AMERICAN MUSEUM OF NATURAL HISTORY

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LIZARDS & SNAKES: ALIVE!
BACK ON VIEW AT THE AMERICAN MUSEUM OF NATURAL HISTORY
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RETURNING EXHIBITION SHOWCASES MORE THAN 60 LIVE LIZARDS AND SNAKES FROM AROUND THE WORLD

The real monsters, dragons, and basilisks are back! More than 60 live lizards and snakes from five continents reside in exquisitely prepared habitats. In addition to the live animals, the exhibit uses interactive stations, significant fossils, and an award-winning video to acquaint visitors with the world of the Squamata, the group that includes lizards and snakes. Visitors can learn about chameleons' ballistic tongues, how basilisks escape from predators by running across water, amazing camouflage of Madagascar geckos, the 3-D thermal vision of rattlesnakes and boas, spitting cobra fangs, blood-squirting Horned Lizards, flying snakes and lizards, and other gravity-defying squamates.

Approximately 8,000 species of lizards and snakes have been recognized and new species continue to be discovered. In ***Lizards & Snakes: Alive!*** visitors will see 26 species, including crowd favorites such as the Gila Monster, Eastern Water Dragon, Green Basilisk, Veiled Chameleon, Blue-tongued Skink, Rhinoceros Iguana, Eastern Green Mamba, and a fourteen-foot Burmese Python. The Water Monitor habitat is equipped with a Web camera enabling virtual visitors around the globe to observe the daily behavior of one of the largest living species of lizard on Earth.

One case in the exhibition includes four species of geckos: Madagascan Giant Day Geckos, Common Leaf-tailed geckos, Lined Leaf-tailed Geckos, and Henkel's Leaf-tailed Geckos. The case is equipped with **cameras located in two different viewing stations** that allow visitors to zoom in on the animals. There is also a **web camera** mounted on the water monitor case, enabling virtual visitors around the globe to observe the daily life and routine behavior of one of the largest living species of lizard on Earth.

This exhibition is organized by the American Museum of Natural History, New York (www.amnh.org), in collaboration with the Fernbank Museum of Natural History, Atlanta, and the San Diego Natural History Museum, with appreciation to Clyde Peeling's Reptiland.

"I am delighted to announce that ***Lizards and Snakes: Alive!*** is back by popular demand," said Ellen V. Futter, President of the American Museum of Natural History. "Built upon the Museum's scientific research program in herpetology and the Museum's mission to educate the public about science and nature, ***Lizards and Snakes*** continues a tradition of exhibitions that bring people, especially children and families, face-to-face with ambassadors from the natural world. With this exhibition, visitors will meet some of the world's most exotic, fascinating, and even terrifying creatures who have much to teach us about diversity of life, the fragility of natural systems, and our own responsibility to study and steward life on Earth."

(more)

"***Lizards & Snakes: Alive!*** dispels many mistaken notions," said Darrel Frost, Associate Dean of Science for Collections; Curator, Department of Herpetology, Division of Vertebrate Zoology; and curator of ***Lizards & Snakes***. "For instance, snakes are not slimy and are just an amazingly successful group of lizards that have lost their legs. Visitors to this exhibition will learn about the amazing diversity of squamates...and how they have evolved into many shapes and sizes and have come to live in so many habitats. This exhibition will leave the visitor with a sense of wonder at the remarkable diversity of this very large but underappreciated group."

The Exhibition

Lizards & Snakes: Alive! examines many aspects of squamate biology, including differences in hunting strategies. One group, the "sight hounds"—about 1,400 species including iguanas and their relatives—rely mostly on vision, not smell, to find their dinners and mates, and use their tongues to capture their food. On the other hand, "nose hounds"—which includes monitors, skinks, and snakes—use a highly evolved chemoreceptive system that collects chemical clues from the environment with forked tongues and delivers them to special sense organs on the roofs of their mouths. Another focus of the exhibition is how snakes, among the most evolutionarily successful vertebrates on Earth, have compensated for the absence of limbs with thermal vision, complex venom-delivery systems, constriction, and flexible skulls that allow them to swallow prey many times larger than their own heads.

Lizards & Snakes also offers **numerous interactive stations,** inviting visitors to listen to recorded squamate sounds, get a close look at live geckos, test their knowledge about squamates, and experience what its like to hunt like a rattlesnake with a computer interactive created by AMNH scientists and the exhibition media team.

Lizards & Snakes will also feature **a variety of fossil specimens and fossil casts**. Among the highlights is a fossil cast of Megalania, the largest-known terrestrial squamate, which attained lengths up to 9.5 meters (30 feet). This ancient relative of today's monitor lizards lived in Australia during the Pleistocene epoch (from 1.6 million to 40,000 years ago).

Informative text panels throughout the exhibition discuss a range of topic including how some lizards can survive freezing, the medicinal uses of Gila Monster venom, and the multi-colored sign-language of chameleons .A stunning high-definition video (winner of the CINE Golden Eagle Award) on squamate locomotion reveals how snakes and lizards get around.

Herpetology at the Museum

The American Museum of Natural History's **Department of Herpetology** was founded in 1909 as the Department of Ichthyology and Herpetology. **One of the world's foremost centers of research on reptiles and amphibians**, the Department has pioneered research on the evolution and biology of lizards and snakes and their relatives—as well as other groups of reptiles and amphibians—and has conducted work that has been useful to conservation efforts worldwide.

For more than a century, Museum herpetologists and their colleagues have led expeditions to remote regions of the globe to study reptile and amphibian species in their natural habitats and to gather specimens for detailed examination. As a result, the Department's **holdings now rank among the five largest in the world**, with

approximately 350,000 specimens from more than 160 countries. This collection, **one of the most heavily used herpetological resources in the world**, enables researchers to study evolution, reproductive biology, and even the diets of squamates and their relatives; to discover their benefits to society; and to develop conservation strategies. The collection is an essential resource for the Museum's herpetologists, who specialize in the study of evolutionary relationships among reptiles and amphibians and whose biological research has yielded a number of exciting findings, including

- new understanding of the evolution of species diversity in Madagascar and around the Indian Ocean,
- new classifications for major groups of amphibians and reptiles worldwide,
- discovery of many new species,
- and theoretical advances in evolutionary biology.

In addition, scientists from the Museum's Department of Herpetology and their colleagues have used the Remote Sensing/GIS Laboratory overseen by the Museum's Center for Biodiversity and Conservation to develop a modeling approach that has **successfully predicted the geographic distribution of 11 chameleon species in Madagascar**. The models, based on satellite data and specimen locality data from Museum collections, **also correctly predicted the existence of previously unknown areas of chameleon distribution, which included seven chameleon species new to science**. This discovery suggests that for poorly-explored regions, satellite data and data from museum collections can help identify promising places to survey for new species—an exciting development, especially beneficial to the conservation community. The Department of Herpetology and the Center for Biodiversity and Conservation are actively engaged in conducting inventories of poorly-known and remote localities in Bolivia and Vietnam, where new squamate species have been discovered. Current herpetological conservation research focuses on Bolivia, Colombia, Vietnam, Madagascar, and the New York tristate area.

Herpetology research also takes place in the Division of Vertebrate Paleontology, where scientists are working on new fossils with implications for squamate evolution. In the last three years, these scientists have identified a group of extinct lizards from the Cretaceous period of Mongolia, examined differential rates of evolution in geckos, and even come up with a new hypothesis about snake origins.

Curator Biographies

Darrel R. Frost, Curator-in-Charge, Department of Herpetology, Division of Vertebrate Zoology; Associate Dean of Science for Collections; and Curator, *Lizards & Snakes: Alive!*

Associate Dean of Science for Collections Darrel R. Frost is responsible for overseeing the use and maintenance of the American Museum of Natural History's permanent collection of more than 30 million specimens and cultural artifacts. Dr. Frost also oversees the Office of the Conservator of Natural Science Collections and the Interdepartmental Laboratory, which includes a state-of-the-art imaging facility that provides analytical microscopy, spectroscopy, visualization, and image analysis in support of the Museum's scientific activities. As a curator in the Division of Vertebrate Zoology, Dr. Frost studies the evolutionary origin and diversification of reptiles and amphibians and has formulated a revised classification for Iguania, the group of New World lizards comprising about 1,000 species in the Americas, Madagascar, Fiji, and Tonga. Dr. Frost recently spearheaded a collaborative study on the evolutionary

history of all amphibians that has revised understanding of the world's 6,000-plus species of amphibians. He also maintains the Amphibian Species of the World database (http://research.amnh.org/herpetology/amphibia), a comprehensive, online catalogue of the world's living amphibians that allows scientists around the world to keep track of rapid advances in global amphibian diversity. Dr. Frost received his Ph.D. in systematics and ecology from the University of Kansas in 1988 and joined the American Museum of Natural History in 1990 as Assistant Curator. He is also Adjunct Professor at Columbia University and at the City University of New York.

David Kizirian, Curatorial Associate, Department of Herpetology, Division of Vertebrate Zoology; and Co-Curator, *Lizards & Snakes: Alive!*

David Kizirian is primarily responsible for the care of the Museum's collections of non-fossil amphibians and reptiles. His primary research interest is the species-level diversity and evolution of various groups of squamates. Dr. Kizirian received his Ph.D. in Systematics and Ecology from the University of Kansas in 1994. He was a Coleman Postdoctoral Fellow in the Museum's Department of Herpetology in 1995 and worked in the Museum's Monell Molecular Laboratory from 1996 to 1998. From 1998 to 2003, he was Assistant Curator of Herpetology and co-director of the Molecular Systematics Program at the Natural History Museum of Los Angeles County. Dr. Kizirian joined the American Museum of Natural History as a Curatorial Associate in 2005.

Jack L. Conrad, Research Associate, Department of Vertebrate Paleontology, Division of Paleontology; and Co-Curator, *Lizards & Snakes: Alive!*

Jack L. Conrad studies the anatomy and evolutionary relationships of modern and fossil lizards, documenting their morphology and applying these data to phylogenetic analyses in the hopes of understanding the interrelationships of the dizzying diversity of squamates. In addition to working Cretaceous fossil lizards from the Gobi Desert and China, Dr. Conrad also works on the mechanics of snake feeding at Stony Brook University. Dr. Conrad has published 14 scientific papers and conducted fieldwork in Connecticut, Montana, Wyoming, the Sahara, and the North Pole, where he was part of the group that uncovered *Tiktaalik* (the "fishapod"). He received his B.A. in biology from Drury University in 1999, and a Ph.D. in vertebrate paleontology at the University of Chicago in 2005.

Halls of Reptiles and Amphibians

The **Hall of Reptiles and Amphibians**, located on the third floor, offers visitors a wealth of information on the world's terrestrial ectotherms. Visitors can explore the fascinating world of these animals in exhibits organized along such themes as anatomy, defense, locomotion, distribution, reproduction, and feeding, and view the great range of these animals' physical forms, from the tiniest toad to the crocodile of frightening dimensions. Highlights in this hall include the Australian Frilled Lizard raising its frill of skin to exaggerate its size to a predator, a 10-foot Komodo Dragon stretching its jaws across the belly of a wild boar, and a 25-foot Reticulated Python posed as if about to strike.

Squamates Featured throughout the Museum's Permanent Halls

Squamate specimens and models, as well as cultural representations of lizards and snakes, can be found in a number of other areas throughout the Museum. Located on the first floor near the Grand Gallery, the **Discovery Room** offers families the opportunity to learn more about lizards and snakes through a range of displays and hands-on activities. Visitors can explore a variety of books on lizards and snakes and can also participate in a **"search for squamates" hunt** to find specimens of snakes, lizards, and salamanders, some of which are alive throughout the exhibit space. **The Discovery Room is open from September to June from 1:30 to 5:10 pm and during July and August from 10:30 am to 1:30 pm and 2:15 to 5:10 pm.**

Lizards and snakes are prominently featured in the **Hall of Biodiversity**, located on the first floor, in the spectacular walk-through diorama of the Central African Republic's Dzanga-Sangha rain forest. Other models are featured in the Spectrum of Life, an exhibit that showcases the glorious diversity of life though a grand assemblage of more than 1,500 specimens and models—including insects, plants, fish, and mammals—mounted in a 100-foot-long installation along one wall and extending out overhead.

The **Hall of Vertebrate Origins** features exhibits on the evolutionary history of squamates. Visitors can compare the skeletons of living squamates with their ancient relatives. Highlights include a complete skeleton of a Big-headed Lizard and a 30-foot-long skeleton of the marine lizard *Tylosaurus proriger*.

Squamates are also widely represented in the **Hall of Plains Indians**, located on the third floor, which features artifacts such as a musical instrument, headdress, bow, and rattle that are adorned with snake imagery, and in the **Hall of South American Peoples**, on the second floor, which features rattlesnake rattles and a ceramic burial urn from Brazil decorated with clay lizards.

Exhibition Organization

Lizards & Snakes: Alive! is organized by the American Museum of Natural History, New York (www.amnh.org), in collaboration with Fernbank Museum of Natural History, Atlanta, and the San Diego Natural History Museum, with appreciation to Clyde Peeling's Reptiland. The exhibition curator for ***Lizards & Snakes: Alive!*** is Darrel R. Frost, Associate Dean of Science for Collections; and Curator, Department of Herpetology, Division of Vertebrate Zoology. The exhibition is co-curated by David Kizirian, Curatorial Associate, Department of Herpetology, Division of Vertebrate Zoology, and Jack L. Conrad, Senior Postdoctoral Researcher, Anatomical Sciences, Stony Brook University. It is designed and produced by the American Museum of Natural History's Department of Exhibition under the direction of David Harvey, vice president for Exhibition.

Exhibition Web Site at amnh.org/lizards

The exhibition website, **amnh.org/lizards**, features a link to the "Lizard Cam" mounted above the water monitor case, interviews with Dr. Frost, photographs of the squamates on view, interesting facts about lizards and snakes, listings of exhibition-related public programs at the Museum, curator biographies, and behind-the-scenes

images documenting the construction and development of the exhibition. Visitors to the website can also purchase tickets online.

American Museum of Natural History

The American Museum of Natural History is one of the world's preeminent scientific, educational, and cultural institutions. Since its founding in 1869, the Museum has advanced its global mission to explore and interpret human cultures, the natural world, and the universe through a wide-reaching program of scientific research, education, and exhibitions. The Museum accomplishes this ambitious goal through its extensive facilities and resources. The institution houses 45 permanent exhibition halls, state-of-the-art research laboratories, one of the largest natural history libraries in the Western Hemisphere, and a permanent collection of more than 30 million specimens and cultural artifacts. With a scientific staff of more than 200, the Museum supports research divisions in Anthropology, Paleontology, Invertebrate and Vertebrate Zoology, and the Physical Sciences. In 2006, with the launch of the Richard Gilder Graduate School at the Museum, it became the first American museum with the authority to grant the Ph.D. degree. The Museum shares its treasures and discoveries with approximately four million on-site visitors from around the world each year. AMNH-produced exhibitions and Space Shows can currently be seen in venues on five continents, reaching an audience of millions. In addition, the Museum's Web site, **amnh.org**, extends its collections, exhibitions, and educational programs to millions more beyond the Museum's walls.

At the American Museum of Natural History

The Museum offers a broad array of programs for adults, children, families, students, educators, and scientists. These range from special exhibitions to symposia, lecture series, workshops, and film festivals. Highlights include ***Traveling the Silk Road: Ancient Pathway to the Modern World*** (November 14, 2009–August 15, 2010), an exhibition that brings to life the most celebrated trade route in human history through evocative sights, sounds, and artifacts as well as intriguing interactives; ***Highway of An Empire: The Great Inca Road*** (October 17, 2009–September 2010), an exhibition of more than 35 striking photographs featuring roads and trails built by the Inca six centuries ago; ***The Butterfly Conservatory: Tropical Butterflies Alive in Winter*** (October 10, 2009–May 31, 2010), a highly popular winter attraction that transforms the iciest day into a magical summer escape, inviting visitors to mingle with up to 500 fluttering, iridescent butterflies among blooming tropical flowers in 80-degree temperatures; ***On Feathered Wings*** (June 21, 2008–July 1, 2010), an exhibition of more than 30 striking photographs featuring dramatic images of birds in flight; ***Vital Variety: A Visual Celebration of Invertebrate Biodiversity*** (ongoing), an exhibition of 23 large-format color photographs highlighting the immense diversity of invertebrates; the Hayden Planetarium Space Show, ***Journey to the Stars***, narrated by Whoopi Goldberg; ***SonicVision*** (Friday and Saturday evenings), the dazzling, digitally animated alternative music show in the Hayden Planetarium, with a mix by Moby; and **One Step Beyond**, the popular monthly party series where guests can dance in the Museum's Cullman Hall of the Universe to sets by the biggest names in techno, electronica, hip-hop, and indie rock.

Hours
The Museum is open daily, 10 am–5:45 pm.

The Museum is closed on Thanksgiving and Christmas.

Space Show and *SonicVision* Hours
Space Shows are screened every half hour on weekdays, 10:30 am–4:30 pm except Wednesday, when first show starts at 11 am; and Saturday and Sunday, 10:30 am–5 pm.

Admission
Suggested general admission, which supports the Museum's scientific and educational endeavors and includes 45 Museum halls and the Rose Center for Earth and Space, is $16 (adults), $12 (students/seniors), $9 (children).

The Museum offers discounted combination ticket prices that include suggested general admission plus special exhibitions, IMAX films, and Space Shows.

- Museum Plus One (special exhibition, IMAX film, or Space Show): $24 (adults), $18 (students/seniors), $14 (children)
- Museum SuperSaver (includes all special exhibitions, IMAX films, and Space Shows): $32 (adults), $24.50 (students/seniors), $20 (children)

Visitors who wish to pay less than the suggested Museum admission and also want to attend a special exhibition, IMAX film, or Space Show, may do so only on-site at the Museum. To the amount they wish to pay for general admission, they should add $20 (adults), $16.50 (students/seniors), or $11 (children). All prices are subject to change.

Public Information
For additional information, call 212-769-5100 or visit the Museum's website at **amnh.org**.

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