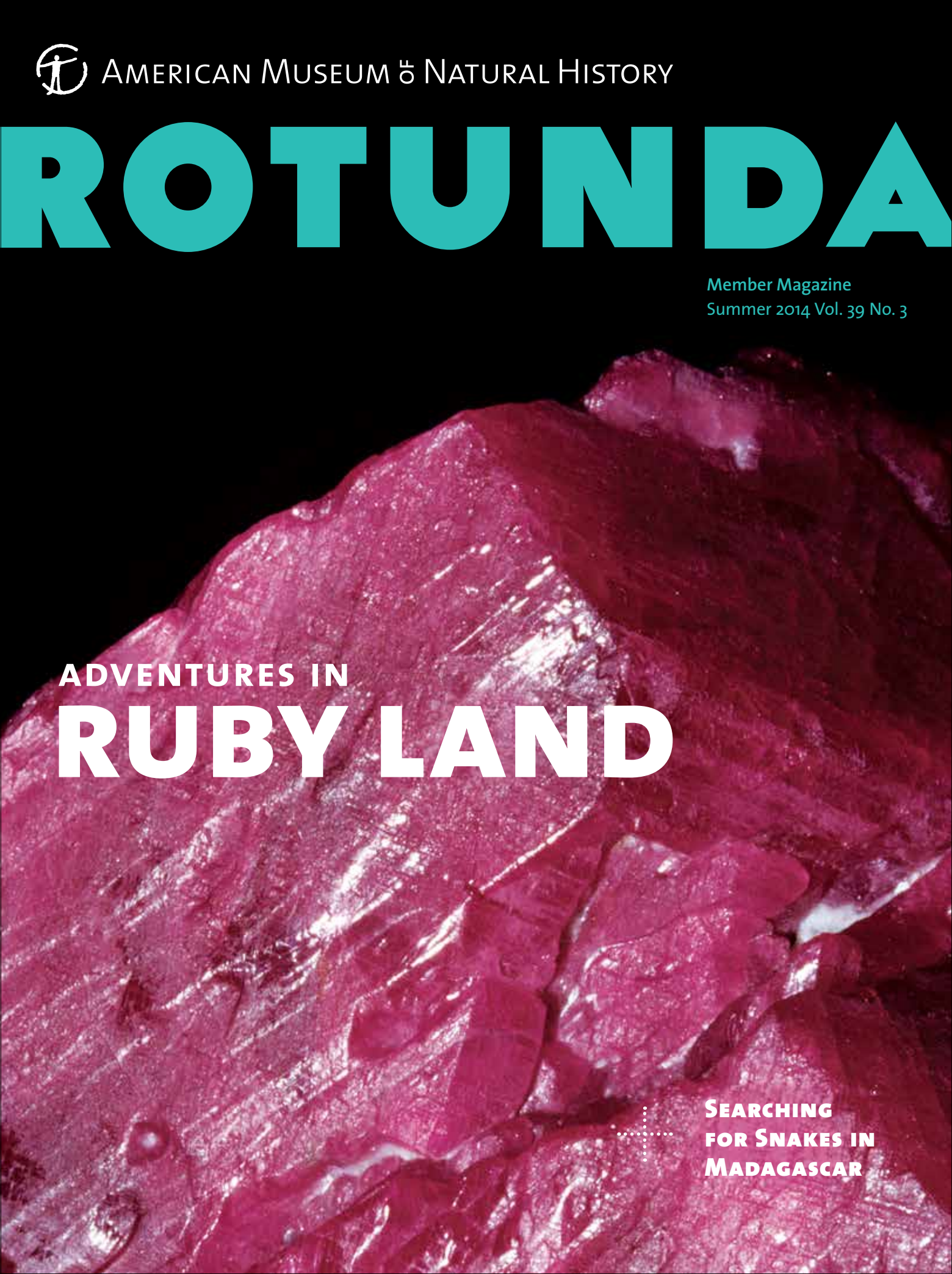
American Museum of Natural History

ROTUNDA

Member Magazine
Summer 2014 Vol. 39 No. 3



ADVENTURES IN RUBY LAND

Searching for Snakes in Madagascar

From the President

Ellen V. Futter

For generations, the Museum's exhibitions have been unsurpassed in communicating about nature and culture. When visitors come face-to-face with *Oviraptor's* fossilized nest of eggs, the Star of India sapphire, or soaring totems from the Northwest Coast, children and adults alike are launched on a journey of discovery. Today, the reach of the Museum's inspiring presentations is extended through new media, and some exhibitions may be virtual. Others may be alive.

This summer, live spiders are back at the Museum! Visitors can get up close and personal with 20 species of arachnids, including 16 species of spiders, explore spider anatomy and behavior, and learn about the critical role spiders play in ecosystems. Did you know that a spider can consume more than 80 pounds of insects a year? That most spiders have eight eyes yet still don't see very well? Most importantly, that spiders are threatened by habitat destruction, yet are often overlooked in conservation planning?

Since 1998, when the Museum first opened *The Butterfly Conservatory*, live-animal exhibitions have been a feature on the Museum's schedule. Complementing our galleries and special exhibitions, these presentations allow the Museum to focus on a particular group of animals and present science's current understanding of its evolution, behavior, and conservation status.

And these exhibitions have been enduringly popular: visitors come to warm up with tropical butterflies in the middle of winter, to peer into the eyes of tiny poison-dart frogs from a safe remove, to try to locate lizards expert at camouflage, and, this summer, to marvel at the amazing variety of our world's spiders.

Won't you join us and continue on your own journey of discovery?

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ROTUNDA

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ISSN 0194-6110
USPS Permit #472-650
Vol. 39, No. 3, Summer 2014
Rotunda is published quarterly by the Membership Office of the American Museum of Natural History, 15 West 77 Street, New York, NY 10024-5192. Phone: 212-769-5606. Website: amnh.org. Museum membership of $75 per year and higher includes a subscription to *Rotunda*.

Periodical postage paid at New York, NY and at additional mailing offices. Postmaster: please send address changes to *Rotunda*, Membership Office, AMNH, at the above address.

Please send questions, ideas, and feedback to **rotunda@amnh.org.**

Spiders Alive! Reopens, with Dividend

As *Spiders Alive!* returns to the Museum this month–two years after the exhibition's debut–for some of the featured arachnids, it won't be a question of coming back. As it turns out, they never left–and some have even multiplied.

After the first exhibition ended in December 2012, several species stayed on to live in the Museum's behind-the-scenes facility. Among the resident animals: 16 rose-haired tarantulas, seven emperor scorpions, five ornamental tarantulas, five desert hairy scorpions, three giant vinegaroons, three Southern house spiders, and two trapdoor spiders. (One of the rose-haired tarantulas, Heather, is currently featured in *The Power of Poison*. "She's particularly pretty," says Hazel Davies, associate director of live exhibits. "We like her coloration.")

Over time, the group has grown thanks to two broods of emperor scorplings, eight born last July and 16 this March–catching Davies and her team by surprise. Unlike spiders, "scorpions give live birth, so there were no egg sacs to prepare us," she explains.

While youngsters have to be kept apart from adults, emperor scorpions are communal: the scorplets get along as a group, and the adults live peacefully together. The two broods each now live in their own separate glass enclosures and, like the adults, are fed a diet of crickets.

The mother scorpions and their offspring, as well as a variety of spiders from around the world, will be on view in Gallery 77 on the first floor when *Spiders Alive!* reopens. The exhibition features some 20 arachnid species in all, including the goliath bird eater, one of the largest spiders in the world; the venomous western black widow, one of the few North American spiders harmful to people; and the orb weaver, the large-web spinner made famous by E. B. White's classic book *Charlotte's Web*.

Overseen by Norman Platnick, curator emeritus in the Division of Invertebrate Zoology, the exhibition includes larger-than-life models, videos, interactive exhibits, and fossils, and explores such topics as spiders' silk, venom, and defensive mechanisms such as mimicry and noise making. Also returning are the popular half-hourly presentations in which Museum staff handle live arachnids for visitors to see up close, highlighting their anatomy and facets of their behavior.

Spiders Alive! is back with 16 live spider species, climbable models, and juvenile scorpions.

Thanks to the recent additions, visitors also will be able to see emperor scorpions at various stages of development. Newborns are a ghostly white; after birth they crawl up en masse onto their mother's back, where she keeps her venom-barbed tail poised over them to protect them from predators. That hasn't been a concern for their human handlers at the Museum, says Davies, because the sting of the emperor scorpion is relatively mild, comparable to a bee sting, and avoidance is the animals' first line of defense. "They're very mild mannered, these guys," she explains. "And we know how to handle them without upsetting them."

Over the course of a month or so this spring, the March brood of scorplets came down from their mother's back, going through successive molts to grow larger and darkening in color each time. By the time visitors see them in the gallery, they'll be dark brown, changing color toward black like their parents.

***Spiders Alive!* is open beginning Friday, July 4.**

The golden orb-weaver is one of 16 spider species on view.

© AMNH/D. Finnin and R. Mickens

A Spider Primer

Scorpions are arachnids, too, but most of this show's stars are members of the order Araneae. Here are a few fun facts about these animals.

- Spiders evolved more than 300 million years ago, long before dinosaurs walked the Earth.
- Scientists have identified more than 44,500 spider species so far (for comparison, there are about 6,000 mammal species).
- Only about 50 percent of known spider species make webs. Others hunt their prey or burrow underground and one species, *Argyroneta aquatica*, lives underwater.
- Every spider sheds its exoskeleton, the inflexible outer shell, several times during its life. Most stop molting once they reach maturity.
- Nearly all spiders have eight simple eyes—consisting of one lens and a retina—arranged in different ways. But, for the most part, they don't see very well. In most cases, spiders use other senses, like touch and smell, to help capture prey.
- Many spiders care for their offspring. For instance, a female wolf spider may carry an egg sac containing her young for weeks. Once the spiderlings hatch, she hauls as many as 100 or more of them on her back for another week or so.

Catalog no. 70.1/7029C

A Hornbill Spoon

For much of human history, poisoning–whether by accident or malice–was much more common than it is today. To protect against the threat, people turned to a variety of natural and man-made materials that were thought to expose toxic substances–early warning systems prized for their life-saving potential.

In the Middle East, legends told of celadon dishes that would break or change their distinctive pale green color if they came into contact with poisoned food. According to Italian tradition, goblets of Venetian glass were thought to explode if filled with poisoned wine, while in Asia, silver chopsticks were believed to discolor on contact with poison. (The latter myth had some basis in truth; poisons containing sulfur can speed the tarnishing of silver.) Claims about some charms went even further than detection. Fossilized shark's teeth, thought to be dragon tongues, were dipped into food to purify it of poison. Other substances, such as agate, amethyst, and bezoars (hard objects found in the digestive tracts of animals), were believed to lessen the potency of or even destroy poison on contact.

The artifact pictured here is a hornbill spoon, which, according to Malaysian legend, would change color, even turn black, in the presence of poison. Now on view in the Museum's special exhibition *The Power of Poison*, this spoon was fashioned from the beak of a Rufous Hornbill *(Buceros hydrocorax)*, a large bird indigenous to the Philippines and characterized, like all hornbills, by a prominent casque or horny growth extending along the top of its head. (Imagine the spoon inverted.) It was collected by Laura Watson Benedict from the Bagobo people in Mindanao, Philippines, in the early 20th century and purchased by the Museum in 1910.

Hornbill, especially from the solid casque of the helmeted hornbill, has long been a popular material for carving and is often referred to as "ivory," although it is something quite different. Ivory is made of dentin, the stuff of tusks and teeth, while hornbill is keratin, which makes up hair, nails, and, of course, horn.

Although carved hornbill objects, from belt buckles to snuff boxes, are prized by antique collectors, modern trade is severely limited under the United Nations' Convention on International Trade in Endangered Species of Wild Fauna and Flora. All Asian hornbill species are currently threatened by hunting for their feathers and skulls, as well as by habitat loss due to logging and agriculture.

Don't miss *The Power of Poison*, which closes August 10. Members receive free admission.

A Pioneering Anthropologist

Laura Watson Benedict (1861–1932), who acquired the hornbill spoon, traveled to the Philippines in 1906 to study the Bagobo people, the first anthropologist to do so. In 1910, the Museum purchased her collection of 2,534 Bagobo artifacts for $4,000 and she was hired to accession it. In 1920, she donated another 50 objects of Bagobo memorabilia.

Making History

Benedict was in her mid-fifties when she became the first woman to earn a doctorate in anthropology from Columbia University in 1914, publishing her thesis, *Bagobo Ceremonial Magic and Myth*, in 1916. According to anthropologist Jay H. Bernstein in a 1985 article on Benedict, her study of the Bagobo "remains a forgotten treasure of 20th-century anthropology."

Enduring Legacy

In the Margaret Mead Hall of Pacific Peoples, visitors will find 29 artifacts collected by Benedict, including exquisitely beaded clothing and jewelry. Reflecting on the pride the Bagobo exhibited in their possessions and handiwork, Benedict wrote in the *American Museum Journal* in 1911, "If the Bagobo people could come to the New York and see their belongings arranged in a great hall in sight of all visitors, their joy would be unbounded."

Hornbills on View

Two Rufous Hornbills, painted by Francis Lee Jaques, appear in the Philippines diorama in the Whitney Hall of Pacific Birds. Four African hornbills can be seen in the Congo Forest diorama in the Hall of Birds of the World: the Black Dwarf Hornbill *(Tockus hartlaubi)*, the White-thighed Hornbill *(Bycanistes albotibialis)*, the Black-casqued Wattled Hornbill *(Ceratogymna atrata)*, and the White-crested Hornbill *(Tropicranus albocristatus)*. Unlike Asian hornbills, African hornbill species are not endangered.

Catalog no. 7067

An Early Collection

In 1869, the year the Museum was incorporated, the Trustees turned to the critical task of building its collections. Within a few months, they sent Daniel Giraud Elliot, a noted ornithologist and naturalist, and Museum Trustee William T. Blodgett to negotiate the purchase of "certain collections of specimens in Natural History" in Europe.

At the top of the list were collections that had been gathered by a few notable naturalists: the Verreaux brothers, who assembled one of the largest collections in Europe; Monsieur Vedray of Paris, who had collected 250 mounted mammal specimens and rare Siberian birds; and Prince Maximilian zu Wied (1782–1867), an explorer from the German principality of Wied-Neuwied. Prince Maximilian's collection "is regarded as one of the most important private collections in Europe, and has long been consulted by the scientific world," wrote Blodgett in his report. "[It] contains a large number of types, the results of the Prince's explorations in South America, and many rare specimens which [sic] have been secured at intervals during the period of a long lifetime." It was a fantastic opportunity for the nascent Museum to acquire specimens that would form the nucleus of its holdings.

Elliot and Blodgett ultimately purchased the prince's 4,000 mounted birds, 600 mounted mammals, and about 2,000 fishes and reptiles, either mounted or in alcohol, for 1,500 pounds sterling–or approximately $200,000 today.

The value of the Maximilian collection lay largely in its diversity and the rarity of its specimens, which the prince–with his appetite for discovery, broad interests in the natural world, and resources to undertake overseas trips–was able to pursue over many decades. He even led two scientific expeditions to the New World, first to Brazil in 1815-17 and then to the United States in 1832–34, gathering thousands of specimens along the way. Researchers still study these today.

Prince Maximilian also acquired objects collected by others, including this South African geometric tortoise specimen, *Psammobates geometricus*, whose earlier history is unknown. Today, this species is considered endangered.

For more about the Department of Herpetology's collections, visit amnh.org/our-research.

Travel Diaries

After his first expedition, Prince Maximilian published *Travel in Brazil in the Years 1815–17*, as well as a four-volume taxonomic review of the species he collected and 90 hand-painted engravings of animals. Following his North American journey, he published *Travels in the Interior of North America* with watercolors by Swiss artist Karl Bodmer, who had accompanied him. The publications remain important references for researchers today.

Student of Cultures

Prince Maximilian had an abiding interest in native cultures of the Americas. Before embarking on his travels, he studied anthropology at the University of Goettingen under Johann Friedrich Blumenbach. On his expeditions, he observed the customs, culture, and languages of the Botocudo, Puri, and Pataxo of Brazil, and the Mandans and Hidatsas of America's Northern Plains, later publishing his findings along with illustrations from his expeditions.

A Trove of Specimens

The Museum houses one of the five largest collections of reptile and amphibian specimens in the world, with some 360,000 items representing almost 8,000 species. The arrival of Prince Maximilian's collection predated the formation of the Department of Herpetology, which now holds almost 500 items from his collection as well as specimens from other historically important collections, including those of Edward Drinker Cope, Emmett Reid Dunn, and Clifford H. Pope.

True to Type

The Maximilian collection includes dozens of types—that is, original specimens of new species on which names and descriptions are based. Another measure of the prince's contribution to science is the number of species that bear his name. Among them: Maximilian's Scaly-headed Parrot (*Pionus maximiliani*); the margay (*Felis* or *Leopardis wiedii*); and the Maximilian sunflower (*Helianthus maximilianii*).

Collections Connoisseur

Daniel Giraud Elliot was eminently qualified to assess the European collections for the Museum. One of the Museum's founders, he was a recognized expert in the birds and mammals of many regions. During his Paris trip with Blodgett, he carefully selected diverse specimens to get the new Museum off to a strong start. The following year, the Museum expanded its holdings with the purchase of 2,500 bird specimens from Elliot's own collection for $7,351.62, about $130,000 in today's dollars.

RUBY LAND

THE **GEMS** AND **GEOLOGY** OF MYANMAR'S MOGOK STONE TRACT

Museum Curators George Harlow (left) and James Webster (right) with Dr. Kyaw Thu (center) overlook the gem-rich Mogok Valley.

Mogok, an historic city in northern Myanmar (Burma), lies in a valley 50 miles west of the snaking Irrawaddy River, about 3,500 feet above sea level. The shrub- and flower-covered hills rising above are dotted with small towns, villages, and garden plots, and adorned with well-tended Buddhist shrines. The spires of these gold-leaf-covered pagodas reach skyward, like gilded sculptures arising from rock-outcroppings along not just the area's one major highway but also its dirt roads and walking paths.

Mogok is best known for its gemstones, including ruby, sapphire, spinel, peridot, and moonstone. For centuries, the Mogok Stone Tract's hills were legendary for such amazing abundance that locals were said to come upon gems just glinting in the grass in their gardens. The area is still world-famous for gems: A sign along the highway reads "Welcome to Ruby Land," as about 1,000 working mines and diggings are found there today; most of the world's finest gem rubies come from Myanmar, most of these from Mogok.

"Geologically, Mogok is an unusual place," says Curator George Harlow, who specializes in minerals and gems. Dr. Harlow has visited the country's mineral-rich regions three times since his first trip in 1997-8–a trip that the not-prone-to-hyperbole curator described as "a jaw-dropping experience. I don't know any other place on the entire planet that has such a diverse suite of minerals."

Harlow is one of the lucky few to have traveled to Myanmar over the last few decades, however. Until 2011, the country was ruled by a military junta, and travel was greatly restricted, even for researchers. Since a government transition, a series of political reforms in this Buddhist nation of about 56 million people is gradually opening its borders to scientists, businesspeople, and even more so to tourists, in some places.

In November 2013, a group of Museum geologists finally got a long-awaited opportunity: to travel to Mogok to study the complex geological evolution of "Ruby Land." Why was it that the region was so rich in gem-quality minerals, which are, by definition, rare? Harlow was joined by Curator James Webster, who studies magma processes, and Senior Scientific Assistant Jamie Newman, on a Constantine S. Niarchos expedition supported by the Stavros Niarchos Foundation.

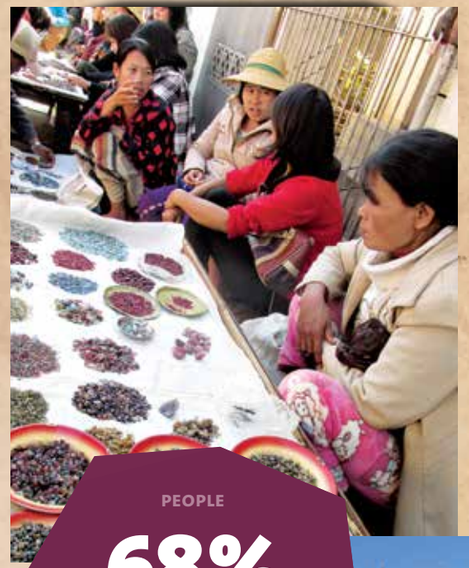
Unlike other mineral resources, gemstones do not generally form in large ore deposits. Instead, the deposits are usually small and found only in certain geologic environments. The Mogok Stone Tract is unique because it contains several very different environments, offering one clue as to why the region is so gem-rich.

These sources include igneous (formed from magma) intrusions called pegmatites that can form large gem pockets inside other rocks. Magmas reacted with preexisting rock (which researchers call country rock) to form sapphire, moonstone, and certain rare gemstones. Metamorphism by heat, pressure, and passing fluid transformed limestone to marble and created Mogok rubies and spinels, a related red gem, during mountain-building as long ago as 200 million years. Weathering of all these rocks created river and cavern concentrations of gems, historically the richest deposits of all.

SIZE

676,578 sq km

(slightly smaller than Texas)



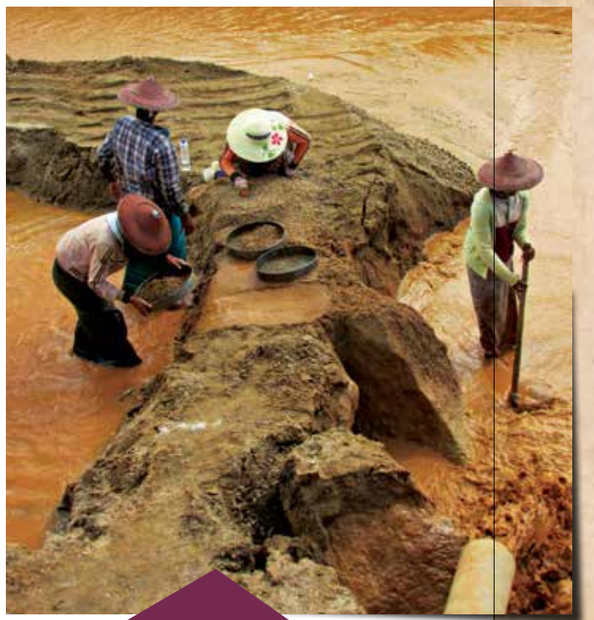
PEOPLE

68%

Burman with more than

100

other ethnic groups

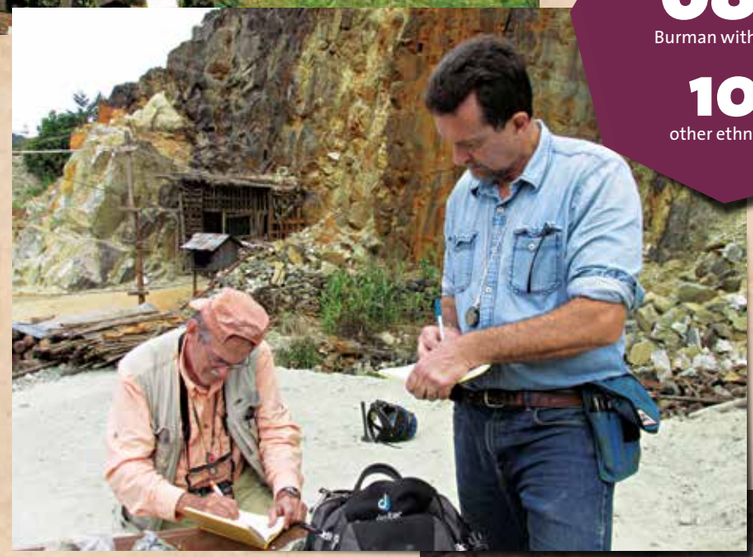


GEOGRAPHY

Shares borders with

5

countries:
Thailand, India, China, Bangladesh, and Laos



Center: During the trip, mineralogist George Harlow and geologist James Webster (right) collected more than 200 pounds of specimens, making notes at every collecting stop.

Top left: The edge of Mogok, pictured here, has long been a central mining area. Beyond the row of houses in this image, you can see quarry-like features of abandoned mines, with the mountains in the distance.

Top right: Each week, women in Mogok gather to sell gems to locals and visitors. Importing rubies and jade to the United States is currently illegal.

Middle right: Buddhist Myanmar is dotted with shrines and gold-leaf-covered pagodas, like these at Kyauk-Pyat-That monastery, rising from the rocks.

Bottom right: Miners in Mogok use high-pressure hoses to wash gems from gravels.

Bottom left: These women use bamboo baskets to concentrate gems, like gold miners panning for gold, from the outwash of a gem processing plant.

All expedition images
 Data source: CIA World Factbook

Geology 101

There are three kinds of fundamental rock: igneous, sedimentary, and metamorphic. While rare, gems can form or be found in various environments within all of these rock types, via different processes.

IGNEOUS ROCKS form when molten rock (magma or lava) cools and solidifies.

SEDIMENTARY ROCKS originate when particles settle out of water or air, or by precipitation of minerals from water. They accumulate in layers.

METAMORPHIC ROCKS result when existing rocks are changed by heat, pressure, or reactive fluids, such as hot, mineral-laden water.

While almost all gems are formed below Earth's surface, some are unearthed through mining, while others are exposed through Earth processes such as volcanoes, large-scale uplift, or faulting and, of course, weathering.

To learn more about different types of rocks, visit the Gottesman Hall of Planet Earth. For more about minerals and gems, visit the Guggenheim Hall of Minerals and the Morgan Memorial Hall of Gems.

POPULATION

55,746,253

2014 estimate

Another explanation for the presence of certain gems in Mogok, says Dr. Webster, could be the ancient circulation of extremely hot watery fluids through Earth's crust, which might have helped minerals dissolve and re-form in veins or at contacts between different types of rock. "It's really about hot water," says Webster. "At one time, it must have dissolved certain things out of the rock–changing minerals to other minerals." One hypothesis is that a portion of the Mogok deposits of the mineral corundum–a very hard mineral, second only to diamond, known to us in its red form as ruby and in many other colors as sapphire–formed in this way about 15 to 25 million years ago.

Once in Myanmar, Museum scientists worked with Dr. Kyaw Thu, a Burmese geologist, mineralogist, and gem dealer who helped arrange visits to 19 mines over 9 days in Mogok. Traveling by jeep or by foot from their home base at the Golden Butterfly Hotel, the geologists concentrated on collecting–not rubies, since these cannot be imported from Myanmar to the United States due to an embargo, but other gems and rocks to be analyzed back at the Museum.

Most of the mines in the region are large, employing hundreds of workers and using mechanized earth-moving equipment and high-pressure hoses to blast apart the sediments from open pits. Others are more basic, but at each spot the rocks researchers collected around the mines were clues–sometimes heavy ones–to the larger context of the geology that created the gems.

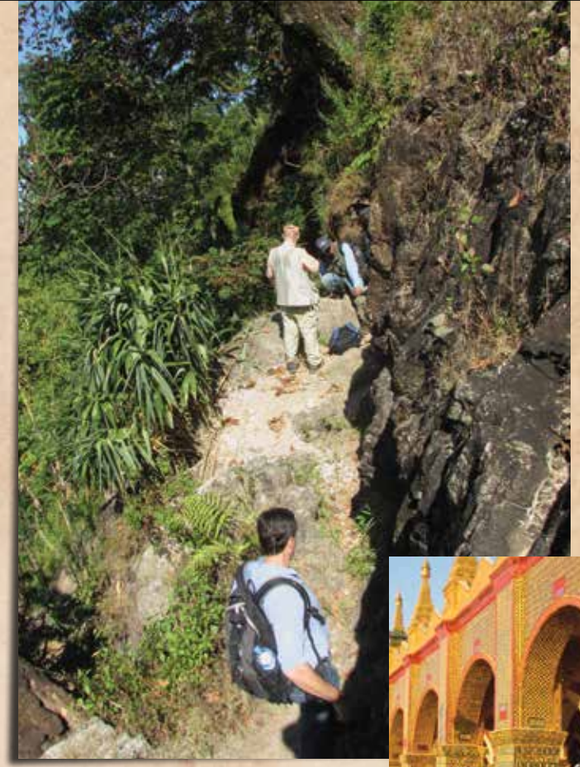
One day, for instance, they visited the Pandaw pegmatite mine. Setting off from the hotel, the team walked downhill for an hour or so on a path used for walking or, for intrepid miners, motorcycles, with birds calling in the distance through the foliage. At the bottom of the hill they finally came to a small mine, a pegmatite pocket–barely big enough for a person to wiggle into–that was mostly hand-dug.

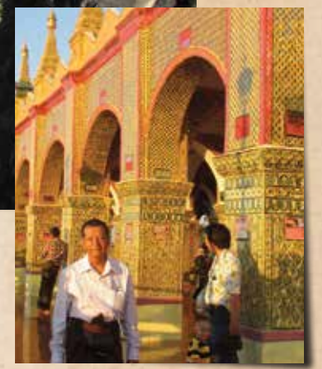
Accompanied by miners, Harlow and Webster crawled into the mine and collected rock samples. To add to their yield, the mine owner offered them a variety of mineral and rock samples as well. Then, with full rucksacks weighing perhaps 50 pounds, the researchers slowly walked back up the track to reach their vehicle, a trek that took more than an hour. "For some reason," says Webster, dryly, "the mines always seemed to be at the bottom of the hill."

Harlow, Webster, and colleagues investigated the geology of Mogok on the expedition.

All expedition images © J. Newman. Rock type photos © AMNH/C. Chesek, D. Finnin, and R. Mickens

Bear Mountain photo © istockphoto.com/mervas





Above: Most of the 1,000 working mines in Mogok are industrial, but some are accessible only by remote paths.

At right: While in Myanmar, the researchers also traveled to cities including Mandalay (pictured) to exchange ideas with other scientists.

Geologists are used to hauling their specimens: they collect rocks on expeditions all the time. But being allowed to do so in Mogok, Myanmar, remains for Westerners a special privilege. By the end of their three-week trip, the Museum team had collected 121 kilograms (266 pounds) of rocks for studying the context of this mineral-rich area. Using X-ray diffraction, scanning electron microscopy, mass spectrometry, and other techniques back in New York, the team hopes to be able to tease out answers to Mogok's mineralogy.

For instance, Harlow is working to understand how the mineral peridot–the gem form of forsterite, the common form of the mineral olivine–formed in Mogok, and whether these exquisite green gems were formed via similar processes to other known peridot deposits.

Perhaps the most important part of the trip happened not in the field, however, but in Myanmar's universities and geological societies. There, the Museum team met and exchanged ideas with Burmese researchers who have been limited in their international collaborations and hampered in their access to modern scientific equipment. During their visit, the team met local scientists and gave presentations in Yangon and at the geology department of the University of Mandalay.

"Helping our colleagues in Myanmar and developing collaborations should be beneficial to them, the Museum, and Myanmar as well," says Harlow. He and Webster hope that young scientists from Myanmar will be able to travel to the Museum in the not-too-distant future to train with researchers in the Department of Earth and Planetary Sciences, and that Museum postdocs will have opportunities to travel to Myanmar for field work–in Ruby Land and beyond.

This Constantine S. Niarchos Expedition was generously supported by the Stavros Niarchos Foundation.

Collecting Closer to Home

Interested in hunting for minerals near New York City this summer? It's illegal to collect on private lands without permission, but Curator Jim Webster recommends a few sites where collecting or prospecting is encouraged.

Sterling Hill Mining Museum, Ogdensberg, NJ
Just an hour or so from New York City, visitors ages 7 and up can collect zinc-ore mineral specimens, which are often fluorescent. Wear appropriate shoes and bring safety glasses as well as your own hammers, ultraviolet lamps, and carrying bags. Tools are also available for purchase.

For more information, including fees, visit **sterlinghillminingmuseum.org**.

Herkimer "Diamonds," Upstate New York
Hunt for unusually clear, diamond-like quartz crystals near Albany, New York. Two commercial mines offer prospecting from April through October. Plan to bring appropriate footwear and safety glasses as well as tools.

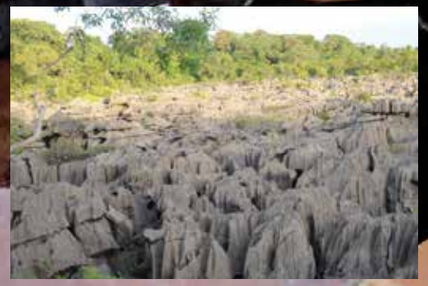
For more information about admission and fees, visit **herkimerdiamonds.com** and **herkimerdiamond.com**.

Bear Mountain State Park, Bear Mountain, NY
While you can't collect here, this popular park was formerly mined for iron ore and offers hikes that take you by historic mine dumps, mining roads, and prospect pits.

For more information, visit **nysparks.com/parks/13/details.aspx.**

The four-story Perkins Memorial Tower atop Bear Mountain offers spectacular views of the park.

Trailing Snakes in Madagascar



Madagascar's rainy season is relentless. Unpaved roads turn to mud. Rivers flood. Feet start to blister from constant dampness. Humidity permeates everything, soaking maps, seeping into GPS units, attacking cameras and other electronic equipment.

So why did herpetologists Chirstopher Raxworthy and Sara Ruane schedule their latest expedition to the island for January and February, at the height of the wet season?

"When I first came to Madagascar in 1985, there was very little practical knowledge about reptiles and amphibians anywhere, and most people were coming out in October or September," says Raxworthy, who is associate curator in the Division of Vertebrate Zoology. "I remember talking to one of the really good local guides, and I asked him–when do you think is the best time to come out and look for chameleons, frogs, and snakes? He said, the middle of the rainy season. Since then, I've gone to Madagascar during the peak rainy season, and that's made all the difference."

On this particular trip, Raxworthy and Ruane, a postdoctoral researcher, were carrying out a National Science Foundation-funded study of Madagascar's snakes, an unusually varied group given their relatively recent arrival on the island, about 30 million years ago. Each of the island's snakes is an endemic species, found nowhere else in the world. That, plus the fact that Madagascar is relatively small, geographically isolated, and has habitats ranging from humid forest to desert to mountainous areas, makes the island "the perfect place to study speciation," or the evolutionary processes that lead to new species, says Raxworthy. To document the fieldwork–rain, mud, and all–Raxworthy invited the video team from the Museum's Science Bulletins multimedia program to accompany him and Ruane to Madagascar's Anakarana National Park.

Rainy season aside, snake surveys are challenging to conduct. Snakes are shy and not abundant, the hardest reptiles to find during fieldwork. Madagascar's snakes have been studied for decades, and still scientists estimate that many new species are yet to be described. Many of the described species still lack DNA samples or even recent confirmed observations. It's those rarest 10 percent–the most elusive of an already hard-to-spot group, rarely seen and poorly documented–that Raxworthy and Ruane were after on this expedition.

To study snakes, of course, you first have to find them–but how? Some of the species at the top of Raxworthy and Ruane's list are so little known that researchers lack the most basic clues –prey, behavior, habitat–about where to start. Instead, they use everything in their toolkit, including traps, including pitfalls, and repeated surveys at various sites and at all hours of day or night.

"Searching at night is a good way to find snakes," says Dr. Ruane, who has been catching snakes since she was five years old and bringing reptiles and amphibians home from weekend hikes in Pennsylvania with her grandmother. "At night, I'm looking in trees for arboreal snakes that are active only at night, and during the day most of the snakes I'm looking for are terrestrial, fast, so I might be scanning the ground and ready to pounce."

It's a tough gig, and not just physically. "It's discouraging when you don't find anything," says Ruane. "But I just keep telling myself: I might find it if I look. I know I will not find it if I don't look."

The team's dedication ultimately paid off. Just what did Raxworthy and Ruane discover? Find out when the video segment about this trip begins screening this summer in the Hall of Biodiversity.

See video coverage from this expedition in the Hall of Biodiversity this summer and on the Museum's YouTube channel.

This research was supported by the U.S. National Science Foundation under Grant No. DEB 1257610.

Programs and Events

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

For updates and reminders, sign up for monthly Calendar Highlights 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.

July

IMAX: *Great White Shark*
Opens Monday, July 7
Daily screenings in 2D and 3D
Check amnh.org for Member ticket prices

In this stunning giant-screen movie, filmmakers Stephen McNicholas and Luke Cresswell take viewers around the world for "a breathtaking encounter with the predator we love to fear" and a look at their critical role at the top of the oceanic food chain. Focusing on four key Great-White hotspots–Mexico, South Africa, California, and New Zealand, the 40-minute film explores what is known about these incredible animals–their strength and beauty–and why they are vulnerable to extinction. Bill Nighy narrates as viewers see sharks through the eyes of people whose lives and work are inextricably linked to the Great White: South African shark expert Michael Rutzen, who openly scuba dives among them; Dr. Chris Lowe, who has been tagging juvenile Great Whites off the coast of Los Angeles; and two record breaking free-divers, Frederic Buyle and William Winram, who tag Great Whites during free dives.

Evening Bat Walk in Central Park
Fridays, July 11, July 18, or **July 25**
8:30 pm
$40 adults; **$25** children 12 and under

At dusk, bats leave the warm spaces under city roofs to feed on flying insects. Join members of the New York City Bat Group for a walk through Central Park, aided by a detector that amplifies the bats' otherwise inaudible high-frequency chirps.

Manhattanhenge
Friday, July 11
Time pm
$12

Learn the history and simple astronomy behind this unique event–when the sunset is aligned with Manhattan's east-west streets–in a special presentation at the Hayden Planetarium. Afterward, outdoor photo opportunities abound. Hayden Planetarium Director Neil deGrasse Tyson explains Manhattanhenge in a video on **amnh.tv**.

Fun with Fossils with Carl Mehling
Saturday, July 19
9 am–4 pm
$95 per person

Pack your collecting bag, old sneakers, and lunch, and travel back in time with paleontologist **Carl Mehling** for an expedition to Big Brook in Monmouth County, New Jersey. Offering a variety of invertebrate and vertebrate fossils from the Late Cretaceous period, the spot is ideal for collecting.

Member Hall Tour: Geology of Asia and Africa
Tuesday, July 29
6–8 pm
$25

Geologist and historian **Sidney Horenstein** takes visitors on a tour of the unique landscapes of Africa and Asia via the Museum's habitat dioramas.

Exhibitions

Pterosaurs: Flight in the Age of Dinosaurs
Free for Members

The fossils of ancient winged reptiles known as pterosaurs puzzled paleontologists for hundreds of years. Find out about how incredible new discoveries are revealing more about this extraordinary group of animals.

The Power of Poison
Closes **Sunday, August 10**
Free for Members

Explore poison's paradoxical roles in nature, myth, and human health and history while solving poisoning mysteries. Live presenters in the Detecting Poisons theater share real-world cases and highlight dramatic advances in toxicology and forensic science.

Lonesome George
Opens **Thursday, September 18**

Lonesome George, the world-famous Pinta Island tortoise who was the last of his kind when he died in June 2012, has been preserved in consultation with Museum scientists and will be on display for a limited time.

Natural Histories
Free for Members

View reproductions of beautifully illustrated scientific works from the Museum Library's Rare Book collection in an exhibition inspired by the book *Natural Histories*. Highlights include reproductions of works by Albrecht Dürer, Joseph Wolf, and John Woodhouse Audubon.

Astronomy Live: The Grand Tour
Tuesday, July 29
6:30 pm
$12

Explore the observable universe in one evening in the Hayden Planetarium. Nearly all of us know we're the third planet from the Sun, but where are we among the stars in the Milky Way? Do we hold a special place among the planets, stars, and galaxies in the universe? The Grand Tour answers these questions while you travel from Earth to the most distant objects in the universe with an experienced guide using the 3D Digital Universe Atlas, the most complete and scientifically accurate 3D map of the cosmos.

August

Member Excursion: Wolf Conservation Center
Saturday, August 2
9 am–4 pm
$95 per person

Join mammalogist **Eileen Westwig** on a visit to the Wolf Conservation Center in South Salem, NY. Learn about these beautiful wild animals and meet the Center's ambassador wolves, including a rare, new ambassador pup. Price includes transportation by private coach, lunch, and all admissions.

Journey to a Lost World with Paul Nascimbene
Saturday, August 16
9 am–4 pm
$95 per person

Pack your collecting bag, old sneakers, and lunch, and travel back in time with paleontologist **Paul Nascimbene** for an expedition to Big Brook in Monmouth County, New Jersey, which offers a variety of invertebrate and vertebrate fossils from the Late Cretaceous period. Plentiful fossils and diverse fauna make it an ideal spot for collecting.

Members' Walking Tour: Geology of Northern Central Park
Thursday, August 21
$25

Geologist and historian **Sidney Horenstein** leads a tour through the unique landscape of northern Central Park, including the area's War of 1812 fortifications and Huddlestone Bridge. As part of the walk, stroll by the Conservatory Gardens and the Harlem Meer.

Astronomy Live: Life on Other Worlds
Tuesday, August 26
6:30 pm
$12

Using the Museum's Digital Universe Atlas, astrophysicist **Jackie Faherty** and Director of Astrovisualization **Carter Emmart** lead a tour in the Hayden Planetarium dome of recently discovered exoplanets–planets that revolve around stars other than the Sun–and discuss their potential for life and more.

September

Fall Morning Bird Walks
Eight-week series starting
Tuesday, September 2
Wednesday, September 3
Thursday, September 4
Friday, September 5
7 am (Fridays start at 9 am)
$85 for a series

Observe the fall migration of birds in Central Park with naturalist **Joseph DiCostanzo.** Learn how to use field marks, habitat, behavior, and song as aids in identification. Bird field observation cards are included.

Animal Drawing
Eight Wednesdays, starting September 10
7–9 pm
$160 (Materials not included)

The celebrated dioramas, dinosaur skeletons, and other distinctive features of the Museum serve as settings for this series of intensive after-hours drawing classes with illustrator and naturalist **Patricia Wynne.** Learn about the gifted artists who created the Museum's world-class dioramas as you sketch subjects in their "natural" habitats. All levels welcome.

Please check **amnh.org** for Member ticket prices for live-animal exhibits, IMAX and 3D films, and the Space Show.

Spiders Alive!
Opens **Friday, July 4**

Featuring live specimens, including the goliath bird eater, black widows, and African whip spiders, *Spiders Alive!* immerses visitors in the fascinating and complex world of spiders and other arachnids.

LeFrak Theater
Mysteries of the Unseen World
Closes **Sunday, July 6**

Discover phenomena that can't be seen with the naked eye, revealed through time-lapse photography, electron microscopy, and more. Now screening in 2D and 3D.

Great White Shark
Opens **Monday, July 7**

This new IMAX film unravels the mystery of the animal atop the oceanic food chain. Screening in 2D and 3D.

Hayden Planetarium Space Show: *Dark Universe*

Narrated by Neil deGrasse Tyson, the new Space Show celebrates pivotal discoveries and the cosmic mysteries that remain.

Credits
Pterosaurs: Flight in the Age of Dinosaurs *was organized by the American Museum of Natural History, New York (amnh.org).*

The Museum gratefully acknowledges the
Richard and Karen LeFrak Exhibition and Education Fund.

Credits continue on page 16

An Indomitable Beast with Alan Rabinowitz

Wednesday, September 17
6:30 pm
Free

In his latest book, *An Indomitable Beast: The Remarkable Journey of the Jaguar*, big-cat expert **Alan Rabinowitz** shares his journey to conserve a species that, despite its past resilience, is now on a slide toward extinction. Including a mix of personal stories and scientific inquiry, this lecture will offer fascinating accounts from the field and beyond.

Dr. Rabinowitz is the president and CEO of Panthera, a nonprofit organization devoted to saving the world's wild-cat species, animals now subject to a variety of threats from diminished habitat to hunting by traders in body parts. Through the Global Felid Conservation Genetics Program, Museum scientists work in collaboration with Panthera to track tigers, lions, jaguars, and snow leopards through DNA in scat, or fecal specimens, gathered in the field. This method allows field biologists, wildlife officials, and others to carry out non-invasive tracking, with no potential for harming the animals and with much more comprehensive results, the identification of specific individuals and relationships within populations.

Rabinowitz will also discuss how to improve survival rates for other living things–and how to tackle immediate and long-term catastrophic changes to our environment. The lecture will be followed by a book signing.

Lonesome George and the Galapagos Today: What the Tortoise Taught Us

Thursday, September 18
6:30 pm
$12

Charles Darwin's visit to the Galapagos Islands in 1835 helped him decipher evolution by natural selection, the process responsible for the dizzying abundance of species on the planet. Today, hundreds of species go extinct each year. In honor of the Museum's special exhibition of Lonesome George, the famed Galapagos tortoise that was the last of his species, join us for an in-depth conversation about biodiversity and conservation. Uncover the issues and current environmental initiatives in the Galapagos and explore the possibilities and perils that lie ahead. The conversation will feature **Johannah Barry** and **Linda Cayot** of the Galapagos Conservancy, **James Gibbs** of the State University of New York College of Environmental Science and Forestry, and **Arturo Izurieta**, director of the Galapagos National Park. The discussion will be moderated by **Dr. Eleanor Sterling**, chief conservation scientist of the Museum's Center for Biodiversity and Conservation.

Family Bird Walks

Saturday, September 20
9 am; 11 am; 1 pm
$10 per person

Families, join a Museum naturalist for a bird walk in Central Park! Young explorers ages 4–10 and their parents will learn how to find and identify the many bird species and habitats found in our own "backyard."

Credits:
Support for Hayden Planetarium Programs is provided by the Schaffner Family.

Credits continue from page 15

Major funding for The Power of Poison *has been provided by the Lila Wallace—Reader's Digest Endowment Fund.*

The presentation of Natural Histories *at the American Museum of Natural History is made possible through the generosity of the Arthur Ross Foundation.*

Dark Universe *was created by the American Museum of Natural History, the Frederick Phineas and Sandra Priest Rose Center for Earth and Space, and the Hayden Planetarium.*

Made possible through the generous sponsorship of **Accenture**.

And proudly supported by **Con Edison**.

The Museum also gratefully acknowledges major funding from the Charles Hayden Foundation.

Presented with special thanks to NASA and the National Science Foundation.

Dark Universe *was developed by the American Museum of Natural History, New York (www.amnh.org), in collaboration with the California Academy of Sciences, San Francisco, and GOTO Inc, Tokyo, Japan.*

July

4 Friday
Spiders Alive! Opens

6 Sunday
Mysteries of the Unseen World closes in the LeFrak Theater

7 Monday
Great White Shark opens in 2D and 3D in the LeFrak Theater

11 Friday
Evening Bat Walk in Central Park

Manhattanhenge

18 Friday
Evening Bat Walk in Central Park

19 Saturday
Fun with Fossils with Carl Mehling

25 Friday
Evening Bat Walk in Central Park

29 Tuesday
Astronomy Live: The Grand Tour

Member Hall Tour: Geology of Asia and Africa

August

2 Saturday
Member Excursion: Wolf Conservation Center

10 Sunday
The Power of Poison closes

16 Saturday
Journey to a Lost World with Paul Nascimbene

21 Thursday
Members' Walking Tour: Geology of Northern Central Park

26 Tuesday
Astronomy Live: Life on Other Worlds

September

2 Tuesday
Morning Bird Walks series begins

3 Wednesday
Morning Bird Walks series begins

4 Thursday
Morning Bird Walks series begins

5 Friday
Morning Bird Walks series begins

10 Wednesday
Animal Drawing starts

17 Wednesday
Lecture: An Indomitable Beast with Alan Rabinowitz

18 Thursday
Lonesome George exhibit opens

Lonesome George and the Galapagos Today: What the Tortoise Taught Us

20 Saturday
Family Bird Walks

Inside the Collections

Over the last 145 years, the Museum has amassed one of the world's preeminent natural history collections. Built around a nucleus of 19th-century naturalists' collections at the Museum's founding in 1869 (see page 5 for a glimpse of one such collection), it has grown through thousands of expeditions, a tradition that continues today with more than 100 field projects each year. Over the past few decades, new types of specialized collections—from frozen tissue to genomic data—have increased and diversified the holdings. Today, modern tools have amplified scientists' ability to analyze specimens and to continue to address critical questions about our planet and the universe.

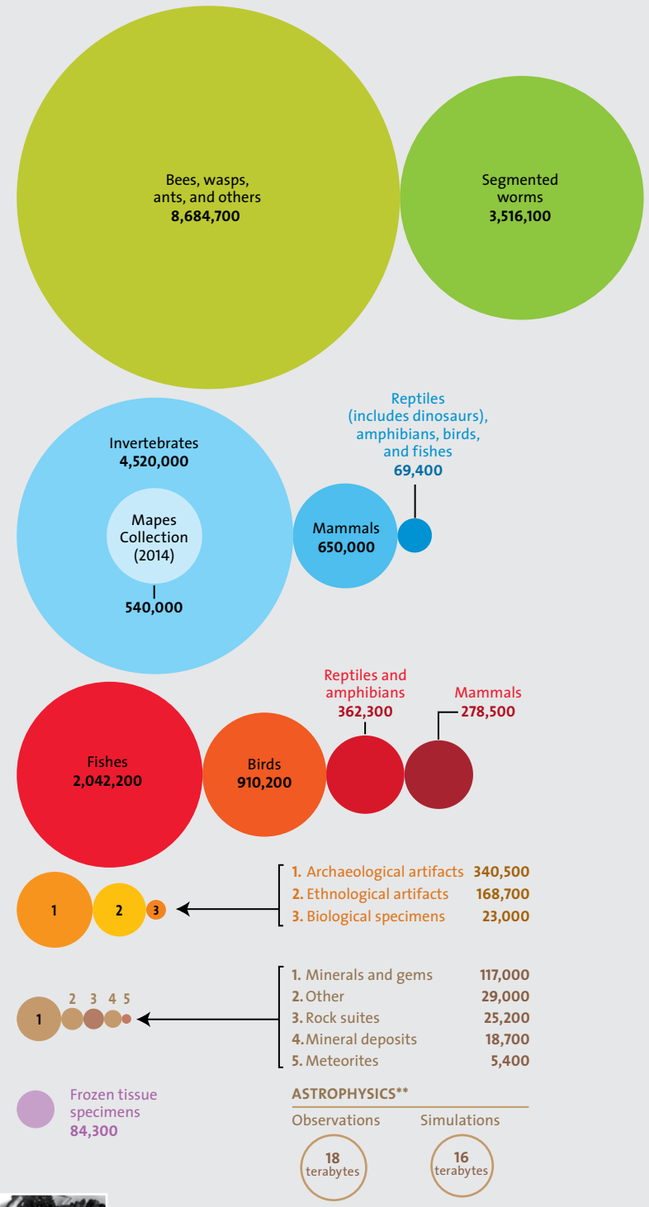
A striking case in point: a 325-million-year-old skull of a shark-like species, *Ozarcus mapesae*, from the recently acquired Mapes Collection led to a rethinking of the evolutionary history of modern sharks. A study of that fossil by scientists at the Museum published in the journal *Nature* this spring concludes that modern sharks have less to tell us than was previously thought about the early evolution of jawed vertebrates—including humans—than do early cartilaginous and bony fishes.

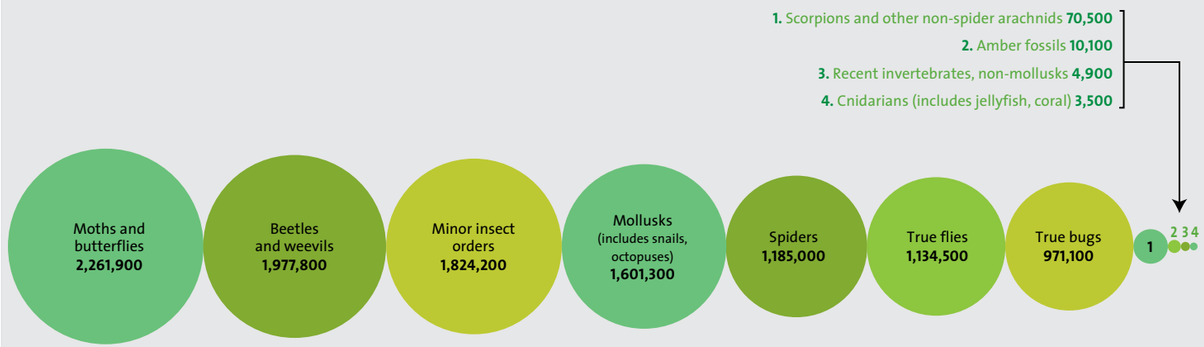
For more about *Ozarcus mapesae* and the Mapes collection, visit amnh.org/blog.

TOTAL
33,430,000

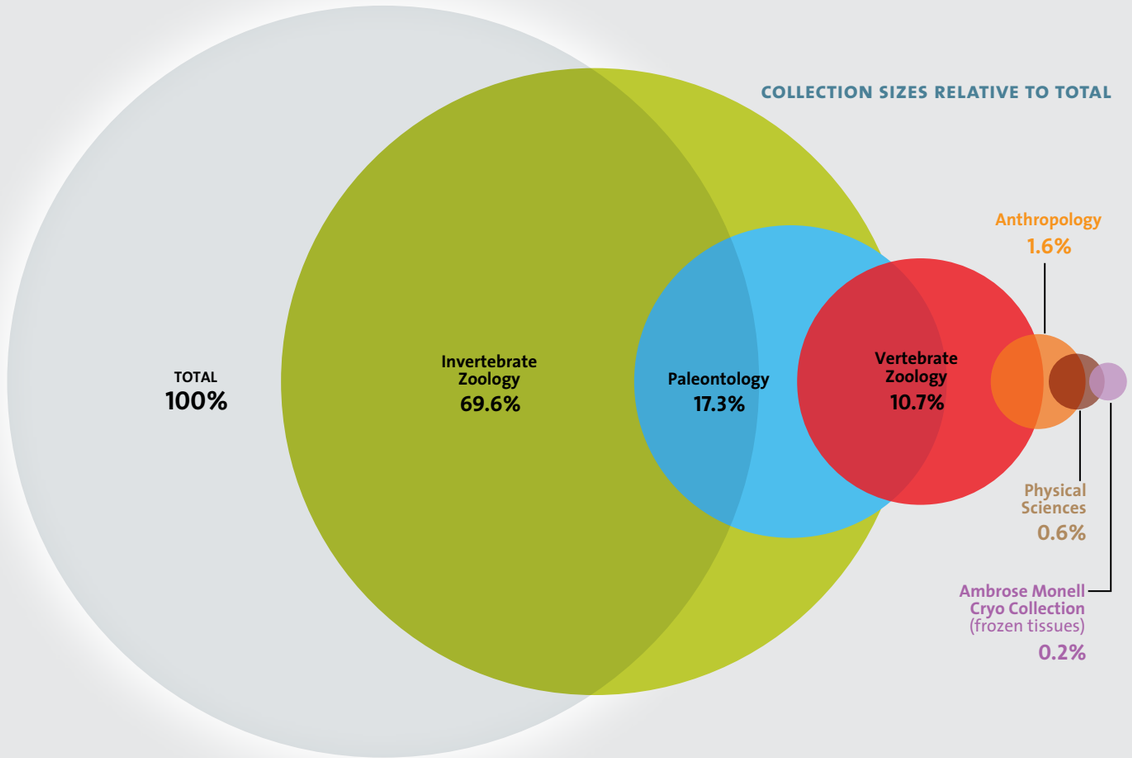
THE SCIENTIFIC COLLECTIONS

Number of items*





COLLECTION SIZES RELATIVE TO TOTAL



* Rounded to the nearest hundred. Also, many collections designate individual lots containing multiple objects as one specimen or artifact.
** Not included in total collection number

SELECT COLLECTIONS HIGHLIGHTS

1869
Museum is founded; scientists sail to Europe to bring back specimens from noted collections.

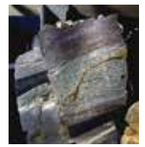
1900
Trustee J. P. Morgan purchases 382 Tiffany & Co. gems shown at Exposition Universelle for the Museum.

1908
Fossil hunter Barnum Brown discovers the fossil skeleton of *Tyrannosaurus rex* on display today.

1915
Lang-Chapin Congo Expedition brings back 100,000 invertebrates and 20,000 vertebrates.

1920
Explorer Roy Chapman Andrews initiates a decade of dinosaur discoveries in the Gobi Desert.

1957
Biologist Alfred Kinsey's 7-million-plus gall wasp collection is acquired.



1996–1998
Museum leads 28 expeditions to collect specimens for Gottesman Hall of Planet Earth.

2001
Ambrose Monell Frozen Tissue Collection is established.

2014
Mapes Collection adds more than 540,000 marine fossils.

Follow Your Heart: Plan a Gift for the Museum

Longtime Member Bill Thierfelder, who leads tours of the Museum on Tuesdays, takes a group of visitors through Gottesman Hall of Planet Earth.

When Bill Thierfelder isn't photographing hauntingly beautiful landscapes, creating colorful collages, or writing poetry under the penname T. Richard Williams, he is lecturing at Long Island libraries on everything from evolution to opera. And on any given Tuesday, he can be found leading tours of the Museum where his skills as a onetime professor are on full display.

A true Renaissance man, Dr. Thierfelder is a rare combination of artist and patron. Eight years ago, while still a professor of English and humanities at Dowling College in Oakdale, Long Island, he included the Museum in his will as the sole beneficiary of his retirement fund–a bequest that qualified him for membership in the Museum's Jesup Society.

The Jesup Society is named after Maria DeWitt Jesup, who in 1912 left the Museum a $5 million bequest (an estimated $100 million in today's dollars.) Membership in the society is conferred on anyone who names the Museum as the beneficiary of a bequest in a will or trust, names the Museum beneficiary of a bank account, life insurance policy, or retirement plan, or funds a charitable gift annuity or charitable trust with the Museum.

After Thierfelder formally retired in 2010, he realized he might live to eventually exhaust much of his retirement money, so decided to also make a gift to the Museum in the form of a charitable gift annuity.

"I wanted to do something more to show my gratitude to this place that has been important to me since I was 4 years old," he says, alluding to the day in 1955 he first visited the Museum, a trip that sparked a life-long passion and enduring involvement as a Member. He marked milestones in his life at the openings of permanent exhibitions–his second-grade birthday party in the Hall of North American Forests, eighth-grade graduation in the Hall of Primates, 20th birthday in the Margaret Mead Hall of Pacific Peoples. As a professor, he incorporated visits to the Museum into the classes he taught. And in 2013, after intensive training, he became a docent and now leads Highlight and Spotlight tours and, occasionally, sign language tours for visitors.

While both the bequest and the charitable gift annuity have tax benefits and the annuity will provide him with a fixed lifetime income, he said his primary motivation was support for the Museum, especially its scientific research, such as fieldwork in search of fossils.

"Even if it only pays for one day of digging, that's one day of digging they didn't have!" he said. "I'm a teacher, not a millionaire. But every little bit helps."

For more information about the Jesup Society, contact the Museum's Planned Giving Department at 212-769-5119 or email plannedgiving@amnh.org.

Pros Behind Popular Programs

Of the many Museum programs that routinely sell out, the Animal Drawing course and bird watching in Central Park are at the top of the list. For decades, these were the purview of naturalist and long-time exhibition artist Stephen C. Quinn, but since his retirement in the spring of 2013, these popular eight-session programs have been carried on by two Museum stalwarts: Patricia Wynne, who now teaches animal drawing, and ornithologist Paul Sweet, who is leading bird walks in Central Park.

Wynne, who has worked across several Museum departments for 39 years, is an artist and freelance illustrator with numerous books and awards to her name. Her work can be seen on permanent display within the Museum, from the evocative animal silhouettes featured on renewed exhibit labels in the Bernard Family Hall of North American Mammals to the new bronze floor medallion in the Theodore Roosevelt Memorial that depicts a bison based on an illustration by Wynne. She is also in high demand by Museum scientists to illustrate their scientific papers. A new bat species, *Thyroptera wynneae*, discovered in 2012 by Museum Curator Robert S. Voss in Peru, was named after her–an especially fitting tribute to the illustrator of a children's book, *Hello, Bumblebee Bat,* for which she received a Theodore Seuss Geisel Honor in 2008.

Sweet, the collections manager for the Department of Ornithology, is known to many Members for leading behind-the-scenes tours of the Museum's ornithology collection–the largest and most diverse collection of bird specimens in the world–and for his Members-only bus excursions to such rich bird-watching sites as Basha Kill Wildlife Management Area in New York and the Edwin B. Forsythe Wildlife Refuge in New Jersey. He is also the author of the recently published *Extraordinary Birds: Rare Book Selections from the American Museum of Natural History Library*, an exquisite collection of 40 essays and frameable plates.

Visit amnh.org/calendar for information about these and other fall programs.

Animal Drawing classes taught by Patricia Wynne (standing) return this fall.

Best Birthday Party Ever!

What parent or grandparent doesn't dream of giving his or her little girl or boy the most memorable experience? And what fits that bill better than a birthday party at the American Museum of Natural History?

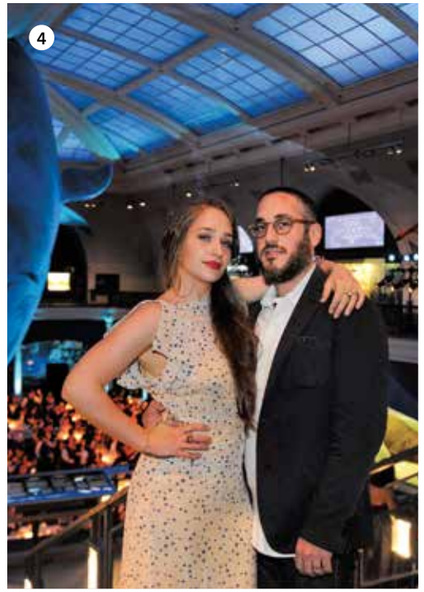
Open to Members at the Family level or above, birthday parties at the Museum, coordinated by Linda Kaye's Birthdaybakers, Partymakers, are available at various times, seven days a week. Choose from four themes—Underwater Treasure, Safari Adventure, Cosmic Blast-Off, and Dinosaur Discovery—for two hours of fun-filled activities for up to 25 children ages 4 and up.

Party fees include admission to the Museum for each guest, use of the Birthday Café for the party—including table covers, cake plates, and napkins—and a crown for the birthday boy or girl. Food is provided by the Museum's in-house caterer, Restaurant Associates, and kosher options are available upon request. Ask too about custom goody bags and custom cakes or having the children decorate the cake or cookies as part of the fun.

Party coordinators, leaders, and assistants will help make your event run smoothly. Theme-related characters, entertainers, photographers, and videographers are another party extra available on request.

For more information, contact Linda Kaye's Birthdaybakers, Partymakers at 212-288-7112 or call the Museum's Membership office at 212-769-5606.

1. The March 1 program "Experience Korea" included brush painting and calligraphy with Korean rice paper, brushes, and ink.
2. Performances on March 1 included the Floral Fan Dance by the Korean Traditional Museum and Dance Institute of New York.
3. Environmental Lecture and Luncheon Chairs Claire Bernard and Connie Spahn, Museum President Ellen V. Futter, and Chairs Catherine Sidamon-Eristoff and Kitty Kempner celebrated at the April 30 event.
4. Children used microscopes to observe insects, spiders, hydra, and other organisms that use venom at the April 13 Milstein Science Series.
5. Zoologist Jarod Miller brought baby animals, including a black bear cub, to a program on April 5.



1. Chairs of the 2014 Museum Dance Michael and Nina Patterson, Gregory and Ali Kwiat, Michael Kaufman and Kristen Edgreen Kaufman, Jonathan and Elizabeth Kurpis, and Kipp and Colleen deVeer were photographed in the Cullman Hall of the Universe on May 15.
2. Zibby and Andrew Right arrive at the Museum Dance.
3. JUS SKE performed at the Museum Dance after-party.
4. HBO "Girls" star Jemima Kirke and Michael Mossberg in the Milstein Hall of Ocean Life.

Save the Date!
Upcoming Events at the Museum

SEPTEMBER
9/18 **Lonesome George** exhibit opens at the Museum for a limited run.

OCTOBER
The popular ***Butterfly Conservatory*** returns.

10/21 Join us for the **Annual Family Party**, with activities and entertainment for children of all ages. For event and ticket information, please call 212-313-7161, or email familyparty@amnh.org.

10/23–10/26 Don't miss the **38th Annual Margaret Mead Film Festival**, which will feature the best of contemporary cultural storytelling including international documentaries, art installations, and intimate conversations with filmmakers and subjects.

10/31 The annual **Halloween celebration** at the Museum features costumed characters, hands-on activities, performances, and more.

NOVEMBER
11/13 A special **Member preview** offers the first look at the fall special exhibition ***Nature's Fury: The Science of Natural Disasters***, which focuses on the causes of earthquakes, volcanoes, tornados, and hurricanes as well as the risks and risk management for each.

11/15 ***Nature's Fury: The Science of Natural Disasters*** opens to the public.

11/24 The **Origami Holiday Tree** returns to mark the start of the holiday season at the Museum.

11/27 The Museum is closed on **Thanksgiving**.

DECEMBER
12/4 **The Holiday Party for Young Members** will feature crafts and after-hours visits to the *Pterosaurs* exhibition.

12/25 The Museum is closed on **Christmas Day**.

12/27 Live musical performances, dance, and spoken word at this family-friendly festival of African and African-American performing and visual arts celebrate the seven principles of **Kwanzaa**.

American Museum of Natural History
Membership

Central Park West at 79th Street
New York, New York 10024-5192
amnh.org

In late 2013, Museum researchers set out on a Constantine S. Niarchos Expedition to study the gems and geology of the Mogok Stone Tract, in Myanmar, also known as "Ruby Land." The world's finest gem rubies come from Myanmar, most of these from Mogok. See page 6 for more about the expedition.

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-percent discount.
Hours are subject to change.

Museum shops
The Museum Shop, Dino Store, Shop for Earth and Space, Cosmic Shop, Pterosaurs Shop, The Power of Poison Shop, and Online Shop (amnhshop.com) offer Members a 10-percent 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: B (weekdays) or C to 81st Street; 1 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.