafe Neuroscience of Creativity
Wednesday, June 5
7 pm
Free; 21+ with ID
Join musician and Johns Hopkins professor **Charles Limb** to learn how the brain works during musical improvisation.

Summer Star Sail
Tuesday, June 11
8–10 pm
\$95 per person
Set sail with astrophysicist **Charles Liu** to watch the sun set on one of the longest days of the year while learning the science and star lore that surrounds the Summer Solstice.

Program credits: The Presenting Sponsor of the Museum’s cultural programming is
MetLife Foundation.

The exclusive corporate sponsor of Our Global Kitchen Education Programs is
Chase.

Global Kitchens tasting experiences presented by
Whole Foods Market.

The SciCafe series is proudly sponsored by Judy and Josh Weston.

Human Health SciCafes are supported by the National Center for Research Resources and the Division of Program Coordination, Planning, and Strategic Initiatives of the National Institutes of Health through Grant Number R25 OD011093.

The Museum greatly acknowledges the Mortimer D. Sackler Foundation, Inc., for its support to establish The Sackler Brain Bench, part of the Museum’s Sackler Educational Laboratory for Comparative Genomics and Human Origins.

The Milstein Science Series and Reefs Illuminated are proudly sponsored by the Paul and Irma Milstein Family.

Credits continue from page 15

The Kitchen Experience in Our Global Kitchen is presented by
Whole Foods Market.

Lord & Taylor is the proud sponsor of The Butterfly Conservatory.

Winged Tapestries: Moths at Large, featuring the art of Jim des Rivières, is produced by the Canadian Museum of Nature, Ottawa, Canada.

The presentation of Winged Tapestries at the American Museum of Natural History is made possible by the generosity of the Arthur Ross Foundation.

Journey to the Stars was produced by the American Museum of Natural History, the Rose Center for Earth and Space, and the Hayden Planetarium. Developed by the American Museum of Natural History, New York (amnh.org), in collaboration with the California Academy of Sciences, San Francisco; GOTO INC, Tokyo, Japan; Papalote • Museo del Niño, Mexico

City, Mexico; and Smithsonian National Air and Space Museum, Washington, D.C.

Journey to the Stars was created by the American Museum of Natural History, with the major support and partnership of NASA, Science Mission Directorate, Heliophysics Division.

Made possible through the generous sponsorship of
Lockheed Martin Corporation.

And proudly sponsored by **Accenture.**

Supercomputing resources provided by the Texas Advanced Computing Center (TACC) at The University of Texas at Austin, through the TeraGrid, a project of the National Science Foundation.

APRIL

3
Wednesday
SciCafe: Tiny Conspiracies: Cell-To-Cell Communication in Bacteria

4
Thursday
Behind the Scenes in Ornithology

8
Monday
The Core of the Moon

9
Tuesday
Conservation, Wilderness, and the American Dream

13
Saturday
Baby Animal Encounter

Members’ Trip to Brooklyn Grange

14
Sunday
Milstein Science Series: Island Life

Reefs Illuminated
screenings begins

15
Monday
Sackler Brain Bench: Why We Eat What We Eat

18
Thursday
Eruptions That Shook the World with Clive Oppenheimer

19
Friday
Members’ Trip to Stone Barns Center and Blue Hill Café

20
Saturday
Family Members-only Highlights Tour

22
Monday
Sackler Brain Bench: Why We Eat What We Eat

23
Tuesday
Members’ Open House

24
Wednesday
Adventures in the Global Kitchen: The Art of Fermentation

29
Monday
Sackler Brain Bench: Why We Eat What We Eat

MAY

1
Wednesday
SciCafe Flavor Labs: Demystifying the Science of Taste

2
Thursday
Members’ Trip to Science Barge

3
Friday
Last chance to see *Reefs Illuminated* in the Milstein Hall of Ocean Life

5
Sunday
Anthropology Unmasked

6
Monday
Sackler Brain Bench: Why We Eat What We Eat

8
Wednesday
Curiosity’s Mars Mission

9
Thursday
Nature’s Compass

Behind the Scenes in Herpetology

11
Saturday
Identification Day

18
Saturday
Birding and Wine-tasting in Basha Kill

Members-only Highlights Tour

19
Sunday
Milstein Science Series: Whales

29
Wednesday
Curator Lecture: *Our Global Kitchen*

JUNE

1
Saturday
Family Bird Walk

4
Tuesday
Behind the Scenes in Paleontology

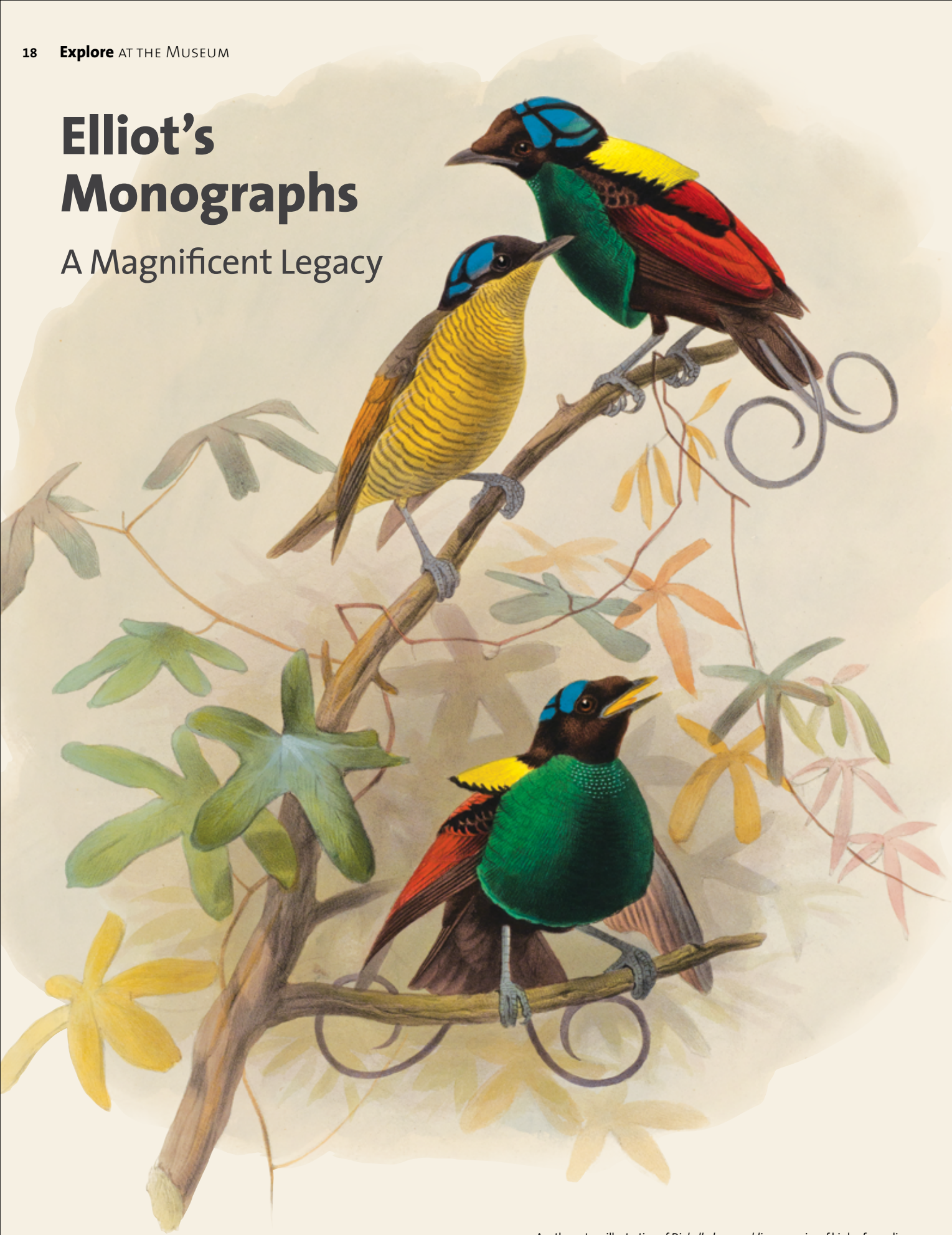
5
Wednesday
SciCafe Neuroscience of Creativity

11
Tuesday
Summer Star Sail

For additional events, please visit amnh.org/calendar.

Elliot's Monographs

A Magnificent Legacy



A 19th-century illustration of *Diphyllodes respublica*, a species of birds of paradise

The third of a four-part series, the following excerpt from *Natural Histories: Extraordinary Rare Book Selections from the American Museum of Natural History Library* (Sterling Signature, 2012), edited by Tom Baione, the Museum Library's director, highlights the role of rare 19th- and 20th-century monographs in advancing science.

By Joel L. Cracraft

Daniel Giraud Elliot was one of the most important American ornithologists and naturalists of the nineteenth century. Despite his importance and stature, there is remarkably little recorded about his life's details other than what he wrote and spoke about his professional life in 1914, in an unpublished reminiscence and an address to the Linnean Society of New York. Elliot's professional accomplishments were anything but obscure, however. He was a scientific founder of the American Museum of Natural History in 1869, and his personal collection of North American birds included the first specimens accessioned into the Museum.

Elliot made numerous trips across the globe for study and collecting, generally being away for multiple years at a time, with his longest absence being a decade. Based on these travels, he published hundreds of papers, including multiple folio-size monographs on groups of mammals and birds. His scientific productivity was remarkable, given that his formal education was minimal—he withdrew from Columbia College shortly after his acceptance due to “delicate” health, but yet almost immediately set out for several years of travel in South America, Europe, and the Middle East.

According to those who knew him, Elliot was an imposing and courtly man. His soft-spoken, congenial personality no doubt facilitated his access to the world's museums and scientists—allowing him to spend months at a time in those institutions—but, importantly also, it gave him access to social circles of the wealthy and powerful, who became sponsors of his major works. Through his contacts in Europe, he assembled collections of birds for the American Museum of Natural History, most through purchases from dealers as well as from the personal collections of royalty and the wealthy. In today's parlance, Elliot was a networker.

Elliot must also have been a person of iron will and focus. In his day, few, if any, of his peers had his knowledge and experience with the birds and mammals of the world. Elliot became famous as a monographer of families of birds and mammals. He synthesized previous taxonomic knowledge about the species in each group and added observations and new interpretations based on specimens housed in major museums.

Elliot's first love was birds, and he produced large synthetic works on pittas, pheasants, grouse, hummingbirds, and birds of paradise. Along the way he also published a folio-size monograph on cats. In 1894, he moved to the Field Museum of Natural History in Chicago as its curator in the Department of Zoology, shifting his attention to mammals. After he left that museum in 1906, he spent the next two years traveling in Europe and Asia studying primates, both in collections and in the field. Next, back in New York at the American Museum of Natural History, his investigations eventually culminated in his 1913 three-volume taxonomic monograph *A Review of the Primates*.

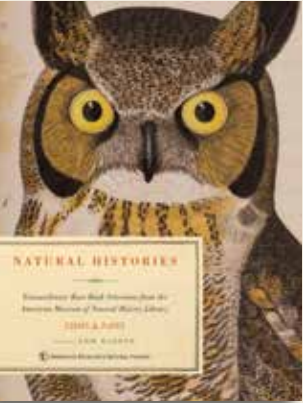
During Elliot's time, folio-size, lavishly illustrated scientific monographs were primarily for the well-to-do and not meant for general distribution. They were funded by the wealthy and published for them. Elliot did not invent the monograph—indeed, in his youth, he was influenced by the works of John James Audubon—but he elevated its importance, combining the emerging field of wildlife art with contemporary science. Illustrative of that was *A Monograph of the Paradiseidae [or Birds of Paradise]*, published in London in 1873. It was “printed for the subscribers, by the author,” and among those 49 patrons were many dukes, counts, earls, bankers, such as Baron A. de Rothschild, and a handful of institutional libraries. In 1887, Elliot's large ornithological library was purchased for the American Museum of Natural History by Cornelius Vanderbilt and Percy Pyne, and it was presumably at this time that this volume came to the Museum. Through a gift by Elliot's daughter Margaret in 1927, the American Museum of Natural History is also indeed fortunate to have the original watercolors by [Joseph] Wolf [1820–1899], along with many of his original wash drawings of these magnificent birds.

Joel L. Cracraft is the chair of the Division of Vertebrate Zoology.

Birds of a Feather

Daniel Giraud Elliot was a world-renowned ornithologist and mammalogist when Theodore Roosevelt first encountered him in March 1870, in Florence, Italy, where the 11-year-old Roosevelt had traveled with his family. It was the beginning of a life-long association, marked by a shared connection to the American Museum of Natural History, a passion for nature, and an historic collaboration.

In 1902, the Macmillan Company published *The Deer Family* by Roosevelt and three other eminent naturalists, among them Elliot. The book was written while Roosevelt was vice president, but touted as the first book ever to appear with a sitting president as an author. In it, Roosevelt railed against “game butchers” and exhorted hunters to serve as field naturalists with such fervor that, according to historian Douglas Brinkley, who consulted on the reopened Theodore Roosevelt Memorial Hall, the book has come to be seen as “the most important of all Roosevelt's books for our understanding of his evolved views on conservation.”



NATURAL HISTORIES IS AVAILABLE FROM THE MUSEUM SHOPS, INCLUDING AMNHSHOP.COM

Heeding the Call of the Wild, on a Member Excursion



Great Blue Heron



Wood Duck



Green Heron



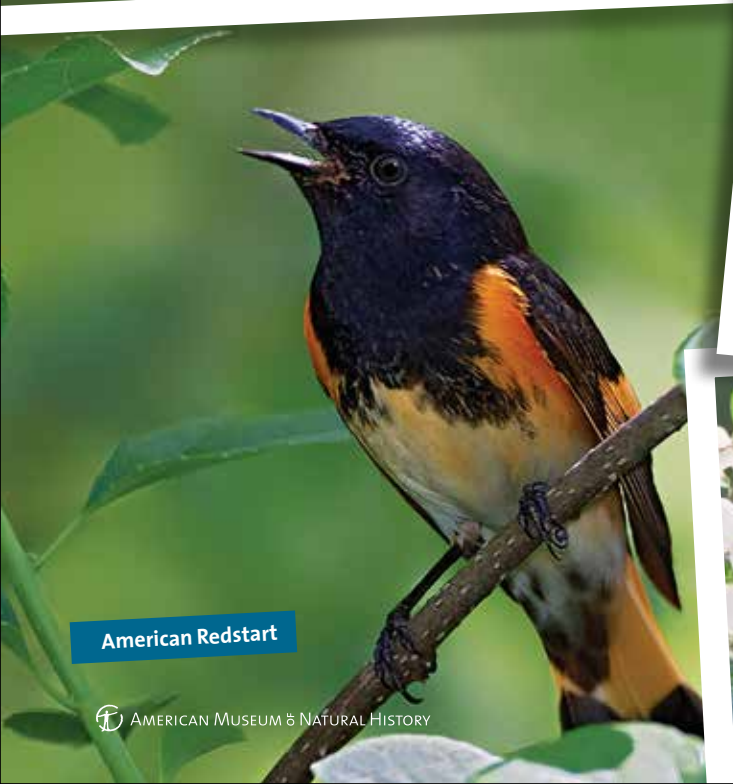
Eastern Kingbird



Common Yellowthroat



Bald Eagle



American Redstart



Eastern Bluebird



Great Blue Heron

HEAD TO
BASHA KILL ON
MAY 18
SEE P.15

By Jeanette Holmes

A city girl and a nature lover, I enjoy the excellent birding in Central Park. But sometimes the wider world beckons, and, for that, I turn to day-trips organized exclusively for Members by the American Museum of Natural History. The excursions are led by experts and include transportation by bus. All we have to do is—quite literally—go along for the ride.

On an outing last June to Basha Kill Wildlife Management Area near Wurtsboro, New York, our expert guide was Museum ornithologist Paul Sweet. After he told us about eagles, a nest, and scopes, I could hardly hear another word. We might see a bald eagle nest with a youngster through a spotting scope? Hurry this bus up! Okay, I did hear two more words: poison ivy. I began to think that long pants might have been a better option. Sure, I know “leaves of three, let it be,” but that’s all I know. Five people tried to show me poison ivy in the course of the day but none of the plants looked the same to me. So I still have no idea how to identify it, but luckily came through rash-free!

The walk was fantastic, filled with Red-winged Blackbirds, the males showing off for the lovely ladies and overseen by a beautiful Bald Eagle who excelled at ignoring us. An Eastern Kingbird and a few swallows (both Tree and Barn) occasionally flew over the marsh. I thought I saw a Spotted Sandpiper flying away and others reported seeing one, too. We saw a pair of Wood Ducks and a few Mallards, but they were all shy—so different from the ones crowding tourists in Central Park and begging for bread!

There were warblers about, including a Common Yellowthroat and a few American Redstarts. Some turtles were sunning, as best they could on a cloudy day. Up ahead, a Great Blue Heron was strutting around like it owned the place. A Green Heron was hanging out in a bare-branched tree over the water, looking more beautiful than is reasonable, but that’s quite common for Green Herons.

Ten steps later, a snake! Paul loves snakes. He loves to pick them up and explain them. I’m sure it was very educational, but I can’t recall any of it, because I was distracted. By the snake. In his hand. And around his arm. To be honest, most of my focus was just on the snake, but not for long.

We came to a clearing where spotting scopes were set up, and some birders watched us come up the path, pride and anticipation on their faces. They knew we were in for the rare sighting of a young Bald Eagle showing off its wings from the safety of its nest. We each took a long look, eventually tearing ourselves away to head up to the bus, passing a bluebird box on the way. (That’s one bird whose name does not disappoint!) A Tree Swallow also came over and hung out on the power line above us, while some of the group scouted out a winery nearby. They invited us in, so in we went, everyone happy to be there.

Our final bird list of the day was just over 40 species. Then, it was back to the city, where I will dream of Basha Kill and make plans to return. Maybe I will even learn how to identify poison ivy or, dare I say it, appreciate snakes.

Jeanette Holmes has been a Member since 2009.

Photos courtesy of David Speiser, www.lilibirds.com.

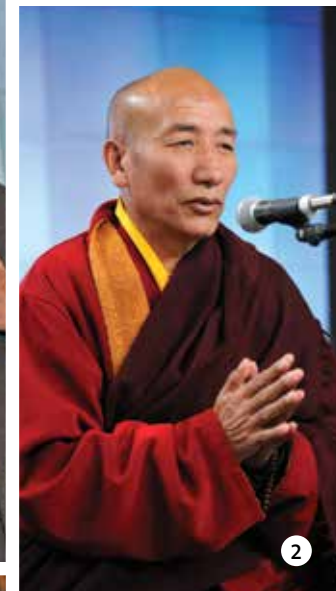


1. The Ao Dai Tet New Year's fashion show, which took place on January 26 during the Museum's Festival Luna, featured designs by Le Thanh Phuong.
2. Festival Luna featured stations where visitors could try calligraphy and learn more about Vietnamese folk painting.

3. Visitors to Festival Luna learned how to make Tibetan clay sculptures from master artist Rabkar Wangchuck.
4. During Festival Luna, visitors shared favorite holiday memories in a mobile recording studio created by Kitchen Conversations, a project of the Let's Talk About Food organization.

5. Composer and musician Paul Yeon Lee and New York Korean Traditional Marching Band electrified Cullman Hall of the Universe on January 26.

Photos © AMNH/R. Mickens



1. Former U.S. Poet Laureate Robert Hass and acclaimed entomologist E.O. Wilson discussed art and science on December 6.
2. Llama Gelek guided visitors through Moon meditations during Festival Luna.

3. NBC News Correspondent Robert Bazell (center) moderated "How To Feed A Growing Planet" with chef Marcus Samuelsson, Molly Jahn, and Raj Patel, pictured with Dr. Eleanor Sterling.
4. Nathan Myhrvold, author of *Modernist Cuisine*, spoke about new cooking techniques from his book.

Save the Date! Upcoming Events at the Museum

APRIL

4/14 Discover what scientists have learned about island species since Charles Darwin's famous voyage brought him to the Galapagos in 1831 in this **Milstein Science Series**, which is free for Members.

4/14–5/3 *Reefs Illuminated*, a new film by Museum scientists **John Sparks** and **David Gruber**, will be shown in a Geodome inflatable theater in the Milstein Hall of Ocean Life as part of the Milstein Science Series.

4/18 Dance the night away at the annual **Museum Dance**. This year's festivities will be "Under the Sea" in celebration of the exhibition *Whales: Giants of the Deep*. Please call 212-496-3495 for more information.

4/24 The annual **Environmental Lecture and Luncheon** will focus on the resilience of island ecosystems. Please call 212-769-5165 for more information.

MAY

5/11 Bring your shells, rocks, bones, and feathers—or other mysterious finds—to the Museum for **Identification Day**, where scientists will try to identify your specimen or artifact.

5/18 Hop on down to see *Frogs: A Chorus of Colors*, which returns with **live species of amazing amphibians** from around the world.

5/19 **Milstein Science Series: Whales** celebrates cetaceans under the big blue whale and the 10th anniversary of the Milstein Hall of Ocean Life. This program, which is free for Members, will feature a life-size replica of a humpback whale, presentations by scientists, and hands-on activities.

JUNE

6/5 Join us for the last **SciCafe** of the season to find out how the brain works during musical improvisation.

JULY

7/12 Bat walks are back! Experts lead guided walks through Central Park.

Photos 1-2 © AMNH/D. Finnin, Photos 3-4 © AMNH/R. Mickens

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New York, New York 10024-5192
amnh.org



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Whales: Giants of the Deep explores the latest research about these marine mammals as well as the central role they have played for thousands of years in human cultures. From the traditions of New Zealand's Māori whale riders and the Kwakwaka'wakw peoples of the Pacific Northwest to the international whaling industry and the rise of laws protecting whales from commercial hunting, the exhibition traces the close connections humans and whales have shared for centuries.

General Information

HOURS

Museum: Open daily, 10 am–5:45 pm;
closed on Thanksgiving and Christmas.

ENTRANCES

During Museum hours, Members may
enter at Central Park West at 79th Street
(second floor), the Rose Center/81st Street,
and through the subway (lower level).

RESTAURANTS

Museum Food Court, Café on One,
Starlight Café, and Café on 4 offer
Members a 15% discount. Hours are
subject to change.




MUSEUM SHOPS

The Museum Shop, DinoStore,
Shop for Earth and Space,
Cosmic Shop,
Our Global Kitchen Shop,
and Online Shop (amnhshop.com)
offer Members a 10% discount.

PHONE NUMBERS

Central Reservations 212-769-5200
Membership Office 212-769-5606
Museum Information 212-769-5100
Development 212-769-5151

TRANSPORTATION AND PARKING

Subway:  (weekdays) or  to 81st Street;
 to 79th Street, walk east to Museum
Bus: M7, M10, M11, or M104 to 79th Street;
M79 to Central Park West
Parking Garage: Open daily, 8 am–11 pm;
enter from West 81st Street. Members can park
for a flat fee of \$10 if entering after 4 pm.
To receive this rate, show your membership card
or event ticket when exiting the garage.