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# In the Field

The Bulletin of the Field Museum of Natural History

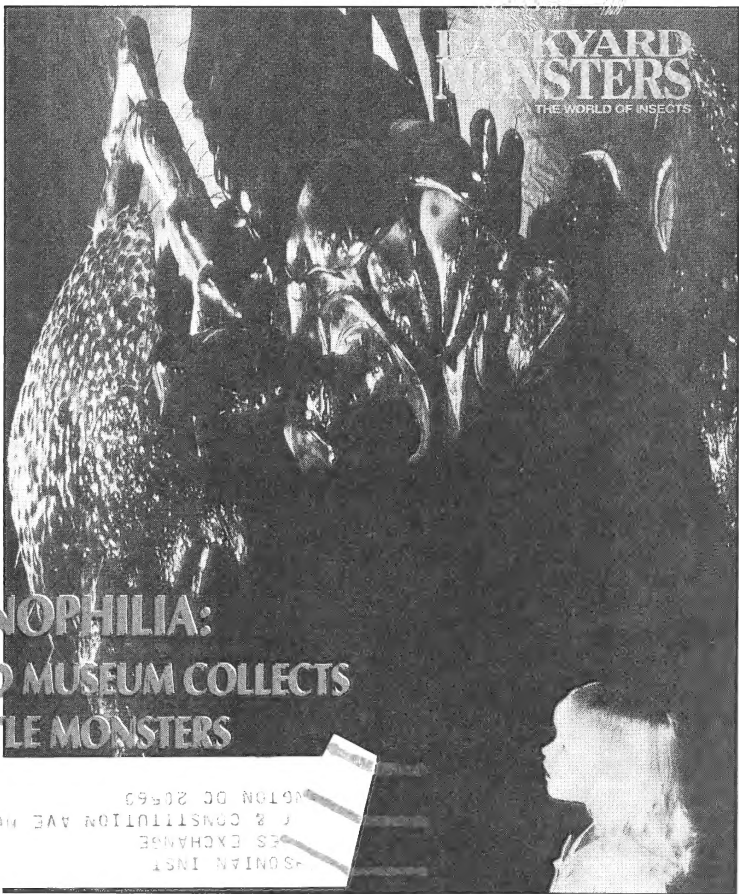
May/June 1992



**COWBIRDS  
DEFY  
CONVENTION**

**LOCKED IN  
STONE:  
CREATURES  
OF FOSSIL  
LAKE**

**MEMBERS'  
NIGHT,  
MAY 15**



**ARACHNOPHILIA:  
WHY FIELD MUSEUM COLLECTS  
THESE LITTLE MONSTERS**

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# In the Field

The Bulletin of the Field Museum of Natural History

May/June 1992

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May 15 is Members' Night. Special treats include the leading authority on Chicago's freight tunnels.

5

New exhibits: A fossil community "Locked in Stone," and interim dinosaur exhibits.

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May is Neighborhoods Month at Field Museum. And May 22 is Neighbors Night, so come on by.

10

What's in a name? The Apatosaurus vs. Brontosaurus feud had its origin at Field Museum in 1903.

9.7 MILLION MONSTERS

Nearly half of the 20 million objects in the Field Museum collections are insects, millipedes, centipedes, and arachnids.

Article, Page 11



## EVOLUTIONARY SURPRISE

Scott Lanyon, chairman of the Department of Zoology, has unraveled an evolutionary pathway among cowbirds (a sub-group of blackbirds) that overturns the prevailing thought among evolutionary biologists. This finding grows out of his larger research project — developing an accurate "family tree" for the nearly 100 species of blackbirds — that will be put to use by scientists throughout the world as they try to answer a variety of questions about evolution.

"The results of our research have been surprising, even counterintuitive," Lanyon says. "But in science, it's only the surprises that teach us something new."

Lanyon's new theory concerns the direction of an evolutionary pathway. A prevailing idea among evolutionary biologists has been that evolution proceeds from the general to the specialized. It's an intuitively appealing theory, with many familiar analogies. For example, early cars like the Model T were designed as all-purpose carriages; only later were specialized vehicles such as pickup trucks and racing cars developed.

Many examples from evolutionary theory seem equally reasonable. Consider the giraffe, with its long legs and neck — specialized traits perfectly adapted for browsing in treetops inaccessible to other leaf-eaters. It seems natural to view this highly specialized animal as a latter-day offshoot of a primitive quadruped, perhaps similar to a deer or a horse, that grazed on a wide variety of ground-level plants.

Lanyon's findings, however, should cause scientists to re-examine such assumptions. His work — based on a rigorously constructed phylogeny, or evolutionary tree, which he is developing for the blackbird family — has revealed at least one case in which the evolutionary pathway runs precisely the other way: from specialist to generalist.

Lanyon's study, published in *Science*, the journal of the American Association for the Advancement of Science, concerns the evolution of an odd breeding behavior known as brood parasitism, practiced by five of the six species of cowbirds. A brood parasite is a bird that lays its eggs in the nest of a "host" species, relying on the host to raise its young. Different species of cowbirds use different numbers of species as their hosts. The screaming cowbird, for example, is a specialist, using only the non-parasitic bay-winged cowbird as its host. The brown-headed cowbird, by contrast, is a broad generalist, laying its eggs in the nests of more than 200 other bird species. The rest of the cowbirds fall somewhere in between.

Many other groups of animals also exhibit parasitism, and evolutionary biologists have theorized about the coevolution of parasite and host. Generally, they've drawn an "arms race" scenario: Besieged by the parasites, host animals gradually develop a variety of defense

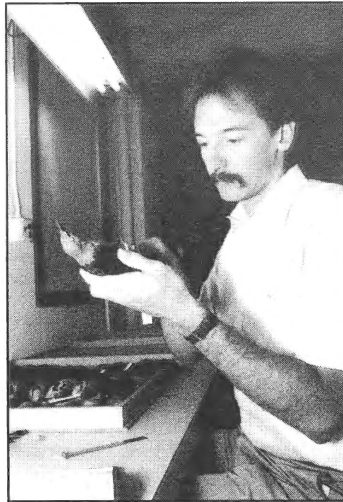
mechanisms against them; the parasitic animal, in response, develops mechanisms to counter the defenses of one host species, abandoning the others. The evolutionary pathway, then, leads from generalist to specialist.

Until recently, it seemed reasonable to apply the prevailing theory to the evolution of brood parasitism in the cowbird. But when Lanyon used the most advanced techniques of biology to construct a detailed evolutionary tree, a very different story was revealed.

Combining the cutting-edge technique of DNA analysis — the comparison of matched segments of mitochondrial DNA in different species — with the more traditional methods of morphology (similarities in body form and behavior), Lanyon is developing one of the most thorough blackbird phylogenies ever produced. Showing the interrelatedness of the various species, it will, in effect, recreate the historical record of blackbird evolution, allowing biologists to follow the development of a given trait over time.

When Lanyon examined the evolutionary pathway of brood parasitism through his tree, he found that the first lineages to evolve were those that use the smallest number of host species — the specialists. Each succeeding branch that split off produced a broader generalist, with the brown-headed cowbird, using some 240 hosts, being the most recently evolved.

"Unexpected results like these force us to reorient our thinking, to reexamine our assumptions," Lanyon notes. "Here, we're reminded that we can't make assumptions about the endpoint of evolution — that assuming the 'specialist' to be most highly evolved is a very egocentric view. That's an important lesson for scientists looking at all kinds of



Scott Lanyon

animal behavior."

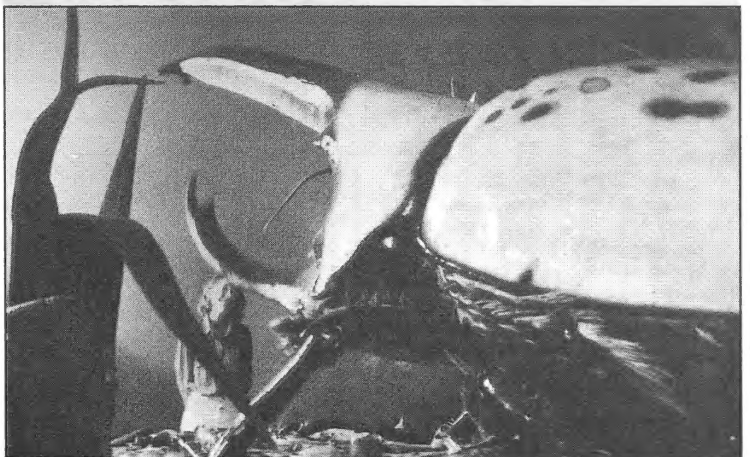
Lanyon's work will doubtless have an impact beyond the community of scientists interested in cowbirds. *Science* recognized that when it decided to publish the paper on brood parasitism; the magazine has published very few articles on birds in recent years. Behind this paper stands Lanyon's major work, the comprehensive blackbird phylogeny, which many scientists await

with great anticipation.

"There aren't many plant or animal groups for which we have enough information to ask questions and test our hypotheses about evolution," Lanyon explains. "Right now, scientists tend to look at one species, describe an evolutionary process, and then extrapolate it to all species."

"But in order to test a hypothesis, you have to have your phylogeny straight. You have to be able to trace the evolutionary pathway of a trait and look for patterns in the environment. Then you can start asking 'how' and 'why?' — the questions that get at the heart of the evolutionary process."

## THE BACKYARD MONSTERS ARE COMING!



## NOTES ON FIELD TRIPS



By Willard L. Boyd  
President, Field Museum

The name of this newspaper, *In the Field*, suggests many things about the Museum. One of these, certainly, has to do with "field trips"; at the Field Museum this is a multifaceted idea. Our curators are regularly "in the field." Our Education Department organizes day trips to nearby sites of natural-history interest. And our Tours Department arranges curator-led trips to places that are important to the work of the Museum.

During 1991, Field Museum curators and scientific support staff visited at least fifteen foreign countries and many parts of the United States to conduct field research and build the Museum's collections, in addition to studying other museums' collections and attending scientific meetings abroad. Some of these trips resulted in headlines around the world, including Bennet Bronson and Chuimei Ho's work on the disruption of trade routes in southeast Asia during the 9th century, and Anna Roosevelt's rolling back of the timeline for human cultural development in the Amazon rain forest. Significant curatorial research ranged from Robert Inger and Harold Voris's studies of the relationship between logging and biodiversity in Borneo to Peter Crane's continuing work on 100-million-year-old fossil pollen grains in Virginia.

On weekends each spring and fall, members and friends of the Museum gather at the

West Door to take buses to nature sites in Wisconsin, Illinois, Indiana, and Michigan. These trips are guided by members of the Museum staff and outside experts. In May and June, some participants will go birding in Wisconsin with David Willard, the Museum's bird collection manager, others will visit Chicago's ethnic communities with geographer Irving Cutler of Chicago State University, and still others will gather fossils on a canoe trip down Sugar Creek in southern Indiana with Peter Laraba, geology specialist in the Education Department. (See page 7 for the full schedule.)

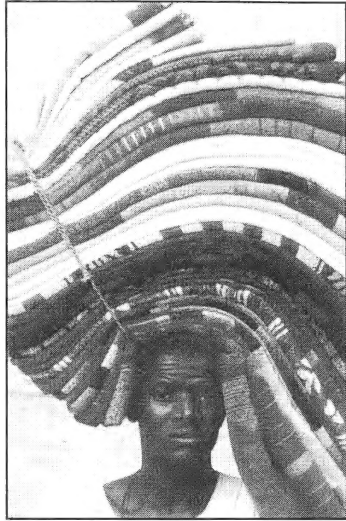
Since the 1960s, the Museum has arranged study tours for members and friends; in a way, these have replaced the earlier donor-sponsored expeditions of curators. The most popular destinations overseas are the Galapagos Islands and Egypt. A perennial favorite for domestic travel is a rafting trip through the Grand Canyon of the Colorado. These trips often

benefit the Museum in interesting ways. Restoration of the Maori meeting house, currently under way, has been promoted and supported by alumni of our New Zealand tour of 1986. Most recently, this year's tour to Senegal and Mali in Africa found tour members in market places with the developer of our new Africa exhibit, Deborah Mack, buying objects for the exhibit.

A very key element of our new "Into the Wild" exhibit is to prepare visitors for going into the field as bird watchers and observers of nature. The "Nature Walk" itself has a computer program that allows the visitor to punch in his or her ZIP code and find a map of locations where one can visit wildlife.

All of this is to say that being "in the field" outside of the Museum is a very big part of one's experience "in the Field."

A vendor encountered during the Museum tour to Mali



## FOUNDERS' COUNCIL SPRING PROGRAMS



Ron Dorfman (G186222:15)

At a reception and preview of "Moving Earth," above, Carolyn Blackmon, chair of the Museum's Department of Education, points out the glowing core on a cross-section model of the Earth for her husband, Jack, and Mrs. Theodore D. Ticken.

Right, annual dinner chair Donna Freeman (center) in animated discussion with her husband, Peter, and Jaci Carter, assistant to President Boyd.

This has been an active season for members of the Founders' Council, who in recent weeks attended a special preview, reception, and lecture in conjunction with the opening of the "Moving Earth" exhibit, about plate tectonics, and the Council's annual dinner, at which they were addressed by curators Robert Inger and Peter Crane. The latter event honored Inger and Crane on the occasion of their being named to chairs newly established under a major grant from the John D. and Catherine T. MacArthur Foundation.

Next on the Council's calendar is a tour to

Alaska, departing June 24. Council members will be accompanied by David Willard, collections manager in the Division of Birds, and Willard E. White, vice president for development and external affairs.

At the March 4 "Moving Earth" event, John Flynn, associate curator of fossil mammals, spoke on the development of the theory of plate tectonics and its importance to our understanding of earth history.

At the annual dinner on April 8, Inger, now the MacArthur curator of amphibians and reptiles, talked about his research on diversity among frogs in Borneo, where he and Field Museum colleagues are also studying the impact of development on the rain forest.

Crane, the MacArthur curator of paleobotany, spoke of the importance of collections such as the Field Museum's to both pure and applied science in many disciplines.

In February, American National Bank hosted a Council luncheon addressed by Harold K. Voris, curator of amphibians and reptiles.

The Founders' Council is composed of individuals who contribute \$1,500 or more annually or who make other major gifts supporting the Museum as an international center for scientific research and education.



John Worelein (G186222:14)

## ERRATUM

The photo on page 3 of the March/April issue shows Museum volunteer Florence Selko and a group of sixth-graders standing before the model of the pyramid edge on the ground floor — not, as the caption states, in the tomb of Unis-Ankh.

The accompanying article should have been clearer that the organs deposited in canopic jars are themselves mummified.

## HIGH GROUND

Although a spur from the Loop coal tunnel system runs to the Field Museum, engineers quickly determined that there would be no danger to the Museum's facilities or collections from the flooding that began April 13.

The point at which the tunnel meets the Museum's boiler room is 20 feet above the level of Lake Michigan, and the Museum's ground floor (the floor below Stanley Field Hall) is 34 feet above lake level.

## In the Field

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# MEMBERS' NIGHT, MAY 15

The Museum will be opening its doors and throwing light into all its dark corners on May 15, from 5 p.m. to 10 p.m., as it celebrates the 41st annual Members' Night. Once again, Museum members will have a chance to explore every inch of the museum, including those research and collection areas normally off-limits to visitors.

Not only can members see the entire Museum, but they can talk to the people behind the scenes — the scientists, technicians, preparators, exhibit developers, designers, and others who carry on the Field's outstanding traditions of research and

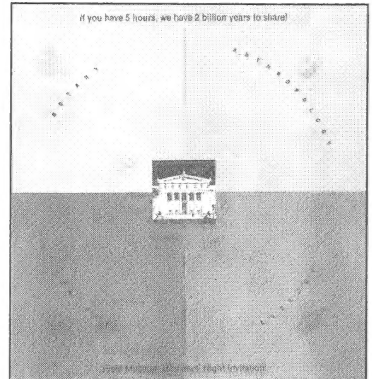
education. A special treat will be a program of Maori art and storytelling.

Members can talk with the scientists who devote their lives to the pursuit of new information, and then visit with the people who turn that information into challenging, informative exhibits, designed to entertain and educate the millions of visitors who come through the Museum's doors. They'll also get a closer look at those exhibits, with exciting games and tours through "Into the Wild," the Pawnee Earth Lodge, and other popular exhibits.

There will be updates on exciting

new exhibits now being planned, including an on-site tour of the Africa exhibit as it moves from model to construction, and an up-close look at the model for the new exhibit on evolution that is going to include everybody's favorites — the dinosaurs. A special sneak preview of the installation of the Museum's hottest summer attraction — "Backyard Monsters: The World of Insects" — will add to the fun.

Museum botanists, anthropologists, geologists and zoologists will be on hand to share what they have learned with Museum members. Pro-



grams include: "Hunting Fossils in the High Andes"; "Changing Faunas: South America in the Pliocene"; "Amphibians and Reptiles of the Chicago Area"; and "Secrets From the Attic."

Cocktails and soft drinks will be available at a cash bar, and both McDonald's and Picnic in the Field will be serving food from 5:00 until 9:30 p.m. The downstairs vending area will be open until the museum closes at 10:00 p.m.

Members may bring two guests, and special arrangements can be made for handicapped visitors by calling (312) 922-9410, ext. 453, beginning on May 4. The Museum is wheelchair accessible. There will be free parking in both the Museum and Soldier Field lots, and a shuttle bus will run every 20 minutes between the Museum and Union Station, with stops at Northwestern Station, Washington and State, Washington and Michigan, Adams and Michigan, and Balbo and Michigan. You may board these buses, which will be marked "Field Museum," by showing either your membership card or your Members' Night invitation.

## BACKYARD MONSTERS

A strange assortment of house-guests has come to the Museum — including a male unicorn beetle roughly the size of a Volkswagen, a harvester ant big enough to break a human in two with its pincers, and a dragonfly with a ten-foot wing span.



These are some of the oversized, "animatronic" creatures featured in "Backyard Monsters: The World of Insects," at Field Museum from May 30 to September 7. They and their friends — a scorpion, a Western black widow spider, and a Chinese praying mantis — are the main attractions in an exhibit designed to educate and entertain people of all ages about the importance of insects in our world and their role in nature.

Besides the oversized "monsters," the exhibit features 14 fun, interactive stations as well as displays of hundreds of exotic insects and arachnids from around the world — all of which serve to introduce the public to the broad diversity of insects and arachnids [See chart, page 10], and demonstrate the positive and negative impacts they have on agriculture and human life.

The "monsters" in the title are actually the product of a high-tech system of animated robotics — animatronics — which enables each robot monster to come to life with biologically accurate, computer-programmed movements. Creative Exhibits, Inc., and its affiliate company, Creative Presentations, Inc., the animatronics company that gave life to the giant insects and arachnids, has also worked with filmmaker Steven Spielberg to create an oversized "E.T." robot for Universal Studio's

theme parks.

For "Backyard Monsters," each six- to twelve-foot creature, up to 100-times scale, was created in consultation with Arthur V. Evans, a leading entomologist, and they all represent the latest in scientific and environmental research. They are presented in backyard settings that resemble their natural habitats, complete with digital sound and lighting effects. Thanks to animatronics, the monsters are able to perform up to 20 life-like movements, including darting eyes, waving antennae, creeping legs, and forward and backward hunches.

To augment the monsters, the exhibit also features 14 interactive mini-exhibits designed to give visitors a "bug's-eye" view of life. These exhibits, and corresponding educational programs, make the findings of entomological research accessible in a lively, engaging manner to visitors, students, and teachers.

The hands-on exhibits include: "Honeycomb Construction," where visitors will be able to climb inside a bee's honeycomb; "Bug's Eye View," from which visitors can look out at the world through the complex, compound eyes of an insect; "Build a Bug," in which kids race to see who can put together a bug the fastest — using interchangeable colored body parts; and "The Better to Eat You With," where visitors can "join" hungry insects at the dinner table to learn how insects and arachnids sip nectar and drink blood to survive.

The third major component of "Backyard Monsters" displays more than 1,000 exotic insects and arachnids from all over the world. Topics explored include insect preservation, social relationships, and environmental impact. Visitors learn to appreciate the part insects and arachnids play in everything from agriculture to jewelry.

The Field Museum provides an ideal setting for "Backyard Monsters"; the exhibit is bolstered here by a comprehensive entomology collection of more than 9.7 million specimens. [See page 11.]

"Backyard Monsters" is a special ticketed exhibit. Admission is \$2.50 per person, but Museum members pay only \$1 and receive priority entrance to the show.

Always up-to-date, the Museum has scheduled a special Members' Night program on Chicago's freight tunnel system, which flooded in April with drastic consequences for the city. Bruce Moffat, author of *Forty Feet Below*, will narrate a film of the same title on the underground freight railroad from 1899 to 1959. Phil O'Keefe of the National Model Railroad Association will display a scale model of the tunnel connection to the Field Museum boiler room.



BACKYARD MONSTERS  
THE WORLD OF INSECTS



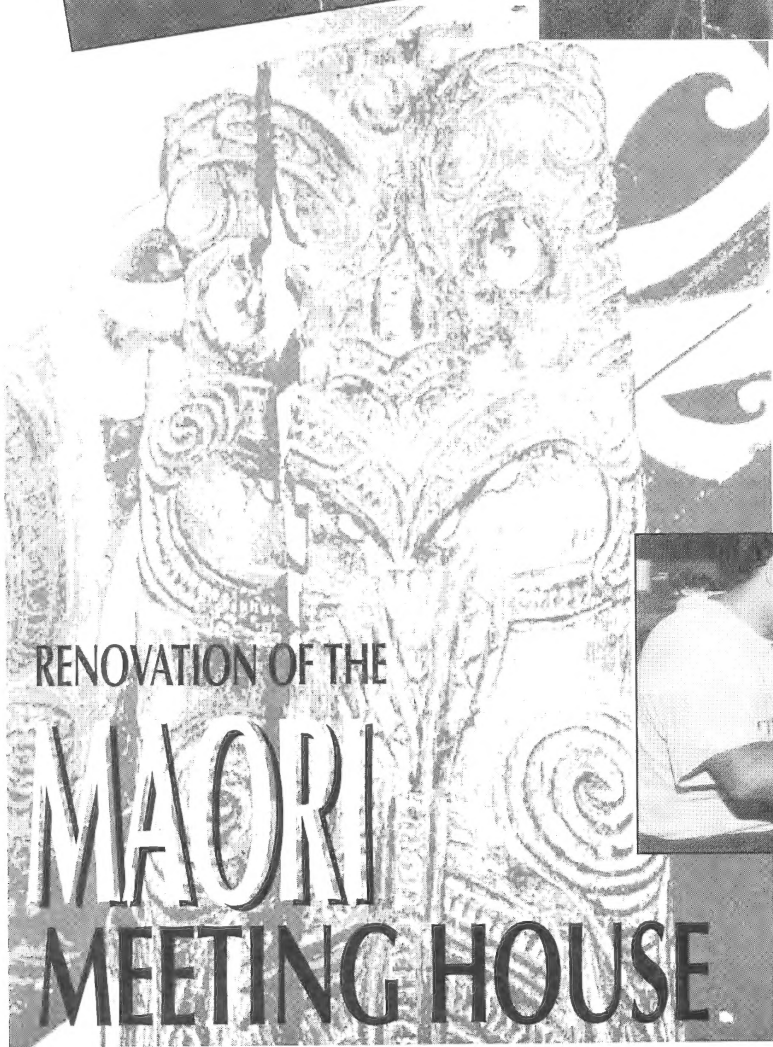
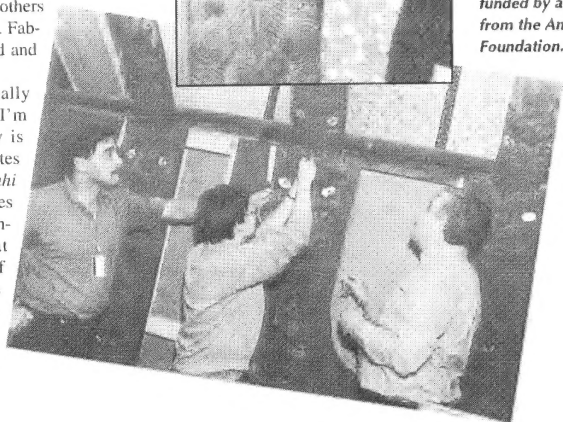
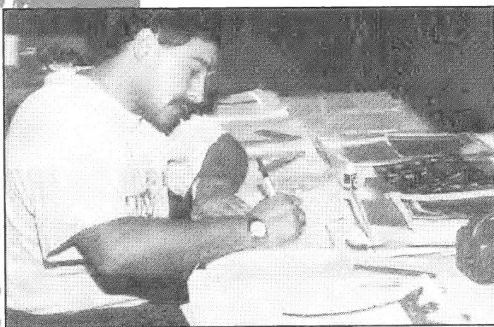
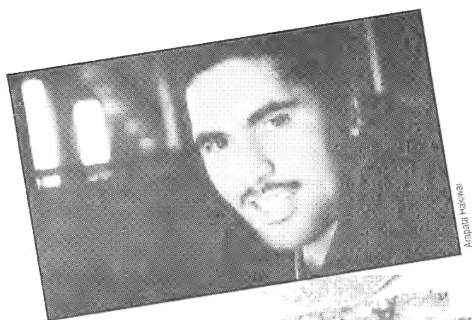
### OUTREACH COUNCIL PREVIEW PARTY

The Outreach Council, a group of young professionals that supports the Museum's program of community outreach, is sponsoring a special preview of "Backyard Monsters" from 6 p.m. to 9 p.m. on Saturday, May 30, including a festive picnic supper. Tickets are \$35 per adult and \$25 per child (under 13). For information and reservations, call (312) 922-9410, ext. 351.

Photographs by John Weinstein



Photographs by  
Diane Alexander White



# RENOVATION OF THE MAORI MEETING HOUSE

Work began in April on the renovation of Ruatēpupuke II, the Museum's 19th-century Maori meeting house. In cooperation with the people of Tokomaru Bay, New Zealand, where the building originally stood, the Museum plans to reopen the house in the spring of 1993 as "an outpost of Maori culture in the New World."

Meeting houses are central to that culture because they embody ancestral spirits, and the sale of this house to an Englishman in the 1890s [the community built a new one] provoked controversy among the Maori that has not entirely subsided. But in the past five years, since a group of elders from Tokomaru Bay visited Chicago for the Museum's mounting of the exhibit "Te Maori" and a Museum tour group visited Tokomaru Bay, the community has coalesced around the idea of shared responsibility for its renovation and future use.

Key to this effort are Arapata Hakiwai, curator of Maori collections at the National Museum in Wellington, who has been named co-curator of the house with Field Museum anthropologist John Terrell, and two Maori

artists, Hinemoa Hilliard and Hone te Ihi te Rangi Ngata, who are working as conservation interns with Catherine Sease, the Museum's chief conservator. Hakiwai and Ngata have family ties to the house, and all three were selected for this project by the people of Tokomaru Bay.

Parts of the structure, including some carvings, must be replaced. Ngata will do some of the carvings in Chicago and others will be done by artists in New Zealand. Fabrics for the house will also be designed and woven in New Zealand.

Hilliard, who says she feels "really honored to have been chosen since I'm from out of the area" — her family is from Peria on the North Island — notes the importance of the concept of *te ahi ka*, "keeping it warm." The idea relates to a connection between the current generation and the living objects that embody their ancestors. "The people of Tokomaru Bay," she says, "want to see this house come alive again, not to be a stale exhibit."

Clockwise, from upper left: Hone te Ihi te Rangi Ngata, conservation intern; John Terrell, Field Museum curator of Oceanic archaeology; the start of work on the house, with Craig Atkinson, project supervisor, atop the ladder; Arapata Hakiwai, curator of Maori collections at the National Museum in Wellington, New Zealand; Hinemoa Hilliard, conservation intern; and Hakiwai with Catherine Sease, head of the Field Museum Division of Conservation, and Uriel Schlair of Harry Weese Associates, consulting architects. The renovation is funded by a grant from the Ameritech Foundation.



## LOCKED IN STONE: PREHISTORIC CREATURES OF FOSSIL LAKE

An array of intriguing fossils that paint a fascinating picture of a 52-million-year-old lake community in Wyoming will be on display June 27 through November 15 in "Locked in Stone: The Prehistoric Creatures of Fossil Lake." The more than 100 fossils on display are a select representation of specimens collected over the past fifteen years by Lance Grande, associate curator of fossil fishes in the Department of Geology.

The fossils were extracted from Fossil Lake, which is part of the Green River Formation that covers parts of Wyoming, Colorado, and Utah. Located in southwestern Wyoming, Fossil Lake has proved to be one of the richest fossil areas in the world — an entire lake community fossilized in limestone and frozen in a time when that part of the country had a tropical climate. Grande has assembled for the Field Museum the world's finest collection of Green River fossils.

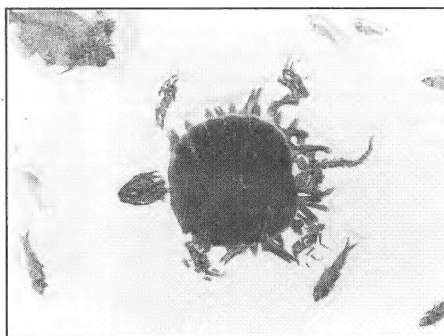
The work at Fossil Lake is unusual because scientists are able to look at an entire lake community rather than having to piece together scattered objects. Insects, shrimps, snails, plants, fishes, amphibians, turtles, birds, 13-foot-long crocodiles, and other fossils can all be found in a narrow horizon of limestone — a compressed picture of an entire lake system representing a contemporaneous community of organisms from the Early Eocene time period.

At Fossil Lake, instead of studying isolated specimens, scientists are able to examine a whole community: fish eating other fish, fish with other fish in their stomachs, leaves that have been chewed by insects, and the insects that most likely did the chewing. Grande is also able to study fossil evidence of the life histories of now extinct animals, including growth series of fishes from the newly hatched to large adults.

Another quality that makes Fossil Lake such an important research site is the amazing preservation of the fossils. It is not unusual, at Fossil Lake, to find whole fishes preserved in the limestone, for example. The condition of

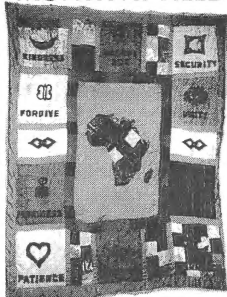
these fossils allows Grande and other scientists not only to study the past, but to include those fossils in studies of fish living today. The fossils are so detailed that scientists can determine where their nearest living relatives are today. This kind of information is crucial in studies of evolutionary patterns.

Non-scientists are in for a rare treat at "Locked in Stone." These fossils have opened a window on the past, providing a startling view of life on earth more than 50 million years ago.

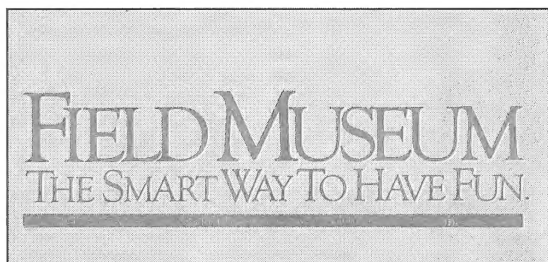


Remarkably complete fossils of a turtle and some fishes from Fossil Lake.

### MAY IS NEIGHBORHOODS MONTH AT FIELD MUSEUM



The quilts hanging in Stanley Field Hall during May were hand-made by local community groups. Many other special programs are being offered. (See over.)



## INTERIM DINOSAUR EXHIBITS



Albertosaurus losing his or her head last March. The space in Stanley Field Hall where Albertosaurus stood over a fresh kill will be temporarily occupied by "Backyard Monsters: The World of Insects."

To prepare for a major new exhibit on evolution, the Field Museum has had to take down the dinosaur exhibits that have been so familiar to museum visitors throughout the years. The dinosaurs haven't been put in storage, however. They are being cleaned, repaired, and remounted as an integral part of the new exhibit, tentatively titled "Life Over Time." When next they appear, they will also be assuming new poses that will accurately reflect the latest discoveries in paleontology.

For those desperately in need of a dino sighting, however, the Museum has tried to be accommodating. Two new mini-exhibits have been created on the second floor, near the new "Moving Earth" exhibit. "Mesozoic Life" presents fossils from the Age of Reptiles, including dinosaur skulls, and "Field Paleontology" describes how scientists extract fossils from the ground. Also on display is the skeleton of *Lambeosaurus*, a Canadian dinosaur that lived 70 million years ago.

There are other places in the Museum that dino enthusiasts will find of interest. "Prehistoric Animals," located on the second floor west near the "Earth Sciences" exhibit, is loaded with fascinating fossils, including mammoths and mastodons, giant birds and sloths, early horses, and ancient rhinos and hippos that once lived in North America.

For those who want to start at the very beginning and work their way through the stages of life on Earth, the "Time Line" records the history of the universe, from the Big Bang some fifteen billion years ago right up to modern times. "Time Line" stretches across the north plaza in front of the Museum, and features a model of an *Albertosaurus*, a smaller relative of the fearsome *Tyrannosaurus*.



MAY 30 THROUGH SEPTEMBER 7

The Field Museum wishes to thank its Chicago promotional partners for "Backyard Monsters":

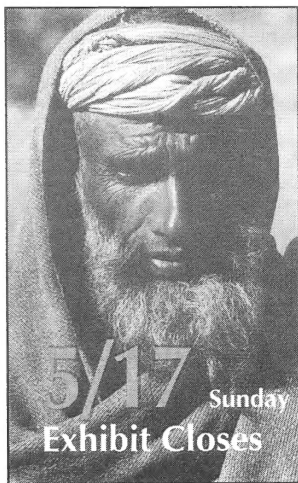


## 5/3 Sunday Chicago Day

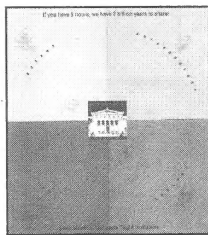
Field Museum and 14 other cultural, educational, and social-service organizations founded between 1889 and 1893 waive admission fees and provide special programs, and the CTA provides free shuttle service all along the route. Chicago Day is sponsored by AT&T and WBBM Newsradio 78. At Field Museum, special events include a production of "Earth, Magic, and Me" by the Call To Action Performing Arts Troupe, and "Legacy," a history of African-American music by singer/storyteller Maggie Brown.

## 5/7 Thursday Saving Books

The Friends of Field Museum Library present "Boards, Cords, and Wrappers: Some Observations on Book Conservation" by Jim Reed, a book conservator and Museum volunteer. Reception at 5:30 p.m.; program at 6 p.m. Reservations: (312) 322-8874.



"Where the World Meets the Sky: Photographs of Ladakh and Tibet" by Ellen Kaplowitz. In the South Gallery.



## 5/9 Saturday Theory & Evolution

The Museum's 15th annual Spring Systematics Symposium brings together philosophers and evolutionary biologists to ponder "Systematics & Process," the ways in which evolution works its wonders. Scholars, scientists, students, and serious amateurs call (312) 922-9410, ext. 416 for information.

## 5/11 Monday Virgin Spring & Fall

Nature Camera Club of Chicago presents "Warren Woods Through the Seasons," by Peggy Stevens. The program focuses on the finest virgin-forest preserve in the Chicago area. Program at 7:45 p.m. in Lecture Hall 2. Use the West Entrance. The club meets the second Monday of each month at Field Museum. All are welcome.

## 5/15 Friday Members' Night

Members of the Field Museum and their guests have the run of the house for five hours, 5 p.m. to 10 p.m., with lots of interaction with curators, exhibit developers, and other Museum personnel. Cash bar. Shuttle bus to Loop and train stations.

## 5/22 Friday Neighbors Night

The Museum's Community Outreach Program presents its 4th annual celebration of the arts and cultures of Chicago's ethnic communities. The free open house features a wide variety of activities for the whole family. Free bus transportation for residents of Chinatown, Auburn-Gresham, Englewood, West Englewood, Pilsen, South Shore, and South Chicago.

## 5/23 Saturday Exhibit Closes

"Powwow," photographs of Shoshone and Arapaho powwow dancers by Elijah Cobb. In the Webber Gallery.



## 5/30 Saturday Birth Day

"On the Day You Were Born": Special performance by In the Heart of the Beast Puppet and Mask Theatre of Minneapolis, based on Debra Frasier's best-selling book. After the play, visit "The Planetary Midway," with carnival-like booths with dramatizations of gravity, tides, and the rotation of the earth. For adults and children ages 3 - 10. Two performances, at 11 a.m. and 2 p.m. Adults \$10, children \$6. Call (312) 322-8854.

## 6/6 Saturday Out of Africa

Deborah Mack, senior exhibit developer of the Museum's forthcoming comprehensive exhibit on Africa, presents a slide-lecture on her recent research trip to Senegal. She'll describe the materials she collected, how they are made and used in Senegal today, and how they'll be used in the exhibit. 2 p.m. Admission \$12; \$10 for members. Call (312) 322-8854.

## 6/27 Saturday Exhibit Opens

"Locked in Stone: Prehistoric Creatures of Fossil Lake." More than 100 fossils from a 52-million-year-old lake bed in Wyoming. Through November 15.

## 6/24 Wednesday Northern Exposure

Founders' Council tour to Alaska departs Chicago, returning July 2.

## 6/28 - 7/1 Them Dry Bones

The 5th North American Paleontological Convention meets at the Field Museum. The public is invited to two programs: a seminar on "Global Change and Biodiversity" (Sunday, June 28, 2 p.m., \$3) and a lecture on "Dinosaur Behavior and Growth" (Tuesday, June 30, 6 p.m., \$5). Advance registration is recommended; call (312) 322-8854.

## NEIGHBORHOODS FEATURED IN MAY

Throughout the month of May, the Field Museum will feature a variety of activities for visitors of all ages that highlight the diversity and richness of Chicago's neighborhoods. Quilting demonstrations, mural painting, neighborhood storytelling and an assortment of informal activities will take place on the first four Saturdays in May.

Search for your neighborhood's flora and fauna in our new "Into the Wild" exhibit and locate your neighborhood on a giant map of Chicago. Research your neighborhood's history and ethnic background with representatives from Chicago's historical and cultural agencies and museums. View the prize-winning student exhibits from this year's Chicago Metro History Fair. Similar hall activities for school groups will be offered on Wednesdays. A detailed schedule appears on the "Visitor Programs" page (overleaf). Highlights of Neighbors' Month include:

### May 2, 6, 13, 16 & 20

Neighborhood mural artist Roberto Valdez will demonstrate mural painting and invite visitors to paint scenes from their own neighborhoods.

### May 2, 9, 16 & 23

Dorothy Moton will demonstrate quilting and show samples of a neighborhood "quilting bee" project.

### May 16

Representatives from many of Chicago's historical and cultural agencies and museums will be on hand to discuss Chicago's heritage.

### May 20 & 27

Storyteller Alice Rubio returns to the Museum with tales from the neighborhoods.

### May 23

Prize-winning student exhibits from this year's Chicago Metro History Fair will be on display

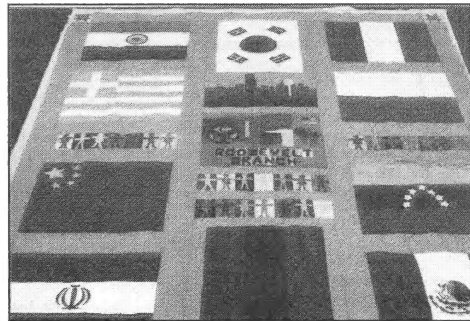


Mural art in the Mexican-American tradition. The building is the Little Village Unit of the Boys' and Girls' Club of Chicago at 2801 S. Ridgeway. The mural is by Jose Guerrero.

from 10:00 a.m. until 4:00 p.m. The students will be on hand to discuss their research projects and answer questions.

Mural artist Jose Guerrero will present an adult program, Mural Art in the Mexican American Tradition, on Saturday, May 23 from 10 a.m. – 2:30 p.m. Guerrero will discuss mural art and its role as a powerful and ancient form of communication during a morning lecture. After the lecture, travel by school bus to the Pilsen community for a walking tour highlighting local mural art. Fee: \$28 (\$24 members)

Preregistration is required for these programs. For more information or to receive a brochure with further details and a registration form, please call the Education Department, (312) 322-8854.



Quilting is a near-universal form of women's artistic expression, and several Chicago community groups have carried on their ethnic traditions by participating in quilting bees under the sponsorship of Field Museum's Community Outreach Program. Many of their hand-made quilts will be on display in Stanley Field Hall during Neighborhood Month, May 1 – 25. Among the groups that have participated in the quilting bees are women — including young girls ages seven to eleven and disabled seniors — from the Ada Niles Senior Care Center, the Cockrell C.P.C., the Roosevelt Branch Public Library, the Neighborhood Institute, the Accounters Center, the Chinese-American Service League, Ward School, Englewood High School, and the Community Outreach Program staff.

## NEIGHBORS NIGHT, MAY 22

The Community Outreach Program invites Chicagoans to an evening of free performances and educational programs, from 5 p.m. to 9 p.m. Friday, May 22. Enjoy the music and cultures of the city's many ethnic groups, including:

- Prince Joe Manu's Polynesian Revue
- The Pickard School Folkloric Dancers
- Dede Sampaio Brazilian Folklore Trio
- "A Tribute to Living Legends in the Blues" with
  - Sunnyland Slim
  - Billy Branch and the Sons of Blues
- Quilts from many communities

For more information, call (312) 922-9410, ext. 363

## Become a Member of the Field Museum of Natural History and receive these benefits:

- Free admission
- Free coat checking and strollers
- Invitation to Members' Night
- Priority invitations to special exhibits
- Free subscription to *In the Field*
- 13-month wall calendar featuring exhibit photographs
- Reduced subscription prices on selected magazines
- Opportunity to receive the Museum's annual report
- 10% discount at all Museum stores
- Use of our 250,000-volume natural history library
- Discount on classes, field trips, and seminars for adults and children
- Members-only tour program
- Opportunity to attend the annual children's Holiday Tea
- Discount at Chicago's largest furniture wholesaler
- Children's "dinosaur" birthday card

### MEMBERSHIP APPLICATION

New Members only. This is not a renewal form.

- Please enroll me as a Member of the Field Museum of Natural History

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Home phone \_\_\_\_\_

Business phone \_\_\_\_\_

### GIFT APPLICATION FOR

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Home phone \_\_\_\_\_

Business phone \_\_\_\_\_

### GIFT FROM

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Home phone \_\_\_\_\_

Business phone \_\_\_\_\_

### MEMBERSHIP CATEGORIES

- Individual – one year \$35 / two years \$65
  - Family – one year \$45 / two years \$85 (Includes two adults, children and grandchildren 18 and under.)
  - Student/Senior – one year \$25 (Individual only. Copy of I.D. required.)
  - Field Contributor – \$100 - \$249
  - Field Adventurer – \$250 - \$499
  - Field Naturalist – \$500 - \$999
  - Field Explorer – \$1,000 - \$1,499
- All benefits of a family membership — and more
- Founders' Council – \$1,500

Send form to:  
Field Museum of Natural History, Roosevelt Rd.  
at Lake Shore Dr., Chicago, IL 60605

## FIELD TRIPS FOR SPRING

Join us for a Field Museum excursion. Minimum age is 18; students 13 to 17 may attend if accompanied by an adult. Pre-registration is required and fees vary with the program. For a brochure, call (312) 322-8854.

Saturday, May 16  
Crabtree Nature Center and Baker's Lake: Spring Bird Migration

Sunday, May 17 or Sunday, June 28  
Chicago Waterways

Saturday, May 30 or Saturday, June 6  
Canoeing and Collecting at Sugar Creek

Sunday, May 31 and Sunday, June 7  
Ancient Egypt in Chicago

Sunday, May 31  
Birding in Wisconsin: Bong Recreation Area

Saturday, June 6  
Changing Woodlands

Saturday, June 6  
Night Hike: Ryerson Conservation Area

Saturday, June 20  
Lake Michigan's Magnificent Shoreline



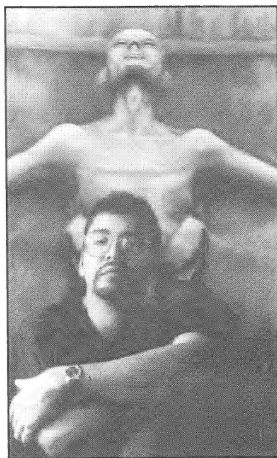
# VISITOR PROGRAMS

A Celebration of Neighborhoods  
Explore the meaning of neighborhoods on each Wednesday 10am - 1pm and Saturday 10am - 4pm in May through a variety of hands-on activities. Locate your neighborhood, find out more about **urban animals**, play an animal neighborhood **treasure hunt**, discover different **animal tracks**, and find out how Chicago has changed its natural environment.

**Saturday, May 2**  
10am - 12noon Help paint a **Neighborhood Mural** with muralist Roberto Valadez.  
11:30am - 1:30pm **African-American Quilting Demonstration** with Dorothy Moton.

**Sunday, May 3**  
1pm Take a journey with performer Maggie Brown through the **evolution of African-American music** from field hollers and spirituals to contemporary rap.

2pm **"Earth Magic & Me"** by Call to Action Performing Arts Troop. A delightful play for children shows we are all an important part of Planet Earth. See how you can make the difference.



Muralist Roberto Valadez

**Wednesday, May 6**  
10am - 12noon Help paint a **Neighborhood Mural** with muralist Roberto Valadez.

**Saturday, May 9**  
11:30-1:30 **African-American Quilting Demonstration** with Dorothy Moton.

10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

2pm **Hieroglyphs**. Have your name written in this ancient alphabet.

**Sunday, May 10**  
1pm - 4pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

12noon **Welcome to the Field**  
Enjoy a highlight tour of Field Museum.

2pm **Hieroglyphs** Have your name written in this ancient alphabet.

**Wednesday, May 13**  
10am - 11am Help paint a **Neighborhood Mural** with muralist Roberto Valadez.

**Thursday, May 14**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Saturday, May 16**  
10am - 12noon Help paint a **Neighborhood Mural** with muralist Roberto Valadez.

10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

11:30am - 1:30pm **African-American Quilting Demonstration** with Dorothy Moton.

**Sunday, May 17**  
12 noon **Welcome to the Field**  
Enjoy a highlight tour of Field Museum.

1pm - 4pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

2pm **Hieroglyphs** Have your name written in this ancient alphabet.

**Wednesday, May 20**  
10am - 11pm **Stories of the Streets & Neighborhoods** with Alice Rubio

**Thursday, May 21**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Friday, May 22**  
5 p.m. - 9 p.m.  
**Neighbors Night at the Field**  
Field Museum Community Outreach Program invites you for an evening of free performances, demonstrations, refreshments, and much more! Performances by Prince Joe Manu's **Polynesian Revue**; the Pickard School **Folkloric Dancers**; Dede Sampaio **Brazilian Folklore Trio**; and **"A Tribute to Living Legends in the Blues"** performed by Sunnyland Slim, Billy Branch and the Sons of the Blues. For more information call (312) 922-9410, Ext. 363.

**Saturday, May 23**  
10 - 4 A sample of some outstanding projects on **community history** from the Chicago Metro History Fair will be on display.

11:30-1:30 **African-American Quilting Demonstration** with Dorothy Moton

2pm **Hieroglyphs** Have your name written in this ancient alphabet.

**Wednesday, May 27**  
10am - 11am **Stories of Streets & Neighborhoods** with Alice Rubio

**Thursday, May 28**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Backyard Monsters: The World of Insects**  
Special Activities:  
May 30 - September 7  
Discover the world of bugs through activity carts featuring live insects, arachnids, and other arthropods. Daily 10am - 4pm. **Join Field Museum entomologists** on weekends from 11am - 4pm for a close-up look at how insects are prepared for the research collection.

**Sunday, May 31**  
1pm **Around the Field in Italian**  
Dinosaurs, totem poles and more will be visited during this highlight tour presented in the Italian language.

3pm **Around the Field in Japanese**  
Dinosaurs, totem poles and more will be visited during this highlight tour presented in the Japanese language.

**Saturday, June 6**  
1pm **The Chinese Music Society of North America** performs music of the classical Chinese orchestra.

**Sunday, June 7**  
1pm Enjoy wonderful **Latin American Stories** with Carmen Aguilar.

**Thursday, June 11**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Saturday, June 13**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

1pm **"Children of the Sun — Myths of Stones and Gems"** stories by Alice Rubio.

2pm **Hieroglyphs** Have your name written in this ancient alphabet.

**Sunday, June 14**  
1pm - 4pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

1pm Experience the musical and magical sounds of Latin America with **Maya Marimba**.

**Thursday, June 19**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Saturday, June 20**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

1pm **Latin Caribbean music** with Freddy Concepcion.

**Sunday, June 21**  
1pm - 4pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

1pm Listen to the original sounds of the **Mbira -Thumb piano** by Chike.

**Thursday, June 25**  
10am - 1pm **Weaving Designs in Cloth** A demonstration by the North Shore Weaver's Guild.

**Saturday, June 27**  
1pm Join Ari Brown for a **world music performance** featuring the saxophone.

2pm **Hieroglyphs** Have your name written in this ancient alphabet.

**Webber Resource Center**  
Native Cultures of the Americas Books, videotapes, activity boxes, tribal newspapers and resources for teachers about native peoples of the Americas are available. Daily 10am - 4:30pm

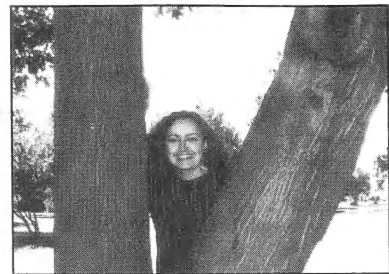
**Harris Educational Loan Center**  
Chicago area educators may borrow activity boxes and small dioramas from the Harris Educational Loan Center. For more information call: (312) 322-8853 or visit during open house hours: Tuesdays & Thursdays 2:30 - 5pm and Saturdays 9am - 5pm.

**Place For Wonder**  
A special room of touchable objects where you can discover daily life in Mexico, in addition to an array of fossils, shells, rocks, plants, and live insects.

May - June 15:  
Weekdays 12:30pm - 4:30pm  
Weekends 10:00am - 4:30pm

June 15 - September 4:  
Weekdays 11:00am - 4:30pm  
Weekends 10am - 4:30pm

Storyteller Alice Rubio



**Pawnee Earth Lodge**  
Walk into a traditional home of the Pawnee Indians of the Great Plains and learn about their daily life during the mid-19th century. Free program tickets available from the South Information desk in Stanley Field Hall.

May - June 15:  
Weekdays: 1pm program  
Saturdays: 10am - 4:30pm with free ticketed programs at 11, 12, 2 & 3.  
Sundays: 10am - 4:30pm

June 15 - September 4:  
Weekdays: Programs at 11, 11:30, 1, & 1:30.  
Thursday and Friday: 2 - 4:30.

Saturdays: 10am - 4:30pm with free ticketed programs at 11, 12, 2 & 3.  
Sundays: 10am - 4:30pm

**Backyard Monsters: The World of Insects**  
Volunteers are being sought to staff activity carts featuring live bugs and related activities on weekdays and weekends May 30 - September 7. For more information, contact the Museum Volunteer Coordinator, 312/922-9410, extension 360.

**Animal Kingdom Study Area**  
Volunteers are being sought to staff a resource center and present programs in a new animal kingdom exhibit scheduled to open this fall. Volunteer training for these exciting programs begins in August. For more information call 312/922-9410, extension 360.

**Field Partners Reading Club**  
An exciting free summer program for 6 - 8 years olds will explore Native America cultures through books, storytelling, hands-on activities, and weekly visits to the Field Museum & your local library. Club size is limited to 20. For more information or to register, call the Webber Resource Center (312) 922-9410, extension 497 by June 30, 1992.

**Members of the Roosevelt Branch Public Library quilting group sew their national flags into a quilt for the community quilt display at Field Museum May 1 - 25.**



# PALEONTOLOGISTS CONVENE AT FIELD

The Fifth North American Paleontological Convention, a major international meeting of scientific researchers, is being held at Field Museum June 28 to July 1. Co-sponsors of the convention are the University of Chicago, the University of Illinois at Chicago, and the Association of North American Paleontological Societies. One seminar and one lecture will be open to Museum members and the general public. Seating is limited. Advance registration is recommended and tickets may not be available at the door. For ticket information, call (312) 322-8854.

**Seminar: Sunday, June 28, 2 p.m. - 4 p.m.**  
**\$3 members and nonmembers.**

*Global Change and Biodiversity: An Historical Perspective*

John Flynn, Ph.D., Geology Department, Field Museum, Moderator

The future of our planet's climate and the diversity of life on earth can only be predicted by looking to the history of climate and diversity change, and understanding the mechanisms of change. Three leading researchers will present three different perspectives on where the earth has been and where it is going, looking at how the atmosphere and climate work, at glaciation and the history of biodiversity in the temperate zone, and at the history of the most diverse land communities, the tropical rain forests. The topics and discussants are:

*Some Concepts in Global Habitability: Climate, Chemistry and Life*

John Frederick, Ph.D., Department of the Geophysical Sciences, University of Chicago

What processes have maintained the earth's environment in the narrow range that living systems can tolerate? Scientists are trying to answer this central question of global habitability. Current issues such as global warming and ozone depletion are focusing increased attention on the earth's climate. Dr. Frederick will discuss in qualitative terms how variations in the earth's environment have been related to astronomical and geophysical factors and the possible influence of these factors on the evolution of life on our planet.

*Viewing the Future Through the Past: Paleobiological Perspectives for Contemporary Problems*  
 Russell Graham, Ph.D., Curator and Head, Geology, Illinois State Museum

Computer-driven models indicate that the earth may experience unprecedented climate changes in the next few decades. It is difficult to predict how these changes will affect biological communities. However, the paleobiological record documents the response of past biotas to global climate changes and it can provide insights into various processes that will shape our future biotas. Dr. Graham will discuss how global cooling and warming during the last glacial/interglacial cycle altered terrestrial biotas on the northern continents and how this information can be applied to contemporary problems of global climate change and biodiversity.

*The Past and Future Amazon: Exploring the Last Great Unknown*

Paul Colinvaux, Ph.D., Smithsonian Tropical Research Institute

Explaining high Amazon diversity requires an understanding of Amazon history. Most of the past million years has been passed in Ice Age times, and the present warm interglacial period has lasted only ten thousand years. Very little is known about the Ice Age Amazon and Dr. Colinvaux is one of the few researchers trying to gain an historical perspective on the tropical rain forest. There has been much speculation that the Ice Age Amazon was too dry to support a high-diversity tropical rain forest. In contrast, Dr. Colinvaux's research shows that an Amazon biota did persist through grand climatic change and more modest disturbance, though that biota was very different from the one we know today. Saving the current diversity of the rain forest will depend on moderating present and future disturbance to the levels experienced in the past.

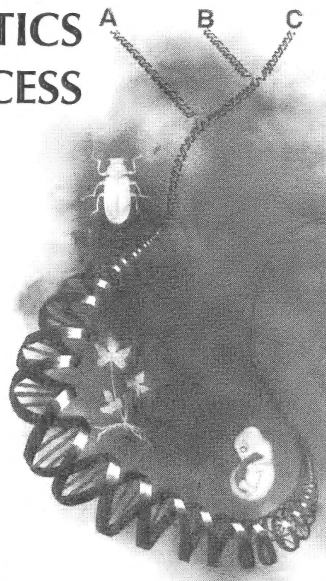
**University of Chicago Centennial Plenary / Public Lecture: Tuesday, June 30, 6 p.m.**  
**\$5 members and nonmembers**

*Dinosaur Behavior and Growth*

John Horner, Ph.D., Curator of Paleontology, Museum of the Rockies

Since 1978, Dr. Horner has stirred considerable interest around the world with his discoveries in Montana of extensive dinosaur nesting grounds and fossilized skeletons of baby dinosaurs. Dr. Horner will share new geological and paleontological data from the Upper Cretaceous Two Medicine Formation in Montana which indicates that at least some dinosaur species exhibited complex social behaviors similar to many living birds. For example, while some species of dinosaurs hatched from their eggs helpless and immature, others emerged fully capable of a high degree of activity. Recent evidence shows that some duck-billed dinosaurs nested in colonies and cared for their young. Learn new information this research is revealing on dinosaur behavior and growth.

## SYSTEMATICS & PROCESS

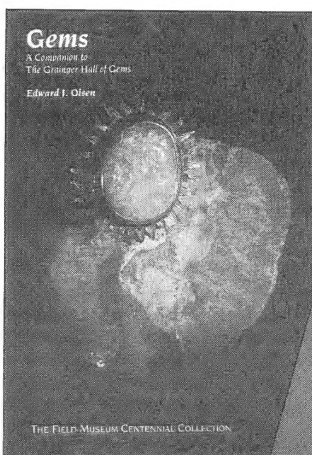


Clara Richardson Simpson

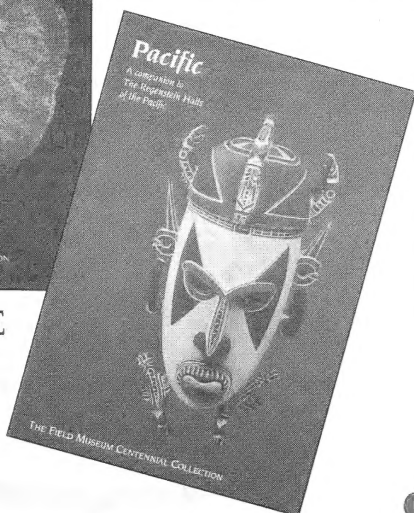
Fourteen scientists and philosophers from across the United States will address the often controversial theories that attempt to explain the processes of evolution at the Museum's 15th annual Spring Systematics Symposium on May 9. Five hundred scholars, scientists, and students are expected to attend.

The meeting is being organized by Olivier Rieppel, Field Museum curator of fossil amphibians and reptiles. Moderators are Paul Sereno of the University of Chicago and Joel Cracraft of the University of Illinois at Chicago.

Symposium topics include: "Darwinian Dependency in Biological Systematics," "Testing the Ambiguity of the Evolutionary Process," "Logical and Historical Approaches to Systematics: A Tension between Description and Explanation," "Cladistics and Biogeography," and "Symbiosis and Speciation."



Coming in August  
**Inside Ancient Egypt**



Now in  
**THE FIELD MUSEUM STORE**

*Pacific* and *Gems* — the first two volumes in THE FIELD MUSEUM CENTENNIAL COLLECTION of illustrated companions to the Museum's major collections on exhibit.  
 Telephone orders: (312) 322-8866 • \$8.95 each

# YES, VIRGINIA, THERE IS A BRONTOSAURUS

By Ron Dorfman  
Editor, *In the Field*

**D**ismantling of the *Apatosaurus* skeleton attracted considerable attention from the news media and from visitors to the Museum who happened to wander upon the scene. One group of schoolchildren stood watching in the doorway and asked me, as the nearest responsible-looking person, to explain what was happening. I told them that the *Apatosaurus* was being taken apart so it could be rearranged and moved to a new exhibit on evolution. A boy, about twelve, looked confused and disappointed. "I thought it was a *Brontosaurus*," he said.

Well, I'd always thought it was a *Brontosaurus* too, until I came to work here a couple of years ago. Everybody at the Field Museum calls it *Apatosaurus*. In fact, one of the Museum's mascots is a costumed creature named Dolores the *Apatosaurus*. I never made serious inquiries, but from time to time somebody would make reference to the wrong head having been put on the skeleton at some point, so I gathered that whatever I'd learned in school and from comic books forty years ago had now been superseded by a scientific consensus in favor of *Apatosaurus*.

And that's what I told the kid, thinking to myself how typical that they had not updated the curriculum for so many years.

A few days later, however, there popped into my head the title of Stephen Jay Gould's latest collection of essays, *Bully for Brontosaurus* (Norton, 1991), one of many books

that have been lying around patiently waiting for me to get to bed early enough to read them. I cracked it that night, and was rewarded not only with the solution to the *Brontosaurus/Apatosaurus* conundrum, but with an interesting bit of Field Museum history in the bargain.

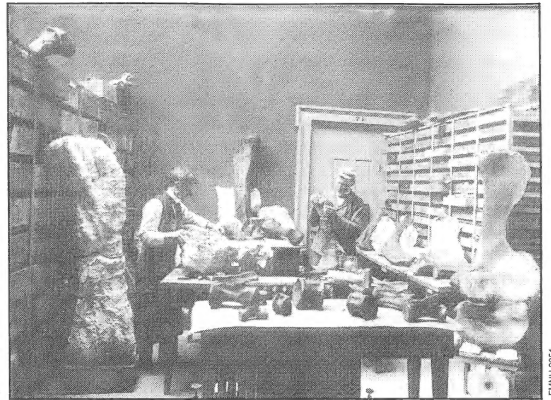
In the late 1870s, Othniel C. Marsh of Yale and Edwin Drinker Cope of Philadelphia were rival collectors of dinosaur bones and other fossils. As Don Lessem reports in *Kings of Creation*, his new book on modern dinosaur research (Simon & Schuster, 1992), Marsh and Cope hired prospectors to comb the American West and send them bones. The two celebrated paleontologists "battled in the press, accusing each other of plagiarism and libel. Nearly every find was dubbed a new species."

In particular, in 1877 Marsh named and described *Apatosaurus ajax*, a 50-foot dinosaur, based on what Gould says was "sketchy information." Two years later, Marsh "introduced the genus *Brontosaurus*," estimating its length at 70 to 80 feet. Over the next two decades Marsh and Cope named 136 new species of dinosaurs, and somebody had to sort out the confusion. Enter Elmer Riggs.

Riggs was the eminent dinosaur man at the Field Museum, and in reviewing Marsh's work in 1903 he recognized that *Apatosaurus ajax* was simply a juvenile *Brontosaurus*. In a paper titled "Structure and relationships of opisthocoelian dinosaurs, Part I: *Apatosaurus*" (Geological Series of the Field Columbian Museum, Publication 82, Vol. 2, No. 4, pp. 165-196), Riggs wrote: "As the term '*Apatosaurus*' has priority, '*Brontosaurus*' will be regarded as a synonym."

"*Apatosaurus*" had "priority" because Marsh had published it two years before "*Brontosaurus*," and at the time the rule of precedence was strictly enforced in taxonomy; it was not until 1913 that the International Zoological Congress adopted Article 79, the "plenary powers decision," which provided an appellate mechanism to suspend the rule of precedence in appropriate cases.

But even if Article 79 had been in force in



FMNH 0203

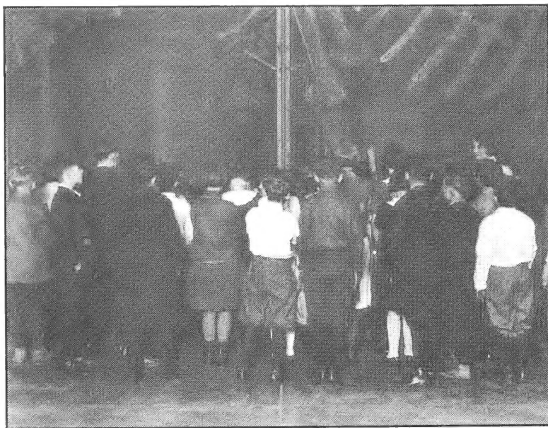
1903, Gould notes, "*Brontosaurus* was not yet an icon of pop culture . . . no Sinclair [oil company] logo, no Alley-Oop, no *Fantasia*, no *Land Before Time*," so Riggs "had no reason to prefer *Brontosaurus*" over *Apatosaurus*. Marsh had put together at Yale a nearly complete *Brontosaurus* as early as 1883, but only after Sinclair sponsored a dinosaur exhibit at the 1939 World's Fair in New York did that huge and supposedly stupid animal capture the public imagination. *Brontosaurus*, says Gould, "soon became everyone's typical sauropod — indeed, the canonical herbivorous dinosaur of popular consciousness."

At that point, an appeal could have been taken under the plenary powers decision to suppress "*Apatosaurus*" in favor of the commonly used name, "*Brontosaurus*," but no one bothered to do so, and there the matter rested until 1989, when the United States Post Office decided to issue a *Brontosaurus* stamp. An explosion of what Gould derides as "'trivial pursuit' one-upmanship" put the Post Office on notice that it was using an "incorrect" name for its honoree. The Post Office replied as follows:

"Although now recognized by the scientific community as *Apatosaurus*, the name *Brontosaurus* was used for the stamp because it is more familiar to the general population. Similarly, the term 'dinosaur' has been used generically to describe all the animals [there were four in the postal series], even though the *Pteranodon* was a flying reptile." So there.

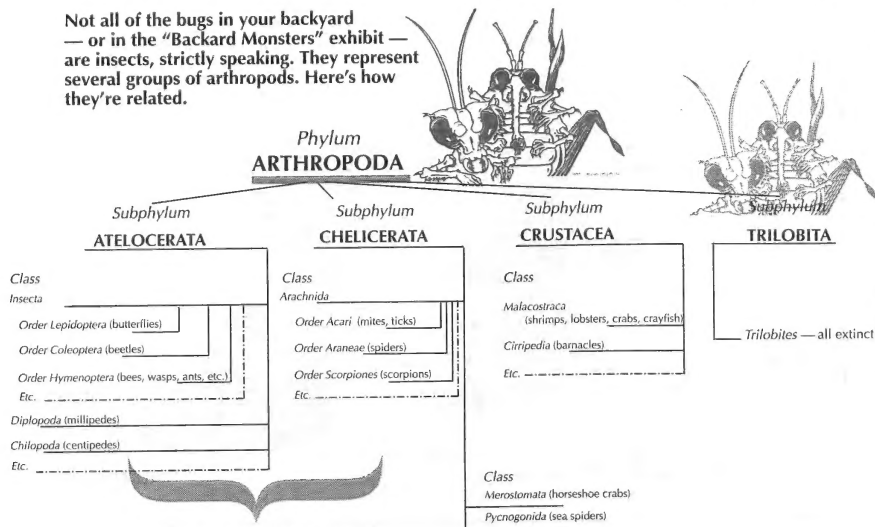
As for *Brontosaurus*'s head, Marsh had indeed put the wrong skull — that of a *Camarosaurus* — on his specimen at Yale. But that has nothing to do with the proper name of the beast.

Top, Elmer Riggs (wearing cap) in his laboratory at the Field Columbian Museum. Below, teacher and schoolchildren study skeleton of *Apatosaurus* in this 1920s photo.



FMNH 4803

Not all of the bugs in your backyard — or in the "Backyard Monsters" exhibit — are insects, strictly speaking. They represent several groups of arthropods. Here's how they're related.





# 9.7 MILLION 'MONSTERS'

Of the Field Museum's collection of nearly 20 million objects, including natural history specimens and cultural artifacts, almost half are held by the Division of Insects in the Department of Zoology.

Not all of the Division's 9,730,000 specimens are insects, strictly speaking. The "insect" collection encompasses four classes of arthropods — the insects (beetles, butterflies, ants, flies, bees, etc.), millipedes, centipedes, and arachnids (spiders, mites, ticks, and scorpions). Other groups of arthropods — sea spiders, horseshoe crabs, and the various crustaceans — are in the collections of the Division of Invertebrates.

"What we're doing at the Field Museum is building a record of diversity," says Alfred F. Newton, Jr., associate curator of insects. "We want to be able to recognize and apply names to the animals and plants we see, and to understand which may be beneficial, which may be harmful, which may have useful chemicals we can extract. That record needs to have not just single representatives of species but enough individuals so that we can figure out their geographical distribution and habitats — then we can tell which parts of the world have sufficient diversity and endemism [species particular to the territory] to need protection from, say, deforestation."

Newton's own research currently focuses on the distribution patterns and evolutionary relationships of the New World species of one genus of a large family of beetles, the Staphylinidae. "I'm hoping that by taking a detailed look at this group, we can say something about the history of the region [the forests of Mexico and Central America] as a whole, comparing the distribution patterns of the beetles and the vegetation, for example," Newton says. After gathering data on more than 53,000 specimens from more than 100 insect collections, he is now preparing computer charts of their biological and environmental characteristics, and determining how the species are related to one another.

Newton also continues his long-term studies of the higher-level classification and evolution of this large family and, with Field Museum Research Associate Margaret Thayer, faunal surveys of southern-hemisphere temperate areas — Australia, New Zealand, and Chile — and their biogeographic history.

His colleague, Associate Curator John Kethley, specializes in the systematic description and ecology of deep soil mites and in the evolutionary development of the reproductive systems of a group of mites that includes chiggers, spider mites, and other familiar pests. Kethley and colleagues at Brigham Young University have obtained DNA sequences on nearly 50 groups of mites and other arachnids in an effort to better understand the evolutionary relationships of these creatures.

Most research on mites concerns species that inhabit forests and grasslands. But Kethley has determined that thousands of species of mites found in contemporary sandy soils and coastal areas, including the shores of Lake Michigan, are little-changed "living fossils" closely related to three

fossil species that date back to the Devonian period, about 400 million years ago — "before there were forests," he notes, and before the continents separated. These findings have implications for understanding the ways in which communities of soil organisms evolve (and thus the plant and animal communities above them), and also for tracing the evolutionary spread of mites and more "advanced" arthropods to inland habitats.

A five-year, \$700,000 grant from the National Science Foundation is being used to reorganize and computerize parts of the insect collections and to add some 375,000 specimens from South Africa, Chile, Australia, and other areas, filling gaps that now exist in major North American museum collections. The grant also provides for outside specialists to help in this work; John E. Rawlins of the Carnegie Museum in Pittsburgh is currently working on the butterflies and moths.

In addition to accommodating scientists who come to Chicago to study the insect collections, the Field Museum each year makes about 100 loans to scholars around the world, averaging 300 specimens each.

What defines an "insect proper" is a particular complex of anatomical features, most visibly:

- three body segments including a head, abdomen, and thorax with three pairs of legs;
- the head having one pair of antennae, jaws consisting of one pair of mandibles and one pair of maxillae, a hypopharynx, and a labium.

Subgroups of insects are distinguished mainly on the basis of wing structure, the arrangement of mouth parts, and the changes in form between juvenile and adult stages.

The beetles (Coleoptera) are especially well represented at the Field Museum and include many notable world collections. For example, the 500,000 specimens of the family Staphylinidae (rove beetles) constitute one of the two ranking collections in the world. Among them are representatives of a least 30,000 species, including more than 4000 "type" specimens — the internationally recognized standard specimens identifying their species. These species of Staphylinidae — two-thirds of the family's 33,000 species — are nearly 10 percent of the estimated world total of 300,000 beetle species.

Other exceptional strengths in the Coleoptera collection include the families Histeridae (hister beetles), Tenebrionidae (darkling beetles), Scarabaeidae (scarabs), Lucanidae (stag beetles), Cerambycidae (long-horned beetles), Buprestidae (metallic wood-boring beetles), Cleridae (checkered beetles), Elateridae (click beetles), Leiodidae (round fungus beetles), Pselaphidae (short-winged mold beetles) and cave-inhabiting species of the Silphidae (carrion beetles).

The butterflies (Lepidoptera) are another great strength of the collections; along with termites (Isoptera) representing nearly half of the world's species; and millipedes (Diplopoda) and centipedes (Chilopoda), among them numerous identified New World and African specimens including about 200 types.

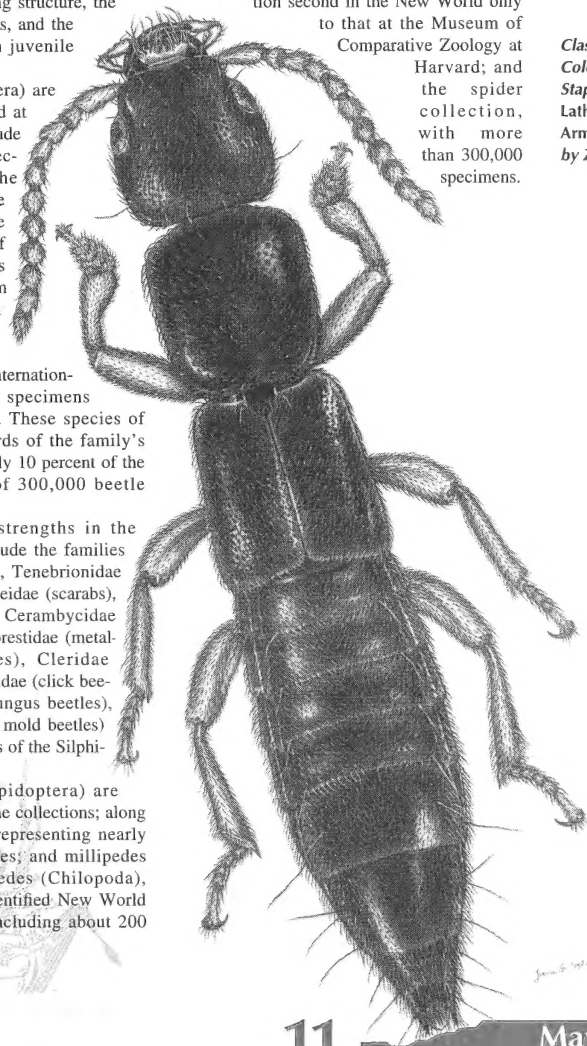
Among the Arachnida (spiders, scorpions, mites, and ticks), the Museum's holdings include the water mite collection, which contains types of about 765 species including more than 90 percent of known North American species — the most important type collection of water mites in the New World. Water mite material from abroad includes 200 identified species (146 types) from the Ethiopian region and 173 species from India (143 types). The collection of Trombiculidae (chiggers or redbugs) contains about 150,000 slides as well as substantial material in alcohol.

Collections of external parasites are extensive and include ticks (50 percent of identified species for the world); batflies (40,000 specimens, 70 percent of the world species of which 40 percent are represented by types); fleas (about one-third of identified species and types of 25 percent of tropical New World species); sucking lice (about one-third of described species); and important holdings of parasitic mites.

Nearly half of the insect collections have yet to be fully sorted and identified. These "bulk" materials include more than 10,000 partially sorted collections obtained from soil and litter samples by the Berlese funnel method, 3,000 obtained from baited traps, and 1,000 obtained from flight-intercept traps. These samples represent insect populations from throughout the world, and for many of them there is full ecological data. They have so far yielded some 4 million specimens of little-studied groups.

Other strengths include more than 3,500 specimens in Baltic amber, a collection second in the New World only to that at the Museum of Comparative Zoology at Harvard; and the spider collection, with more than 300,000 specimens.

*Class Insecta. Order Coleoptera. Family Staphylinidae. Genus Lathrobium. Species Armatum. Illustration by Zoriça Dabich*






# FIELD MUSEUM TOURS

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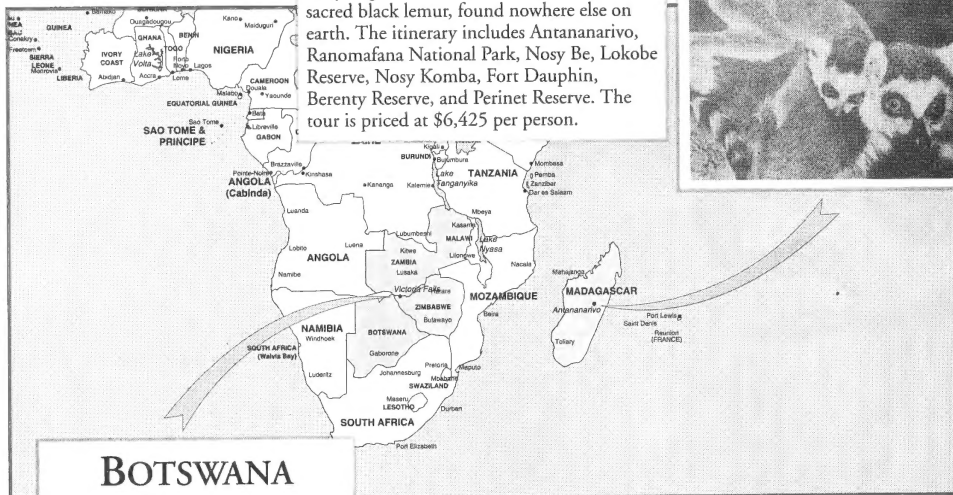
## MADAGASCAR

### Island of the Ancestors and Nature's Sanctuary

18 days: November 6  
to November 23, 1992



A wondrous immersion in Malagasy art and culture and an opportunity to see an amazing array of plants and animals, including the sacred black lemur, found nowhere else on earth. The itinerary includes Antananarivo, Ranomafana National Park, Nosy Be, Lokobe Reserve, Nosy Komba, Fort Dauphin, Berenty Reserve, and Perinet Reserve. The tour is priced at \$6,425 per person.



## BOTSWANA and ZIMBABWE

18 days: September 17  
to October 4, 1992

From Harare, an excursion to the Larvon Bird Garden with its 46 species of

waterfowl and half of all the bird species in Zimbabwe. Next, the rugged, remote area on the Zambezi River bordering Mana Pools National Park; the camp consists of thatched wooden chalets set back from the river under large shade trees, but there are no tour buses or tarred roads, ensuring a true wilderness experience. From there, the group travels to Ivory Lodge in Hwange National Park where morning and afternoon game drives using open vehicles highlight the day. Accommodations are traditionally thatched tree houses with private, en suite facilities.

A stop in Livingstone, just across the river in Zambia, provides access to Victoria Falls, with your choice of rafting in the rapids or visiting the local museum to learn about Zambia's culture, history, and wildlife.

The tour's longest stop is the famous Okavango Delta at the Xaxaba Safari Camp, with many opportunities for bird watching, fishing, leisurely walks along palm-covered islands, and possible sightings of hippos, crocodiles, and perhaps the rare sitatunga.

The final major stop is Chobe Game Lodge in the Chobe National Park, with the first afternoon featuring a game drive in open vehicles. Early morning drives may yield lions, hippos, crocodiles, warthogs, and perhaps a glimpse of a colony of carmine bee-eaters nesting on the river bank. More spectacular are the afternoon drives to view congregations of elephants, buffalo, sable, bushbuck, roan, tsessebe, and waterbuck that gather along the banks to drink.

Capping the tour is a final stop at Victoria Falls, where the average flow is 120 million gallons per minute, and the deafening roar envelopes you in its physical presence, never failing to impress even the most experienced traveler.

The tour is priced at \$6,475.