INTHEFIELD

January
February
1999

The Field Museum's Membership Publication

Margaret Mee: Return to the Amazon

January 22 to April 30

A Philippine Journey

From the President

JOHN WEINSTEIN /GN88119.6

The Field Museum Beyond 2000

What makes The Field Museum unique? For more than 100 years we have been telling the story of the Earth and its people by combining the scientific research of our curators with public education and exhibits. Within the past few years, we have broadened this story by adding to our educational and research arsenal the Center for Cultural Understanding and Change, which seeks to bring an anthropological perspective to the important issues of cultural interaction. We also have created the Office of Environmental and Conservation Programs, which works with organizations like Conservation International to find practical solutions to the world's most pressing ecological problems.

Since 1996, we have made significant progress in adding color and depth to this story. For example, we are designing a new family of permanent exhibits that includes **Underground Adventure**, which explores the biodiversity beneath our feet and is scheduled to open in the spring. In the winter of 1997, we purchased Sue, which will become the centerpiece of The Field Museum in 2000 and will, as the most complete *T. rex* fossil ever found, resolve many of the scientific mysteries that still surround this remarkable creature. In addition, our academic department has broadened its research programs by developing new alliances with other institutions. For example, we signed an agreement on April 7, 1998, with the Kenya Wildlife Service to collaborate on several scientific and educational ventures in Kenya relating to Tsavo National Park — the former hunting ground of the Museum's two famous man-eating lions. Finally, our trustees, campaign committee and staff have raised nearly $70 million, which has allowed us to continue down this extraordinary path.

There is no doubt these recent achievements have solidified our position as one of the nation's preeminent educational and cultural institutions. But before we go any further, it is time for us to answer the question: Where do we go from here?

Judy Block, chairman of the board of trustees, and I recently asked the Museum's board to direct a yearlong strategic planning initiative to evaluate and answer this question. What evolves from this initiative will serve as the underpinning of The Field Museum of the 21st century. As board members contemplate this important question, they also will examine the following topics and challenges:

Governance: How can our trustees most effectively guide The Field Museum?

Funding: How ambitious should our fund-raising efforts be?

Footprint: How can we better serve our expanding audience?

Research: How do we prioritize our research activities?

Collections: How can we make better use of our collection of more than 21 million specimens and artifacts?

Education: Is there a specific educational niche the Museum should be filling?

Exhibits: What types of traveling and permanent exhibits should we be offering?

Environment: How involved should we be in working on the ever-increasing environmental problems plaguing our planet?

Technology: What types of technology should we incorporate into our research, collections, exhibits and educational programs? And, how should we use technology to communicate to the public?

Outreach: What is the best way for us to reach out to traditional and new audiences?

I also pose a question to you, our members: In what direction would you like to see The Field Museum head as we approach the new millennium? Please write me at the Museum or send an e-mail to <mccarter@fmnh.org>. I look forward to hearing from you.

John McCarter

John W. McCarter Jr.
President & CEO

We would like to know what you think about "In the Field" . . . .

Please send comments or questions to Robert Vosper, publications department, The Field Museum, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605-9410, or via e-mail at <rvosper@fmnh.org>.

Inside

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Cover illustration is a 1978 watercolor painting by Margaret Mee of a *Nymphaea rudgeana*. Copyright: RBG, Kew, England.

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Around Campus

Shedd Aquarium

Beginning Jan. 4, 1999, Shedd Aquarium's **discount day** moves to Monday, when Aquarium-only admission is free and admission to both the Aquarium and Oceanarium is only $6. This change is designed to give Chicago-area residents a roomier, more enjoyable visit on a day of the week that traditionally draws fewer out-of-town guests. Families will benefit from the change because the new discount day coincides with many school holidays, including Martin Luther King Jr. Day and Presidents' Day. The Aquarium's discount day, supported by the state of Illinois, provides all local residents with an opportunity to enjoy and learn more about the world's aquatic environments. Call 312.939.2438 for information about upcoming aquarium events.

Adler Planetarium

The Adler has unveiled the new **Sky Pavilion**, a dramatic, glass-enclosed wing with four major exhibition galleries, the world's first **StarRider™ Theater** and **Galileo's**, a new restaurant that offers superb views of Chicago's skyline and Lake Michigan.

Visitors also can discover the Earth's Solar System, the Milky Way Galaxy and realms beyond in dozens of remarkable new exhibits that present the excitement of astronomy as never before. The virtual reality StarRider™ Theater offers visitors the thrill of traveling through space to other planets, stars and distant galaxies.

A Philippine Journey

The Evolution of an Environmental Crisis

PAUL HEIDEMAN

Above: Nobody really knows how many unique animals inhabit the old-growth rain forests of the Philippines. In the past 10 years alone, scientists and conservationists working in this island nation have discovered 16 new species of mammals and more than 20 species of frogs, as well as several birds and numerous reptiles. What they do know, however, is that this country's 7,200 islands support at least 512 endemic species of mammals, birds, amphibians and reptiles — the greatest concentration of endemic animals in any country on the planet.

By Lawrence Heaney
Associate Curator and Head, Mammals
Department of Zoology

On Nov. 7, 1991, one of the many typhoons that strike the Philippines each year happened to take a course over the northwestern corner of Leyte Island in the central part of the country. When the rains fell near the small city of Ormoc, they also pounded the recently logged mountainsides and steep, fallow fields of sugar cane that only a few years before were covered by rain forest. As often occurs during a typhoon, more than 18 inches of rain fell in less than a day. Without the forest to break the rainfall and without the thick layer of rainforest plants and decomposing vegetation on the ground to absorb the rain, the water rushed down the steep terrain in a rising torrent. When the flood reached Ormoc, it destroyed roads and bridges and annihilated homes and businesses. More than 7,000 people died in a few hours, changing the political landscape of the Philippines forever.

Ten years earlier, I had begun taking almost yearly trips to the rain forest of the Philippines, often for three months at a time. What my Filipino and American colleagues and I have found there ranges from dazzling to deeply disturbing.

For example, the Philippine Islands are home to the greatest concentration of unique species of any country in the world, including at least 512 endemic species of mammals, birds, reptiles and amphibians. However, Birdlife International and the International Union for the Conservation of Nature now list the Philippines as possessing the world's greatest concentration of severely endangered bird and mammal faunas. To make matters worse, lush rain forest once covered 96 percent of the Philippines; today only 6 percent of the old-growth forest remains.

When I first set foot in the Philippines in 1981, I was captivated by the rain forest and the animals living in it, which included such things as the world's heaviest bats (about three pounds) that eat mostly wild fig fruit; a rodent with a long, tweezer-like snout that feeds almost exclusively on earthworms; insect-eating bats with folds of skin around their noses that resemble finely oiled leather leaves; and birds so colorful they take your breath away. I also saw turquoise mountain lakes surrounded by emerald rain forest where the calls of kingfishers and eagles echo by day and the calls of fruit bats and frogs echo by night, filling the forest with sounds untouched by human activity.

In addition, I saw mountainsides, once covered by rain forest from the sea to the mountaintops, now supporting only scattered coconut trees, shrubs and saw grass that tears at clothing and skin. I visited a patch of forest less than a quarter square mile that forms the only habitat for three species of birds found nowhere else in the world. I watched as typhoons swept most of the topsoil off a steep mountainside that the brother of the town's mayor had illegally but openly logged. I worked with a couple so impoverished that their child died because they did not have the equivalent of $1 to buy antibiotics.

LAWRENCE HEANEY

Above: A thick blanket of towering rainforest trees once covered these mountain slopes on Negros Island. Within the past 20 years, however, commercial loggers and subsistence farmers have stripped them bare of rain forest. Without the brush and trees to protect it, the soil on these slopes quickly erodes under the constant barrage of rainfall, which ranges from 15 feet to 25 feet each year in the Philippine mountains.

During my early trips, I met a group of young Filipino biologists who had been trying unsuccessfully to obtain their own funding for field research. As we worked together on my meager research grants, I taught them how to identify the species we encountered and some of the basic concepts of biogeography and systematics. In turn, they taught me about Philippine society and language, and together we learned about the ecology, behavior and distribution of Philippine animals.

To reach our study sites, we would ride in homemade jeeps across the fertile lowlands covered by plantations of sugar cane and rice, past hills covered by pineapples and coconut trees, to the dozens of small villages along the old, rutted logging roads in the foothills. After hiking for three to six hours to reach old-growth rain forest, we encountered the wonders we had dreamed of — unknown species of mammals, gorgeous birds, orchids carpeting the ground and rushing mountain streams of clear water. As we reveled in our discoveries, however, the noise of chain saws filled the air from dawn to dusk at most of our study sites, overpowering the sounds of the forest.

By the 1980s, commercial loggers had destroyed most of the Philippine rain forest, leaving what remained in the "protected" forests and national parks to the destitute, landless farmers armed with rented

chain saws. After felling the huge "Philippine mahogany" trees on the steep mountainsides, the farmers would use water buffaloes to haul the timbers along slick trails to the roads. Every few weeks a truck would roar up the mountain, and the driver would pay each farmer a few dollars for his stack of lumber. An armed soldier usually accompanied the driver, who would stop at checkpoints on the way down and quietly pay officials to look the other way. The mayor's brother or governor's cousin then would smuggle it out of the country — "smuggle" being a relative term since everyone knew it was happening.

Most of the time, we worked in montane and mossy forests above 3,000 feet. We rarely worked lower because few native trees remained. When rains came to our camps, we huddled under our tarps and watched as the deluge fell, often unable to converse because of the roar of the falling water — which sometimes surpassed 14 inches in a day. We marveled that the thick layer of moss on the ground absorbed the rainwater and were astonished that runoff in the streams increased only modestly. When the skies cleared, the forest sparkled and shone like a gem.

After several weeks or months in the forest, we would descend to the impoverished little villages in the foothills. On the way down, we would hike the rainforest trails over moss, roots and old leaves until we reached the periphery of the logging zone. There, the trails abruptly dropped into trenches gouged out by the lumber dragged behind water buffaloes, and then scoured by the heavy rains to a depth of three to six feet. Everywhere we looked, we saw evidence of logging — fewer trees; valleys with eroded, steep muddy walls where small streams once flowed; and battered villages. As we drove down to the coast, we saw severe flood damage to roads, bridges, plantations and small coastal cities.

Because the popular and scientific press rarely published any stories about the Philippine environment during the 1970s and 1980s, no one knew about the extraordinary diversity of biological life in this country or the threats to its existence. Clearly, the government did not wish to draw attention to the problems they were creating. In addition, the Marcos government provided no funding for biologists to conduct field research and easily controlled news reporters and environmentalists who were harassed, threatened and sometimes beaten if they spoke up.

By the late 1980s, after the "people power" revolution deposed President Ferdinand Marcos, increasingly frequent and violent floods began to capture the nation's attention. Reporters linked the floods to the logging activities — which heightened public concern still further and led to the downfall of some politicians who had ties to logging.

A few years later, some colleagues and I traveled to Sibuyan, a small island south of Luzon where few biologists had ever set foot. During our surveys that year and in 1992, we discovered five new species of mammals — perhaps the largest number of unique mammals living in such a small area anywhere in the world. We quickly learned that a mining company was stripping the island's rain forest to supply timbers to a mine on a nearby island. When we submitted our standard report on the fieldwork to the new government, we recommended they set aside the remaining forest as a national park. Since the Marcos government had ignored our earlier reports, we had little hope it would happen.

Then came the 1991 typhoon, which killed more people than any other environmental disaster in the history of the Philippines. Articles about deforestation filled newspapers and magazines, leaving the government scrambling to respond.

Soon after, in 1992 and 1993, we inventoried the mammals and birds of Mount Kitanglad, one of the highest mountains on Mindanao, the large southern island in the Philippines. Our project, which the MacArthur Foundation sponsored as part of a biodiversity conservation training program I headed, revealed that the mountain shelters the largest number of mammal and bird species (many of which are endangered) of any place in the Philippines. We also discovered two new, previously unknown species of mammals high on the mountain. At the time, several local conservation groups had suggested turning the

LAWRENCE HEANEY

Above: Filipino graduate students working with Lawrence Heaney survey the damage to a montane forest caused by destitute farmers using water buffaloes to haul out illegally logged lumber.

area into a national park, a move we strongly supported in our annual report to the government and recommended to several international agencies that were funding the redevelopment of the country's park system.

Three years ago, we traveled to Camiguin Island, a small island north of Mindanao that is a popular honeymoon site because of its idyllic beaches, spectacular volcanoes and quiet, traditional culture. We soon learned that the mayors of the island's towns had pleaded for years with the government to declare the remaining forest and the huge volcanoes as a national park. They believed that ecotourism was their best strategy for economic development and stability. Their pleas were ignored. After several weeks of fieldwork, however, we documented two new species of mammals, discoveries that the national newspapers quickly reported. Because the mammals were restricted to the small and rapidly disappearing patch of forest on the island, they met the legal definition of "feature of national concern." Again, we pressed the government to designate the area as a national park and worked behind the scenes to advance the idea.

To our astonishment, all three are now national parks, all are listed as priority sites and all receive funding from international agencies, including the World Bank and European Union. Several other areas our team has recommended for protected status are also part of this group. As a result, most of the country's endangered species of mammals and birds now have at least one population residing within a national park. Perhaps equally as important, the local populace strongly supports this initiative because they believe the parks will protect critically important watersheds and will serve as the foundation for the development of ecotourism and other sustainable activities.

Last year, The Field Museum made plans with several Filipino-American groups in Chicago to host a celebration of the Philippine declaration of independence from Spain in 1898. After I spoke to community groups about the Museum's biological programs in the Philippines, several people urged me to write a book about the country's exceptional biodiversity and the threats to its existence. To give the book more depth, I asked Jack Regalado in the Museum's botany department to help me write what would become *Vanishing Treasures of the Philippine Rain Forest*, which the Museum published in June 1998, just in time for the opening of its two exhibits about Philippine culture and environment.

In September 1998, I traveled to Manila to promote the book and to increase awareness of the nation's spectacular biodiversity and its crucial link to the country's economic and social well-being. Many Philippine businesses had once seen environmental protection as a threat to their profitability. This has now changed so thoroughly that one of the largest and most influential corporations in the Philippines sponsored my appearances. The response to my talks was dramatic — Filipinos were astonished to learn that their country was biologically one of the most important places on Earth and horrified to learn it was disappearing so quickly. Several people told me that I had made them realize that their nation was approaching a crisis — not another political crisis, which they had surmounted before, but a combined economic and environmental crisis that threatened the stability of their society.

LAWRENCE HEANEY

Above: This endangered white-winged flying fox (a giant fruit bat) is found only in limited regions of the Philippines. After capturing this individual in a mist net, conservationists introduced it to a captive breeding colony set up by the Silliman University on Negros Island in 1991.

As if to complete the change from the days of the Marcos government, a representative from President Joseph Estrada's office invited me to brief the president on the country's environmental issues. As luck would have it, the national airline went into a financial crisis at the same time, and a typhoon struck Manila. I made it as far as the presidential palace, but never spoke to the president.

As I left Manila, I was gratified that in a small way I had helped the Filipino people see the issues that my colleagues and I had taken several decades to discover. Perhaps our efforts, including the book, will help to avert a crisis or at least to lessen its impact. But more immediate events quickly take precedence, whether they are airline closings, erupting volcanoes or the need to obtain antibiotics for a sick child. I can only hope there is enough time for Filipinos to learn of their wonderful biological heritage and to understand the threats to its existence, as well as to recognize the need to change the direction their society has taken in the past. There is some time — but only a little. ITF

*Lawrence Heaney and Jack Regalado's book, **Vanishing Treasures of the Philippine Rain Forest**, is available for $24 in The Field Museum's main store.*

BugCamp: A Kid's Life

JOHN WAGNER

Above: Ancona science teacher Zeus Preckwinkle demonstrates the art of collecting insects with sweep nets to participants of last year's BugCamp.

By Robert Vosper

The only contact most city kids have had with insects is probably limited to torturing a colony of ants with a magnifying glass, squashing cockroaches with a shoe or watching a bite mark swell up on their arm after being attacked by a bloodthirsty mosquito. It is precisely for this reason that three years ago Field Museum entomologist Bill Ballard created BugCamp — a six-week summer program offered to 10 students from the 7th and 8th grades that explores the world of insects by combining collecting field trips with lectures by Field Museum scientists.

The kids seem to love it. As one recent BugCamp alum declared, "It was cool to learn from all the groovy weird guys that talked to us about insects."

BugCamp — which is supported by the National Science Foundation and by a Nancy Ryerson Ranney Leadership Grant — evolved after Zeus Preckwinkle, a science teacher from the Ancona School in Chicago, invited Ballard to come to his class and talk to the students about the Museum and his research. Ballard not only agreed, but also set up a behind-the-scenes tour of the insect division.

"After meeting these kids, I was startled by the lack of exposure they have had to biodiversity and insect biodiversity in particular," explains Ballard. "I think it is important for kids to realize that humans don't just exist by themselves and that we are part of a much bigger community."

A few weeks later, Ballard and Preckwinkle began designing an educational program aimed at addressing this problem and giving students a much more in-depth look at the world of bugs. After creating a pilot program for a group of Ancona students from Preckwinkle's class, they eventually came up with the idea for BugCamp.

During the camp, students attend lectures and conduct lab work at the Museum. Once a week, they also visit Ryerson Woods, a 550-acre forest preserve in Deerfield, Ill. Using different collecting techniques, they roam the preserve's grassy fields, capturing everything from maggots to moths. At the end of the day, Matt Dean, a doctoral student at the University of Illinois, helps the kids classify their collections into the 32 different insect orders.

In many respects, BugCamp provides the students with more than just a basic lesson in entomology. It teaches kids about general biological and ecological concepts and shows them that biodiversity isn't just something found on the African plains or in the Amazon basin.

"In the city, it is so hard to see anything natural, you just overlook it," says Jane Zimmerman, the coordinator of BugCamp '99. "With this program, the kids are going out into their backyards and finding a world they never would have known existed if they weren't looking a little closer."

It is also a program that is helping ecologists at Ryerson Woods. Throughout the year, Museum researchers continue to collect insects in the forest preserve, recording their findings along with those of the students on a computer database. When the database is finished, staff at Ryerson Woods will use it to create educational programming and to monitor the ecological balance and health of the preserve's prairie ecosystem.

Back at the Museum, the kids also are helping staff recatalog the Diptera collection (an order of insects that includes true flies, mosquitoes and gnats) that consists of about 36,000 individual insects. In addition, the students are entering all the information gleaned from the catalog onto a database that entomologists around the world eventually will be able to access through the Museum's Web site.

Although it is too early to measure whether BugCamp is having any long-term effect on the kids in terms of their career choices or understanding of science, Ballard is confident that it is at least changing their perceptions about insects.

"Many of these kids come into camp totally petrified of insects," admits Ballard. "When they leave, however, they have a much better appreciation of the role that insects play in biodiversity and the environment. And they understand that like humans, not all insects are good and not all insects are bad." ITF

For more information about BugCamp '99 or to receive an application, please call Jane Zimmerman at 312.922.9410, ext. 624, or send her an e-mail at <zimmermn@fmnh.org>.

Papua New Guinea Begins Rebuilding After Tidal Wave Disaster

Robert Welsch
Adjunct Curator of Anthropology

On July 17, 1998, a massive earthquake and tidal wave leveled the Sepik Coast of Papua New Guinea, killing about 3,000 people, including at least one-third of the residents of Warapu and Arop — two of the region's main coastal communities. The first tidal wave scoured the villages, washing everything away. The next two covered what was left with sand.

Two months after the disaster, Jack MacDonald, a Field Museum volunteer, and I flew to the Sepik Coast to check on the friends we had made while conducting fieldwork in the area for the past nine years. After sitting for 30 hours in cramped airplanes and bouncing around on the back of 4-wheel drive trucks for two hours on newly graded dirt roads, we eventually arrived at the "care centres" that emergency workers had set up to house the survivors. Within hours of arriving, we found Ferdinand, a former headmaster of a local school and one of our longtime friends. After we all hugged, he began telling us what had happened to him the night of the disaster:

"We were just about to eat dinner when we felt the earthquake. When we went out to see what had happened, we saw the wave coming. I told my family to get into our dinghy over by the lagoon. Twelve or 13 people were in the boat, but it was so heavy we couldn't push off. There was nothing we could do. Then the wave hit us. We didn't really see it and the next thing I knew I was under water. When I got to the surface, I was near the dinghy. I stayed with it for the rest of the night. I couldn't see any of my family; I thought they were all dead."

ROBERT WELSCH

Above: (from left to right) Jack MacDonald, Ferdinand and Leonard at the Ramo Care Centre, one of the two dozen temporary shelters emergency workers erected after the disaster for the residents of Warapu. By now, most of these people have rebuilt their homes and have vacated the camps.

As it turned out, Ferdinand was among the lucky ones. When the tidal waves hit, he hurt his leg so badly he later required a skin graft. But after floating in the debris-covered lagoon on the other side of the narrow sand spit that defines the Sepik Coast, he finally made it to shore in the morning and found his wife and children alive and safe. When he returned to his village a few days later, all he found were a few coconut trees — not a house nor shrub remained.

Other residents of the Sepik Coast were not so fortunate. Two months after the disaster, our close friend Leonard was still hobbling around on crutches, his leg sealed in a cast. He had lost his baby daughter.

We also found our friend Alex who lives on nearby Seleo Island and whom we hadn't seen since Museum anthropologist John Terrell and I led a Museum tour to the area in 1997. Alex's wife was from Warapu and his entire family had come home for a four-day weekend. Although Alex and his young boys survived the terrifying ordeal, his wife did not.

By the time we visited the Sepik Coast, most of the injured were healing. Despite the rustic conditions of the camps and gruesome memories the survivors were now living with, the mood in these care centres was one of expectation and excitement at the prospect of rebuilding.

For instance, when Jack and I walked down the coast to see the remains of Warapu, we found villagers hard at work restoring their community. In fact, many already had abandoned the camps and moved into their half-finished homes. The atmosphere in Warapu was totally different from the stories of death and devastation — people were on the mend and were rebuilding their lives.

As we left the cramped conditions of the camp for Chicago, clearly our friends were as resilient to this tragedy as they had been in dealing with other changes they have faced this century. As they waved goodbye, our friends called out, "The next time you come back, our village will be finished. We will have flowers in front of the houses and streets like we used to have. You'll see." ITF

Museum Names Exhibition Center For Congressman Sidney Yates

Left: Retired Congressman Sidney R. Yates was born in Chicago and educated in the Chicago public schools. He is an alum of the University of Chicago and the University of Chicago Law School. His father was a Jewish immigrant from Lithuania who drove a truck in Chicago.

By Robert Vosper

After learning that Illinois democratic Congressman Sidney Yates, 89, would retire at the end of the 105th Congress, the Museum sent the U.S. House of Representatives a proposal with an idea for creating a permanent tribute to Yates in Chicago. A few months after reviewing the proposal, the House announced on Oct. 16, 1998, a $2 million appropriation for the Museum to name its Exhibition Center for Yates and his wife, Addie.

"We wish to name the exhibition center to honor all Congressman Yates has done in support of the arts, humanities and museums in the United States," said Willard Boyd, campaign chair and president emeritus of The Field Museum. "He has been their champion in the Congress throughout his tenure and is recognized across the nation. It is fitting to recognize him in his home city that has benefited enormously by his renowned leadership."

The Sidney and Addie Yates Exhibition Center is located on the main floor just east of Stanley Field Hall and contains 12,000 square feet of floor space. With its movable walls and advanced mechanical facilities, the center allows staff to install exhibits quickly, increasing flexibility and decreasing downtime. In the past, the space has been home to a variety of temporary exhibits, including "Dinosaur Families," "Sue Uncrated," "Assignment Rescue: The Story of Varian Fry and the Emergency Rescue Committee" and "Swedish Folk Art: All Tradition is Change."

Yates' political baptism came in 1948 when, after serving in World War II, he challenged Republican Representative Robert Twyman. He won that election and retained his seat until 1962 when, at the urging of the late Mayor Richard J. Daley and his democratic machine, he challenged then Senate Minority Leader Everett Dirksen. Yates lost with 47 percent of the vote. In 1963, President John F. Kennedy appointed him as an ambassador to the United Nations on the Trusteeship Council.

The following year, voters from the 9th Congressional District sent Yates back to the House where he remained for the next three decades, serving for much of that time on the Appropriations Committee. During his last congressional session, he also was a ranking member of the Subcommittee for the Department of the Interior and Related Agencies, which provides regular annual appropriations for the Department of the Interior, the U.S. Forest Service, the Department of Energy, the Smithsonian Institution and the National Endowment for the Arts and Humanities (NEH). In addition, Yates was one of 10 congressional representatives on the United States Holocaust Memorial Council.

During his long career, Yates developed a reputation as a staunch supporter of the NEH and, as a senior congressman, was instrumental in finding the resources to support significant regional projects like the Chicago Deep Tunnel sewage system, the Chicago Wilderness Project, the Chicago Greenstreets program, the Chicago Shoreline Project and the Indiana Dunes Lakeshore land acquisition.

Last summer, House Interior Appropriations Subcommittee Chairman Ralph Regula (R-Ohio) offered the following statement about his colleague on the House floor:

"Mr. Yates' dedication to public service is truly remarkable and every generation owes him a debt of gratitude for the tireless hours he has dedicated to our public lands, energy research and, of course, to the arts and humanities . . . Mr. Yates, the members of this House will miss you greatly, and we wish you and your wonderful wife, Addie, a very happy retirement."

The $2 million for the Sidney and Addie Yates Exhibition Center is part of the Fiscal Year 1999 Omnibus Appropriations Bill that Regula introduced and President Bill Clinton signed into law on Oct. 21, 1998. ITF

Race Matters

A Lecture and Book Signing by Cornel West

Sunday, Feb. 7, 1999, at 4 p.m.
James Simpson Theatre
Members: $10
Nonmembers: $15; Students $12

Cornel West has built a reputation as one of the most eloquent participants in the ongoing racial debate. Influenced by traditions as diverse as the Baptist Church, American transcendentalism, the Black Panthers and European philosophy, he confronts in his work the "monumental eclipse of hope and the unprecedented collapse of meaning" in American race relations.

A professor of Afro-American studies and philosophy of religion at Harvard University, West was recently promoted to university professor, a title held by only 14 of Harvard's 2,200 faculty members. Henry Louis Gates Jr., chairman of Harvard's Afro-American studies department, describes West as "one of America's most important public intellectuals and a formidable scholar by any measure."

West, who is a member of President Clinton's new National Conversation on Race, believes that racial division fosters the poverty, paranoia, despair and distrust that are undermining America's democratic process. His current interests include the problems facing the African-American urban underclass; the development of an ongoing dialogue between blacks and Jews; and the creation of a nationwide parents' movement across race and class.

"Cornel West (above) is one of the most authentic, brilliant, prophetic and healing voices in America today. We ignore his truth . . . at our personal and national peril."
— Marion Wright Edelman, founder and president of the Children's Defense Fund and the first African-American lawyer admitted to the bar in Mississippi.

In addition, he is the author of many books, including *Jews and Blacks: Let the Healing Begin* and *Restoring Hope*. His book *Race Matters* became a best-seller and gained the attention of *Time* and *Newsweek* magazines. His wrote his latest work, *The War Against Parents*, with Sylvia Ann Hewlett, who, like West, is a cochair of the National Parenting Association's task force on Parent Empowerment.

A Note to Members

The Membership Department would like to thank members for their patience in waiting to enter "The Art of the Motorcycle" exhibit during the members' viewing night on Nov. 15, 1998. Due to an extraordinary turnout and the space constraints of the exhibit, the lines to enter "The Art of the Motorcycle" were perhaps longer than members are used to. We hope it was worth the wait. For those whose schedules didn't permit them to stay, we hope you will use your free tickets before the exhibit closes on March 21, 1999.

— The Membership Department

Membership Programs at a Glance

Member Preview for the Underground Adventure Exhibit
March 26, 1999, and March 27, 1999
This new permanent exhibit explores life below the ground.

Duke Ellington Centennial Concert
May 1, 1999
The Field Museum and Jazz Unites Inc. celebrate the 100th anniversary of the birth of one of American's greatest composers.

Members' Nights
May 6, 1999, and May 7, 1999
The Field Museum's annual open house for members.

Membership Lecture Series — Wilma Mankiller
July 13, 1999
Wilma Mankiller is the former principal chief of the Cherokee Nation.

Inside

Above: Margaret Mee in 1971 during her seventh visit to Brazil's Rio Negro. For more than three decades, Mee (1909 – 1988) journeyed through the Amazon rain forests creating a unique record of the region's native plants, many of which are now extinct.

MARGARET MEE:

Return to the Amazon

From Jan. 22, 1999, to April 30, 1999, The Field Museum will host the international traveling exhibit "Margaret Mee: Return to the Amazon." Coorganized by the Royal Botanic Gardens, Kew, England, and the Houston Museum of Natural Science, the exhibit bridges the worlds of art and natural science by addressing the global issue of rainforest preservation through Margaret Mee's botanical art. Featuring 85 of her spectacular watercolor drawings, the exhibit also showcases Mee's field sketches, personal art materials, diaries and native Brazilian artifacts she collected during her Amazonian expeditions, as well as specimens from the Kew Herbarium and models of tropical flowering plants.

Undaunted by danger and hardship, Mee journeyed through Brazilian Amazonia for more than three decades, creating a unique record of the plant life with her paintings. Of special importance is the fact that she observed and painted the plants in their natural habitat and discovered several previously unknown species that now bear her name. A passionate conservationist, Mee was one of the first to raise a voice against the destruction and exploitation of the Amazon.

Ruth L.A. Stiff, the exhibit curator, believes Mee's work continues to inspire and lead:

"These extraordinary paintings have a special power to convey the beauty of Amazonia and enable us to understand why this outstanding lady inspired so many scientists, conservationists and artists to take up the cause of protecting our fragile planet and its life-supporting flora."

"Margaret Mee: Return to the Amazon" not only seeks to captivate visitors with the beauty of Mee's botanical paintings, but also to educate visitors about the conservation of irreplaceable ecosystems, biodiversity, pollination mechanisms, botanical research and current scientific efforts in the Amazon.

Exhibit lenders include the Royal Botanic Gardens, Kew, England; Margaret Mee Amazon Trust; Fundação Botânica Margaret Mee; Instituto de Botânica de São Paulo; National Museum of Natural History, Smithsonian Institution; and private collections.

George and Cynthia Mitchell; the Margaret Mee Amazon Trust; and the American Society for the Royal Botanic Gardens, Kew, England, all provided underwriting for the exhibition's national tour.

Above: Rudolfiella aurantiaca *(1971) — one of the many plants Margaret Mee observed and documented during her numerous expeditions through the rain forest of Brazilian Amazonia.*

Origins

It is one of life's great mysteries: How did we, as human beings, get to where we are today in just a few million years — a mere blip on the geological time line. "Origins," a Field Museum exhibit that opens Jan. 9, 1999, and continues through May 31, 1999, will depart from the standard explanation of human origins by offering a new way of viewing human evolution.

"An important message in this exhibit is that we are still evolving as a species and adapting to environmental changes around the world, just as our human ancestors did," says Field Museum President John McCarter. "We thought there was no better time than the eve of the new millennium to look at how far we've come — and where we might be headed."

Many museum exhibits focus on the biological factors in human evolution such as brain size. "Origins" is different. It looks at how, over time, our ancestors developed more complex language and technological skills like tool making in order to adapt to changing environments. For example, some 2 million years ago *Homo habilis* became skilled in the production and use of stone tools to access a variety of plant and animal foods.

The exhibit features more than 130 artifacts, including skulls, skeletons, stone tools and jewelry. There are eight stations in the exhibit, each centered around a fossil cast or diorama that features one of our human ancestors at a particular time in human evolution. Replicas of some of the most famous hominid fossils in the world will be on display, including Lucy, who lived in Africa 3.2 million years ago and stood 3 feet 5 inches tall. Her species, *Australopithecus afarensis*, exhibits a combination of ape-like and human-like features. Also on display are study casts of Moshe, a 60,000-year-old Neanderthal; Qafzeh IX, an early modern human who lived in Israel 90,000 years ago; and Turkana boy, who lived 1.6 million years ago and whose species, *Early Homo erectus*, marks a turning point in human evolution.

"Origins" is presented as part of Project Millennium, a year-long cultural and learning initiative taking place in Chicago and Illinois throughout 1999 that explores themes relevant to our lives as we approach the 21st century. More than 180 organizations in Illinois will present some 1,000 exhibits, performances and educational programs as part of the project.

JOHN WEINSTEIN /GN88905.47C

Above: Scientists discovered the fossil skeleton of this 18-year-old girl know as Magdalenian Girl in a limestone cave in France in 1911. Named for the geological period in which she lived 18,000 years ago, Magdalenian Girl represents our species, Homo sapiens sapiens. *She can be found among several other fossils in the "Origins" exhibit.*

The Art of the Motorcycle

RANDY LEFFINGWELL

Above: A replica of "Captain America's" Harley-Davidson chopper, the motorcycle Peter Fonda rode in the film Easy Rider. *Although there were two original Captain America bikes on the set, producers destroyed one as called for in the script, and thieves took off with the other one.*

On display until March 21, 1999, "The Art of the Motorcycle" exhibit gives visitors an up-close look at 72 motorcycles ranging from the steam-powered bicycles of the 19th century to the retro-revolutionary bikes of today. Each one is displayed as a unique work of art, a sculpture of extraordinary design and innovative technology.

The exhibit — which has been organized by the Solomon R. Guggenheim Museum, New York — sheds light on the motorcycle not only as an achievement in design and technology but as a cultural icon, influencing and influenced by popular culture. In keeping with the its mission to explore the Earth and its people, the Museum's installation supplements the Guggenheim's with new material, focusing on the diverse individuals and groups who have used the motorcycle to shape their identities.

The Field Museum's presentation of "The Art of the Motorcycle" is made possible by Zell's Angels, a group of motorcycle enthusiasts founded by Chicago businessman Sam Zell. Support is also provided by Discover Today's Motorcycling, the communications service bureau of the Motorcycle Industry Council and its funding members, Yamaha, Suzuki, Kawasaki and Honda.

Depending on their membership category, Museum members may receive up to four free tickets to the exhibit. Admission to the exhibit for nonmember adults is $5, Monday, Tuesday and Thursday; and $6, Wednesday, Friday, Saturday and Sunday. To purchase tickets in advance, please call 1.888.474.7900. For more information, please call 312.922.9410.

MARK WIDHALM /GN88991 34

Above: More than 700 motorcyclists cruised down Lake Shore Drive on Nov. 7, 1998, to celebrate the opening of "The Art of the Motorcycle" exhibit. After the ride, many of the bikers used words like "adventure," "thrill" and "escape" to describe the lure of motorcycling. During the lecture "Traveling the World by Motorcycle," three tour operators will reveal the joys of biking and the ins and outs of touring by motorcycle.

An Evening with N. Scott Momaday

1/7, Thursday, 6:30 p.m.

To celebrate the opening of the "Origins" exhibit, Native American (Kiowa) Pulitzer Prize-winning novelist Scott Momaday will discuss origins. Born in Oklahoma and raised on Indian reservations in the Southwest, Momaday was already a published poet and scholar when his novel, *House Made of Dawn*, won the Pulitzer Prize in 1969. His achievement began what critics have called the Native American renaissance. Throughout his career, Momaday has inspired a generation of young Native American writers to take their rightful place in the American arts. $15 ($12 students; $10 members). Please call 312.322.8854 for more information or to register.

Lecture: Traveling the World by Motorcycle

1/9, Saturday, 2 p.m.

Touring by motorcycle in past few decades has became increasingly popular as companies started designing motorcycles that are easier to use and maintain, and are more efficient. In response to the desire to see the grandeur of America and foreign destinations, tour companies sprang up across the nation. Learn the ins and outs of touring by motorcycle with three experts: Burt Richmond, owner of Lotus Tours; Sean Reid, owner of Northeastern Motorcycle Tours; and Skip Mascorro of Pancho Villa Motorcycle Tours. Bring your questions and a sense of adventure. Free with Museum admission. Call 312.322.8854 for more information.

Dinosaurs and More: Sizes

1/9 and 1/10, Saturday and Sunday, 11 a.m. – 3 p.m.
1/11, Monday, 10 a.m. – 1 p.m.

Visit the Dinosaur Interpretation Station and use the "measure-a-saurus" to compare the size of a *Triceratops* and *Tyrannosaurus rex* to a "Superasaurus." Then use this measuring instrument to see how you size up against *Tyrannosaurus rex*. In addition, visitors can examine some insects from different geologic ages, and Field Museum scientist Phil Parillo will explain why these insects are much larger than those found today. Free with Museum admission. Call 312.922.9410, ext. 497, for more information.

The Legacy of Margaret Mee: Preserving our Botanical Heritage

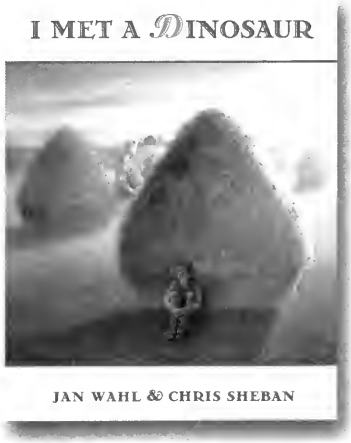
1/23, Saturday, 2 p.m.

Join the "Margaret Mee" exhibit curator Ruth Stiff of the Royal Botanic Gardens, Kew, England, and Professor Grenville Lucas, a conservationist, author and developer of the World Conservation Monitoring Center, as they explore the extraordinary accomplishments of botanical artist and environmentalist Margaret Mee. Stiff will begin the lecture by discussing Mee's development as an artist and her journeys along the Amazon. Afterward, Lucas will discuss global plant conservation in light of the extraordinary legacy of Mee's paintings, which lend urgency to the need to save the Amazon's irreplaceable ecosystems. Free with Museum admission. Call 312.322.8854 for more information.

Dinosaurs and More: Dinosaurs in Africa

2/13 and 2/14, Saturday and Sunday, 11 a.m. – 3 p.m.
2/15, Monday, 10 a.m. – 1 p.m.

During February's dinosaur festival, visitors can learn about new dinosaur discoveries on the African continent and in Madagascar. Visit with Field Museum scientist Greg Buckley as he discusses the dinosaur *Majungatholus*. Throughout the festival, visitors will learn how to classify dinosaurs and will hear about the type of research paleontologists conduct in the field. Free with Museum admission. Call 312.922.9410, ext. 497, for more information.



Faces of Faith Performance

Every Sunday from 2/14 to 3/21, 2:30 p.m.

The Field Museum/Music Theatre Workshop's newest work looks at diversity through faith from a teen-ager's perspective. "Faces of Faith" begins with an examination of the evolution of speech, movement, gestures, rituals and conflict among tribes. The opening piece will begin in the "Origins" exhibit and will follow the exhibit's fossil stations. When the ensemble reaches the Magdalenian Girl fossil, the teens will introduce visitors to "Connor," an Irish Catholic boy who struggles to make a decision about maintaining a new friendship with a Protestant boy. This character's internal turmoil will take the audience on a journey through the **Native American, Africa** and **Living Together** exhibits. "Faces of Faith" is free with Museum admission.

How to Build a Mean Machine Field Trip

2/15, Monday, 9 a.m. – 2 p.m.

This day-long trip will start at The Field Museum with a visit to "The Art of the Motorcycle" exhibit and will include a tour of the Harley-Davidson plant in Milwaukee. At the plant, participants will learn about the company's history and will see Harleys being built on the factory floor. The field trip departs from the Museum's west entrance and includes lunch at a Milwaukee-area restaurant. $55 ($47 members). Call 312.322.8854 for more information or to register.

I Met A Dinosaur and Peter and the Wolf: The Chicago Chamber Musicians, with Narration by Bill Kurtis and Donna La Pietra

2/21, Sunday, 11 a.m. and 1 p.m.

This musical performance by The Chicago Chamber Musicians begins with the classic folk tale *Peter and the Wolf* and is followed by the world premiere presentation of *I Met A Dinosaur*, based on the book written by Jan Wahl and illustrated by Chicago's own Chris Sheban. The Field Museum's geology specialist Peter Laraba will share dinosaur basics and updates on the preparation of Sue. Following the performance, copies of *I Met A Dinosaur* will be available for purchase and signing by the author and illustrator. The Ronald McDonald House Charities is sponsoring this family concert at The Field. Ages 3 and above. $8 per participant. To purchase tickets, please call The Chicago Chamber Musicians at 312.225.5226.

An Evening with Meave Leakey: The Search and Discovery of Our Earliest Ancestors

3/4, Thursday, 6:30 p.m.

Paleoanthropologist Meave Leakey — head of the paleontology division at the National Museums of Kenya — is the standard-bearer of a family of paleoanthropologists who have dominated their field since the beginning of the 20th century. In 1994, Meave Leakey discovered what may be the answer to one of evolution's fundamental mysteries: a new species of hominid, or early human, that began walking upright at least 4 million years ago (500,000 years earlier than previous data had indicated). This keynote presentation is offered in conjunction with the "Origins" exhibit. $15 ($12 students; $10 members). Call 312.322.8854 for more information or to register.


JOHN WEINSTEIN/GN88283.9C

Above: In 1996, an international team of paleontologists that included two Museum research associates unearthed this 75-million-year-old skull of a predatory dinosaur called Majungatholus atopus *in Madagascar. During the "Dinosaurs and More: Dinosaurs in Africa" festival, visitors will discover why scientists think this dinosaur might be a distant cousin of* T. rex.

Motorcycle Programs

Throughout the presentation of "The Art of the Motorcycle" exhibit, the Museum will be exploring the variety of meanings the motorcycle has had in 20th-century society and the changing role it plays for different people in different environments.

Lecture: Traveling the World by Motorcycle

Saturday, Jan. 9, 2 p.m.

See "Calendar of Events" page.

Symposium: The Motorcycle as a Cultural Icon

Friday, Jan. 15 and Saturday, Jan. 16

Keynote Presentation: A Conversation with Peter Fonda on the Art of the Motorcycle

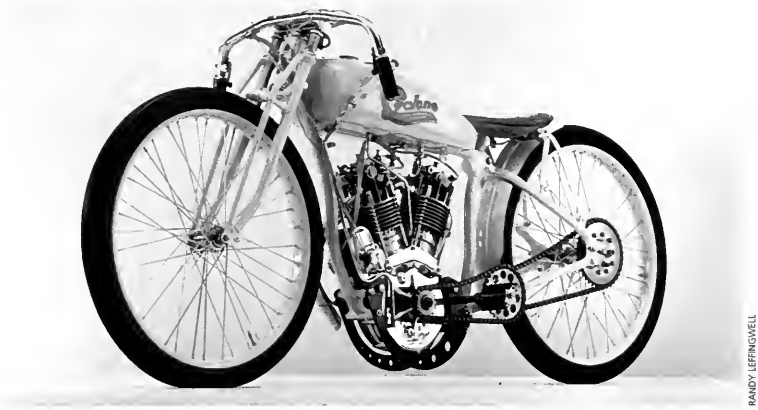
Friday, Jan. 15, 6:30 p.m.

Join actor and producer Peter Fonda as he explores the meaning of the motorcycle as an artifact and a unique work of art. Peter Fonda, who starred in the movie classic *Easy Rider*, once called the motorcycle "an extension of the self, an interpretation of an inner attitude."

Symposium:
Saturday, Jan. 16, 9 a.m. – 3 p.m.

Explore the many meanings attached to the motorcycle. After the keynote presentation by Peter Fonda on Friday evening, the symposium continues Saturday morning with opening remarks by Mihaly Csikszentmihalyi, author of *Flow: The Psychology of Optimal Experience*. His remarks will be followed by two panel discussions addressing the motorcycle as an object, image, fashion statement and means of transportation. A poetry slam with slam master Marc Smith will complete the day.

Above: Peter Fonda — actor, writer, director and producer.



RANDY LEFFINGWELL

Above: Manufactured by the Joerns Motor Manufacturing Company of St. Paul, Minn., the 1914 Cyclone 61 ci is a legend among the pioneering motorcycles produced in the United States. The motorcycle shown here — which is on display in "The Art of the Motorcycle" exhibit — is actually a hybrid Cyclone redesigned by a racer in 1926.

Keynote Presentation Only:
$35 ($30 members)
Symposium Only: $30 ($25 members)
Lecture and Symposium:
$60 ($50 members; $40 students)
Please call 312.322.8854 for more information or to register.

Special Evenings of Film: Wheels and Reels!

Tuesdays, Jan. 26, Feb. 2, Feb. 23 & March 9

Unwind with Kris "TigerLady" Slawinski, producer and host of *Open Road Radio*, for fun and informal evenings of motorcycle movies and roadhouse treats. Each evening will include a special guest who will explore Hollywood's use of the motorcycle in film. Beer, hotdogs and popcorn will be available for purchase. There is limited seating, so please make your reservations early. All programs start at 6:30 p.m.

Jan. 26: ***The Leather Boys***
Feb. 2: ***Evel Knievel***
Feb. 23: ***Bike Boy***
March 9: ***He Would've Rode a Harley & Mabel at the Wheel***

$8 ($5 members) per evening
$28 ($16 members) for all four evenings.
Please call 312.322.8854 for more information or to register.

Day of Remembrance

Saturday, Feb. 20, 1 – 3:30 p.m.

February 20, 1999, marks the 59th anniversary of President Roosevelt's signing of the order to remove 120,000 Americans of Japanese descent into internment camps. To commemorate this day, The Field Museum is presenting free activities for families and a discussion by a group of speakers about whether this tradition is worth continuing. "Day of Remembrance" is sponsored by the Chicago Japanese American Historical Society, the Japanese American Citizens League and the Japanese American Service Committee.

This program is the first in a series the Museum has developed to celebrate the Millennium year. Throughout 1999, The Field Museum will look back on recent history to examine "moments" in time that may impact our future decisions and actions.

African Heritage Festival '99
Connecting to Africa

Feb 6 and Feb. 7, 11 a.m. – 4 p.m.
Feb. 8 and Feb. 9, 10 a.m. – 1 p.m.

This year's annual African Heritage Festival delves into The Field Museum's research activities in Kenya, with a special focus on the Tsavo Initiative — an innovative project created by the Kenya Wildlife Service and the Museum that explores crucial relationships between humans and wildlife. Throughout the festival, visitors can enjoy performances that highlight the music and stories of Kenya; watch demonstrations featuring art and culture; and learn about the fieldwork of Field Museum scientists. All activities are free with general Museum admission. Preregistration is only required for school groups. Call 312.922.9410, ext. 497, for more information.

Festival Highlights:

Saturday, Feb. 6
Noon & 2 p.m. Kilimanjaro "Mila" Entertainment: Enjoy exciting Swahili rhythms and songs from the heart of Africa.

1 p.m. Lecture/Video Presentation: Bill Kurtis discusses his documentary work in East Africa.

Sunday, Feb. 7

1 p.m. A Photographer in the Service of Science: Join staff member John Weinstein as he shares the photographs he took of Africa's Tsavo National Park during a recent Museum research expedition.

Noon & 2 p.m. Kilimanjaro "Mila" Entertainment continues.

Thursday, Feb. 11
6 p.m. Human Origins Lecture: Sibel Kusimba, Field Museum anthropology research associate, probes the past 5 million years of human evolution using the archaeological and human fossil record. During the lecture, Kusimba also will discuss the things that make humans unique among other animals and will share with the audience what scientists know about early ancestors of modern humans. $12 ($10 members). Please call 312.322.8854 for more information or to register.

JOHN WEINSTEIN/98823SC

Above: While on a Museum research expedition to Kenya's Tsavo National Park, staff photographer John Weinstein took this photograph of Giriama women and children outside their home in the village of Madunguni on the Kenyan coast — about 100 miles east of the park.

La Guadalupana: Images of Faith and Devotion

"La Guadalupana: Images of Faith and Devotion" exhibit — which is on display until Feb. 14, 1999 — presents more than 50 devotional works of art created by contemporary Hispanic artists in New Mexico to celebrate Our Lady of Guadalupe, the legendary apparition of the Virgin Mary in 1531 and official patroness of Mexico. Devotion to Our Lady of Guadalupe spread from Mexico into New Mexico along the Rio Grande during the colonial period (1598–1821). Today, artists continue to create devotional works of art to Guadalupe using the same materials and techniques their ancestors used. While the artists draw on historical prototypes for inspiration, they reinvent the image of Guadalupe with each creation, resulting in a rich diversity of interpretation.

This exhibit has been organized by the Museum of International Folk Art, Santa Fe, and is circulated by the TREX: Traveling Exhibitions Program of the Museum of New Mexico, with funding provided by the International Folk Art Foundation, the Museum of New Mexico Foundation, HRH Don Felipe, Prince of Asturias and the Spain '92 Foundation.

Above: Artist Anita Romero Jones created this statue of Our Lady of Guadalupe from wood, gesso and synthetic pigment.

Free Visitor Programs

Every Saturday and Sunday

1 p.m. Story Time: Facts, Fables and Fiction. Learn new songs and stories and have fun creating artwork — all in a 15-minute program for preschoolers in the Crown Family Place for Wonder.

Interpretive Station activities. Drop by hands-on stations located throughout the Museum where a facilitator invites visitors to touch objects and to take part in activities. Please check the informational directories for daily listings.

Jan. 2 — Saturday

Noon. Swedish Song and Dance with Forgat-Mig-Ej and Scandinavian Children's Club.

2 p.m. Madrigal Musical Performance with the Yorkshire Carolers.

Jan. 9 — Saturday

11 a.m. – 3 p.m. Dinosaurs and More: Sizes. See the "Calendar of Events" page.

11:30 a.m. and 1:30 p.m. Millennium at the Museum Performance. See a preview of The Field Museum/Music Theatre Workshop's newest work, "Faces of Faith," that highlights the "Origins" exhibit.

2 p.m. Traveling the World by Motorcycle. See the "Calendar of Events" page.

Jan. 10 — Sunday

11 a.m. – 3 p.m. Dinosaurs and More: Sizes. Continues from Jan. 9.

1:30 p.m. Millennium at the Museum Performance. See Jan. 9.

Jan. 13 — Wednesday

1 p.m. Zoom In! Motorcycles in the Movies: *Blonde in Black Leather.*

3 p.m. Zoom In! Motorcycles in the Movies: *Scorpio Rising.*

Jan. 16 — Saturday

11 a.m. – 3 p.m. Activity Day: Road Trip! Watch a motorcycle-related film and catch Poetry Slam Master Marc Smith in action. Hear author Ted Simon share his travel stories and meet Craig Vetter, the designer of the Triumph Hurricane motorcycle.

11 a.m. Zoom In! Motorcycles in the Movies: *I Was a Male War Bride.*

1 p.m. Zoom In! Motorcycles in the Movies: *Easy Rider.*

3 p.m. Zoom In! Motorcycles in the Movies: *Sleazy Rider.*

JOHN WEINSTEIN /984627C

*Above: A lizard (*Agama agama agama*) surveys the landscape of Kenya's Tsavo National Park atop the decaying skull of an African buffalo. Staff photographer John Weinstein took the photograph during a recent Museum research expedition to Tsavo, an area of East Africa that is the focus of this year's African Heritage Festival.*

Jan. 17 — Sunday

1 p.m. Zoom In! Motorcycles in the Movies: *Mad Max.*

2 p.m. Millennium at the Museum Film — Gift of the Sacred Dog. See a movie about the Great Plains tale of a boy who brings the first horse to his people.

Jan. 23 — Saturday

11 a.m. and 2 p.m. Millennium at the Museum Stories: Julia Brown Wolf discusses the origins of the Dreamcatcher.

11 a.m. – 1 p.m. Artists in the Field. See student artists demonstrate watercolor techniques in the tradition of artist Margaret Mee.

11 a.m., noon & 1 p.m. Meet Margaret Mee. Actress Heidi Grosch portrays the explorer, conservationist and botanical artist.

2 p.m. The Legacy of Margaret Mee: Preserving our Botanical Heritage Lecture. See the "Calendar of Events" page.

Noon – 3 p.m. Scientific Illustration in the Halls and Drawing in the Field. Watch a Field Museum scientific illustrator at work.

Jan. 30 — Saturday

11 a.m. – 3 p.m. Millennium at the Museum Future Feature Weekend.

1 p.m. Millennium Weekend Lecture: Traditional Origins, The Present and Future of Navajo (Dine') Culture with Elsa Johnson, a Dine' woman.

1 – 2 p.m. Millennium Weekend Family Activity. Lenny Marsh demonstrates the origins of drumming.

Jan. 31 — Sunday

1 p.m. Zoom In! Motorcycles in the Movies: *Gimme Shelter.*

3 p.m. Zoom In! Motorcycles in the Movies: *Hell's Angels on Wheels.*

Feb. 6 — Saturday

11 a.m. – 4 p.m. African Heritage Festival. See "Get Smart" page.

Feb. 7 — Sunday

11 a.m. – 4 p.m. African Heritage Festival. See "Get Smart" page.

2 p.m. Millennium at the Museum Film — Watch a short video that examines the origins and consequences of the African slave trade.

Feb. 8 — Monday

10 a.m. – 1 p.m. African Heritage Festival '99: Connecting to Africa. A school festival (group registration required; please call 312.322.8852).

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Feb. 9 — Tuesday
10 a.m. – 1 p.m. African Heritage Festival. See Feb. 8.

Feb. 10 — Wednesday
1 p.m. Zoom In! Motorcycles in the Movies: *Chopper Chicks in Zombie Town.*

3 p.m. Zoom In! Motorcycles in the Movies: *Rosanne: Born to Be Wild.*

Feb. 13 — Saturday
11 a.m. – 3 p.m. Dinosaurs and More: Dinosaurs in Africa. Learn about dinosaur discoveries on the African continent and in Madagascar from a Museum scientist.

Feb. 14 — Sunday
11 a.m. – 3 p.m. Dinosaurs and More: Dinosaurs in Africa.

11 a.m. Zoom In! Motorcycles in the Movies: *Beach Blanket Bingo.*

11:30 a.m. and 1:30 p.m. Dinosaur sing-along.

1 p.m. Zoom In! Motorcycles in the Movies: *Bye Bye Birdie.*

2:30 p.m. Millennium at the Museum Performance: Faces of Faith. See Jan. 9.

Feb. 15 — Monday
10 a.m. – 1 p.m. Dinosaurs and More: Dinosaurs in Africa. See Feb. 13.

11 a.m. Dinosaur sing-along.

Feb. 20 — Saturday
1 – 3:30 p.m. Day of Remembrance. See "Get Smart" page.

11 a.m. – 1 p.m. Artists in the Field. See Jan. 23.

Feb. 21 — Sunday
Noon – 3 p.m. Scientific Illustration in the Halls and Drawing in the Field. See Jan. 23.

2:30 p.m. Millennium at the Museum Performance: Faces of Faith. See Jan. 9.

Feb. 27 — Saturday
11 a.m. – 3 p.m. Millennium at the Museum Future Feature Weekend.

1 – 2 p.m. Millennium Weekend: Family Activity with Lenny Marsh. See Jan. 30.

2 p.m. Millennium Weekend Film — Master of Brass: Lost Wax Casting in Ghana. This short documentary describes the origins of traditional brass making and its evolution.

Feb. 28 — Sunday
1 p.m. Zoom In! Motorcycles in the Movies: *Sherlock, Jr.*

2:30 p.m. Millennium at the Museum Performance: Faces of Faith. See Jan 9.

3 p.m. Zoom In! Motorcycles in the Movies: *Knightriders.*

Resource Centers
Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center; the Webber Resource Center, Native Cultures of the Americas; and the Daniel F. & Ada L. Rice Wildlife Research Station.
Open daily from 10 a.m. to 4:30 p.m.

Pawnee Earth Lodge
Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains.
Open from 10 a.m. to 4:30 p.m. on weekends and at 1 p.m. during weekdays. Check the informational directories or the sign in front of the Lodge for program times.

Ruatepupuke:
The Maori Meeting House
Discover the world of the Maori people of New Zealand at the treasured and sacred Maori House.

McDonald's Fossil
Preparation Laboratory
Watch Field Museum preparators work on Sue, the largest and most complete *T. rex* ever found.
Daily, 9 a.m. – 5 p.m.

The Crown Family Place For Wonder
A hands-on area for children.
Weekends, 10 a.m. – 4:30 p.m.
Weekdays, 1 p.m. – 4 p.m.

THE MUSEUM OF MODERN ART/FILM STILL ARCHIVE, NEW YORK

Above: Dennis Hopper, Peter Fonda and Jack Nicholson ride the open highway in the 1969 film Easy Rider, *which will be shown at Field Museum on Saturday, Jan. 16, 1999, at 1 p.m.*

Daily Highlight Tours

Visit the exhibits that make this Museum one of the world's finest. Find out about the stories behind the exhibits. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

The Bikers' Ball Raises $400,000 for Field Museum

CHERI EISENBERG

More than 900 guests turned up for The Bikers' Ball on Nov. 6, 1998, to help the Women's Board raise $400,000 in support of The Field Museum's research and education programs. After being escorted into the Museum by Chicago-area motorcycle enthusiasts, guests attending this annual fund-raiser were treated to dinner and music in Stanley Field Hall and a tour of "The Art of the Motorcycle" exhibit. Toward the end of the evening, the Women's Board auctioned off three Honda Shadow motorcycles and organized a raffle for prizes that included United Airline tickets for two to Asia, a pinball machine and two Polo Ralph Lauren leather jackets. Among those in attendance were Mayor Richard M. Daley; Thomas Krens, director of the Solomon R. Guggenheim Museum, New York; and Bob Collins of WGN Radio. Zell's Angels, a motorcycle group founded by Chicago businessman Sam Zell, provided the underwriting for the event.

Above: (from left to right) John McCarter, Field Museum president; Karen Gray, the Bikers' Ball chair; Judy Block, chairman of The Field Museum Board of Trustees; and Laura Front, the Women's Board president.

Right: Maggie Daley, the Bikers' Ball honorary chair.

CHERI EISENBERG

CHERI EISENBERG

Above: Sam Zell and his fiancée, Helen Fadim.

Holiday Tea Celebration

Thousands of children packed Stanley Field Hall on Dec. 2, 1998, to explore the wonders of winter with the Women's Board during its annual holiday celebration for the Chicago community. Combining fun and learning, the event featured performances by the Stu Hirsh Orchestra, the Ballet Chicago Youth Troupe and the Jesse White Tumblers. Kids also had an opportunity to try their hand at making a pine-cone bird feeder, designing Native American parfleche storage sacks and creating Eskimo snow goggles. This year's special guests were the 1998 Wiz Kids (right), a group of students from the after-school Community Youth Creative Learning Experience program that serves residents of Chicago's Cabrini-Green neighborhood. The Women's Board Holiday Tea Celebration was made possible by the following: Household International, Inc.; Kraft Foods; Illinois Tool Works Inc.; Thomas Ware Griffin Foundation; Mr. and Mrs. John Stepan; Stepan Company; and Arch W. Shaw Foundation.

JOHN WEINSTEIN /GA89040 9AC

Researchers Rediscover an Archaeologist's Legacy Through the Museum's Collections

By Stephen Nash
Coordinator of the Martin Collection Project

During his 43-year career as a Field Museum archaeologist, Paul Martin directed excavations at 69 Anasazi and Mogollon archaeological sites in Arizona, Colorado and New Mexico — including the now-famous Lowry Ruin, a large, multistory pueblo located 32 miles northeast of Cortez in southwestern Colorado. At these early Native American sites, he unearthed more than half a million artifacts and published 200 popular and scholarly papers on his findings. Through his research, Martin defined the prehistoric Mogollon culture and uncovered evidence of ancient Native American agricultural practices. In the process, he transformed the field of North American archeology. Unfortunately, Martin, who died in 1974, never finished cataloguing about 250,000 of the artifacts in this collection, leaving a large and important portion of his work inaccessible for scientific study.

However, in 1997, the National Science Foundation awarded Jonathan Haas, MacArthur Curator of North American Anthropology, a two-year grant to catalog, analyze and create an electronic database of all Martin's materials. Since October 1997, archaeologists Tamatha Smith and Christine Taylor and I, as well as some volunteers, have been sifting through thousands of Martin's "lost" artifacts, including more than 33,000 prehistoric corncobs, 600 whole ceramic vessels, 1,300 projectile points and tens of thousands of potsherds. Once the project is completed this summer, the Martin collection arguably will be the best documented and most easily accessible archaeological collection in North America.

Martin, a graduate of the University of Chicago and an alum of Winnetka's New Trier High School in Illinois, began his career in 1926 conducting archaeological fieldwork at the Mayan site of Chichen Itza on the Yucatan Peninsula. Although he wanted desperately to continue his career in Mesoamerica, concurrent cases of malaria and amebic dysentery, with strongly worded doctor's orders, precluded such a course. At the age of 30, Martin joined The Field Museum, eventually rising to the rank of chief curator of archaeology in 1935. He retained that position until his retirement in 1964, after which he served as curator emeritus until 1972.

Since Martin's death, anthropologists have turned to his collection to study everything from early Native American agricultural practices and trade patterns to early ceramic production techniques. Although Martin had a stellar publication record, he unfortunately never completely and properly catalogued his artifacts. The reasons for this oversight are many, but

Above: In this photograph from 1954, Martin takes a break from excavating a Native American site in New Mexico to spend some time with his dog Spot. Martin unearthed this 850-year-old Native American "Snowflake" pot (right) at the Carter Ranch Pueblo in the White Mountains of Arizona in 1961.

the situation isn't unique — many large archaeological collections in museums across the country remain imperfectly inventoried.

To date, we have assigned catalog numbers to more than 75,000 artifacts from 35 of Martin's archaeological sites. These numbers help the Museum track artifacts that are moved, borrowed by visiting researchers, placed on exhibit or lent to other institutions. As part of the cataloguing process, we also have compiled Martin's excavation records, which allow us to reconstruct the archaeological context from which Martin recovered his anthropological treasures. Without this information, artifacts are essentially worthless for modern archaeological analysis and interpretation.

In addition, the team is preparing for the 64th annual meeting in Chicago of the Society of American Archaeology that begins on March 25, 1999. During this conference, archaeologists throughout the country will reflect on Martin's 100-year legacy, discuss his contributions to the field and review the results of our project.

Scholars eventually will be able to access all of Martin's collections, as well as his excavation site maps and photographs via the Web. Currently, the site (www.fmnh.org/martin) contains the team's progress reports, some archival photographs, Martin's biography and a selected bibliography of his published works. ITF

THE FIELD MUSEUM A108886

"A close examination of the mammoth moon enables me to testify to its accuracy as a real model and not mere show. It reproduces with almost marvelous fidelity the features of the lunar surface and really exhibits a great deal more detail than would be noticed by the unpracticed eye in viewing her through a first-class telescope."

Elias Colbert — former director of the Dearborn Observatory in Evanston, Ill; —as quoted in a 1898 *Chicago Tribune* article.

From the Photo Archives . . .

Before The Field Museum received this 20-foot diameter model of the moon on April 2, 1898, it had been collecting dust for 10 years in Lewis Reese's tenement house at 1435 N. State Street. The story of how Reese, a manufacturer of astronomical telescopes, came into possession of this gigantic model could fill the pages of a book. Here is the abbreviated version:

For five years, Thomas Dickert, a curator at the University of Bonn, and J. F. Julius Schmidt, a renowned lunar expert, painstakingly built what European astronomers at the time hailed as a marvel of accuracy and detail. The duo constructed the model in 116 plaster sections that when fitted together showed 70,000 different topographical features of the hemisphere of the moon visible from Earth. After showcasing the model throughout Germany to rave reviews, Schmidt sold it for a sizable sum to G.C. Riverston, a wealthy Chicagoan who was creating an exhibit in the United States featuring scientific objects of curiosity. With the reviews the model received in Germany, Riverston had no doubt he would make his money back in spades. He was wrong.

After U.S. customs slapped him with an unexpected import tax, Riverston opened his exhibit in New York City to a less than lukewarm reception. Facing financial ruin, Riverston stored his collection in a warehouse in Chicago until he could recuperate from the mess. What was left of his luck, however, soon deteriorated when the warehouse went up in flames and consumed most of his collection — all of which was uninsured. Fortunately, the model survived.

The story at this point is a little unclear; however, it seems that Lewis Reese lent Riverston some money to store the model in another facility. When Riverston couldn't pay him back, he gave Reese the sculpture as payment. Reese accepted this treasure without hesitation, believing he could unload it for a profit. After 10 years of searching for a potential buyer, however, Reese gave up and donated it to The Field Museum — a decision that wasn't popular in Germany. On Jan. 14, 1899, the *Hanover Courier* reported the news of The Field Museum's acquisition with the following editorial:

"Time and time again the complaint is made that the best efforts of German art are taken away over the ocean only because they are better paid for in America . . . It cannot but hurt the patriotic feelings of a German to know that this still incomparable work is to be found in an American museum, instead of in a German observatory."

C'est la vie, as their neighbors would say. Within days of receiving the moon, the Museum erected it and placed it on exhibit, where it stayed until the Museum staff dismantled it to make room for a new exhibit in 1987. A year later, the Museum donated the model to the Fort Wayne Science Central museum in Indiana. ITF

From the Field Archives

January 1936

A group of gelada baboons collected during the Field Museum/*Chicago Daily News* Abyssinian (Ethiopia) Expedition of 1926 and mounted by staff taxidermist Leon Pray went on display in Hall 22. These days, gelada baboons are found only on the central Ethiopian plateau within the boundaries of the Blue Nile Gorge and the upper Wabe Shebelle valley (east of the Bale massif).

The Norton Company of Worcester, Mass., donated samples of boron carbide they created by mixing boric oxide and carbon in a furnace. In the 1930s, companies used the material, which is almost as hard as a diamond, to grind solid surfaces and line objects susceptible to severe abrasion. Currently, the material can be found in everything from the bullet proof seats on the Apache helicopter to nuclear control rods.

Staff taxidermist Leon Walters added new models to an exhibit on poisonous snakes, including a Florida coral snake, a pygmy rattlesnake and a large fer-de-lance, the most abundant poisonous snake of tropical America. He based the model of the fer-de-lance on a live snake that scientists on the Leon Mandel Guatemala Expedition brought back to The Field Museum in 1934.

Paleontologists mounted a skeleton of the extinct *Barylambda faberi* — one of Earth's first really big mammals. Bryan Patterson, assistant curator of fossil mammals, collected the specimen in 1933 near Mesa, Colo., on a parcel of land called Hell's Half Acre.

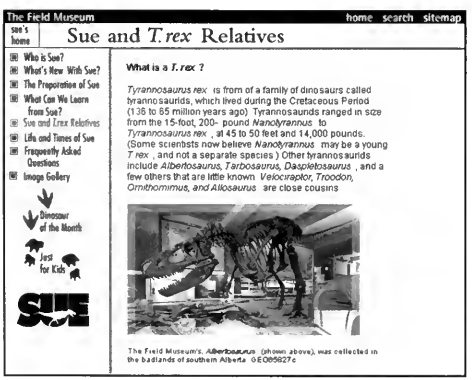
February 1936

Staff artist Charles Corwin completed a life-size mural of the famous Dragon Tree of Orotava that Spanish conqueror Alonso Fernández de Lugo discovered growing on Tenerife in the Canary Islands in 1496. Believed to be older than the Egyptian pyramids, the tree was 70-feet high and measured 50 feet in circumference. For centuries, the tree remained an object of legend until a violent tempest destroyed it in 1867.

Scientists on the Admiral Richard E. Byrd's Second Antarctic Expedition sent the Museum two Antarctic seal specimens: the Weddell seal and the crab-eater seal. The Museum also received 10 rare emperor penguins that died while on display at Brookfield Zoo.

The Museum placed on exhibit an Ethiopian ibex (*Capra ibex walie*) collected during the Field Museum/*Chicago Daily News* Abyssinian Expedition. A close relative of the goat, ibexes are found mostly in rocky mountainous ranges and once roamed freely throughout the hilly regions of Arabia. Today, they are extinct in Egypt and endangered in Sudan and Ethiopia.

WWW.FMNH.ORG/SUE



Above: The Museum's Web site averages more than 50,000 visitors a month (double from last year). Most of these visitors spend at least 10 minutes on the site per session.

For more than 65 million years, nobody knew that Sue existed, which is not surprising considering she was entombed under a thick layer of rock and sediment in the Black Hills of South Dakota. After Sue's discovery in 1990, however, she quickly claimed the title as the world's most famous *T. rex*.

Recently, Sue also earned the distinction of being the first dinosaur to have her own official Web page (www.fmnh.org/sue). On this site, kids, adults and aspiring paleontologists can find information about Sue's relatives, the environment in which she lived and the lessons her ancient bones are teaching scientists about the life and times of her species. The site also contains updates on the Sue preparation project and a gallery of photographs taken of Sue since she arrived at The Field Museum on Oct. 20, 1997. In addition, the site is updated each month with new activities for kids and with a profile of a different species of dinosaur.

In other Web news, the editors of the *St. Louis Post-Dispatch's* magazine *GetOut* recently rated The Field Museum's site as the best museum site on the Internet. They based their decision on the site's clarity of information, speed and simplicity of use. Here is what they had to say:

"As more online museums pop up, this site should be a prototype. There is no wasted space, the colors are sharp and friendly and the pages are concise with no teasers that say you have to visit the museum to get the scope of the exhibits. It never lapses into marketing gimmicks other than to offer quality Web design, which is the best marketing tool of all. Also, it's not just for lurkers — the deeper you dig into this site, the more in-depth the information."

Field Museum Tours at a Glance

Micronesia: Pohnpei to Guam

May 9 – May 22
Duration: 14 days
Museum Leader: zoologist Rüdiger Bieler
Price: Starts at $5,390; not including air fare of $1,788 from Chicago.

British Columbia and Alaska

May 19 – May 29
Duration: 11 days
Museum Leader: zoologist David Willard
Price: Starts at $2,380; not including air fare of $430 from Chicago.

Turkey: Crossroads of Civilizations

May 21 – June 6
Duration: 17 days
Guest Leader: University of Chicago Professor Richard Chambers
Price: $4,395; not including air fare of $885 from Chicago.

The Field Museum is offering two expedition cruises to Alaska in 1999: an exploration of British Columbia and Alaska's Inside Passage in May and a two-part journey in July and August that retraces the historic 1899 Harriman Expedition to Alaska's Gulf Coast (part I) and the Kodiak Islands, the Aleutians and the Pribilof Islands (part II).

In June, Museum anthropologist Bennet Bronson is heading for the British Isles to explore prehistoric villages like Scara Brae (above), ancient fortresses and wilderness areas in Scotland, Wales, Ireland and England.

Remote Britain

June 15 – June 28
Duration: 14 days
Museum Leader: anthropologist Bennet Bronson
Price: Starts at $5,300; not including air fare from Chicago.

Arctic Circumnavigation by Icebreaker — A four-part expedition

June 30 – Sept. 1
Duration: 64 days (total)
Guest Leader: oceanographer Don Walsh
Price: $36,790 (all four parts); not including air fare.

Galápagos Islands Adventure

July 22 – July 31
Duration: 10 days
Museum Leader: conservation ecologist Douglas Stotz
Price: $4,460, including air fare from Chicago.

Alaska–Harriman Centennial — A two-part expedition voyage

July 22 – Aug. 3 (part I)
Aug. 3 – Aug. 19 (part II)
Duration: 30 days (total)
Guest Leaders: marine scientist John Loret and ornithologist Ronald Beane
Price: Starts at $4,730 for part one and $6,480 for part two; not including air fare.

Join Doug Stotz, Museum ecologist and ornithologist, on an exploration aboard a 10-cabin yacht to the Galápagos Islands — the home of the marine iguana (above). An optional extension also is available deep into the Amazon jungle.

For more information and free brochures, please call Field Museum Tours at 800.811.7244, or send them an e-mail at <fmtours@sover.net>.

In the Planning Stages

France: Total Solar Eclipse

Iran: The Ancient Land of Persia

Wildlife of Botswana and Zimbabwe

Natural History of Borneo

Arabian Adventure: Aqaba to Dubai

Natural History of Patagonia

Amazon by Riverboat

Costa Rica and Panama Voyage

Millennium Costa Rica Adventure

Millennium Safari in Kenya's Tsavo National Park

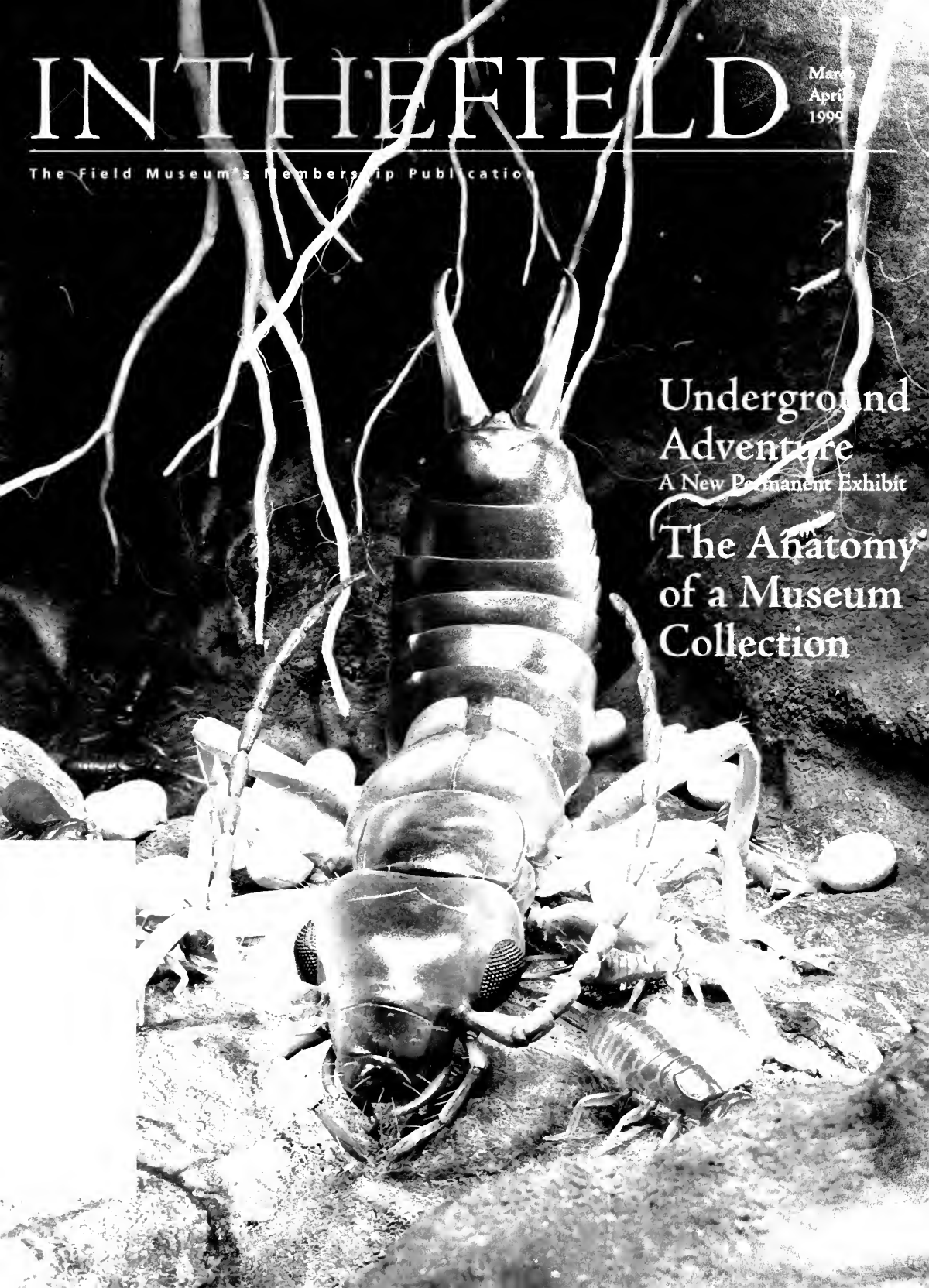
Archaeology and Landscapes of China

Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.

IN THE FIELD

March/April 1999

The Field Museum's Membership Publication



Underground Adventure

A New Permanent Exhibit

The Anatomy of a Museum Collection

JOHN WEINSTEIN /GN88119 6

Wading Through the Millennium Hype

Throughout our lives, we experience a variety of milestones that compel us to stop, take stock and reflect on the past and contemplate the future. Some of these are personal milestones — marriage, the death of a loved one or the birth of a child. During these occasions, we often make changes in our lives by going back to school, for example, or changing jobs. Others are national milestones — the assassination of a President, the retirement of a sports legend or the conclusion of a war. These milestones are shared by the community and affect our national identities. Amid these events, the nation pauses and undergoes a period of reflection and self-examination.

Nine months from now we are about to experience a much rarer kind of milestone, one that cuts across geopolitical borders and many cultural barriers. This milestone is the birth of a new century and the dawning of a new millennium. It is during extraordinary times like these that we use a much broader stroke of the brush to examine our lives, often asking ourselves what it means to be human and how we have succeeded or failed as a species. Sometimes, it leads us to wonder how the generations that follow will judge our conduct and the decisions we have made that have affected the planet.

I know, at this point you may be tired of hearing about the new millennium and listening to prognosticators sermonize about the pending religious and technological disasters that might befall us when our clocks strike 12:00:01 a.m. on Jan. 1, 2000. It is unfortunate that such a historic moment, one that occurs only once in every 20 lifetimes, is being swallowed in a sea of commercialism and doomsday predictions.

If you are like me, then you are probably still trying to wade through all the hype to find some meaning. I have a suggestion. Throughout 1999, more than 180 organizations across Illinois will present a series of exhibits, performances and special events aimed at fueling and facilitating an exploration of our collective past and examining the important issues we may face in the 21st century. All these activities are organized under the banner of Project Millennium, a partnership conceived two years ago by the state's leading cultural institutions to create a millennium celebration that is both substantive and diverse.

At the heart of Project Millennium are six themes that we will investigate in two-month intervals. The themes are *Origins* (January/February); *Environment* (March/April); *Discovery and Technology* (May/June); *Shaping Community* (July/August); *New Directions* (September/October); and *Transitions* (November/December).

As the convener of Project Millennium, The Field Museum spent the past two years designing three new exhibits that delve into these themes. The first is "Origins," which is on display through May and takes visitors on a journey along the evolutionary path of our species.

On March 27, 1999, the Museum will open its second millennium exhibit, **Underground Adventure**, a $12-million permanent exhibition that allows visitors to explore an underground soil ecosystem from a "bugs-eye" view. Embedded in this 15,000-square-foot simulated habitat are important lessons about the complex role soil plays in regulating the health of the environment.

During the theme of *New Directions*, the Museum will unveil "Sounds From the Vault," which encourages visitors to use state-of-the-art digital technology to play an assortment of ancient musical instruments collected by Museum scientists during their expeditions.

Throughout this celebration, the Museum also will be offering numerous lectures, educational programs and activities. Additional information about Project Millennium and a schedule of events are available at The Field Museum, Chicago and suburban library branches, and on Project Millennium's Web site at <www.projectmillennium.org>.

I hope you will join us on this historic journey.

John W. McCarter Jr.
President & CEO

We would like to know what you think about "In the Field" . . . .

Send comments or questions to Robert Vosper, [illegible], The Field Museum, [illegible] Lake Shore Drive, Chicago, IL [illegible] or e-mail at <rvosper@fmnh.org>.

Inside

In April, the Museum will present the Award of Merit to Robert Ballard — the scientist who conquered the most hostile environment on Earth.

In its new exhibit, the Museum exposes the hidden world below the ground and brings it to life with state-of-the-art technology. See **Calendar Section.**

For 21 days, AquaRap scientists waded through the world's largest wetland. What they found there just might be enough to save it.

IN THE FIELD

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Cover illustration by John Weinstein (Z94274C) of an earwig — one of the many robotic creatures inhabiting the new Underground Adventure exhibit.

The Field Museum

The Field Museum salutes the people of Chicago for their long-standing, generous support of the Museum through the Chicago Park District.

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Roosevelt Road at Lake Shore Drive
Chicago, IL 60605-2496

ph 312.922.9410
www.fmnh.org

Around Campus

Shedd Aquarium

Meet Shedd Aquarium's early risers during **Breakfast with the Animals,** Saturdays in April. Will you have bagels with the belugas on April 3 or April 24, popovers with the penguins on April 10 or danish with the dolphins on April 17? Whichever day you choose, you'll arrive at the Oceanarium at 8 a.m. to watch the animals as they start the day with an informal feeding and training session. Animal-care specialists will be on hand to answer questions. Then have an all-you-can-eat breakfast in Soundings restaurant and tour the Aquarium and Oceanarium for the rest of the day. Tickets for **Breakfast with the Animals** are $28 for adults and $25 for seniors and children ages 3 to 11. Call 312.692.3333 to make reservations.

Adler Planetarium

Brace yourself for a **Journey to Infinity,** a new show embarking from the world's first StarRider™ Theater in the Adler Planetarium's Sky Pavilion. Using state-of-the-art computer projection technology and a sophisticated audience-participation system, this 3-D, virtual-reality show takes visitors on a journey out of the Earth's atmosphere and through the solar system. Controls on the seats in the theater allow visitors to react to the show and provide input on its direction and outcome. **Journey to Infinity** is presented hourly, beginning at 10 a.m. every day. For more information, call 312.922.STAR.

From Finches to Ostriches:

JOHN WEINSTEIN/Z9428.1C

Right: One of the five cabinets in the bird division containing different species of tanagers — a large, diverse group of birds found in North and South America.

By David Willard
Collection Manager, Birds

The other day, Peter Lowther from The Field Museum's computer services department stopped by my office and handed me a frozen House Finch his 11-year-old daughter, Gloria, found dead in the snow by their house in Homewood, Ill. Although our computer records showed we already have more than 500 House Finches in the bird collection, I didn't hesitate to accept another. After all, this was our first House Finch collected on Jan. 20, 1999. It is one of only four from Illinois, one of six from east of the Mississippi River and our only eastern specimen collected in winter.

It is also just one of the 425,000 specimens in our bird collection and one of 20 million specimens gathered from around the world that are housed in The Field Museum — in all, one of the largest and most important natural history and cultural collections in the world. When visitors enter the Museum, they encounter an extraordinary array of cultural artifacts, plants and animals. Most visitors don't realize the specimens on exhibit represent only a fraction of those

The Anatomy of a Museum Collection

we have under lock and key in storage areas throughout the building. Why do we have so many specimens and why do we need more? Gloria's House Finch can provide part of the answer.

Sixty years ago, a small number of House Finches from the Los Angeles area were released on Long Island, N.Y. For the next 30 years, the population grew slowly, until it suddenly exploded and began spreading up and down the East Coast and to the west. First recorded in Illinois in 1980, the House Finch is now one of the most conspicuous birds in suburban and urban areas of the Midwest. Gloria's House Finch is a representative from the western frontier of the population's expansion. By comparing this specimen to those collected from the East Coast 50 years ago and to those from the source population on the West Coast, we can begin to understand how animals change over time, or how they evolve.

Evolution is the central theme of many of the Museum's exhibits and most of its research programs. The study of this process prompts Museum scientists to fan out over the globe to document the diversity of life on Earth. Like the research conducted in other areas of the Museum, the research of the bird division falls into two main categories — exploring remote areas and studying the specimens collected during these expeditions. The latter helps us better understand the patterns and processes of evolution and the conservation needs of the areas we study.

Collecting

The specimens used in museum studies come to us from a variety of sources. Universities often donate their collections when they no longer have the staff to study and care for them. Birds that die in zoos, birds hit by cars and the more than 2,000 birds that crash into glass windows each year in Chicago all augment the Museum's bird collections.

However, the specimens we obtain from these sources represent only a small percentage of the bird species in the world. Searching for the rest of them often takes us to pristine outposts where there is little available information about the region's natural history. In the past 10 years, staff and students from the bird division have worked in Madagascar, Uganda, South Africa, Gabon, the Philippines, Mexico, Peru, Bolivia, Brazil and Australia. We have described previously unknown features of the birds in these areas by watching them through binoculars. We also have recorded their songs and collected some of them for our own studies and for studies by future generations.

While we occasionally have the luxury of modern technology, such as airplanes for reconnaissance, our collection strategies aren't much different from those of earlier generations. We still camp for weeks on end, and we still have to work our way up trailless mountains in order to study the birds at the top. Like those that came before us, we still carry our supplies on our backs and we still pay our dues in tropical diseases like malaria, leishmaniasis and dengue fever. But for all of us who grew up loving wild places, the thrill of discovery on these expeditions is unparalleled.

On an expedition to the Andes of Peru, we found the Peruvian Piedtail, a hummingbird thought to be extremely rare — everything known about it was written on labels attached to a few old museum specimens. It turned out to be a common bird, but only in a very narrow elevation band, above and below which it was absent. Its presumed rarity simply reflected a lack of exploration in the appropriate places. In the heart of a swamp in the Impenetrable Forest of Uganda, we found several birds that no other scientist had ever documented in this region, despite more than a

ILLUSTRATION BY JOHN FITZPATRICK

Above: The Rondonia Bushbird — a species of antbird discovered by Museum scientists while exploring the west bank of the Rio Jiparaná in western Brazil in 1986. This watercolor shows the female of this species.

century of intense exploration. Again, no one had ventured into the waist-high water of the swamp to see what was there.

We also have had the extraordinary luck of finding some species that are new to science. While an entomologist may go into the field expecting to find new insects (because there are so many insects and so few entomologists), it is much rarer for an ornithologist to find something new. Back in the 1980s, a group of ornithologists and mammalogists from the Museum mounted an expedition to Rondônia in southwestern Brazil. We set up fine-meshed, almost invisible mist nets to capture birds that are difficult to observe in the forest understory. While removing and measuring familiar bird after familiar bird from the nets one morning, I came upon one that was totally unfamiliar. It was a chunky, thrush-sized bird, cinnamon colored with a black throat patch. Its most surprising feature was its bill, which had a pronounced upward curve and was flat on either side like a knife blade. Nothing like it had ever been described and the only bird that even closely resembled it lives 1,300 miles away in the northern Andes of Colombia. We later named the new species the Rondonia Bushbird.

Expeditions to northern Peru in the 1970s produced an astounding four new species from a single mountain range: the Bar-winged Wood-Wren; the Royal Sunangel; Peterson's Screech-Owl; and the Cinnamon-breasted Tody-Tyrant. Similar explorations in southern Peru during the 1980s led to the discovery of the Manu Antbird and the Cinnamon-faced Tyrannulet.

These expeditions have produced collections that contribute to our basic knowledge of bird biology and diversity and provide information upon which conservation biologists base many of their decisions. They also follow a tradition that dates to the Museum's inception. In the 1890s, D.G. Elliot, the division's first curator, made one of the first ornithological expeditions to Somalia. His successor, Charles Cory, was a pioneer in Egyptian ornithology who also hired collectors to bring back some of the first bird specimens from the West Indies. Ever since, Museum researchers have studied these collections and added to them through their own expeditions.

Research

The early explorers were concerned with two primary features of bird biology — what kinds of birds existed and where they lived. The typical label accompanying their specimens contains the name of the place where they found the bird and a date. On their return to the Museum, they lined up their specimens next to those already in the collection; if a new specimen from the Peruvian Andes differed even slightly from something similar in the Colombian Andes, they identified it as a new species or subspecies and gave it a new name. For much of the Museum's history, scientists were committed to describing diversity, which remains an important feature of contemporary ornithological work. As interests broadened, however, researchers noted additional information, to the point where a specimen label today also includes the bird's weight, breeding condition, stomach contents, a description of its habitat and the colors of its eyes, bills and legs. With refined techniques for generating and analyzing molecular data, we also save tissue from specimens for genetic studies.

Added to the basic work of describing diversity is an ever-increasing attempt to explain it. The research of Shannon Hackett, head of the bird division, is an example of this next order of questions we are asking today. One of Hackett's projects concerns manakins, a family of birds with brightly colored red, yellow and blue feathers highlighted against ebony blacks and glistening greens. But some of these birds are drab brown. Many manakins have elaborate courtship displays, with males gathering on traditional dancing grounds called leks to show off their finery to females that make a choice of mate based on some manakin perception of a male's charm. But some manakins have no fancy courtship displays. It is easy to sit back with trays of manakin specimens spread out on counters and speculate that the colorful species evolved from drab ones, or that complicated courtship displays must have evolved from simple ones. While this speculation helps formulate a series of questions, the answers require independent tests.

Using specimens collected on her expeditions, along with additional ones provided by other museums, Hackett looks at manakin DNA as her independent test. When she is finished with her analyses, she will produce a phylogeny of the manakins — a branching tree showing the relationships of all of the varieties. On this tree, she can superimpose the plumage characteristics and courtship intricacies in order to understand the evolution of the patterns that prompted so much initial speculation. Her results can help us understand where and from what ancestors manakins originated, how they spread throughout their current geographic range and what factors led to their separation into the more than 50 species recognized today.

When we know the answers to these questions for a group like manakins, we can compare them with other South American bird families to see whether the results can be generalized, or whether they are unique to manakins. When we understand avian diversity in South America, we can compare the patterns there with those in Africa and Asia, continents with very different geological histories. Gradually, as scientists compare ornithological studies to studies of other zoological groups and of botany and paleontology, we start to understand how life on this planet evolved.

Just as Hackett needed to borrow specimens from other museums to make her studies complete, the Museum's bird division lends several thousand specimens every year to scientists working on projects at

other institutions. Almost every ornithological journal contains at least one article in each issue where the authors relied on our collections for their conclusions.

At the moment, scientists from the Museum of Natural History and Science in Cincinnati are using Field Museum specimens from the Philippines to describe a new sunbird species and researchers at the Muséum National d'Histoire Naturelle in Paris are studying bird tissue from our Madagascar collection to determine whether they have discovered a new family of birds. In addition, ornithologists at the Smithsonian Institution are developing a field guide to the birds of India and Pakistan based in part on our collections. And soon, we will be sending feathers from rare heron specimens to Louisiana State University and scrapings from the foot pads of Asian eagle specimens to Austria, where scientists have learned to extract DNA from old specimens.

Researchers also come to the Museum to do their work. Recent visitors include a professor from the University of Wisconsin who is studying relationships among hummingbirds, and a graduate student from Yale who is comparing our skeletons of seriemas (large, ground-walking birds from the pampas of South America) with some fossilized birds she recently discovered. An archaeologist from Michigan State is using our collection to identify fragments of bird bones she unearthed at an excavation site in Israel. This month, a Colombian conservation biologist will use the collections to establish baseline information on bird distributions for use in land-management programs back home. These activities are just a sampling of those in one division of five in the zoology department, which in turn is only one of four scientific departments at the Museum (zoology, geology, botany and anthropology).

While we make and maintain collections of birds for scientific study, scientists are not the only ones who use them. Working next to these scientists is a wood carver from Indiana who is sketching, painting and taking notes on the dimensions of a Painted Bunting to try to make his finished sculpture as accurate as possible. Each semester, students from the Art Institute visit the Museum to study research specimens of birds they drew at the zoo. This allows them to add details to their drawings that would be impossible to capture without a close-up view of their subject. In addition, bird watchers come here to hone their identification skills, to check that the Baird's Sparrow they thought they saw was not just an odd Savannah Sparrow, or to learn the differences between Greater and Lesser Scaups. Even law enforcement gets into the act. If a traveler brings home a souvenir with a feather on it or a company imports merchandise with feathers, the U.S. Fish and Wildlife Service brings the items to the Museum to determine whether the feathers came from protected species. Currently, the Palatine police are relying on our collections for help in interpreting evidence in an unsolved murder case.

Z86740

Above: Melvin Traylor, then assistant curator in the bird division, examines one of the 20,600 specimens in the Koelz Collection — an assemblage of birds from southern Asia purchased by the Museum in the summer of 1956. This collection belonged to Walter Koelz, a zoologist from Michigan, who spent 25 years in southern Asia collecting birds and plants. Traylor is now curator emeritus in the bird division.

The Big Picture

So, the House Finch that Gloria had the foresight to pick up and give to her father can serve a variety of purposes. An artist who is struck by the beauty of a House Finch at a bird feeder can come here and paint from the specimen. A birder who is unsure of the differences between House and Purple Finches can solve that problem by comparing specimens of the two species. And a scientist wanting to understand the evolutionary history of the House Finch can study Gloria's bird in the context of the 530 other House Finch specimens housed at The Field Museum — specimens that span the past 100 years and that were collected throughout North America. Each additional specimen we add to our collections allows us to fine-tune our questions and to understand the biological world in greater detail. Gloria's House Finch joins nearly half a million other bird specimens from across the world, representing most of its bird species. If we maintain these collections well and build upon them, they will continue to serve their current functions, as well as to help our descendants answer questions we haven't even thought to ask. **TF**

Discoverer of Titanic to Receive Award of Merit

By Robert Vosper

When Neil Armstrong stepped off lunar module "Eagle" on July 20, 1969, the world celebrated, believing he had conquered the last unexplored frontier. These celebrations were a little premature. Below the surface of the sea was an environment — the deep-ocean floor — that few people had seen, let alone really explored. Lying on average 2.5 miles below sea level and bound in complete darkness, frigid temperatures and extreme pressures, this frontier seemed unconquerable.

Robert Ballard, president of the Institute for Exploration at the Mystic Aquarium in Connecticut, proved otherwise.

Since 1974, when he was part of a team that was the first to survey and explore the Mid-Ocean Ridge — Earth's largest continuous mountain chain — Ballard has led or participated in more than 100 deep-sea expeditions. In the process, he blazed a trail of discovery that has opened the door for a barrage of deep-ocean research studies.

To honor his contributions to the field of oceanography, the Museum's Founders' Council on April 21, 1999, will present Ballard, 56, with the Award of Merit, given each year in recognition of outstanding achievement in bringing issues of environmental and cultural understanding to the forefront of public attention. Past recipients of this award include Jane Goodall and Richard Leakey.

At the beginning of his career, Ballard, who has a Ph.D. in marine geology and geophysics from the University of Rhode Island, focused his research on finding ways to use submersible vehicles (miniature submarines) to map and understand the uncharted oceanic mountain ranges. During those early years, Ballard discovered hydrothermal vents off the Galápagos Islands and was among the first to observe ocean volcanoes or "black smokers" in the Pacific Rise. Between expeditions, Ballard also began designing and developing robotic submersibles to make the exploration of these hostile environments more reliable and efficient. One such submersible is Jason, a remotely operated vehicle that can dive to a depth of 19,800 feet and provide scientists on the surface with live images from the ocean floor.

In the late 1980s, Ballard turned his attention away from geology to marine archaeology, believing, as he often likes to say, that "there is more history at the bottom of the ocean than in all the museums in the world combined." And he may be right. While testing a new submersible on Sept. 1, 1985, he found the ghostly remains of the Titanic resting 1.5 miles below the surface of the North Atlantic, about 1,000 miles due east of Boston. Not one to rest on his laurels, he later discovered the German battleship Bismarck, 11 warships from the lost fleet of Guadalcanal and the USS Yorktown, destroyed by a Japanese torpedo during the Battle of Midway in 1942.

PHOTO COURTESY OF THE INSTITUTE FOR EXPLORATION

After finding the Titanic, Ballard was inundated with letters from children wanting to know how they could follow in his footsteps. In response, he created the Jason Project, a hands-on, interactive education program designed to excite and engage students in science. For two weeks every year, Ballard conducts expeditions in remote terrestrial and aquatic environments, allowing students in classrooms throughout the world to partake in his discoveries via live-feed video.

Today, Ballard continues to explore the ocean floor both as an educator and explorer. In addition, he and a team of engineers are building a new family of underwater vehicles to aid in the exploration of the deep sea and to assist in the recovery of artifacts from ancient shipwrecks.

"There are two aspects of my life as an explorer," Ballard once told a reporter. "You want to explore, but you need the tools to explore. In my particular field, you can't go down to Sears and Roebuck and buy them. General Motors doesn't build my robots. I have to develop the tools myself. So, half my life is exploring and the other half is building the tools to do it better next time."

This summer, Ballard plans to use some of those tools to search for ancient shipwrecks in the oxygen-free waters of the Black Sea and to explore, map and survey this unique inland sea. ITF

Only members of the Founders' Council may attend Award of Merit presentations. For information about joining this donor group, please call Cynthia Winship at 312.322.8868 or send her an e-mail at <cwinship@fmnh.org>.

Dollars and Sense May Save Threatened South American Wetlands

By Robert Vosper

The Pantanal, a patchwork of wetlands and savannas eight times the size of New Jersey, spreads like an inkblot from southwestern Brazil into Paraguay and Bolivia. Not only does the Pantanal support a myriad of plants and animals, but its waters feed and energize the Rio Paraguay, the Western Hemisphere's third largest river that snakes south from Brazil, slicing through the center of Paraguay. The river and the Pantanal are intricately connected and both are under serious threat from the Hidrovia Project, a multinational plan to increase ocean-bound shipping in the region by straightening and deepening a 2,000-mile stretch of the Rio Paraguay.

On Aug. 22, 1998, an international team of scientists led by Barry Chernoff, associate curator of fishes, began a 21-day expedition into the southern Pantanal to assess its biological assets and to measure the potential environmental and economic damage that may occur if Hidrovia becomes reality.

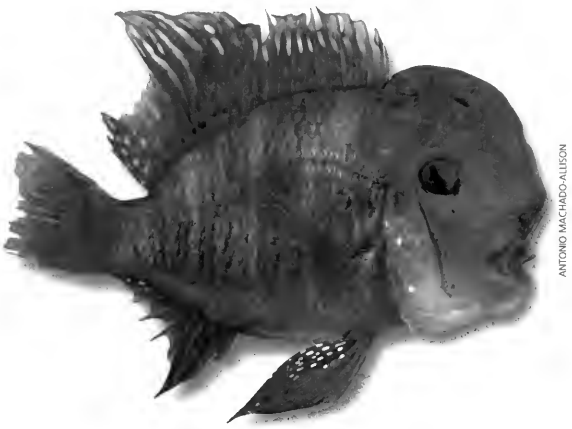
The expedition was organized by AquaRap (Rapid Assessment of Aquatic Resources), a program The Field Museum and Conservation International created in 1996 to identify conservation priorities and sustainable management opportunities in important and highly threatened freshwater ecosystems throughout Latin America. The goal of these AquaRap surveys isn't to paint a detailed picture of the targeted ecosystems; rather, it is to obtain a snapshot that contains enough biological information for the team to develop sound conservation strategies.

A year before this expedition, another AquaRap team visited the region to assess the effect the impending Hidrovia Project would have on the Rio Paraguay. In this system, the team identified nine new species of fishes and ascertained that the project would dramatically lower the river's water levels, decimating many of the area's macrohabitats, such as small tributaries and flooded lagoons, that rely on the river's flooding cycle to flourish. They also determined that the Pantanal would lose most of its standing water.

"From these two projects we now have a pretty good idea of what the downstream and upstream effects are going to be," explains Chernoff, who is an expert in the systematic biology of freshwater fishes.

Some of those effects include the possibility of increased downstream flooding, a disruption in agricultural output along the river's flood plains and a loss of up to 40 percent of the species of fishes that inhabit the system. In other words, the Hidrovia would send the river's ecosystems into a tailspin.

According to Chernoff, however, these grim scenarios may not be persuasive enough to derail a project as extensive and prominent as Hidrovia. But what might work, he says, is what the team found: the Pantanal and the Rio Paraguay harbor a wealth of edible fish and many ornamental fish that are valuable to the aquarium industry.



ANTONIO MACHADO-ALLISON

Above: In U.S. pet stores, a cichlid like this one costs about $20. This species, Gymnogeophagus balzanii, *is found in the muddy, still waters of the Pantanal.*

Chernoff believes that if the countries involved harvest these fish using a sustainable-use management plan, they could reap significantly more economic rewards than by going ahead with the dredging. It is Chernoff's hope that if he can't convince these countries to halt the project based on the ecological value of the aquatic system, perhaps he can based on its commercial value. Though some traditional environmentalists might be disturbed by this type of trade-off, Chernoff sees no other choice.

"What AquaRap does is provide good solid information to allow these countries the opportunity to make reasonable choices," he says. "We can't tell people what to do. If it were up to me we would save everything, but that just isn't going to happen. So, what we do is provide the best information so that the best choices are made."

But will it work? Around the time this issue goes to press, the AquaRap team will be sending its conservation recommendations to government officials and international agencies in the region.

Chernoff, however, isn't going to sit around and wait to see what happens. Later this year, he plans to lead another AquaRap team to the Rio Pastaza, a relatively unexplored river in Ecuador that runs through land that oil companies have targeted for drilling. ITF

More information about AquaRap can be found on Conservation International's Web site at <www.conservation.org/rap>.

Members' Nights 1999

Thursday, May 6 and Friday, May 7
5 p.m. to 10 p.m.

JOHN WHINSTIN (88824.31C

Above: Attendees at last year's Members' Nights watch as Bill Stanley, collection manager in the division of mammals, prepares a fisher for scientific study.

Join the membership department for what has become a Chicago tradition — Members' Nights, the Museum's annual behind-the-scenes open house for Field Museum members and their guests.

During these nights of discovery and exploration, the doors to the research and collection areas are thrown open, the curtains are lifted on exhibits in the making and curators and other Museum staff play show and tell for visitors. It is a rare opportunity for members to visit with staff in their research labs and offices and to learn firsthand about the progress of various Museum plans, such as the Sue preparation project and the Tsavo Initiative.

At any point during the night, members can also tour **Underground Adventure**, the Museum's new permanent exhibit that explores the world beneath our feet, and "Origins," a new temporary exhibit that charts the story of human evolution.

Afterward, guests can dance to music in Stanley Field Hall and feast on a hearty meal in Corner Bakery or in the new Dinosaur McDonald's. As an added bonus, the Museum Store will be open all night and will offer members a 20 percent discount on their purchases.

Admission to this event requires advance tickets. Members will receive an invitation and an order form in the mail by the second week of April. No phone reservations will be accepted.

Upcoming Membership Programs

Duke Ellington Centennial Concert
May 1, 1999
The Field Museum and [illegible] celebrate the 100th anniversary of the birth of one of America's greatest composers. Special guests include the Billy Taylor Trio.

Membership Lecture Series — Wilma Mankiller
July 13, 1999
Wilma Mankiller is the former principal chief of the Cherokee Nation.

Previews for Underground Adventure

There is a whole world beneath our feet and Field Museum members will be the first to discover it. Join the membership department for a two-day members' preview of **Underground Adventure**, the Museum's new permanent exhibit that allows visitors to journey through a larger-than-life underground soil ecosystem inhabited by strange plants, animals and insects (see "Exhibits" page for details).

Members can choose among various time slots to view the exhibit on either March 25 or March 26. Advance tickets are required and must be ordered by mail. All members will receive an invitation to this preview by the second week of March. No phone reservations will be accepted. Call 312.922.9410, ext. 453, for more information.

GEORGE PAPADAKIS

Left: A mole cricket 100 times its normal size sticks its head out of a burrow in the ***Underground Adventure*** *exhibit.*

Inside

JOHN WEINSTEIN /89075.31C

Above: On Jan. 6, 1999, Morley Safer (right) of 60 Minutes, interviewed paleoanthropologist Richard Leakey (left) in the Museum's "Origins" exhibit for an upcoming CBS special. Afterward, Leakey, Museum President John McCarter and Safer examined a cast replica of Turkana boy.

Field Museum Exhibits at a Glance

The Art of the Motorcycle

On display through March 21, 1999

"The Art of the Motorcycle" gives visitors an up-close look at 72 motorcycles ranging from the steam-powered bicycles of the 19th century to the retro-revolutionary bikes of today. Each is displayed as a unique work of art, a sculpture of extraordinary design and innovative technology. To purchase tickets in advance ($5 to $6), please call 1.888.474.7900. This exhibit has been organized by the Solomon R. Guggenheim Museum, New York.

Margaret Mee: Return to the Amazon

On display through April 30, 1999

Coorganized by the Royal Botanic Gardens, Kew, England, and the Houston Museum of Natural Science, the "Margaret Mee: Return to the Amazon" exhibit bridges the worlds of art and natural science by addressing the global issue of rainforest preservation through Margaret Mee's botanical art. For more than three decades, Mee, who died in 1988, journeyed through the Amazon rain forest creating a unique record of the region's native plants, many of which are now extinct. A passionate conservationist, she was one of the first to raise a voice against the destruction and exploitation of the Amazon. The exhibit is free with general Museum admission.

Women in Science: Conversations in Conservation

On display through June 1999

Located in the Searle Lounge, this exhibit highlights seven women at The Field Museum who are working to understand and preserve the delicate balance of life on this planet. The exhibit explores the women's views on research, education and conservation and includes samples of the specimens they have collected or studied. In addition, a kiosk in the exhibit allows visitors to access the Museum's new "Women in Science" Web page <www.fmnh.org/exhibits/wis>, which includes excerpts from interviews with 13 women in science at The Field Museum and resource links for students and teachers. The exhibit is free with general Museum admission.

The Man-Eater of Mfuwe

Now on permanent display

On March 1, 1999, the Museum will unveil the largest man-eating lion on record, donated by Wayne Hosek of West Hills, Calif., in September 1998. Hosek shot this maneless male lion in Zambia in 1991 after it had killed six villagers near South Luangwa National Park. When alive, the lion measured 10 feet, 6 inches in length, surpassing all but the largest lions and rivaling the large Bengal and Siberian tigers. The exhibit is free with general Museum admission.

Origins

On display through May 31, 1999

Featuring more than 130 artifacts, from skulls and skeletons to stone tools and jewelry, this exhibit looks at how our ancient ancestors used technology and language to respond to changes in the environment. Replicas of some of the most famous hominid fossils in the world will be on display, including Lucy, who lived in Africa 3.2 million years ago; Moshe, a 60,000-year-old Neanderthal; and Turkana boy, who roamed the hills of East Africa 1.6 million years ago. "Origins" is presented as part of Project Millennium, a cultural and learning initiative taking place in Chicago and Illinois in 1999. The exhibit is free with general Museum admission.

JOHN WEINSTEIN /GM88884.21C

Above: Wayne Hosek with the man-eating lion he shot in 1991 while on a safari in Zambia.

Underground Adventure

A New Permanent Exhibit
Opening March 27

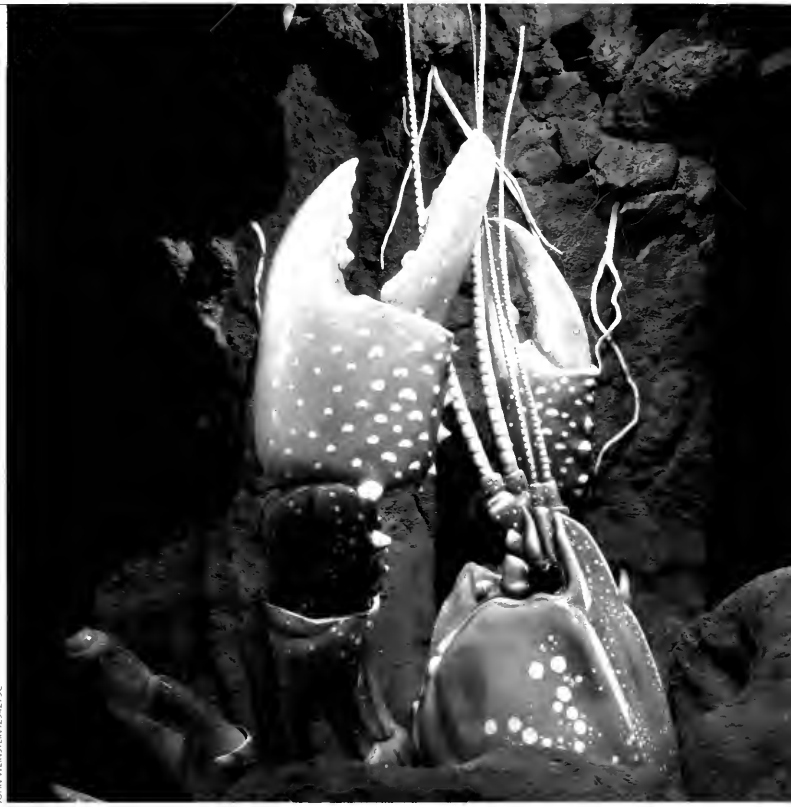
If you are reading this, chances are you are not a farmer. It's not that farmers don't read. The simple fact is, while the majority of Americans throughout the previous century made their living from soil, today just 2 percent of the U.S. population is involved in agriculture.

So, why should we care about soil? Because soil supports and nourishes the crops that feed us, it filters the water we drink and it provides a home for organisms that recycle dead matter into the building blocks for new generations of living things.

Beginning March 27, 1999, visitors can dig into the living world of soil and learn about its connection to the environment in **Underground Adventure**, The Field Museum's second new permanent exhibit in just two years.

Years in the making, at a cost of $12 million, **Underground Adventure** is a 15,000-square-foot total immersion environment in which visitors will encounter an underground soil ecosystem 100 times its normal size. Here, among the roots and worm holes, visitors will encounter a world inhabited by extraordinary plants and fungi, thousands of microscopic mites and nematode worms, and a host of realistic-looking robotic soil creatures, from an 11-foot-long crayfish (above right) to a female earwig fiercely guarding her brood (see cover photograph).

As they travel deeper into this underground maze, visitors also can take part in a variety of scientific tasks, from investigating root tips to tracking moles. In the process, they will discover not only what soil is, but why it matters. As they dig a little deeper, they will learn that soil has a life of its own.



JOHN WEINSTEIN/294279C

Above: An 11-foot-long crayfish crawls out of a subterranean stream in the ***Underground Adventure*** *exhibit. Some species of crayfishes live in surface streams, while others prefer underground rivers and burrows.*

"There is far more life in the ground than above it," says Greg Mueller, chair of the Museum's botany department. "There are more species and more sheer numbers of organisms living underground than above ground."

In the beginning of the exhibit, for instance, visitors will learn that in just one teaspoon of soil there are more than a billion organisms, mostly bacteria but also slightly larger critters, including some 300 nematode worms, 20 mites, 15 springtails and a pseudoscorpion or two.

What's more, 30 percent to 40 percent of the organisms in that spoonful — or any sample of soil — are unknown species, explains Petra Sierwald, adjunct curator of insects. "Thousands of species that are entirely new to science are unearthed each year — microbes, beetles, fungi and plants," Sierwald says. "So far, we know nothing about them, their role in the ecosystem or what information and uses they may hold."

Underground Adventure also explores the importance of soil in regulating the health of the environment and about the interconnections of all living things. For example, in one section, visitors will discover that the lowly earthworm eats dead plant matter from the surface and excretes the organic matter in its feces beneath the soil. Its activ-

Fun Facts About Soil

It takes more than 12,000 years to make the rich prairie soil found in Illinois, yet it can be destroyed in an instant.

Without soil and soil organisms, a deciduous forest would drown in its own litter and leaves.

A single handful of soil may contain as much bacteria as there are people on the entire planet.

There are 4,000 species of mammals living on the planet compared with an estimated 1.5 million species of fungi.

It takes the equivalent of 8,300 bathtubs of water to grow one acre of corn.

In the process of moving soil and organic matter through their guts, earthworms turn over the equivalent of all the soil on the planet to a depth of one inch every 10 years.

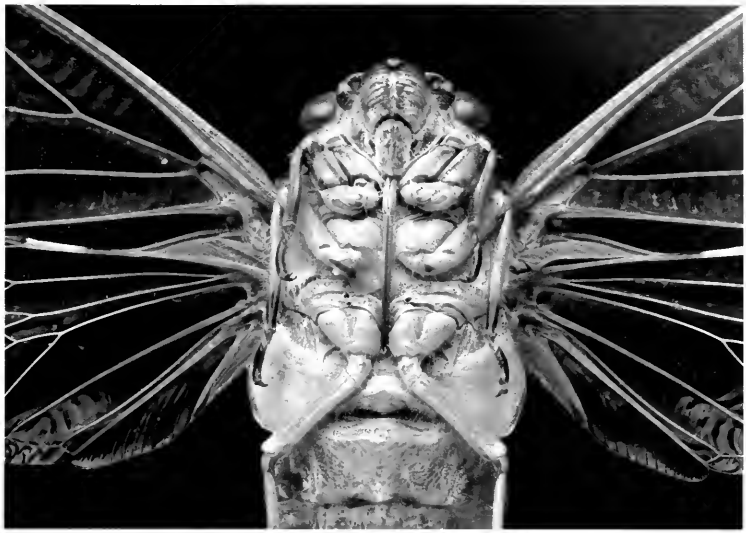
ities aerate the soil, making it a better home to all living things. The matter it excretes will be broken down by other soil organisms and taken up by the roots of plants, which will feed the next generation of earthworms and other creatures, including cattle and humans.

But soil is more than a habitat or a link to the nutrient cycle — it is also entrenched in our daily lives and culture. Though we may not keep Earth shrines in the backyard, our connection to the soil is deeply ingrained. Sure, we buy food wrapped in plastic and diligently vacuum the dirt from our floors. Yet, we cherish childhood memories of mud squishing between our toes and we bring potting soil into our high-rise apartments. We also turn to the soil for our health, as humans have done for all recorded history.

Around the world, people ingest soil for its medicinal ingredients, such as kaolin clay that relieves nausea and diarrhea. Medical science continues to discover new miracles in the earth. For example, a tiny fungus that lives in soil gives us cyclosporine, a drug that suppresses the T cells that are responsible for rejecting foreign tissue after an organ transplant.

At the end of the exhibit, visitors will be challenged to think about the many different ways they are connected to the soil and how their activities affect the health of soil ecosystems and our dependence on it.

"Every year we lose thousands of tons of soil in Illinois through erosion; thousands more are covered by asphalt and construction for urban sprawl," explains Mueller. "And once it's gone, it's gone for at least



JOHN WEINSTEIN /294222C

Above: A cicada spends most of its long life cycle as a nymph burrowing underground and feeding on sap from the roots of trees.

10,000 years. We hope **Underground Adventure** will help people see not only the importance of soil, but how fragile and nonrenewable it is, so they'll leave here thinking in new ways about land use and other conservation issues."

Admission to **Underground Adventure** is $4 for adults; $3 for seniors; and $2 for children ages 3 to 17, students with an ID, teachers and military personnel. Admission is free for members.

Exhibit Donors

As of Feb. 28, 1999

Underground Adventure is made possible by Monsanto — lead sponsor; The ConAgra Foundation; the National Science Foundation; and The Fort James Foundation. Other donors include Abbott Laboratories, Prince Charitable Trusts and the Chicago Board of Trade Charitable Foundation, with additional funding from Marion S. Searle/The Searle Family Trust, Mr. and Mrs. Byram E. Dickes, USX Foundation and an anonymous donor.

With Patience and Good Will: The Art of the Arapaho

Between 1902 and 1905, several Field Museum anthropologists visited Arapaho Indian reservations in Oklahoma and Wyoming and collected almost 1,000 cultural objects, ranging from everyday utensils to ceremonial clothing. In 1993, the Northern Arapaho living in Wind River, Wyo., requested the Museum return to them an object from these collections that is essential to their sacred Sun Dance ceremony. While negotiating for the repatriation of this object, The Field Museum rekindled its relationship with this Native-American tribe. Soon after, Jonathan Haas, MacArthur Curator of North American Anthropology, obtained a grant to survey the collections for other sacred Native-American artifacts. As part of this effort, Haas invited Bob Spoonhunter — a member of the Northern Arapaho tribe well versed in the tribe's traditions — to examine and inventory the Museum's Arapaho collection. During the three months Spoonhunter was in Chicago, he also had the Museum take 32 studio photographs of some of the highlights of this collection.

In 1997, these photographs went on display as part of a new cultural exhibit at the Northern Arapaho reservation in Wyoming. Twenty-five of these photographs — along with some of the original artifacts collected at the turn of the century — will now be on display from March 6 to August 8 in the Museum's new exhibit "With Patience and Good Will: The Art of the Arapaho."

DIANE ALEXANDER WHITE /A113109C

Above: Painted hand drums and quilled sticks of the Northern Arapaho, Wind River, Wyo., and the Southern Arapaho, Okla.

ROYAL CARLTON INC

Above: Paleoanthropologist Meave Leakey has been working at the National Museums of Kenya for the past 30 years.

An Evening with Meave Leakey: The Search and Discovery of Our Earliest Ancestors

3/4, Thursday, 6:30 p.m.

Meave Leakey — head of the paleontology division at the National Museums of Kenya — is the standard-bearer of a family of paleoanthropologists who have dominated their field since the beginning of the 20th century. In 1994, Leakey discovered what may be the answer to one of evolution's fundamental mysteries: *Australopithecus anamensis*, a new species of hominid that began walking upright at least 4 million years ago — 500,000 years earlier than previous data suggested. Working at archaeological sites in the Turkana Basin of East Africa, Leakey's goal is to uncover evidence of our earliest ancestors. ($15; $12 students, $10 members). Call 312.322.8854 for more information.

It's an Underground Adventure with Bill Nye, the Science Guy

3/27, Saturday, 11 a.m.
3/28, Sunday, 1 p.m.

Everyone's favorite science guy is back for two special shows to celebrate the opening of the Museum's new permanent exhibit, **Underground Adventure**. Bill Nye — a scientist, inventor and comedian — will explore the wonders of soil by leading participants on a subterranean adventure. Fascinated with how things work, Nye earned a degree in mechanical engineering from Cornell University and worked for many years at Boeing Co. Combining his talents in comedy and science, Nye made his mark by starring and writing for the television show "Disney Presents Bill Nye the Science Guy." His work on this show earned him four Daytime Emmy Awards. Nye also has written three popular science books, including *Big Blue Ocean*. Greg Mueller, chair of the Museum's botany department, will join Nye to share his knowledge of the world of fungi. ($15; $12 students; $10 members). Last year's program sold out, so reserve your tickets early. Please call 312.322.8854 for more information or to order tickets. Bill Nye's performances are sponsored by Monsanto.

Adventures, Mysteries, Discoveries and Archaeology

3/27, Saturday, 2 p.m.

Sponsored by the Society for American Archaeology, this free program features three speakers who will beguile the audience with stories of human behavior, adventure, mystery and discovery. Mark Mehrer of Northern Illinois University will explain how a small village on the banks of the Rock River is providing archaeologists with a window in the lives of Late Woodland families (A.D. 300 – 700). Hawk Tolson of Michigan State University will follow with a discussion about the last voyage of a Lake Michigan steam barge deliberately run aground in 1911 to prevent it from sinking during a gale. A 1996 landslide on South Manitou Island revealed the largely intact hull of this barge, sparking renewed interest in the boat's history. Toward the end of the afternoon, author Clive Cussler will talk about the intrigue and mystery surrounding sunken ships. A book signing will follow the lecture. For more information, call the Society for American Archaeology at 202.789.8200.

THOMAS G. ANTON

Above: A North American bullfrog waits patiently in the shallows of a pond for his next meal. During Thomas Anton's class, "Amphibians of Northern Illinois," participants will learn, among other things, how to identify the different species of frogs that inhabit the waters of this region.

Naturalist Certificate Program: Amphibians of Northern Illinois

3/29, Monday, 6 – 7:30 p.m.

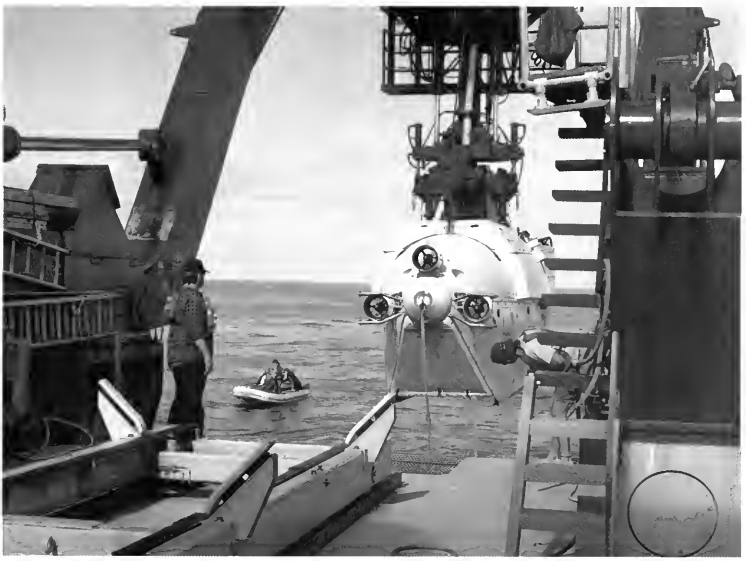
Frogs, toads and salamanders are important but seldom seen members of Chicago-area fauna. They also are valuable indicators of environmental health, as evidenced by the recent publicity on declining amphibian populations. Join Field Museum research associate Thomas Anton as he delves into the taxonomy, life history and ecology of amphibians in a series of classes, lectures and field trips. During this program, participants will learn how to identify local species and the ins and outs of conducting a site inventory and a biological census. This class continues April 3, 10 and 17, from 9 a.m. to noon, and April 19, from 6 to 7:30 p.m. ($111; $92 members). Please call 312.322.8854 for more information or to register.

Family Field Trip: The Great Chicago Fire

3/28, Sunday, 9 a.m. – noon.

Whether sparked by an irritated cow or human error, the Great Chicago Fire of 1871 decimated the hastily built core of Chicago, leaving a level foundation upon which the city's residents built a new metropolis. Draw your own conclusions about how it all began while visiting several historical sites of the Great Chicago Fire with two local historians. The field trip departs from the Museum's west door and is designed for family groups — adults and children grades 4 and up. ($27 per participant; $23 members). Please call 312.322.8854 for more information or to register.

Left: On March 27 and March 28, Bill Nye, the science guy, will explore the wonders of soil by leading an underground adventure with Museum mycologist Greg Mueller (see p.4).



JANET VOIGHT

Above: The crew of the ship Atlantis *recover the deep submergence vehicle ALVIN from the cold waters of the north Pacific Ocean. Vehicles like ALVIN have made it possible for scientists like Sylvia Earle to explore deep-ocean environments and study the animals that inhabit them.*

An Evening with Sylvia Earle Wild Oceans: Exploring and Caring for an Ocean Planet

4/6, Tuesday, 6:30 p.m.

With only 1 percent of its depths explored, the ocean is one of Earth's last great frontiers. One of its most accomplished and celebrated explorers is Sylvia Earle, an explorer-in-residence at the National Geographic Society. Called "Her Deepness" by *The New Yorker* and *The New York Times*, Earle is a marine biologist, author, lecturer, scientific consultant and the former chief scientist of the National Oceanic and Atmospheric Administration. During the program, she will take participants diving (via video footage) into the deep sea to reveal some of the planet's most fascinating aquatic environments and the animals that inhabit them. She will also talk about the tools and technologies that have made deep-ocean exploration possible. ($15; $12 students; $10 members). Please call 312.322.8854 for more information.

It's an Underground Adventure with Petra Sierwald

4/10, Saturday, 9:30 – 10:30 a.m.

What if you could shrink to the size of a bug and burrow beneath the surface of the Earth? Immerse yourself in the living world of soil in this special tour of **Underground Adventure**, the Museum's new permanent exhibit. Petra Sierwald, the exhibit's content specialist and The Field Museum's adjunct curator of insects, will be your expert guide to the wonders of the underground world and the behind-the-scenes work that went into developing the exhibit. ($12; $10 members). Call 312.322.8854 for more information or to register.

DAVID HEALD/ COURTESY OF THE SOLOMON R. GUGGENHEIM MUSEUM

Above: A replica of an 1885 Daimler Einspur 264 cc — one of the world's first motorcycles. This bike is one of the 72 now on display in "The Art of the Motorcycle" exhibit.

Activity Day: Biking Together

Saturday, March 6, 11 a.m. to 3 p.m.

During this day of motorcycle mania, visitors can meet representatives from several local motorcycle clubs and peruse their informational displays. They also can participate in an interactive theater piece, design a miniature motorcycle, take an imaginary motorcycle journey on a stationary bike or catch two classic motorcycle flicks: *Sturgis '90* and *Easy Wheels*. In celebration of Women's History Month, **Biking Together** also will include a series of lectures that examine the culture of motorcycling from a woman's point of view. All activities are free with Museum admission. Call 312.322.8854 for more information.

Biking Together Lectures:

The Road Less Traveled
11:30 a.m.
In 1916, two sisters, Adeline and Augusta Van Buren, became the first women to cross the United States by motorcycle, making it possible for other women to break into the once male-dominated pursuit of motorcycling. In **The Road Less Traveled**, Kimberly Barlag, associate editor of *American Motorcyclist*, will examine the accomplishments of these two pioneering spirits and will look at what the future holds for female motorcyclists today.

Women and Motorcycling: The Early Years
12:30 p.m.
Author Susie Hollern looks at the lives of the pioneering women of the 1900s who took to the road on their motorcycles despite the pressure to follow more traditional pursuits. Through a video presentation, the audience will hear firsthand from some of these early rebels. After the lecture, Hollern will sign her book *Women and Motorcycling: The Early Years*.

Marjie Jennings
1:30 p.m.
Rebecca Hunter, the president of a company that supplies safety products to the motorcycle industry, will examine the contributions that Marjie Jennings made to motorcycle safety by starting one of the nation's first motorcycle instruction courses. In the 10 years she directed this program, Jennings taught an estimated 18,000 students (30 percent of whom were women) how to ride their bikes safely and smartly.

Right: The dunes along Lake Michigan's shoreline are some of the most biologically diverse areas of the Midwest. During the ***It's Wild in Chicago '99*** *festival, visitors can learn about what is being done to protect these fragile and important ecosystems.*

It's Wild in Chicago '99

Saturday, March 27 & Sunday, March 28
11 a.m. to 4 p.m.
Monday, March 29 & Tuesday, March 30
10 a.m. to 1 p.m.

Join the Museum for its annual salute to the work of local conservationists in protecting the area's natural resources. This year's program will highlight soil conservation, biodiversity and the natural landscape of the Chicago area, as well as the opening of **Underground Adventure,** *the Museum's new permanent exhibit. During the festival, Field Museum scientists and local environmentalists from Chicago Wilderness will be on hand to discuss their research and conservation programs. Chicago Wilderness is a coalition of 76 Chicago-area organizations and agencies committed to protecting and restoring local landscapes and biodiversity. Festival activities this year will include puppet shows, interactive plays, cooking demonstrations and musical performances.*

Festival programs and activities are free with general Museum admission. Call 312.922.9410, ext. 497, for more information. School groups must preregister to attend this festival, which is made possible by a grant from Monsanto.

WILLIAM BURGER

Ecology and the Chicago Region: From Cowles to Chicago Wilderness

A Celebratory Symposium
Friday, April 9 & Saturday, April 10

Henry Cowles' 1899 dissertation, "The Ecological Relations of the Vegetation on the Sand Dunes of Lake Michigan," revolutionized the way scientists and conservationists think about ecology and ecological succession, the process by which one natural community replaces another over time. Through his studies of plant communities in the Indiana Dunes, Cowles, who died in 1939, established ecology as the study of *processes* and introduced the concept of the landscape as a dynamic, ever-changing panorama. As a result of his work, Chicago became the center of the ecological movement.

Today, that tradition continues through the work of Chicago Wilderness, a coalition of 76 local organizations and agencies committed to protecting and restoring local landscapes and biodiversity.

To commemorate the 100-year anniversary of Cowles' classic doctoral dissertation at the University of Chicago and its continued relevance to local conservation efforts, The Field Museum, the Indiana Dunes Environmental Learning Center and Chicago Wilderness invite members and visitors to a celebratory symposium Friday, April 9 and Saturday, April 10.

Ecology and the Chicago Region: From Cowles to Chicago Wilderness explores the impact of Cowles' ecological studies on the practical and theoretical applications of ecological restoration and conservation management strategies.

The symposium includes a Friday reception at The Field Museum, followed by a keynote address by Peter Vitousek — a renowned scholar of biosphere dynamics and soil development.

On Saturday morning, international and regional conservationists will discuss the current impact and ramifications of Cowles' work. That afternoon, guests can participate in one of seven different fields trips to native habitats consisting of dunes, prairies, marshes, wetlands or savannas. On these field trips, local experts will discuss topics ranging from succession, restoration, education and the partnerships between natural areas and industry. In the evening, participants will convene at Indiana Dunes Environmental Learning Center for dinner and entertainment in front of a campfire.

WILLIAM BURGER /INSET COURTESY OF INDIANA DUNES NATIONAL LAKESHORE

Above: Miller Woods is part of the Indiana Dunes national park system and is home to marshes, swamps, ponds, savannas and forests. It was in places like this that Cowles (left) conducted his landmark ecological studies at the turn of the century.

For more information about this symposium, or to register, pleases call Tina Bentz at 312.922.9410, ext. 550, or send her an e-mail at <cbentz@fmnh.org>. A discount is available for staff and volunteers of Chicago Wilderness and the Volunteer Stewardship Network.

Registration Before March 15

Symposium/Field Trip Package:
$50; $20 students; $25 members.
This package includes Friday reception, breakfast, lunch and dinner on Saturday, field trip transportation and admission to Friday and Saturday presentations.

Symposium Package:
$30; $10 students; $15 members.
This package includes Friday reception, breakfast on Saturday and admission to Friday and Saturday presentations.

Registration After March 15

Symposium/Field Trip Package:
$60; $25 students; $30 members.

Symposium Package:
$40; $15 students; $20 members.

Naturalist Certificate Program: Spring Courses

Join the Morton Arboretum, The Field Museum and the Chicago Botanic Garden for a journey into the wilderness of Illinois. Based on the Arboretum's successful program in Lisle, Ill., the **Naturalist Certificate Program** *offers beginning and more advanced naturalists an integrated program in nature study through field-oriented classes. This spring, The Field Museum will be offering the following five courses: Amphibians of Northern Illinois; Spring Migrant Birds; Understanding Soil Through an Ecological Approach; Local Flora: Spring; and Insects and Their Relatives. See the "Calendar of Events" page for a description of the Amphibians class beginning in late March. Call 312.322.8854 for information on additional program courses or to register.*

[illegible] and Sunday

1 p.m. **Story Time: Facts, Fables and Fiction.** Learn new songs and stories and have fun creating artwork — all in a 15-minute program for preschoolers in the Crown Family Place for Wonder. One adult for every three children, please.

Interpretive Station activities. Drop by hands-on stations located throughout the Museum where a facilitator invites visitors to touch objects relating to natural history and to take part in educational activities. Please check the informational directories for daily listings.

March 6 — Saturday

1 p.m. **Guided Tour** of the **Africa** exhibit and a screening of an excerpt from the documentary "I'll Make Me a World." Built in 1993, the **Africa** exhibit presents a portrait of Africa's cultural, geographical, political and social diversity. The documentary screening celebrates the contributions African Americans have made to the arts in the 20th century.

11 a.m. – 3 p.m. **Activity Day: Biking Together.** Meet representatives from local motorcycle clubs and hear lectures focusing on the accomplishments of women motorcyclists. See "Get Smart" page for details.

11 a.m. **Millennium at the Museum Stories: Chinese Puppet Storytelling.** Join Field Museum volunteer Mei Chao as she presents Chinese myths and legends through the magic of hand puppets.

11 a.m. **Zoom In! Motorcycles in the Movies:** *Sturgis '90* (120 minutes).

JOHN WEINSTEIN /GN88705 24

Left: At this ***interpretive station****, visitors can study and touch the horns and antlers of different animals.*

Above: Prehistoric Native-American petroglyphs in Dinosaur National Monument, Colo. Anthropologists use ancient rock art to understand how cultures change over time — one of the many themes explored in the "Origins" exhibit.

3 p.m. **Zoom In! Motorcycles in the Movies:** *Easy Wheels* (94 minutes).

March 7 — Sunday

1 p.m. **Drums of our Grandmothers.** Celebrate Women's History Month by learning about the tradition of women's drumming and by participating in a rhythm workshop for children and adults.

1 p.m. **Zoom In! Motorcycles in the Movies:** *Quadrophenia* (115 minutes).

2:30 p.m. **Faces of Faith Performance:** See The Field Museum/Music Theatre Workshop's newest work that begins in the "Origins" exhibit and examines a teenager's perspective of diversity through faith.

3 p.m. **Zoom In! Motorcycles in the Movies:** *If . . .* (111 minutes).

March 13 — Saturday

11 a.m. – 1 p.m. **Artists in the Field.** Visit with student artists stationed throughout the Museum as they demonstrate painting in the tradition of Margaret Mee.

11 a.m. – 3 p.m. **Dinosaurs and More: Dinosaurs in Art.** Explore the many facets of dinosaurs through a myriad of artistic expressions.

1:30 p.m. **Tibet Today: Faith in Exile.** Join Field Museum volunteer Elaine Bernstein for a tour of the **Tibet** exhibit and a slide presentation focusing on Lhasa and other places now open to tourists in Tibet.

March 14 — Sunday

11 a.m. – 3 p.m. **Dinosaurs and More: Dinosaurs in Art.** See March 13.

2:30 p.m. **Faces of Faith Performance.** See March 7.

March 15 — Monday

10 a.m. – 1 p.m. **Dinosaurs and More: Dinosaurs in Art.** See March 13.

March 17 — Wednesday

1 p.m. **Zoom In! Motorcycles in the Movies:** *Teenage Devil Dolls* (58 minutes).

2 p.m. **Zoom In! Motorcycles in the Movies:** *Advice to Adventurous Girls* (8 minutes).

3 p.m. **Zoom In! Motorcycles in the Movies:** *She Lives to Ride* (76 minutes).

March 20 — Saturday

1 p.m. **Drums of our Grandmothers.** See March 7.

March 21 — Sunday

11 a.m. – 3 p.m. **Millennium at the Museum Future Feature** weekend.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

11 a.m. **Millennium Weekend Stories: How Can We Steal the Air?** Children (ages 5 and above) and their adult companions can listen to Museum volunteer Mildred Frank discuss the important contributions of Chief Seattle.

Noon – 3 p.m. **Creation Station: Drawing in the Field.** Use Margaret Mee's botanical paintings to fuel your artistic creativity.

2:30 p.m. **Faces of Faith Performance:** See March 7.

March 27 — Saturday

11 a.m. – 4 p.m. **It's Wild in Chicago '99.** Visit with Field Museum scientists and local conservationists. In addition, you can explore **Underground Adventure,** the Museum's new permanent exhibit. See "Get Smart" page for more information. **It's Wild in Chicago** is made possible by Monsanto.

1:30 p.m. **Tibet Today and Bhutan, Land of the Thunder Dragon.** Learn about Lhasa, Tibet and the small Himalayan country of Bhutan.

2 p.m. **Adventures, Mysteries, Discoveries and Archaeology.** Listen to three speakers talk about human behavior, adventure, mystery and discovery. See "Calendar of Events" page for more information.

March 28 — Sunday

2 p.m. **Millennium at the Museum Film:** *Intimate Strangers: Symbiosis* (8 minutes).

11 a.m. – 4 p.m. **It's Wild in Chicago '99.** See March 27.

April 3 — Saturday

1 p.m. **Guided Tour** of the **Africa** exhibit. See March 6.

11 a.m. – 2 p.m. **Meet a Field Museum Scientist.** View rarely displayed specimens from the collections and listen to Museum scientists discuss their research as it relates to the new **Underground Adventure** exhibit.

2 p.m. **Millennium at the Museum Film:** *The Incredible Heap* (54 minutes).

April 10 — Saturday

1:30 p.m. **Tibet Today: Faith in Exile.** See March 13.

April 11 — Sunday

2:30 p.m. **Faces of Faith.** See March 7.

April 17 — Saturday

11 a.m. – 2 p.m. **Meet a Field Museum Scientist.** See April 3.

April 18 — Sunday

11 a.m. – 3 p.m. **Millennium at the Museum Future Feature** weekend.

Noon – 3 p.m. **Creation Station: Drawing in the Field.** See March 21.

2 p.m. **Millennium at the Museum Film:** *Rain Forest* (60 minutes).

2:30 p.m. **Faces of Faith.** See March 7.

April 23 — Friday

11 a.m. – 3 p.m. **Creation Station: Underground Adventure.** Families can take part in a number of hands-on activities and performances relating to bugs.

April 24 — Saturday

11 a.m. – 3 p.m. **Creation Station: Underground Adventure.** See April 23.

1:30 p.m. **Tibet Today and Bhutan, Land of the Thunder Dragon.** See March 27.

Resource Centers

Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center; the Daniel F. & Ada L. Rice Wildlife Research Station; and the Webber Resource Center, the Native Cultures of the Americas. Open daily from 10 a.m. to 4:30 p.m.

Pawnee Earth Lodge

Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains. Open from 10 a.m. to 4:30 p.m. on weekends and open at 1 p.m. during weekdays. Check the informational directories or the sign in front of the Lodge for program times.

Ruatepupuke: The Maori Meeting House

Discover the world of the Maori people of New Zealand at the treasured and sacred Maori Meeting House.

McDonald's Fossil Preparation Laboratory

Watch Field Museum preparators work on Sue, the largest and most complete *T. rex* ever found. Open daily from 9 a.m. to 5 p.m.

The Crown Family Place For Wonder

A hands-on area for children. Open weekends from 10 a.m. to 4:30 p.m. and weekdays from 1 p.m. to 4 p.m.

Daily Highlight Tours

Visit the exhibits that make this Museum one of the world's finest. Find out about the stories behind the exhibits. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

INDIANA DUNES NATIONAL LAKESHORE

Left: During the **It's Wild in Chicago '99** *festival, visitors can learn about efforts to protect the last of the region's natural habitats, including the dunes on Lake Michigan's south shore. The festival runs from March 27 to March 30.*

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Textile Makers on Island of Sumba Revive Ancient Weaving Process

MARK WIDHALM/A113759C

Left: One of the seven ikat *textiles donated by Withrow Meeker in 1998. Five of the textiles came from Sumba; the other two from neighboring islands.*

For centuries, the weavers on the Indonesian island of Sumba were admired for their intricate, handmade textiles adorned with elaborate, multicolored patterns. To create these designs, they used a laborious weaving process known as *ikat* that calls for tying each individual thread of the textile with string and immersing it in a dye bath. Once the thread is dry, the weaver removes the string, ties it around the section of thread that was just dyed and dips it into another color. When satisfied with the resulting color motif, the weaver takes the threads and interlaces them through a loom.

By the 1980s, however, travelers to Sumba would have been hard pressed to find weavers still producing these traditional textiles. By this point, the role of *ikat* textiles in Sumba rituals involving religion, warfare and status had diminished, in part because of the influx of modern, global culture in the region. In addition, a handful of traders began monopolizing the buying and selling of these textiles in the tourist markets of Bali and Java. Unfortunately, the huge profits they acquired didn't trickle down to the weavers, who were paid only a few dollars per textile. As a result, the weavers, who were mostly women, were no longer willing to spend the months it took to create just one finished product.

However, because of increased competition in the trading hubs of Indonesia, this art form in recent years has experienced something of a renaissance. This time, the weavers are receiving a fair share of the profits.

"This makes a big difference," says Bennet Bronson, curator of Asian archaeology and ethnology. "It signals an important move in preserving Sumban weaving customs."

While on vacation in eastern Indonesia in November 1998, Withrow Meeker, past president of the Women's Board, purchased several textiles that exemplify this rekindled tradition. A few months ago, she donated seven of them to the Museum.

"The textiles that Mrs. Meeker brought back are interesting examples of how an old art tradition is being modernized and preserved," explains Bronson. "But while the methodology has not changed that much, the fact that big new markets have opened up to them have made some Sumbanese relatively rich. Sometimes, we find that women are making more money than men and this is making a difference in Sumban society. And documenting how traditions change and how they remain the same is really why we are interested in collections."

Meeker's gift also highlights the change in the way the Museum's anthropology department builds its collections. Historically, the department augmented its collections through scientific expeditions and exchanges with other institutions. Today, the department relies primarily on gifts from individual donors. Because of the generosity of people like Meeker, the Museum's collection of more than 1.5 million cultural artifacts is among the largest in the world. Yet, with a collection of this size, the Museum can only place about 3 percent of its ethnographic material on display at any given time. While the public may never get to see many of these objects, staff and visiting scientists use and study them as part of their ongoing research.

To increase public access to these "unseen" collections, the Museum in 1991 formed the Collections Committee, a membership group that meets several times a year with Museum scientists to explore the anthropology department's storerooms and laboratories. In addition, members can attend lectures by experts, as well as exhibit previews and workshops on subjects ranging from conservation to forgery. ITF

Annual membership is $50 a year for a Committee membership and $80 for a joint Collections Committee/Field Museum membership. Please send a check to The Field Museum, Development Office — Collections Committee, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605. For more information, please call 312.322.8874 or send an e-mail to <rhoads@fmnh.org>.

Wade Davis Journeys to the Shadows in the Sun

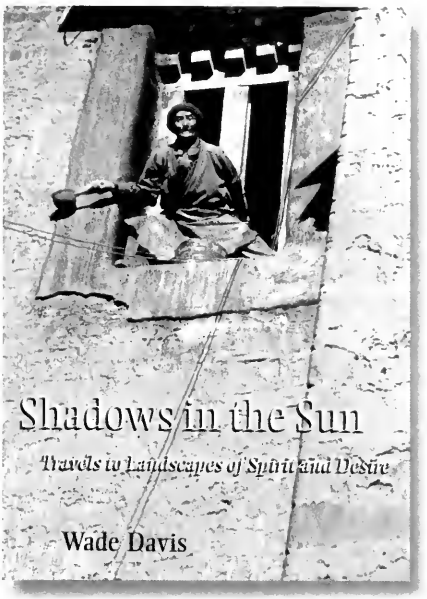
By Marjorie Pannell
Managing Editor, Field Museum Press

As an anthropology student, Wade Davis was told that jaguar shamans were mere figureheads, having no real-world power. Within a year, he was in the Amazon basin, working as a fledgling ethnobotanist, watching shamanic healers at work and learning a different truth.

For years, Davis has been interested in how different societies model reality. In a new collection of travel essays, the author of *The Serpent and the Rainbow* and *One River* looks at the world views of indigenous peoples whose character and way of life are perfectly adapted to a landscape through long residence in a place. Such adaptation is possible, Davis writes, because it springs from a comprehensive vision of nature and the universe in which humans are integrated into the whole. The specific world view that emerges from such societies is often a syncretic one, drawing character, conduct, social institutions, beliefs and environmental practices into a single calculus. It is a model of reality most opaque to Western thought.

Davis' travels take him to Tibet and the Canadian Arctic, the swamps of the Orinoco and the deserts of the Middle East. He encounters societies lacking an "inner horizon" that would separate the cognitive world from the world of the spirit; societies in which botanical knowledge is inseparable from metaphysics, and the order in which rows of corn are planted reweaves the Sky Mother's protective tapestry every day. Yet, even as Davis draws back the veil from, and finds solace in, the realities of such land-adapted groups, he recognizes their transience. Many of the landscapes he describes are undergoing irreversible change; only a few remote areas remain inviolate.

With changes in the landscape comes a shattering of indigenous peoples' world views — views that have been in place "since the world began." The life of the nomadic Penan of Borneo, to take one example, is entirely constructed around the forest. The forest canopy is the roof of the world and the liminal horizon where sky meets earth is something to be feared; a long journey is measured not in time elapsed but as one that takes the Penan out of the forest and exposes them to the sun. Logging in the 1980s removed the mantle of green, effectively decapitating both an adaptive existence and a world view. Deprived of a forest home, some of the Penan began living in sunbaked thatched huts. Sun-related skin diseases never before experienced began to appear. The Penan saw half their reality torn away in a decade, with not only a lifestyle lost but a way of thinking.



Although failures are more common than successes, the picture is not entirely bleak for land-adapted peoples. In April 1999, an Inuit homeland in the eastern Arctic almost the size of Alaska and Massachusetts combined will be placed under Inuit control. It is perhaps the largest experiment in restoring autonomy to an indigenous people ever undertaken, and quietly acknowledges an economy of life that is wholly shaped by environment.

The author's pursuit of alternative models of reality among landscape-adapted groups has brought him up against the rougher order of politics and international trade balances. The essays in this volume necessarily acquire a political cast, for Davis speaks on behalf of people for whom land ownership is anathema, for whom international affairs cannot be separated conceptually from the domestic web that brings dreams, landscape, the hunt, journeys, marriages, agricultural practice and war into relationship. This way Davis finds inherently right and morally inspired. It is also the source of true cultural diversity, rooted in the biological diversity of place. Loss of the roots means loss of the cultures flowering from those roots. The Copernican revolution of the 16th century, Davis writes, moved Western thought off its philosophical foundations by showing that our planet is not the center of the universe. The lesson bears relearning on a smaller scale, and the educative materials are at hand in the numerous land-adapted peoples' constructs of reality. Pouring fire and wind on the page, Davis places his large gift as a writer in the service of relocating those constructs to center stage. ITF

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From the Photo Archives . . .

In 1899, Elmer Riggs (left), the Museum's first paleontologist, and Harry Menke (right), his assistant, unearthed more than five tons of fossilized bones from the Freezeout Hills in Wyoming. These fossils became the foundation of the Museum's vast vertebrate paleontological collections, which today consist of about 100,000 identified specimens — making it the third or fourth largest vertebrate paleontological collection in the United States.

After joining the Museum in 1898, Riggs, a native of Trafalgar, Ind., conducted 12 expeditions in the western United States, as well as two in Canada and two in South America. During these expeditions, Riggs discovered numerous genera and a variety of new dinosaur species and later wrote many journal articles describing these discoveries that are still noted today. In 1942, he retired from the Museum and 21 years later died at the age of 94 in Lawrence, Kan.

Riggs' most fruitful expedition occurred in 1900 on the western slopes of the Rockies overlooking Grand Junction, Colo. After finding the vertebrae, ribs and shoulder blade of a *Camarasaurus*, Riggs and Menke stumbled upon the pelvis and sacrum of a massive dinosaur in a layer of clay-sand cropping out the side of a butte. A few days later, Riggs found the dinosaur's vertebrae, a 7-foot-long femur, some rib material and a flat bone that resembled a humerus.

"[It was] broad at one end, tapering away to a rounded shaft which was jagged and broken," wrote Riggs in the January 1939 issue of *The Field Museum Bulletin*. "More than four feet of it lay intact. It was too long for any dinosaur humerus found at that time from America. Soon we began picking up fragments scattered along the slope and fitting them together. Within half an hour, we had a second great bone not quite as long as the thigh bone, but of different shape. Scarcely believing our senses, the conclusion was forced upon us that this bone was from an upper foreleg — a humerus."

After analyzing the bones back in Chicago, Riggs soon realized he had stumbled upon a species of dinosaur unknown to science. He decided to name it *Brachiosaurus altithorax* (arm lizard with deep chest). Because Riggs was the first to discover this dinosaur, his fossilized specimen stands as a holotype, the standard against which scientists compare all new *Brachiosaurus* findings.

In 1939, the citizens of Grand Junction honored Riggs by naming the site of the discovery Riggs Hill. As for Menke, he left the Museum about eight years after the Colorado expedition, eventually joining the Los Angeles County Natural History Museum as its official photographer. On July 23, 1936, he died of a massive heart attack.

The humerus that Riggs and Menke unearthed in 1900 is currently on display next to the model of a *Brachiosaurus* that towers over the north end of Stanley Field Hall. ITF

From the Field Archives

March 1941

The Museum exhibited a skeletal model of the extinct carnivorous bird *Andalgalornis ferox* that staff paleontologists based on two partial fossil specimens collected during a Field Museum expedition to Argentina and Bolivia in 1926. Though unable to fly, *Andalgalornis ferox* stood five feet high, was equipped with a powerful hooked beak adapted for tearing flesh, and could run as fast as a galloping horse.

Llewelyn Williams, curator of economic botany, returned to the Museum after surveying the flora of Venezuela. During the expedition, he collected a variety of specimens, including chicle, a gumlike substance made from the milky juice of the sapodilla tree and used in making chewing gum; balata, the dried sap of a tropical American tree used at the time to protect transmission cables (now used to cover golf balls); and tonka beans, an almond-shaped seed used to create perfumes and add aroma to tobacco.

A donor gave the Museum a pair of 18th-century stone lions that once guarded the entrance of a government building in Peking during the Qing dynasty (1644 – 1911).

April 1941

Members of a Museum zoological expedition to the Galápagos Islands returned to Chicago with a collection of more than 1,500 fish, including a 340-pound striped marlin and 12-foot-long manta. This was the first recorded instance of a striped marlin inhabiting the waters around this island chain.

While visiting Chicago, Vice President Henry Wallace toured the Museum's anthropological collections. [Seven years later, Wallace ran for President on the Progressive Party ticket that opposed Harry Truman's Cold War policies and the anticommunist campaigns of the time. Wallace lost the election and was later called a "crackpot" by Truman].

The Museum displayed a 400-pound slab of lodestone (magnetite), an iron-oxide mineral with a very strong natural magnetism — a property first discovered by the Chinese in 2 B.C. Not long after, the Chinese used the mineral to create the world's first compass.

New Genus Named for Field Museum Mammalogist

A recent issue of the German science journal *Bonner Zoologishche Beiträege* (Vol. 47, 1998) includes a paper that Field Museum mammalogist Philip Hershkovitz wrote before he died on Feb. 15, 1997. In that paper, Hershkovitz identified an entirely new group of shrew-like rodents that inhabit certain areas of southeastern Brazil. Since Hershkovitz was the first to describe this new genus, he also earned the privilege of assigning these formerly unknown animals a scientific name. So, in his paper, Hershkovitz decided to christen them *Brucepattersonius*, in honor of his colleague Bruce Patterson, The Field Museum's MacArthur Curator of Mammals.

Brucies, which is the common name Hershkovitz used to refer to the genus, are small (about 5.6 inches long) and slender rodents with minute eyes and long, tapering snouts. Their fur is dark brown, reddish or grey; some species have a white-tipped nose. To date, the scientific community recognizes five species within this new genus: the Soricine Brucie, the Red-Bellied Brucie, the Gray-Bellied Brucie, the White-Nosed Brucie and the Ihering's Brucie. In addition, an as yet unnamed species of Brucie recently turned up in the Argentine province of Misiones.

ILLUSTRATION BY KATHLEEN KOZOL TELFER

Hershkovitz and his longtime field assistant Barbara Brown discovered the Red-Bellied Brucie, the Gray-Bellied Brucie and the White-Nosed Brucie while conducting surveys between 1986 and 1992 in various national parks in southeastern Brazil. The other two were collected at different points in history; however, one was misidentified and the other was catalogued as "species indeterminate." **ITF**

Museum Tours at a Glance

For more than 30 years, Robert Inger has been conducting research in Borneo — the third largest island in the world. This September, you can join him as he leads a tour to this island, which is home to an extraordinary array of plants and animals, including the orangutan (above).

For more information and free brochures, please call Field Museum Tours at 800.811.7244, or send them an e-mail at <fmtours@sover.net>.

Arctic Circumnavigation by Icebreaker: A four-part expedition

June 30 – September 1
Duration: 64 days (total)
Guest Leader: oceanographer Don Walsh
Price: $36,790 (all four parts); not including airfare.

Galápagos Islands Adventure

July 22 – July 31
Duration: 10 days
Museum Leader: conservation ecologist Douglas Stotz
Price: $4,460, including airfare from Chicago.

Field Museum anthropologist Bennet Bronson will be leading a tour this June to out-of-the-way places in England, Wales and Ireland — including the Inner and Outer Hebrides, the Orkney and Shetland islands. During the tour, you will see wonderful seabird colonies, spectacular landscapes and some of Europe's oldest archaeological sites.

Alaska–Harriman Centennial: A two-part expedition voyage

July 22 – August 3 (part I)
August 3 – August 19 (part II)
Duration: 30 days (total)
Guest Leaders: marine scientist John Loret and ornithologist Ronald Beane
Price: Starts at $4,730 for part I and $6,480 for part II; not including airfare.

Natural History of Borneo

September 9 – September 24
Duration: 16 days
Museum Leader: zoologist Robert Inger
Price: $4,630, including airfare from Chicago.

British Columbia and Alaska

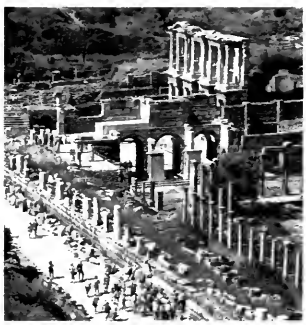
May 19 – May 29
Duration: 11 days
Museum Leader: zoologist David Willard
Price: Starts at $2,380; not including airfare of $730 from Chicago.

Turkey: Crossroads of Civilizations

May 21 – June 6
Duration: 17 days
Guest Leader: University of Chicago Professor Richard Chambers
Price: $5,280, including airfare from Chicago.

Remote Britain

June 15 – June 28
Duration: 14 days
Museum Leader: anthropologist Bennet Bronson
Price: Starts at $5,300, including airfare from Chicago



Tour western and central Turkey and explore the sites of the region's great civilizations with Richard Chambers. On this trip, participants will see a variety of archaeological sites, including Ephesus (above), which was once the capital of the Roman province of Asia.

In the Planning Stages

Arabian Adventure: Aqaba to Dubai

Natural History of Patagonia and Torres del Paine

Wildlife of Southern Africa: Botswana and Zimbabwe

Amazon by 14-Cabin Riverboat

Costa Rica and Panama Voyage

Kenya Safari, including Tsavo National Park

Exploring the Virgin Islands

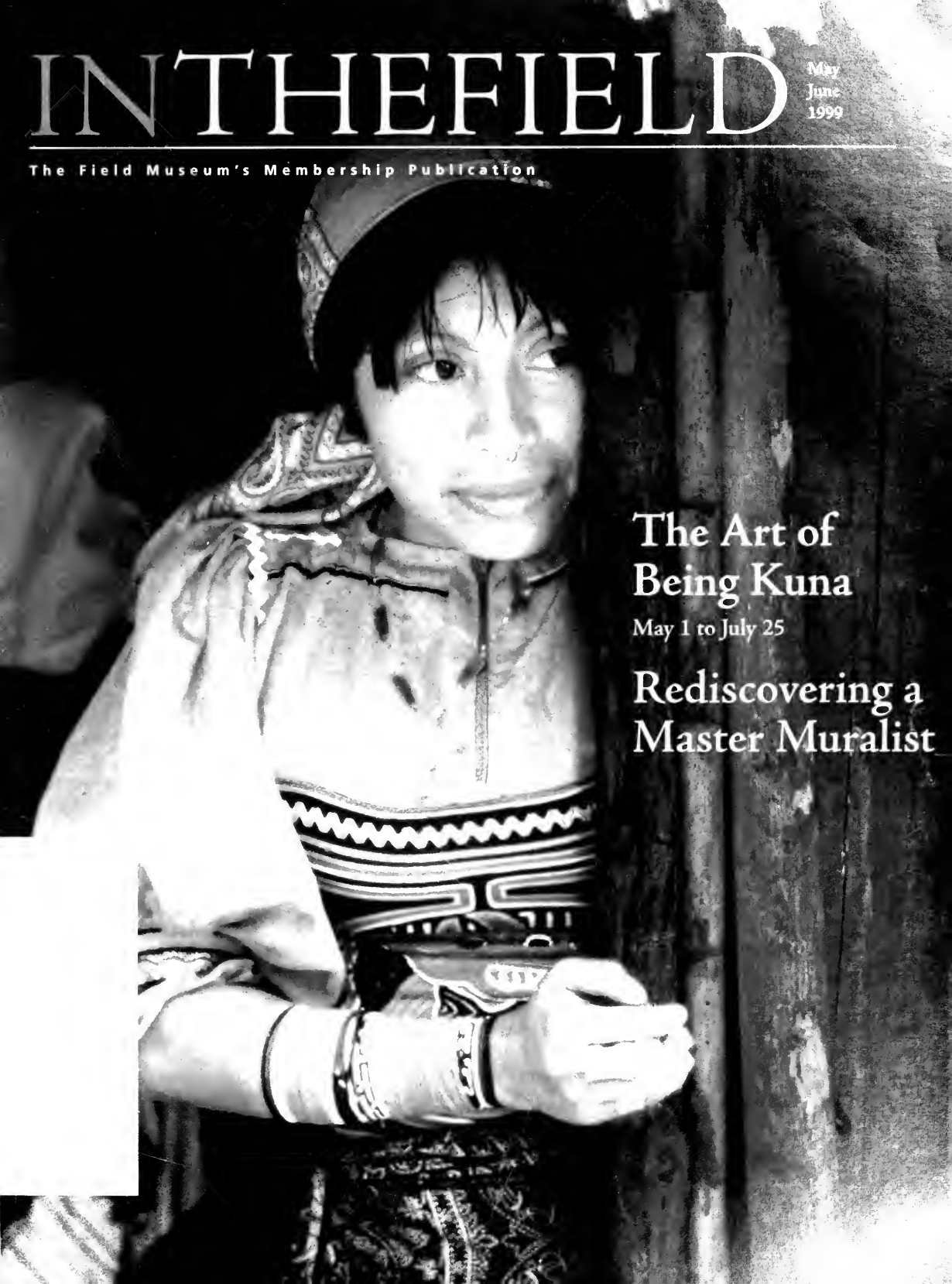
Egyptian Odyssey

Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.

IN THE FIELD

May
June
1999

The Field Museum's Membership Publication



The Art of Being Kuna

May 1 to July 25

Rediscovering a Master Muralist

JOHN WENSTEIN /GN88119 6

NSF: The Field Museum's Silent Partner

The National Science Foundation (NSF), an independent government agency that funds scientific research in the United States, will celebrate its 50th birthday in 2000.

Often called "America's investment in the future," NSF was established by President Truman "to promote the progress of science; to advance the national health, prosperity and welfare; to secure the national defense; and for other purposes." And it has done just that by investing $3.3 billion of taxpayers' money each year in 20,000 research and educational projects at museums, research centers, universities and schools across the nation. In addition, NSF-backed scientists have chalked up a remarkable 100 Nobel Prizes over the past 50 years.

The country's return on its investment has been phenomenal — from the discovery by NSF-supported scientists of how bacteria develop and retain resistance to antibiotics, to the design of the computer framework that evolved into the Internet.

NSF and taxpayers also have received a remarkable return on their investment at The Field Museum, which has received $16 million from the agency since 1990. Following its inception, NSF has supported hundreds of research projects in the Museum's geology, botany, anthropology and zoology departments. These NSF-supported projects have probed everything from the role El Niño plays in the evolution of desert plant communities in Peru to the rise of "modern" precolonial cities and societies on the Swahili Coast of East Africa. Currently, NSF is supporting 15 research projects at the Museum, including zoological studies in South America and geochemical analyses of meteorites in Chicago.

The Museum also has used NSF grants to maintain and improve its research collections — the scientific athenaeum in which our curators have found answers to the world's most complex biological and cultural mysteries. For example, with NSF's support we have created computerized inventories of many of our zoological collections and thereby increased their utility to others. Similarly, the anthropology department is using NSF funds to recatalog and computerize its collection of Anasazi and Mogollon artifacts. When completed, this project will enable researchers to paint a more complete picture of these two early Native American cultures.

Additionally, we have relied on NSF funds over the years to hire and train graduate students to work alongside our curators in the field, and we have turned to NSF for assistance in developing programs designed to train undergraduate women and minorities in collections-based research. The main goals of this program are to encourage undergraduates to pursue careers in the biological sciences and to prepare them for service in the name of science.

During the 1990s, we also received more than $4 million from NSF that has helped us create a host of new exhibits, including **Pacific** (1990), **Animal Kingdom** (1991), **Africa** (1993) and **Life Over Time** (1994). More recently, NSF provided $1.6 million toward the funding of **Underground Adventure**, a new permanent exhibit that explores the complex world of soil ecosystems. Not only do we rely on NSF support to create these exhibits, but also to design educational outreach programs to carry their scientific and cultural message to school children throughout the Chicago area.

In all, NSF has been an invaluable partner in our constant drive to understand the biological and human world. Moreover, I believe that this nation would not be the technological and economic powerhouse it is today if it were not for NSF's half century of service.

NSF, we thank you for all the years you have supported our programs and we look forward to celebrating your next milestone in 2050.

John McCarter

John W. McCarter Jr.
President & CEO

A Reminder For Members' Nights

Don't forget that tickets are required to attend Members' Nights, May 6 and May 7. Please mail in your reservation forms today. For more information, call 312.922.9410, ext.453.

Inside

INTHEFIELD

May/June 1999, Vol. 70, No. 3

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Robert Vosper

Design Consultants:
Hayward Blake & Company

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This issue's cover photograph is by Mari Lyn Salvador of a Kuna woman dressed in a traditional mola.

The Field Museum

The Field Museum salutes the people of Chicago for their long-standing, generous support of the Museum through the Chicago Park District.

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ph 312.922.9410
www.fmnh.org

Around Campus

Shedd Aquarium

Clyde Roper, a scientist at the Smithsonian Institution, recently completed an expedition to find and photograph the elusive giant squids that inhabit the mile-deep Kaikoura Canyon near New Zealand. During **Oceans Day** on June 8, 1999, at 7 p.m., Roper will reveal whether his search for these mysterious, 60-foot-long denizens of the deep ocean was successful. Roper's talk and video presentation will be followed by an informal reception. Admission is $12 for the general public; $10 for Shedd Aquarium members. Call 312.692.3333 for more information and to register.

Adler Planetarium

Celebrate the arrival of warm days and starry summer nights at **Summer Solstice Sunfest** on Saturday, June 19, 1999, from 11 a.m. to 3 p.m. During the day, visitors will have a chance to view the surface of the Sun through a telescope on the Adler's new Telescope Terrace. They also can partake in Sun-related demonstrations and attend discussions highlighting recent discoveries about the Sun in the Adler's Dynamic Universe Demonstration Theater. Other activities include craft-making in the new Solar System exhibit gallery and storytelling in the Milky Way Galaxy exhibit. Please call 312.322.0304 for more information.

Rediscovering Julius Moessel

Chicago and The Field Museum's Master Muralist

Above: "A Wholesale Vegetable Market," 1939 — one of the 18 murals by Julius Moessel that hang in the **Plants of the World** *exhibit on the second floor of The Field Museum. All of the murals in this series, titled "The Story of Food Plants," can be viewed on the Museum's Web site at <www.fmnh.org/candr/ecp/Moessel/moessel_home.htm>. In addition, most of Moessel's known German architectural works and some of his easel paintings are reproduced in Judith Breuer's book* Julius Mössel: Dekorations — und Kunstmaler *(Konrad Theiss Verlag, 1995).*

By Mark Alvey
Administrative Coordinator, Academic Affairs

There is a story waiting to be told in the **Plants of the World** exhibit on the second floor of the Museum. It is not a botanical story — although there are dozens of those there, too, from the search for a cure for AIDS to the ritual uses of hallucinogenic fungi. Rather, this tale is one of pigment and canvas, artistic passion and faded celebrity. And it is not recounted in the hall's display cases, but above them. The 18 murals that hang in the main east-west corridor of the plant hall represent the climax of a long-forgotten drama, marking the final chapter in the story of their painter, Julius Moessel — a German émigré who died broke and largely overlooked.

Dating from 1938 to 1940, Moessel's mural series, titled "The Story of Food Plants," illustrates humankind's use of plants as food, from early man as a hunter-gatherer to an urban produce market in 20th-century America. Supported by the Works Progress Administration (WPA) — a New Deal agency created to employ people on public-works projects during the Depression — the 7-foot-by-9-foot canvases are variously colorful and muted, and largely realistic, although many exhibit a certain playfulness. The head of the agency's Chicago office called the series "a high watermark in WPA art achievement" and the art critic at *The Chicago Tribune* hailed it as one of the "imperative 'not-to-be-missed' affairs, of which each season offers us a few." But "The Story of Food Plants" was the last major commission for Moessel, whom critics in the 1930s and 1940s regarded as one of Chicago's most important artists.

The Chicago years really constituted a second career for Moessel. Born in 1871 in Fürth, Germany, Moessel studied at the Munich Academy, established his own architectural decoration firm while still in his 20s and by the early 1900s had become one of Germany's most important and sought-after architectural painters. He decorated several theaters in collaboration with architect Max Littman, including the Württembergischen Court Theater in Stuttgart and the Schiller Theater in Berlin. His other commissions included the city hall at Leipzig, the Munich Stock Exchange, the Jury Room in Nuremberg's Central Justice Building (site of the war trials) and the Palazzo Borghese in Rome, as well as several churches, cafés and private homes.

As large-scale commissions began to dry up amid the economic decline of post-World War I Germany, Moessel decided to make a dramatic change. In 1926, he left home one morning as if to go to his office like any other day and boarded a ship bound for New York, sending his wife word of his intentions from the ship. Moessel, who later remarried in the United States, claimed to have immigrated to Chicago at the invitation of Julius Rosenwald, president of Sears, Roebuck and Co., to decorate the philanthropist's planned Museum of Science and Industry. The

PETER T. FURST

Above: "The Devil's Galaxy," circa 1940, oil on canvas, 4 feet by 3 feet, in a private collection in the United States. Although Moessel aligned himself with no "school" or movement, local art critics often described his more otherworldly works as surreal.

Rosenwald commission never came to pass, but Moessel remained in the United States, taking on decorative projects in Chicago and St. Louis before finally moving to Chicago in 1929. Moessel also may have decorated some buildings in Detroit in collaboration with industrial architect Albert Kahn, but the historical evidence on this is sketchy. Among Moessel's known architectural works from his early days in the United States are the Stop-and-Shop store on Washington and State in Chicago and the ceiling of the foyer of the Hotel Jefferson in St. Louis, both of which have been lost to demolition and remodeling, respectively.

By the time he settled in Chicago, Moessel had rebuilt his business and his fortune — only to see both wiped out in the stock market crash of 1929. In financial ruin and with the Depression all but eliminating the market for murals and architectural commissions, Moessel, now nearly 60, added easel painting to his repertoire to support himself. Despite having no experience and no training as an easel painter, Moessel was exhibiting both smaller and wall-sized canvases regularly in Chicago by 1932. If economic necessity prompted the shift from grand ceilings to smaller works, the move also marked an advance in the artist's style, which during the German years was very much in line with late 19th-century architectural decoration — intricate, ornate and often grotesque. His Chicago easel paintings suggest that Moessel, possibly freed from the constraints of collaboration with architects, gave his imagination free rein.

Perhaps due as much to his unique and eclectic artistic vision as to market imperatives, Moessel's smaller paintings were extremely diverse in subject and style. He became well known for decorative paintings of exotic birds and tropical animals, as well as hallucinatory religious paintings and nightmarish fantasies reminiscent of Hieronymous Bosch and Max Ernst. (He told friends in Chicago, perhaps with tongue in cheek, that he was the reincarnation of Bosch.) To pay the rent, he also executed comparatively staid landscapes à la Grant Wood. But these wide variations in style didn't seem to affect his standing in the Chicago art world. He exhibited his easel paintings, as well as his murals, at the Chicago Galleries Association, the Art Institute of Chicago and the All-Illinois Society of Fine Arts, and mounted many one-man shows at small galleries.

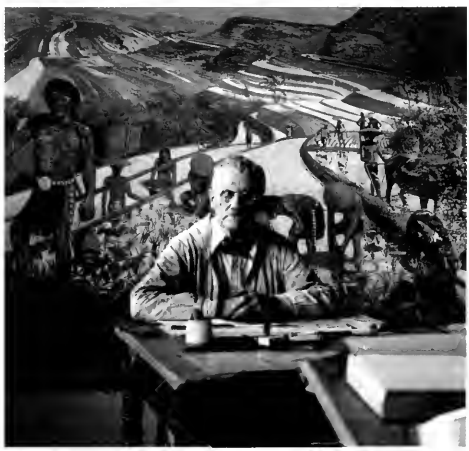
During the mid-1930s, the Chicago press frequently and effusively reviewed Moessel's work. Eleanor Jewett of the *Tribune* and Clarence Bulliet of the *Daily News* and *Art Digest* were Chicago's most powerful critics from the 1930s through the early 1950s. Although they were fierce opponents on most things artistic, both critics were nothing short of fans of Moessel for more than 20 years. In 1935, Bulliet placed Moessel "among the living masters of the world" and in a 1947 review declared that "Max Ernst and Salvador Dali might sit profitably at his feet for a few hours to learn the secret of the awe and wonder" that Moessel brought to his work. Likewise, by the mid-1930s, Jewett had declared Moessel a genius, "one of our outstanding painters" and the praise continued through the mid-1950s. Both critics also were in accord in repeatedly ranking Moessel as the city's most powerful muralist. In addition, Moessel's colleagues in the Chicago art world, such as Carl Hoeckner and Louis Grell, also respected him as an artist of great talent and accomplishment.

By virtue of his versatility and sheer perseverance, Moessel supported himself with his painting during the Depression, but he was dealt one more round of bad luck in the mid-1930s when he began to lose his eyesight. Whatever financial stability the artist had regained was shattered. Although surgery restored his vision, the medical expenses nearly wiped him out. The Field Museum commission, a large-scale project the likes of which Moessel had not seen in some time, must have come as a welcome proposal.

It is not clear exactly how Moessel, now 66, came by the commission, but from the Museum's perspective the decision must have been simple, given the artist's track record in Germany and his local reputation. The Museum envisioned the murals as an illustrative adjunct to the botany displays in what was then known as Hall 25, the Hall of Food Plants. The general thrust of the series was the various aspects of the economic and social dimensions of food plants showing, as the 1938 *Field Museum Annual Report* put it, "the primitive gathering, hoeing and planting, plowing, sowing, and other steps in development of crop production; processes connected with the preparation of staple vegetable foods such as threshing, milling and baking, sugar production and wine-making; and transportation, trade, and distribution."

Initially, the commission called for 13 murals, but the series grew to 18 in the ensuing years. How much the Museum paid Moessel is uncertain, although in an early letter to Bror Dahlgren, chief curator of botany and the project supervisor, the artist proposed to paint the 13 murals for $15,000, noting they "would of course cost in normal times $75–100,000." Whatever the final sum agreed upon, Moessel began painting in April 1938. By the fall of the following year he had completed 14 murals, spending an average of 34 days on each.

Given the scientific nature of the project, Moessel checked his surrealistic impulses and pursued a more realistic style. At pains for accuracy — no doubt at Dahlgren's behest — the artist conducted intensive research on each of his subjects, studying artifacts from the anthropology collections and consulting ethnographic photos. In such a collaboration of art and science, however, some tension is inevitable. In this case, the friction arose in 1938 during the painting of one of the very first murals "Mexican Market Scene." For reasons now forgotten, Moessel became rankled with the Museum powers and illustrated his contempt by painting a dog urinating on a fiber basket in the center of the painting. Museum staff reportedly raised eyebrows but said nothing, and in a day or two, when his ire had subsided, Moessel lowered the dog's leg. The small file of correspondence in the Museum archives hints at the nature of some of the disagree-



THE FIELD MUSEUM / 88208A

Above: Moessel at work in front of the mural "Rice Growing, Philippines," 1938. One of Moessel's friends describes the artist as a "little fellow" who was as "sharp as could be" and who loved to tell stories of playing skat with composer Richard Strauss.

ments between the artist and botanist. In one letter to Dahlgren, for example, Moessel declares, "Regarding the corn picture I have no feeling for any change. I think it is good." But the major bone of contention, and the one that best illustrates the artist's prickliness, was financial. In February 1940, with four murals to go, Moessel stopped working.

"Sure I like to finish my work," he wrote to Dahlgren, "but I would never work as an hourly paid worker. The Museum has to realize finally too, that I am not an eternal W.P.A. worker. . . . But I could be induced to work for a reasonable compensation, if the Museum begins right now with the most possible propaganda for my work."

After a four-month impasse, Museum Director Clifford Gregg resolved the dispute by agreeing to pay Moessel $500 to finish the four murals, which the artist did in July 1940. When the Museum unveiled them in September, the *Tribune's* Jewett, as noted earlier, termed the series a "must" show, a "not-to-be missed" event and went on to call Moessel's Field Museum commission "a just acknowledgement of his merit." Bulliet's *Daily News* review termed the murals "far and away his most important public work since he came to America."

"The Story of Food Plants" was Moessel's last major commission; he essentially stopped executing large-scale works by the mid-1940s. Upon completion of the murals, Moessel wrote to Dahlgren of his intention to travel to New York "looking for business" and asked the botanist for a reference at the American Museum. It is doubtful that the trip yielded any work. He also had sent feelers back to Germany in the late 1930s, but no offers materialized. In the early 1940s, he tried to convince Dahlgren to commission a new mural project or to purchase some of his existing murals, but none of these queries ever came to fruition. Moessel continued to paint smaller canvases and continued to exhibit his work as late as 1955 — to the enduring praise of Bulliet and Jewett. But as new trends like abstract expressionism eclipsed his eclectic style, Moessel saw his market and his fortunes decline. Yet, his temperament never faltered: He railed in interviews against modernism and the "neurasthenics" and "dilettantes" who supported it, and penned essays with such titles as "Concerning the Decay of Art."

Moessel's last years were difficult. He struggled financially and, as sales dwindled, painted increasingly for himself and his friends, often dashing off paintings as gifts. He died on Aug. 13, 1957, at age 85. A few days later, Moessel's widow scattered his ashes over the lagoon in Jackson Park, near their Chicago home.

Moessel is still remembered fondly by friends from the Chicago days, although he is largely unknown to critics and historians of Chicago art. However, history may eventually give the artist his due. In the past few years, historians of German art and architecture have begun to rediscover Moessel's architectural work, much of which was destroyed during World War II.

THE FIELD MUSEUM #79702C

Above: "Indians Gathering Pods of the Cow-Lily, Klamath Lake, Oregon," 1939 — one of the murals in "The Story of Food Plants" series. Moessel also painted two maps for the series, one of which shows the ancient trade routes of the world.

As buildings have been restored, his frescoes and murals have been rediscovered and preserved, sparking new research and a new appreciation of his work. German art historian Judith Breuer has documented 47 of Moessel's architectural projects in Europe. She also has investigated Moessel's presumed work with two German architects, which, when documented, would put the number a good deal higher.

Moessel's output during the Chicago years can only be imagined. The artist estimated in 1947 that he had something on the order of 1,000 yards of completed paintings in his studio, which at the time of his death was stacked to the ceiling with finished pieces. Today, his paintings hang in the art museum at Southern Utah University, Lew Wallace High School in Gary, Ind., the Union League Club of Chicago, Wabash College in Crawfordsville, Ind., and the Illinois State Museum, as well as in private collections in the United States and Germany — and perhaps in countless homes (and attics?) around Chicago.

However, The Field Museum murals are the only works by Moessel on public display in his adopted hometown. A "must" event in the Chicago art scene of 1940, the murals today hang in quiet dignity in the **Plants of the World** exhibit, casting their shadows over the scientific displays of coffee, honeysuckle, witch hazel, waterlilies and the like. But until they are experienced and enjoyed directly by visitors, their whole story — the story of brush strokes on canvas, toil and temperament — can never be fully told. So the next time you are wandering through this hall, pause a while to look up and recall an important moment in Chicago and The Field Museum's artistic history, and, if only for a few minutes, rescue Julius Moessel from the obscurity of time. **ITF**

Artifacts Regain Their Voices After Years of Silence

MARK WITHAM /113770C

Left: A mbira from West Africa — one of the instruments visitors can play using the exhibit's computer workstations.

By Robert Vosper

In most cultures, musical instruments were the heartbeat of the community, providing its members with entertainment, a rhythm to work by or a tool for communicating over long distances. Consequently, they also were prized items for anthropologists studying and documenting the cultures of the world at the turn of the century. But as soon as the anthropologists collected them, the objects were transformed into artifacts —never to be played again or touched by the hand of a musician. Essentially, they were sentenced to a life of silence.

But thanks to 20th-century technology and the ingenuity of a group of exhibit developers and musicians, 50 musical artifacts from the Museum's collections have regained their former voices.

These objects, which include a bass drum from Indonesia and a clay flute from Nicaragua, will be displayed in "Sounds from the Vaults," a temporary exhibit opening Sept. 4, 1999, that allows visitors to see, hear and play these artifacts through the magic of digital technology.

After walking through an introduction that explains how the Museum collects and cares for artifacts, visitors will enter a series of rooms containing musical objects housed behind glass display cases. Below these cases are touch pads that when activated, reveal the sound of the instrument on display. If the touch pad is held down, the sound evolves into a rhythmic pattern. And, if someone else is holding down a different touch pad, the two rhythms synchronize, filling the exhibit space with "Vault Grooves," an original score composed by Bruce Odland, a sound installation artist who came up with the concept for the exhibit.

"The idea is that as more people use the touch pads, the sound inside the room becomes less chaotic and a composition evolves," explained Michelle Miller, the lead exhibit developer. "So, every time you go through the exhibit, you will have a different experience because you never know which touch pads are going to be played."

In addition, visitors can compose their own music by playing virtual replicas of the artifacts on computer workstations located around the sides of the exhibit. For example, they can play a mbira from West Africa by touching the metal keys of the instrument on the screens of the workstations. At these workstations, visitors also can delve into the ethnographic history of the artifacts by listening to interviews with curators and local musicians, as well as by viewing archival photographs and video clips from historic Field Museum expeditions. Some of this ethnographic material, as well as samples of the virtual instruments, will be accessible in May on the Web at <www.fmnh.org/sounds>.

"What we have tried to do with this exhibit is combine the story of how these artifacts came to the Museum with the ability to play them," said Alaka Wali, an anthropologist at the Museum and the content specialist of the exhibit. "This way we have broadened the context through which visitors can understand artifacts and cultures."

To create this exhibit, Odland, who is the cofounder of 30/70 Productions in New York, and Miller enlisted the expertise of videographers, researchers, computer programmers, set designers and local musicians like Leddie Garcia of the Chicago-based band Poi Dog Pondering. For nearly a year, the team worked in a makeshift recording studio at the Museum, choosing instruments, learning how to play them and recording their sounds.

Although the team had more than 6,000 objects to pick from, most could not be played, either because they were too fragile or because curators considered it inappropriate to exhibit them. The most important test, however, came later.

"We played a drum from Tunisia that was 100 years old that sprang to life after we dusted if off," recalled Odland. "Some of them seemed to be waiting to be played, while others needed a little bit of coaxing. A few, however, had lost their voices forever."

The exhibit will be on display through March 5, 2000; however, Museum administrators are still deciding whether to keep it as a permanent installation or lend it out to other institutions. ITF

Museum Offers Visitors a Close Encounter With Extraterrestrial Diamonds

By Robert Vosper

In June, the Museum will place on exhibit more than a quadrillion diamonds that Meenakshi Wadhwa, assistant curator of meteoritics, has been storing in a brown cardboard box on a bookshelf in her office for the past few months.

Now, you would think that while these "gems" were in her possession, she would have hired an armed guard to stand watch outside her door or at least installed a state-of-the-art alarm system in her office. But the only thing that has stopped a jewelry thief from making off with her loot has been a standard door lock — which doesn't seem to have worried Wadhwa.

"These diamonds are a far cry from what one would stick on a ring," she says with a chuckle. "They are thousands of times smaller than an amoeba."

Known as presolar diamonds, these crystalline forms of carbon are actually relics from ancient stars that hitched a ride to Earth aboard a carbonaceous chondrite — a class of meteorite that has remained relatively unchanged since the birth of the solar system. And although these diamonds may not have any commercial value to the folks at De Beers, they are priceless in terms of their scientific value, especially to scientists who spend their days staring into space.

"These tiny diamonds are among the oldest minerals that we know about — older than our solar system," explains Wadhwa.

Billions of years or so before the birth of our solar system and the Sun, mineral grains like graphite, silicon carbide and diamonds began forming in the gaseous envelopes that encircled ancient stars. When these stars reached the end of their life cycles they exploded, sending the grains shooting through the darkness of interstellar space. Over time, some of them became part of the swirling cloud of gas and dust that ultimately formed our solar system. Eventually, these grains accreted into the earliest formed solid objects such as carbonaceous chondrites — some of which have fallen to Earth over the course of its 4.5-billion-year history.

"These minerals are our only link to the history of the universe beyond the beginning of our solar system," says Wadhwa. "Astrophysicists can theorize about how the universe and stars formed and they can make observations through the Hubble telescope. But these mineral grains are the only hands-on physical samples that tell us something about what existed before the beginnings of our solar system."

Specifically, these mineral grains are helping researchers unlock the mysteries of how elements, such as oxygen, carbon and silicon, are synthesized in the nuclear furnaces that burnt within the core of ancient stars. And since all objects on Earth, both living and nonliving, eventually developed from these elements, presolar mineral grains like diamonds are offering scientists clues as to the origins of *all* matter in the Earth, the solar system and by extension much of our universe.

To get these presolar diamonds out of a sample of carbonaceous chondrite for the exhibit, Wadhwa enlisted the help of Roy Lewis, a senior scientist at the University of Chicago, who extracted the diamonds in the course of his ongoing studies of meteorites. For this experiment, he used a 1,000-gram sample of the Allende carbonaceous chondrite, a meteorite that fell to Earth as thousands of fragments near the rural town of Pueblito de Allende in northern Mexico on Feb. 8, 1969.

Over the course of three months, Lewis slowly dissolved the sample in progressively stronger acids until all that was left were the diamonds. He then sealed a portion of them in a two-inch glass vial filled with slightly acidic water, which forces the diamonds into a visible, sand-like, white floc at the bottom of the vial.

The Museum will place this vial next to a sample of Allende from the geology department's collections, which is currently on display in the meteorite exhibit in the Grainger Gallery on the second floor. When this occurs, the Museum will be one of only three places in the world where the public can view presolar diamonds. ITF

JOHN WENSTEN /GEO86193.2C

Above: The dark shaded area at the bottom of this vial, which the Museum will exhibit in June, is the cluster of more than a quadrillion diamonds.

The Field Museum Presents: Wilma Mankiller

Tuesday, July 13, 1999, at 7 p.m.
$10 members ($15 nonmembers; $12 students)
Please call 312.922.9410, ext. 453, for more information and to register.

For the first 10 years of her life, Wilma Mankiller lived in the tranquility of rural Oklahoma on land settled by her Cherokee ancestors at the conclusion of the "Trail of Tears" in 1839. During this infamous chapter in U.S. history, the federal government rounded up Cherokees from the South and marched them 1,000 miles to Indian Territory (what is now the state of Oklahoma). En route, more than 4,000 died.

In 1957, Mankiller experienced her own version of the "Trail of Tears" when the Bureau of Indian Affairs relocated her family to San Francisco in an attempt, as Mankiller explains, to break up tribal communities.

It didn't work. Instead, this move ignited Mankiller's interest in Cherokee history and culture and laid the foundation that produced one of the most important and influential figures in contemporary Native American politics.

During the years she lived in San Francisco, Mankiller participated in a demonstration by Native American students on Alcatraz Island, cofounded an alternative school for Native American children and studied treaty rights. In 1977, she returned to her ancestral home in Oklahoma to help the Cherokee people.

After spearheading a number of successful community projects, she ran and won the position of deputy chief of the Cherokee Nation in 1983. Two years after Mankiller won that election, Cherokee Chief Ross Swimmer resigned and Mankiller assumed the position of chief, becoming the first woman to lead a major Native American tribe. She was then elected to chief in 1987 and reelected in 1991 with an impressive 83 percent of the vote.

During her terms as deputy chief and principal chief, Mankiller dramatically increased the revenue, services and stature of the Cherokee Nation. She also developed worldwide prominence as a speaker, not only for her people, but for countless women's rights and minority organizations.

Suffering from a series of chronic health problems, Mankiller announced in 1994 that she would not run for reelection in 1995. Today, she lives with her husband, Charlie Soap, in the Cherokee Nation and continues to serve her community and to fight to protect the rights of all Native Americans. **ITF**

PHOTO COURTESY OF DAVID LAVIN AGENCY INC

Q&A With Wilma Mankiller

I had the opportunity to talk to Mankiller about a variety of contemporary Native American issues in March. The following are highlights from that conversation — Editor

In the Field: With all the suffering Cherokees have endured, how have they kept their culture alive and intact?

Wilma Mankiller: Well, I will tell you it is just a wonderful thing. But perhaps the better way to look at it is that we have managed to stay alive as a tribe because we have kept in touch with our culture. Today, we are a very stratified people — we are stratified economically, socially and culturally. For instance, you might see a Cherokee person with blond hair and blue eyes as a full member of the Cherokee nation or someone who is full Cherokee and speaks the Cherokee language. And so, there is a great deal of cultural stratification. But, no matter what the person's actual degree of Cherokee blood is, they are all very, very proud of their Cherokee history, ancestry and heritage. That always has been interesting to me because our tribe is relatively assimilated, though we still have the ceremonies we have had since the beginning of time and there are still thousands of people who speak the Cherokee language. More importantly, there are still some of the old values that we have been able to maintain. It's a miracle, really. When I attend ceremonial dances I often think, "My God, it is practically an act of revolution that these people are still participating in these ceremonies." After all, the U.S. government for years has tried to make sure these ceremonies were not continued and that we didn't remain a culturally distinct group of people. It is a fairly awe-inspiring situation.

ITF: What are some of the important issues facing the Cherokee people today and Native Americans in general?

WM: You know, you would get a different opinion from every different person you talk to about what the major issues are. The major issues would depend a lot on where

one lives, whether one lives on a reservation or in a city, or whether someone is elderly or very young. But, I think the common concern of many people — no matter whether they are from a very rural community or they are living in an urban area — is how to retain a sense of ourselves as tribal people and still interact with the world around us.

ITF: Can Native Americans ever regain some of the ground they have lost over the past century and a half?

WM: I think so. You know you're talking to an optimist and so I try to have a reality check sometimes, but my sense of things is that people are, as Alice Walker would say, "looking back toward the future." By that I mean they are looking for indigenous solutions to contemporary problems and for indigenous wisdom to deal with issues that people face today. So, I tend to think people can gain lost ground.

ITF: What is missing from museum exhibits about Native American culture?

WM: The biggest one is a lack of attention to issues of governance. Most museum exhibits educate the public about life ways or a particular cultural attribute of a Native American community. But there are very few that talk about the actual governance and systems for tribes, as well as advances in agriculture and the sciences. And because of the way science was practiced in Native American society it was different than what American academic institutions viewed as science. It would be very interesting to have some of that in museum exhibits. The other thing is that there needs to be a little bit about contemporary tribal people. I love some of the images I've seen in a couple of museums that show Native American people living in two worlds where they are participating one day in a traditional tribal ceremony and the next day sitting at a computer and connecting with people in Europe on the Internet — a kind of real display of what is actually going on in the lives of contemporary Native Americans. But what I least like is the snapshot of us frozen in time 300 years ago.

ITF: In your book *Mankiller: A Chief and Her People* (St. Martin's Press) you don't paint a very favorable picture of the Bureau of Indian Affairs. Have they changed the way they conduct business?

WM: No, if possible it has gotten worse. There is a huge situation going on right now that you may have heard about in the news regarding the mismanagement of the trust fund. So, that is going on and most of the experience I have had with them is that basically they are — I don't know how to explain it — they are kind of like an anachronism. And, there was a time when they may have had a purpose. I am not quite so sure. But, the world has changed, tribal people have changed and tribal governments have changed. And, sometimes it seems to me that the Bureau has not changed accordingly. In fact, the same people seem to be working there that were working there a 100 years ago — they just changed clothes or something. So, I am not an advocate of abolishing the Bureau of Indian Affairs, but rather streamlining it and making it more responsive to contemporary tribal people.

ITF: Have you seen any change in recent years in the attitude of "white" Americans toward Native Americans and the plight of Native Americans?

WM: Well, there is one change for sure: They are not trying to wipe us off the face of the Earth anymore. Obviously, there is that change. Nor are they trying to isolate us from the rest of society by removing us to distant areas far from our homelands. So, there certainly has been that change over the last century and half or so. But, I think in contemporary times, the shift I've seen is a more new-age romanticism and interest in what people perceive to be Native American. Whether that is widespread, I don't know. But certainly I have seen more of that. It is cool to be Cherokee right now.

ITF: Are there things Native Americans and indigenous cultures in South America can learn from each other?

WM: Yeah, it is so terrible what is going on in South America. It is so terrible. People are being exploited terribly by large American corporations, particularly the oil industry. Many of the tribal people are facing a lot of challenges as the world around them is changing. What is most interesting, I think, is the body of knowledge that tribal communities and indigenous cultures in Central and South America have that native people in the United States could learn from. There is so much that we could learn from the indigenous cultures there and most people think it is the other way, "Oh, you guys should go down and help the people in Central and South America." But actually, they have a tremendous body of knowledge there that I think could be helpful to native people here. There could be a good mutual exchange there, and we are seeing more and more of that.

ITF: What is going to be the topic of your lecture at The Field Museum?

WM: I think I'm just going to call it "Contemporary Native American Issues."

JOHN WEINSTEIN /A113771C

Below: The stars on a Cherokee Nation flag represent the seven original clans of the Cherokee people. Some Cherokee Nation flags also have a black star in the right corner to honor those that died during the "Trail of Tears."

Inside

DON COLE/UCLA FOWLER MUSEUM OF CULTURAL HISTORY

THE ART OF BEING KUNA:
LAYERS OF MEANING AMONG THE KUNA OF PANAMA

MARI LYN SALVADOR

Above: Kuna women express their identity through their brightly colored appliqué blouses.

Top Right: A Cristo mola (Christ Mola). The phrase "pap machi purkwisa" in the middle of the blouse means "the Son of God died."

On display until July 25, 1999, the exhibit "The Art of Being Kuna: Layers of Meaning Among the Kuna of Panama" unveils the culture of the Kuna people through 300 works of their art. Although the exhibit includes a full range of Kuna art, including gold jewelry, wooden sculptures and musical instruments, the main focus of the exhibit are molas — the colorful, richly decorated appliqué blouses made by the women of this indigenous community.

The Kuna live in Kuna Yala, a semiautonomous region that includes the San Blas islands and the nearby mainland rain forest of Panama. Most of the Kuna live on about 35 of the 300 islands in the 140-mile-long San Blas archipelago, which is a few miles offshore from the Atlantic coast of Panama. To the Kuna, each part of the natural world is a gift from the Great Father and Great Mother. Through visual arts, the Kuna not only express their appreciation for this gift, but their responsibility to protect it.

Despite its relatively recent development in the late 19th century, mola-making is considered by the Kuna to be an integral part of their culture and important to their ethnic identity. Therefore, molas, which often reflect elements of the environment as well as facets of daily life, are not only visually arresting works of art, but serve as a lens through which much of the culture is revealed. For example, one mola on exhibit highlights a healing ceremony and the importance of chanting to communicate with and guide the spirit world.

However, among those who design molas, anything is a potential source for pictorial interpretation. In the 1920s, for example, Kuna women made abstract and bold designs based on foreign objects outsiders might consider uninspiring — the telephone, company logos and trade goods. Kuna women also draw their inspiration for molas from things they hear of during conversations about outside life — spaceships and astronauts, or events such as boxing matches. One humorous mola, for instance, features a realistic illustration of a bra on one side and matching panties on the other. In addition, biblical motifs became popular in the 1960s, as did comic-book characters.

Also included in the exhibit are Kuna art and artifacts from The Field Museum's collections, which contain some of the earliest Kuna material found in the world, as well as field recordings of Kuna music, translations of songs and oral histories and photographic murals.

"The Art of Being Kuna," which is free with general Museum admission, is organized and produced by the UCLA Fowler Museum of Cultural History, Los Angeles, with support from the National Endowment for the Humanities.

SUE:
THE INSIDE STORY

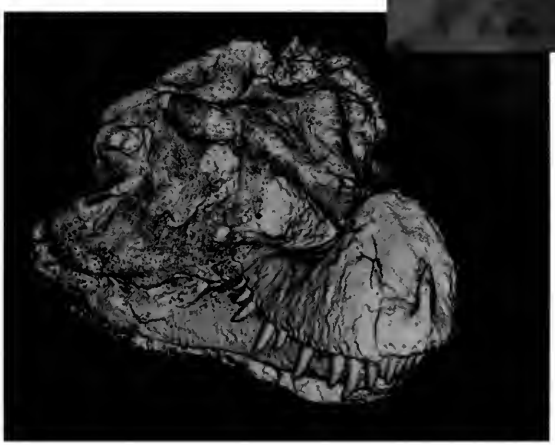
In "Sue: The Inside Story" — which is on display from May 29, 1999, through Jan. 2, 2000 — visitors can take a look inside the skull of Sue, the largest and most complete *T. rex* ever found.

The exhibit, which debuts in conjunction with the publication of an article about Sue in the June issue of *National Geographic*, profiles the recent discoveries made by Museum researchers who have been studying Sue's 2,000-pound skull for the past year. The exhibit includes photographs from the *National Geographic* article and two one-third-scale models of Sue's 5-foot-long skull, one of which shows what Sue's head may have looked like when she was alive. It also includes images made from recent computerized tomography (CT) scans that have allowed scientists to see inside the skull of a *T. rex* in ways never before possible.

The scan, which took place in the fall of 1998 at Boeing's Rocketdyne Labs in California, produced some 750 X-ray images, each representing an extremely thin "slice" of Sue's head. Museum researchers then used a computer to stack these pictures like slices in a loaf of bread to create a 3-D image of Sue's 67-million-year-old skull. These scans are the first ever performed on a *T. rex* skull and are yielding significant insight into the animal's physiology and behavior. Some of the discoveries made by Museum scientists from these images will be highlighted in the new exhibit.

Although the entire skull will not be on display (Museum researchers are still preparing it), the exhibit will include several of Sue's fossilized bones. The Field Museum plans to unveil Sue's 45-foot-long mounted skeleton in May 2000.

GEO86108.02C /PHOTO COURTESY OF SOTHEBY'S



Left: A CT scan of Sue's partially prepared skull (above).

THE FIELD MUSEUM /11303

WITH PATIENCE AND GOOD WILL:
THE ART OF THE ARAPAHO

Between 1902 and 1905, several Field Museum anthropologists visited Arapaho Indian reservations in Oklahoma and Wyoming and collected almost 1,000 cultural objects, ranging from everyday utensils to ceremonial clothing. In 1993, the Northern Arapaho living in Wind River, Wyo., asked the Museum to return an artifact essential to one of their sacred ceremonies. While negotiating the repatriation of this object, The Field Museum rekindled its relationship with this Native American tribe. Soon after, Jonathan Haas, MacArthur Curator of North American Anthropology, obtained a grant to survey the collections for other sacred Native American artifacts. As part of this effort, Haas invited Bob Spoonhunter — a member of the Northern Arapaho well versed in the tribe's traditions — to examine and inventory the Museum's Arapaho collection. During the three months Spoonhunter was in Chicago, he also had the Museum take 32 studio photographs of some of the highlights of this collection.

In 1997, these photographs went on display as part of a new cultural exhibit at the Northern Arapaho reservation in Wyoming. Twenty-five of these photographs — along with some of the original artifacts the Museum collected at the turn of the century — will be on display until Aug. 8, 1999, in the exhibit "With Patience and Good Will: The Art of the Arapaho."

Left: A netted-wheel hair ornament from the Northern Arapaho in Wind River, Wyo.

Calendar of Events

JOHN WEINSTEIN/GN9B442AC

Above: A herd of African elephants (Loxodonta africana) *traverses the Kanderi Swamp in Tsavo National Park, Kenya. At one point, elephants inhabited most of Africa. Because of human interference, however, they now are found only in fragmented populations south of the Sahara and are listed as an endangered species by the International Union for Conservation. Through her work, Cynthia Moss, who will lecture at the Museum on May 9, 1999, has increased public awareness of the plight of these animals.*

Family Performance:
Duke Ellington — A Historical and Musical Retrospective

5/2, Sunday, 2 p.m.

Considered the greatest composer in the history of jazz music and one of the finest musicians of the 20th century, Duke Ellington wrote more than 1,500 compositions, his first, "Soda Fountain Rag," at the age of 14. To celebrate the 100th anniversary of Ellington's birth, musicians from Chicago-based Jazz Unites Inc. will interpret Ellington's work in a musical performance designed for adults and children, grades 1 and up. $8 per person. Please call 312.322.8854 for more information or to register.

Pacific Island Heritage Month Celebration

5/8, Saturday, 11 a.m. – 3 p.m.
5/9, Sunday, 11 a.m. – 3 p.m.

Join The Field Museum and Kupà a-Pacific Island Resources, a Chicago-based nonprofit organization, as they celebrate Asian and Pacific Islanders' Month by highlighting the traditions and values of Pacific Island culture through music, dance and demonstrations. During this celebration, which is free with general Museum admission, families can participate in games relating to Pacific Island culture and can try their hand at hula dancing. The Na Kupuna Ukelele Club will perform a variety of songs and traditional folk tunes throughout the day, while the Museum will offer a multimedia presentation of Polynesian "Mele and Hula" (song and dance) at 2 p.m. Please call 312.922.9410, ext. 497, for more information.

Lecture and Book Signing
Throwim Way Leg: Tree-Kangaroos, Possums and Penis Gourds — On the Track of Unknown Mammals in Wildest New Guinea

5/8, Saturday, 3 p.m.

Throwim Way Leg by Tim Flannery recounts the author's journeys while conducting zoological studies for the past 20 years in New Guinea, the second largest island on Earth and one of the world's last biological frontiers. During his research on the island, Flannery discovered more than 20 species of mammals previously unknown to science, including a black-and-white tree kangaroo that looks like a small panda, and the world's largest cave-dwelling bat, previously thought extinct. *Kirkus Reviews* recently referred to Flannery's book as "natural history in the raw." This lecture is free with Museum admission. Please call 312.322.8854 for more information.

An Evening With Cynthia Moss: The Social Organization of African Elephants

5/9, Sunday, 6 p.m.

Thirty years ago, Cynthia Moss, now a researcher at the African Wildlife Foundation, left a promising journalism career to document the complex social lives of elephant families. Her studies of these animals in their natural habitat, which are often compared to Jane Goodall's revolutionary work with chimpanzees, are the most comprehensive ever recorded and have led to a worldwide effort to protect African elephants. In her presentation — which is sponsored by the Disney Wildlife Conservation Fund — Moss will share her experiences observing the intricate social interactions and family dynamics of elephant families. $12 ($10 students; $8 members). Please call 312.322.8854 for more information or to register.

Field Nights

The Field Museum will remain open until 8 p.m. on Thursday evenings from June 17 to August 26 in celebration of **Downtown Thursday Night**, *a joint project of the Chicago Department of Cultural Affairs and the Chicagoland Chamber of Commerce. Admission during "Field Nights" is free to members and at a reduced rate for nonmembers.*

JOHN WEINSTEIN /GN88744.47C

Above: Throughout the summer, Museum Campus Chicago will have five booths set up throughout the campus where visitors can obtain information on everything from campus trolley schedules to a list of local theaters. In addition, they will be organizing a lake front Museum bike day on May 23 and architectural tours on selected Saturdays and Thursdays from June to August.

Chicago National Science Olympiad Tournament

5/14, Friday, 9:45 a.m. – 4:45 p.m.

The Field Museum — together with the University of Chicago, the Adler, Shedd and the Museum of Science and Industry — will host the National Science Olympiad Tournament, an annual competition starring 1,700 of the country's top middle- and high-school science students. Museum visitors are invited to observe these students compete in a variety of events, ranging from bridge building to dinosaur fossil identification. More information about this free event is available on the Web at <www.nso99.uchicago.edu>. If you would like to volunteer to help with the Olympiad, please visit the Web site or call 773.834.3008.

Lake Front Museum Bike Day

5/23, Sunday, 11 a.m. – 4 p.m.

Ride your bicycle to the Museum Campus (Field, Adler, Shedd) and the Museum of Science and Industry (57th Street at Lake Shore Drive) and receive free admission to any one of these institutions when you present your bike helmet at a Campus Welcome Station. Throughout the day, Museum Campus Chicago will be offering a bike valet, a bike-safety check, refreshments and a chance to win free bike gear. The Welcome Stations are provided courtesy of Museum Campus Chicago and the Museum of Science and Industry. To register for this event or for more information, please call 312.409.9696.

Sue in the Spotlight!

5/29, Saturday to 5/31, Monday
11 a.m. – 3 p.m.

During this weekend celebration of the exhibit "Sue: The Inside Story," you can compare yourself to the size of a *T. rex*, trade in your old dinosaur paraphernalia and watch Green Light Performing Company's performance of "The Paleontologist Tells All" (Saturday and Sunday at noon and 2 p.m.) On Sunday from noon to 2:30 p.m, you also can meet Susan Hendrickson, the woman who discovered the *T. rex* named Sue. During her appearance, Hendrickson will talk to visitors one-on-one about her discovery and autograph photographs (available for a nominal charge). Festival activities are free with general Museum admission. For more information, call 312.322.8854.

Right: Susan Hendrickson poses with the right foot of Sue, the largest and most complete T. rex *ever unearthed. Hendrickson stumbled on the fossilized remains of Sue while conducting fieldwork in 1990 near Faith, S.D.*

Sue: The Inside Story

5/30, Sunday, 3 p.m.

Hear Field Museum research associate Chris Brochu discuss what his studies of Sue's fossilized bones have revealed about the *T. rex*. In addition, he will give participants a sneak preview of some of the insights he and his colleagues have gleaned about dinosaur behavior and physiology from a recent CT scan of Sue's skull (all of which will be covered in detail in the June issue of *National Geographic).* Photographs autographed by Susan Hendrickson and Brochu will be included as part of this lecture. $12 ($8 students/educators; $6 members). Please call 312.322.8854 for more information or to register.

Lecture and Book Signing: North American Indian Jewelry and Adornment

6/1, Tuesday, 6:30 p.m.

Author Lois Sherr Dubin will present a slide-illustrated lecture based on her new book that traces the history of Native American adornment styles across regional and cultural boundaries. Two Native American artists will join the author and speak about their work. In addition, copies of Dubin's book will be available for purchase and signing after the lecture. $12 ($10 members). Please call 312.322.8854 for more information or to register.

JOHN WEINSTEIN /GN89147.1C

Underground Adventure: The Exhibit

MARK WIDHALM/GN89201 13C

Above: One of the many robotic creatures visitors will see in the ***Underground Adventure*** *exhibit is this wolf spider, which is feeding on a grub in its burrow.*

In the new permanent exhibit **Underground Adventure,** visitors can dig into the living world of soil and learn about its connection to the environment through a variety of hands-on activities and displays.

Years in the making, at a cost of $12 million, **Underground Adventure** is a 15,000-square-foot total immersion environment in which visitors will encounter an underground soil ecosystem 100 times its normal size. After walking through a light chamber that makes you feel like you have been reduced to the size of an ant, visitors will enter a world of dark, underground tunnels and burrows inhabited by strange critters like predatory mites, June beetle larvae, springtails, pseudoscorpions and nematode worms. Here, among the roots and worm holes, they also will come face-to-face with a number of realistic-looking robotic soil creatures, including a centipede, a mole cricket, a colony of ants and a wolf spider sucking the insides out of a grub.

At the conclusion of the exhibit, visitors can then partake in a number of scientific activities that reveal the importance of soil organisms to the food cycle and the role soil plays in preserving the purity of air and water. For example, you can view a host of insects like cicadas, mound-building ants and snowbugs under microscopes and can access interactive computer stations that challenge users to find ways to save a prairie, manage a farm and make land-use decisions to meet the needs of a growing metropolitan area. In the process, you will discover not only what soil is, but why it matters.

"Every year we lose thousands of tons of soil in Illinois through erosion; thousands more are covered by asphalt and construction for urban sprawl," explains Gregory Mueller, chair of the Museum's botany department. "And once it's gone, it's gone for at least 10,000 years. We hope **Underground Adventure** will help people see not only the importance of soil, but how fragile and nonrenewable it is, so they'll leave here thinking in new ways about land use and other conservation issues."

Exhibit Donors

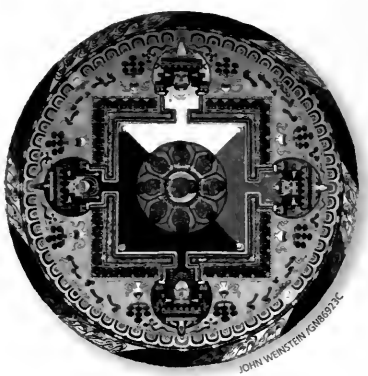
Underground Adventure is made possible by Monsanto — lead sponsor; The ConAgra Foundation; the National Science Foundation; and The Fort James Foundation. Other donors include the Chicago Park District, The Pfizer Foundation Inc., Abbott Laboratories, Prince Charitable Trusts, The ServiceMaster Company, Marion S. Searle/The Searle Family Trust and the Chicago Board of Trade Charitable Foundation, with additional funding from the Shell Oil Company Foundation, USX Foundation and anonymous donors.

The Buddha's Art of Healing: Opening Weekend Activities

Saturday, June 26 and Sunday, June 27
10 a.m. – 2 p.m.

To celebrate the opening of "The Buddha's Art of Healing" exhibit, the Museum has planned a weekend of activities for all ages relating to Tibetan culture. For example, visitors can watch as a Tibetan monk creates a beautiful and intricate sand mandala, a sacred illustration made with colored sand. Made in Tibetan monasteries, sand mandalas are thought to bring balance, peace and health to the yearly cycle. Opening weekend programs and activities are free with general Museum admission. Please call 312.322.8854 for more information.

"The Buddha's Art of Healing," which opens June 26, 1999, and continues through Sept. 12, 1999, highlights 40 20th-century paintings copied from 17th-century originals that illustrate an ancient Tibetan medical text. Some scholars consider these paintings to be one of the greatest surviving treasures of Tibetan civilization.



JOHN WEINSTEIN/GN88913C

Above: Sand mandalas symbolize the universe, totality or wholeness in the Buddhist faith.

JOHN WEINSTEIN /GN89202.09C

Above: Throughout the year, the Museum will be sending this Soil Adventure Mobile out to schools, libraries and park districts in the Chicago region. Inside the truck are various activity carts that children can use to learn about soil classification, erosion and biodiversity.

Underground Adventure: Activities for Everyone

During the months of May and June, Museum visitors can delve into the relatively unexplored world of soil by participating in a variety of educational programs and activities that complement **Underground Adventure**, the Museum's new permanent exhibit. Please call 312.322.8854 for more information or to register.

Family Activity Days
Friday and Saturday, May 14 and May 15
11 a.m. – 3 p.m.
Make a bug chain out of paper, design a 3-D insect or watch as Green Light Performing Company demonstrates how insects and other organisms move around in the soil. "Family Activity Days" are free with general Museum admission.

Mushroom Madness
Saturday, May 15, 9 a.m. – 3 p.m.
Spend the day with Museum mycologist Gregory Mueller searching for edible fungi and touring a Whole Foods market to learn about the biology of mushrooms and their cultural uses. Preregistration is required. $60 ($50 members — price includes lunch and transportation).

What's so Great About Dirt?
Friday, June 11, 6 – 8 p.m.
Learn about the animals and plants that live in soil as Gregory Mueller — associate curator of mycology and scientific content specialist on the **Underground Adventure** exhibit — leads a family expedition under the Earth. For adults and children, grades 3 and up. Preregistration is required. $10 per participant ($8 members).

As the Worm Turns
Saturday, June 12, 1 – 3 p.m.
During this family workshop, learn how worms move, what they eat, where they live and how they adapt to their surroundings. For adults and children, grades 1 to 3. Preregistration is required.
$10 per participant ($8 members).

Underground Network: An Interactive Web Site
Visit "Underground Network," an interactive Web site at <www.fmnh.org/ua/default.htm> that allows online visitors to take a virtual tour of the **Underground Adventure** exhibit while learning about the importance of soil.

Soil Adventure Mobile
What's that truck painted with soil creatures? It is SAM, the Museum's new Soil Adventure Mobile. Staffed by Museum educators, SAM brings hands-on, soil-discovery activities to Chicago-area schools, parks, libraries and community centers.

Mud Management Interpretive Station
Learn about soil through hands-on objects located in a Museum interpretive station. With the help of a model of a cheeseburger, for instance, you can discover how humans depend on soil for their survival.

The Art of Being Kuna: Opening Weekend Activities

Saturday, May 1 and Sunday, May 2
Noon – 4 p.m.

Celebrate the opening of "The Art of Being Kuna: Layers of Meaning Among the Kuna of Panama" exhibit with Chicago's Native American community, the Kuna of Panama and Mari Lyn Salvador, the curator of the exhibit. The weekend's activities, which are free with general Museum admission, will focus on the role of molas, the richly decorated appliqué blouses worn by Kuna women. Illustrating Kuna life and thought, molas are a radiant visual representation of the culture, incorporating images of contemporary and traditional society. Throughout the weekend, Kuna women will demonstrate how molas are made and will explain the links between their art and the environment. The Museum also will be offering hands-on activities for children and adults, as well as a family exhibit guide. Please call 312.322.8854 for more information.

Free Visitor Programs

Every Saturday and Sunday
1 p.m. **Story Time: Facts, Fables and Fiction.** Learn new songs and stories, and have fun creating artwork — all in a 15-minute program for preschoolers in the Crown Family Place for Wonder. In May and June, the Museum will present tales about dinosaurs, creatures that burrow, the rain forest, caterpillars and life around a pond.

Interpretive Station activities. Drop by hands-on stations located throughout the Museum (check informational directories for daily listing).

May 1 — Saturday
11 a.m. – 2 p.m. **Scientists on the Floor.** View rarely displayed specimens from the collections and listen to Museum scientists discuss their research as it relates to the new **Underground Adventure** exhibit.

Noon – 4 p.m. **"The Art of Being Kuna" Exhibit — Opening Celebration.** Celebrate the opening of this new exhibit with the Kuna from Panama and Native Americans from Chicago.

1 p.m. **Performance: Faces of Faith.** Listen to a group of teens perform an original musical play based on the "Origins" exhibit.

1 p.m. **Guided Tour** of the **Africa** exhibit and screening of the documentary "I'll Make me a Word."

May 2 — Sunday
Noon – 4 p.m. **"The Art of Being Kuna" Exhibit — Opening Celebration.** See May 1.

2 p.m. **Millennium at the Museum Film: Then There Were None.** This movie documents the history of the Hawaiian culture, from its origins to the present.

2:30 p.m. **Performance: Faces of Faith.** See May 1.

May 8 — Saturday
11 a.m. – 3 p.m. **Millennium at the Museum: Pacific Island Heritage Month Celebration.** Join The Field Museum and Kupà a-Pacific Island Resources, a Chicago-based nonprofit organization, as they celebrate Asian and Pacific Islanders' month.

May 9 — Sunday

11 a.m. – 3 p.m. **Millennium at the Museum: Pacific Island Heritage Month Celebration.** See above.

JOHN WEINSTEIN / GEO86160 3C

Above: Visitors to the "Sue: The Inside Story" exhibit will learn about what Museum scientists have discovered so far by studying Sue's 5-foot-long skull. They will also get to see some of the recent CT scans of the skull that are allowing scientists to see inside the head of a T. rex *in ways never before possible.*

May 10 — Monday
10 a.m. – 1 p.m. **Dinosaurs and More.** Participate in dinosaur activities and join Green Light Performing Company for a dinosaur sing-along at 11 a.m. and noon.

May 14 — Friday
9:45 a.m. – 4:45 p.m. **Chicago National Science Olympiad.** Observe the nation's top science students compete in a science tournament. See "Calendar of Events" page for more information.

11 a.m. – 3 p.m. **Family Activity Day: Underground Adventure.** Families are invited to participate in hands-on activities relating to soil organisms and the Museum's new permanent exhibit, **Underground Adventure.** In addition, Green Light Performing Company will show how insects and other organisms live in the soil.

May 15 — Saturday
11 a.m. – 3 p.m. **Family Activity Day: Underground Adventure.** See above.

1 – 2 p.m. **Millennium at the Museum: Drumming Demonstration.** Watch as musician Lenny Marsh demonstrates the origins of drumming.

May 22 — Saturday
11 a.m. – 2 p.m. **Scientists on the Floor.** See May 1.

May 29 — Saturday
11 a.m. – 3 p.m. **Sue in the Spotlight Festival.** Trade in your dinosaur paraphernalia at the Dinosaur Trading Post, take part in an interactive performance and listen to a Museum scientist talk about his work on Sue the *T. rex*. See "Calendar of Events" page for details.

May 30 — Sunday
11 a.m. –3 p.m. **Sue in the Spotlight Festival.** See above.

May 31 — Monday
11 a.m. – 3 p.m. **Sue in the Spotlight Festival.** See May 29.

1 p.m. **Story Time.** Stories and activities for preschoolers.

2 p.m. **Underground Café Performance.** Partake in an interactive play and discover the importance of soil.

June 5 — Saturday
1 p.m. **Guided Tour** of the **Africa** exhibit. See May 1.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

June 6 — Sunday

2 p.m. **Millennium at the Museum Film: The Great Lakes.** This documentary shows how conservationists are trying to restore the ecological balance of the Great Lakes.

June 9 — Wednesday

1 p.m. Film: **The Spirit of Kuna Yala.** An award-winning documentary that features the Kuna of Panama uniting to protect their rainforest homeland and the traditions it inspires. Told entirely in the words of the Kuna, the film is not only a plea for environmental awareness but shows how the Kuna have rejected the lure of western culture and reaffirmed their traditional values.

June 12 — Saturday

1 p.m. Film: **The Spirit of Kuna Yala.** See above.

2 p.m. **Underground Café Performance.** See May 31.

June 13 — Sunday

2 p.m. **Millennium at the Museum Film: Twentieth-Century Medicine Man.** Follow an ethnobotanist through the Amazon as he searches for a cure for cancer, AIDS and other infectious diseases among the plants of the rain forest.

June 14 — Monday

1 p.m. **Story Time.** See May 31.

June 16 — Wednesday

1 p.m. **Story Time.** See May 31.

June 19 — Saturday

11 a.m. – 2 p.m. **Scientists on the Floor.** See May 1.

11 a.m. – 1 p.m. **Millennium at the Museum Weekend Demonstration: African Metalwork.** Learn about the technical and sophisticated tools Africans have been using for centuries to process metal with volunteer Robbie Avery.

1 – 2 p.m. **Millennium at the Museum Weekend: Drumming Demonstration.** See May 15.

2 p.m. **Millennium at the Museum Lecture/Tour: Carbonates at The Field Museum.** Explore the geological, ecological, cultural and economic impact of carbonates — a seemingly obscure chemical product formed when carbon dioxide dissolves in water.

June 23 — Wednesday

1 p.m. Film: **The Spirit of Kuna Yala.** See June 9.

June 26 — Saturday

11 a.m. – 3 p.m. **The Buddha's Art of Healing Exhibit — Opening Day Activities.** See "Get Smart" page.

2 p.m. **Underground Café Performance.** See May 31.

June 27 — Sunday

11 a.m. – 3 p.m. **The Buddha's Art of Healing** opening weekend festivities. See "Get Smart" page.

Resource Centers

Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center; the Daniel F. & Ada L. Rice Wildlife Research Station; and the Webber Resource Center — Native Cultures of the Americas.
Open daily from 10 a.m. to 4:30 p.m.

Pawnee Earth Lodge

Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains. Open from 10 a.m. to 4:30 p.m. on weekends and at 1 p.m. during weekdays. Check the informational directories or the sign in front of the lodge for program times.

Ruatepupuke: The Maori Meeting House

Discover the world of the Maori people of New Zealand at the treasured and sacred Maori Meeting House.
Open daily from 9 a.m. to 5 p.m.

McDonald's Fossil Preparation Laboratory

Watch Field Museum preparators work on Sue, the largest and most complete *T. rex* ever found.
Open daily from 9 a.m. to 5 p.m.

The Crown Family Place For Wonder

A hands-on area for children.
Open weekends from 10 a.m. to 4:30 p.m. and weekdays from 1 to 4 p.m.

DON COLE ©FIELD MUSEUM OF CULTURAL HISTORY

Daily Highlight Tours

Visit the exhibits that make this museum one of the world's finest and hear the stories behind these displays. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

Left: Members of the Kuna culture keep these wooden figures, called nuchugana, in boxes. nuchugana are central to healing and well-being in the culture and are among the 300 items on display in "The Art of Being Kuna" exhibit.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Whatever Happened to Carthage?

At the invitation of the Tunisian government, Willard White recently escorted a delegation of American museum administrators on a tour of Tunisia organized by the National Council on U.S.–Arab Relations. As a result of this trip, The Field Museum and the Denver Museum of Natural History are now collaborating on a joint study tour to Tunisia in 2000.

By Willard White
Vice President for Institutional Advancement

We are standing on the crown of Byrsa Hill, a site defined by mythology and the very real evidence of organized settlements over nearly three millennia. Virgil's *Aeneid* provides the most familiar account of the founding of Carthage (circa 846 B.C.) by Queen Dido, who fled the Phoenician city of Tyre after her husband, Acerbas, was assassinated by her brother. Dido and her followers laid claim to the prominent hill overlooking the Mediterranean and a sheltering harbor for their fleet.

Inland were rich agricultural lands that supported the early Phoenicians and their descendants, the peoples we call Punic, master navigators and traders around the Mediterranean and along the coasts of Europe and Africa. The Phoenicians brought with them the essential skills of navigation, engineering, water conservation and a written language, all derived from the civilizations of Mesopotamia. They prospered and expanded their empire in the north part of modern-day Tunisia.

Today, the site of Carthage reveals more about the successive waves of occupation and development — the Romans, Byzantine Christians, Vandals, Arabs, Turks and French colonialists — than about the first invaders who organized settlements and trading routes and quarries, making Carthage the envy, and the enemy, of Imperial Rome.

WILLARD WHITE

Right: The Great Mosque at Kairouan, Tunisia.

Carthage dominates Tunisia, past and present. Historically, Carthage was the greatest city in Africa, second only to Rome itself — the capital of the Province of Africa and the source for grains, olives and fruits sufficient to supply the Imperial City. Today, it is part of a metropolitan district that links Tunis, the modern capital, with popular villages and resorts along the Mediterranean coast.

More than 600,000 tourists visit Carthage each year, part of an annual influx of visitors to Tunisia that approaches 5 million, a remarkable number for a country only about twice the size of South Carolina. Tunisia is well-equipped to receive and entertain tourists, with an abundance of hotels and villas in the coastal resorts of Hammamet, Sousse and Djerba, the most popular destinations for Europeans seeking sun, sand and casinos.

For tourists, Tunisia is a natural entry point into an Arab and Islamic culture that is extremely hospitable and welcoming, in every sense. For Americans, there are no visa requirements, and the combination of French and Arab cultures gives Tunisia the look and sound of a slightly familiar place, not unlike the French Riviera. French and Arabic are the standard languages, but English, Italian, Dutch and German are also heard in this cosmopolitan land.

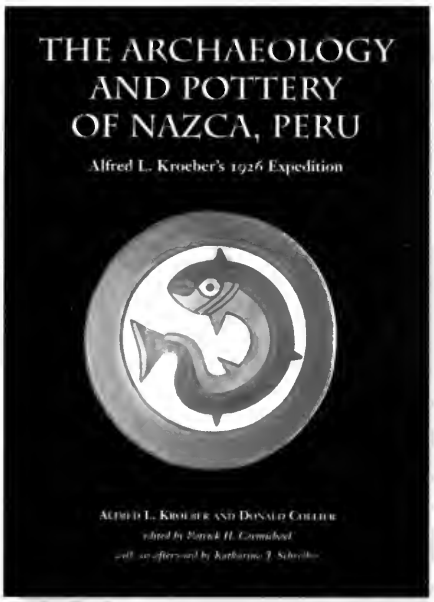
Tunisia is multicultural and egalitarian in a way that other countries should note. Its strength comes not from the military but from a well-educated population, a large middle class, policies that guarantee women equal access to education and employment, and a national strategy for economic development and social services originating from a strong central government. Perhaps most revealing is the government's plan to eliminate adult illiteracy completely throughout the country by 2006.

Museums and cultural festivals offer vast riches for tourists in Tunisia. The Bardo Museum in Tunis holds the largest collection of mosaics in the world, with impressive collections also displayed in Carthage, Sousse and Bella Regia. Festivals feature film, theater, traditional music, dance and olives — just to suggest the range of national and local programs.

As delegates representing museums in the United States, we consulted on many issues of museum management with our colleagues and lobbied for traveling exhibits and performances to reveal to American audiences the extraordinary richness of Tunisian culture.

Whatever happened to Carthage? It continues to flourish in modern Tunisia as it always has — serving as the gateway to a global, open society. ITF

New Book Explores
The Archaeology and Pottery of Nazca, Peru



By Bennet Bronson
Curator, Asian Archaeology and Ethnology

The Archaeology and Pottery of Nazca, Peru, a handsome, oversized book from Altamira Press, describes the archaeological finds made in 1926 in the Nazca Valley of Peru by Alfred Lewis Kroeber (1876 – 1960). Written largely by Kroeber himself, the book is the first on-the-spot description of the ancient Nazca civilization, one of the most important (and controversial) of all early civilizations in the New World.

Kroeber, a professor at the University of California at Berkeley from 1901 to 1946 and a research associate at The Field Museum from 1926 to 1960, wrote a great many books and articles, and had an equally prolific daughter, the science fiction writer Ursula LeGuin.

In 1924, Kroeber approached The Field Museum to fund a field project in Peru. The finds from the project would be divided between the National Museum of Peru and The Field Museum. It would prove an excellent bargain for the Field. Kroeber worked first in northern and central Peru, but in 1926 turned his attention to the rich, but virtually unknown sites of the Nazca Valley in southern Peru. He worked there for almost six months, excavating numerous burial sites and recording important architecture.

Kroeber's excellent field notes and photographs, numerous plans and a fine collection of painted pots in the Nazca style came back to The Field Museum. While there are many Nazca pots in art museums around the world, Kroeber's are the only examples outside Peru to have been scientifically excavated. More than 200 pots are illustrated in the book, along with the site plans, maps and photographs of fieldwork in progress — all of which serve as background to the finds.

While in Peru, Kroeber also took some of the first-ever photographs of the Nazca Lines — gigantic, stylized figures etched in the ground throughout the region. Since the 1970s, writers like Erich von Däniken have popularized the Nazca Lines as evidence of ancient astronauts; Kroeber, for his part, thought they might be ceremonial paths.

Kroeber did not get around to publishing his Nazca finds until the late 1950s, when he began work on them in collaboration with Donald Collier (1911 – 1995), Field Museum curator of Middle and South American archaeology and ethnology from 1941 to 1976. The work was largely complete, though rough, when Kroeber died in 1960.

Collier then laid the project aside and did not pick it up again until 1986, when Patrick Carmichael of the University of Calgary came to the Museum to conduct research on the Nazca collection. Carmichael agreed to help, and over the next few years finished editing the Kroeber-Collier manuscript and preparing it for publication. Meanwhile, Marjorie Pannell, managing editor of the Field Museum Press, began searching for a publisher for the manuscript.

Before printing the book, Altamira Press called on Katharina Schreiber of the University of California at Santa Barbara to review the manuscript. Schreiber, who knew the Nazca sites well through her own research, is named as the fourth author of the book for her highly useful afterword in which she re-locates the sites that Kroeber studied and summarizes progress in Nazca research since his day.

The Archaeology and Pottery of Nazca, Peru — which is on sale in the Field Museum Store for $39.95 — is a fascinating exploration of the Nazca culture, a rare glimpse of the archaeological process and a remarkable editorial collaboration. Most importantly, it also is a very good read. **ITF**

Below: A Nazca pot from The Field Museum's collections.

JOHN WENSTEIN/A113330C

THE FIELD MUSEUM /A107486

From the Photo Archives

While leading a Field Museum expedition to Tibet and China in 1908, German-born anthropologist Berthold Laufer stopped in Darjeeling, India, to examine some artifacts with a Tibetan woman (above). His plan was to cross into Tibet from India, travel north to Lhasa, the Tibetan capital, and then work his way into China. However, while in Darjeeling, which is about 50 miles southwest of Tibet, Laufer received word from the British-Indian government that under no circumstance was he to cross the border.

Undaunted, Laufer traveled south to Calcutta where he boarded a ship bound for China. Once in China, he traveled through the interior, eventually entering Tibet from the northeast. Because of political unrest in eastern Tibet at the time, Laufer wasn't sure he could get very far. ". . . the Chinese or Tibetans may stop us and force us to retreat," he griped in a letter to the Museum dated May 27, 1909. "They are awfully suspicious and watch every foreigner here with greatest care. I am daily besieged by soldiers and spies." His concerns were well founded.

In the Tibetan town of Chamdo, about 250 miles west of the border, officials detained Laufer and escorted him back into China — which may have come as a relief to the anthropologist, who later wrote, "I wish to invite the advocates of the theory that the white race rules the world to a visit of Tibet to experience that the white man finds less consideration there than a dog. Altogether, these people are a fierce and violent lot, always armed to the teeth and ever ready to draw their swords or to make use of their guns."

In all, Laufer spent two years in Tibet and China during this expedition, collecting hundreds of Chinese and Tibetan artifacts that today, along with those he brought back from another expedition to China in 1923, constitute the backbone of the Museum's East Asian collections.

Although Laufer enjoyed the challenges of collecting, his passion lay in examining museum collections and studying ancient Asian texts (as a graduate student in Germany, Laufer studied Persian, Sanskrit, Pali, Malay, Chinese, Japanese, Manchu, Dravidian and Tibetan). He also was a prolific writer, publishing more than 200 works, ranging from academic papers and monographs on subjects such as Chinese clay figures and jade, to popular articles on topics like the prehistory of television and aviation.

On Sept. 13, 1934, at the age of 60, Laufer, who was suffering from depression and other health problems, climbed up to the roof of his apartment building in Hyde Park and jumped to his death. Later that day, police found a note from Laufer to his stepson that read: "Be a good boy and take care of your mother."

Many anthropologists at the time considered Laufer the greatest Sinologist to have ever lived. ITF

From the Field Archives

May 1934

Three specimens of swamp deer (*Cervus duvaucelii*) collected during the James Simpson/Roosevelt Asiatic Expedition of 1926 went on display in a new habitat group in Hall 17. Swamp deer are highly gregarious animals that inhabit the marshy swamplands of north and central India and today are listed as endangered by the International Union for Conservation.

The National Museum in Copenhagen, Denmark, donated a collection of archaeological and ethnological items its researchers gathered from Inuit villages in Greenland. Among the items were a number of toy dolls dressed in fur garments and carved from wood, ivory or stone.

Due to space limitations, the Museum decided to sell a 22-foot-by-13-foot tapestry made by several hundred Japanese weavers for display at the 1893 World's Columbian Exposition. It took the weavers four years to make the tapestry, which depicted a procession passing the gates of a Japanese temple dedicated to Prince Ieyasu.

June 1934

Field Museum anthropologist J. Eric Thompson returned to the Museum after completing an extensive archaeological excavation in Belize with scientists from the Carnegie Institution. During the expedition, Thompson discovered a number of Mayan archaeological ruins dating back to the birth of Christ.

Museum researchers began sifting through a collection of plant specimens collected by the Spanish botanists Hipolito Ruiz and José Pavón in Peru from 1778 to 1788. Included in this collection was a type specimen of *Carludovica palmata* (Panama-hat plant), which the two Spaniards named in honor of King Carlos IV of Spain and Queen Maria Luisa.

The Anthropology department acquired a writing-brush holder that was once owned by Chinese emperor Chien Lung (1736-1795) and inscribed with the words, "May you have white eyebrows (long life) and may your years be prolonged."

Sue Cam Takes Web Users Inside the Museum

Live Web cams are springing up all over the Internet these days, transmitting live images from people's living rooms, offices and even their bedrooms. But who really wants to log onto the Web to watch someone sleeping on their couch or stapling papers in their office? Although some people have found creative uses for Web cams, few have used this relatively new technology for educational purposes.

The Museum, however, hopes to be among the first with "Sue Cam," a camera installed across from the paleontology lab on the second floor where preparators are chipping away the rock from Sue's fossilized bones. Since the Museum installed the "Sue Cam" in March, more than 3,000 people each day have used the camera, which is accessible daily from 9 a.m. to 5 p.m.

When you first enter the Web site at <www.fmnh.org/sue>, a panoramic photograph of the front of the lab will pop up on your screen. If you want to see a close-up view of something in the lab, you simply click on that section of the photograph and the camera will download a live snapshot of that area within 15 seconds. In addition, you can control the camera's zoom capabilities (1X to 5X) and the size of the downloaded image.

The entire "Sue Cam" system is on loan from Perceptual Robotics Inc. (PRI), a company in Evanston, Ill., that develops and markets software and systems for live, interactive Web telecasts.

"Thanks to PRI, people thousands of miles from Chicago can witness the preparation of Sue unfold," said Museum President John McCarter. "In addition, this greatly expands our educational outreach because children everywhere can watch our scientists and learn about the process of fossil preparation."

Although Field Museum researchers have prepared about 75 percent of Sue's bones, they still have about six months' worth of material to work on, including Sue's chest and neck vertebrae, ribs, as well as sections of her skull and shoulder blades. The Museum plans to unveil the mounted *T. rex* skeleton in May 2000. **ITF**

Both of these photographs were downloaded live from the "Sue Cam."

Field Museum Tours at a Glance

Join Museum botanist Gregory Mueller aboard a 55-cabin expedition ship this October and explore the southern reaches of Chilean and Argentine Patagonia. During this trip, you will see magnificent glaciers and exotic marine life, including penguins, sea lions and many species of seabirds.

Only a few cabins are available on this summer's Voyage to Greenland and part one of the Alaska–Harriman Centennial Voyage; there is only one cabin remaining on the Galápagos Island Adventure in July. Call the Field Museum Tours office for more information.

Operation Titanic

August 31 – September 10
Duration: 11 days
Leaders: A team of experts, including Don Walsh, Alfred McLaren, Anatoly Sagalevitch and Ralph White
Price: $35,500; airfare not included.

Natural History of Borneo

September 9 – September 24
Duration: 16 days
Leaders: Museum zoologist Robert Inger and Borneo naturalist Tan Fui Lian
Price: $4,630, including airfare from Chicago.

Natural History of Patagonia

October 28 – November 11
Duration: 15 days
Museum Leader: botanist Gregory Mueller
Price: Starts at $6,170, including airfare from Chicago.

For more information and free brochures, please call Field Museum Tours at 800.811.7244, or send them an e-mail at <fmtours@sover.net>.

Atlantic Island Odyssey: Canary Islands, Cape Verde islands, Ascension and others

November 7 – December 8
Duration: 32 days
Guest leader: Don Walsh, explorer and oceanographer
Price: Starts at $6,115; not including airfare.

Costa Rica and Panama Voyage

December 6 – December 14
Duration: 9 days
Museum Leader: botanist William Burger
Price: Starts at $2,400; airfare is not included.

In February 2000, explore South America by private jet and discover its greatest natural and cultural wonders, including the enormous statues on remote Easter Island and the "lost city" of Machu Picchu (above).

Amazon by 14-Cabin Riverboat

December 11 – December 18
Duration: 8 days
Museum Leader: zoologist Barry Chernoff
Price: $3,090, including airfare from Miami (airfare from Chicago to Miami is $231).

This December, visit the tropical coastlines and jungles of Costa Rica aboard an expedition ship with Museum botanist William Burger. Along the way, you will see remote wilderness areas teeming with plants and animals such as the motmot (left).

In the Planning Stages

South America Expedition by Private Jet

Splendors of Antiquity

Exploring the Virgin Islands

Egyptian Odyssey

Where the Spirits Dwell: Australia and New Guinea

Islands of Diversity: Indonesia and the Philippines

British Columbia and Southeast Alaska

Fire & Ice: Japan, the Kuril Islands and Kamchatka Peninsula

Archaeology and Landscapes of China

Galápagos Islands Adventure

The Ancient Silk Road: Through China and Central Asia by Private Train

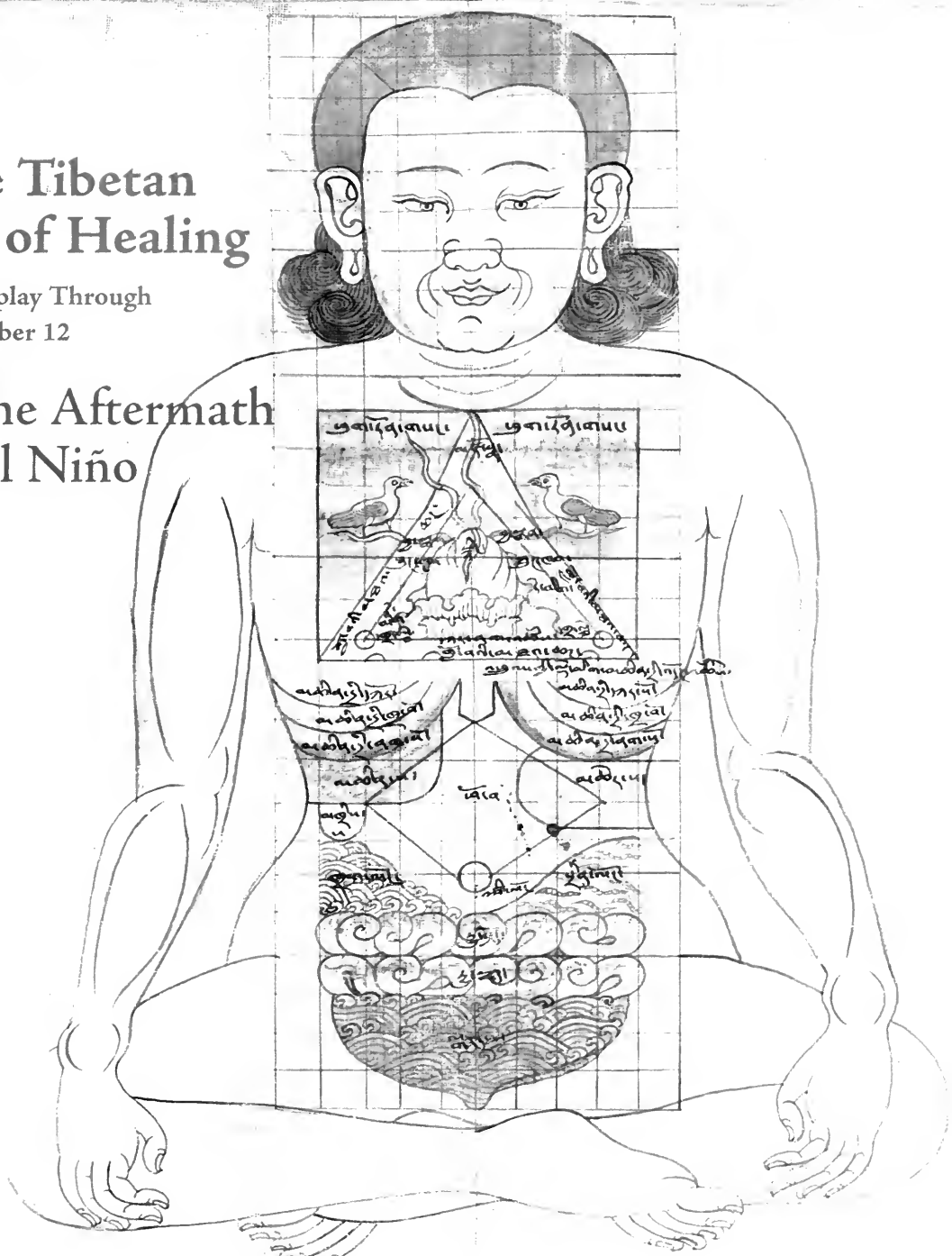
Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.

THE FIELD

The Tibetan Art of Healing

On Display Through September 12

In the Aftermath of El Niño



From the President

JOHN WEINSTEIN/GN88119.6

Journeying Down the Path of Change

Museums around the world are undergoing a renaissance. For example, the J. Paul Getty Museum recently constructed a new center in the foothills of the Santa Monica mountains; the Guggenheim Museums just opened a new facility in Bilbao, Spain; the Smithsonian's National Museum of Natural History is in the midst of major renovations; the American Museum of Natural History will reopen the Hayden Planetarium in 2000 as part of its new Earth and Space Center; and the Metropolitan Museum of Art just opened its new Roman and Greek galleries.

This renaissance is occurring because the country is experiencing enormous economic growth and the philanthropic community and the public are making major investments of both time and money in the arts and sciences. Like our counterparts on both coasts, the Museum also is benefitting from these winds of change.

For instance, The Field Museum is in the process of concluding *Connecting*, the most ambitious campaign in its history that by summer's end will have raised $75 million for a host of new programs and initiatives. The Museum trustees and I thank all the campaign donors for their firm endorsement of our mission, as well as for sharing in our vision and investing in our future.

Throughout the years, the Museum also has enjoyed the continuing benefits of support from The Chicago Park District, which contributes about $7.5 million annually to our operating budget. In addition, the State of Illinois recently committed $850,000 in support of our Sue exhibits and $487,500 in support of our education programs. The State also has issued similar grants to the other cultural institutions that reside on public land throughout Illinois.

Although the public and the philanthropic community have made it possible for us to complete a number of new initiatives, there are still many challenges that await us. One of those challenges involves the daily struggle of maintaining our historic lakefront building. Another is the realization that we are competing for people's leisure time in a city that abounds with cultural and family attractions. To remain competitive, the Museum must find innovative ways to preserve and build its audience, as well as to offer fresh content that makes each visit to The Field Museum a unique learning and entertaining experience.

On another front, our educators and scientists are facing increasing competition for federal funds — funds that are essential if we are to remain an internationally recognized institution for the study and dissemination of knowledge abour natural history, cultural diversity and environmental conservation.

As the competition for resources and audience share increases, the Museum, however, must never lose sight of its core mission of education and scientific research. Because we have not strayed from this path, The Field Museum has emerged in recent years as one of the city's great educational and cultural attractions.

As proof of our commitment to this mission, the Museum has developed many new plans aimed at expanding our educational programming. These plans include a new after-school program called Park Voyagers that we recently launched with the Chicago Park District and the other eight Museums in the Park. In addition, we are working with the Chicago Public Schools on a program to integrate a museum curriculum into school programs and to assist in training teachers who are beginning their careers in Chicago.

Maintaining and managing this level of service and expanding the scope of our mission, however, is an ever-challenging process. As soon as we climb one hill, we find many more looming on the horizon. But it's the journey, not the destination, that counts.

We thank you for accompanying The Field Museum on this journey and we look forward to your continued support.

John McCarter

John W. McCarter Jr.
President & CEO

We would like to know what you think about "In the Field" . . . .

Please send comments or questions to Robert Vosper, publications department, The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-9410, or via e-mail at <rvosper@fmnh.org>.

Inside

Ancient cloth scrolls on display in "The Tibetan Art of Healing" exhibit show what happens when art encounters medical science. See **Calendar Section** for details.

Why does the Museum retain a vast collection of biological specimens and cultural artifacts? The answer can be found in "The Art of Being Kuna" exhibit.

Two paleontologists stick their necks out to defend the posture of the Museum's towering *Brachiosaurus* specimen.

INTHEFIELD

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This issue's cover photograph is by Hughes Dubois Brussels of a section of a Tibetan "thangka."

The Field Museum

The Field Museum salutes the people of Chicago for their long-standing, generous support of the Museum through the Chicago Park District.

The Field Museum
1400 South Lake Shore Drive
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ph 312.922.9410
www.fieldmuseum.org

Around Campus

Shedd Aquarium

Dive into a new experience at Shedd Aquarium by visiting the renovated **Caribbean Reef** exhibit. This 90,000-gallon centerpiece has an all-new reefscape with 50 species of artificial coral and sponges, more than 200 animals — including nurse sharks, a hawksbill sea turtle and, new to the reef, parrotfishes and balloonfishes. Another innovation is the reef within a reef that highlights colorful small fishes and invertebrates. Underwater cameras help visitors explore reef recesses, and a diver takes the audience on a daily guided tour of the exhibit every 90 minutes between 9:30 a.m. and 3:30 p.m. Please call 312.939.2438 for more information.

Adler Planetarium

Following the opening of the new **Sky Pavilion** and **StarRider Theater™** in January, the Adler permanently closed its underground galleries and temporarily closed its building and Sky Theater for extensive renovations. In celebration of these renovations, the Adler will host a **grand reopening** on Oct. 1, 1999. After the ceremony, the Rainbow lobby will once again become Adler's main entrance and the Sky Theater will reopen with a new show. But don't wait until October to visit the Adler — the Sky Pavilion and StarRider Theater™ remain open for business.

In the Aftermath of El Niño

Thailand's Rainbow Water Snakes Begin the Process of Recovery

JOHN MURPHY

Above: Although rainbow water snakes grow to only 18 inches, they are among the top predators of Lake Songkhla — a complex wetland ecosystem in southern Thailand comprised of freshwater and salt-water environments. Located about 50 miles north of the Malaysian border, this wetland is similar to the Florida Everglades in that it serves as an important sanctuary for migrating birds and is home to scores of aquatic animals. Last summer, many of these animals, including the rainbow water snake, were decimated by a series of ecological disasters set off by the 1997/1998 El Niño.

By Karen Sandrick
Volunteer, Division of Amphibians and Reptiles

Harold Voris and Daryl Karns knew something would be different when they arrived at Lake Songkhla in southern Thailand last summer to study the rainbow water snake. A Thai colleague had already warned them that they wouldn't find as many snakes as in previous years.

But the herpetologists were totally unprepared for the magnitude of what they encountered — snake carcasses on the road leading to their research site, dried and yellow marsh grass and dead snails everywhere. Then, after spending six weeks wading through thick mud, brown water and waist-high grass around the edges of the lake, the two scientists managed to trap only five water snakes — 384 less than in 1997.

What Voris, curator of amphibians and reptiles at The Field Museum, and Karns, professor of biology at Hanover College in Indiana, had stumbled upon were the local effects of the 1997/1998 El Niño global climatic phenomenon. They also had stumbled upon an opportunity to conduct an ecological study that most scientists can only dream of.

The El Niño phenomenon occurs when a change in atmospheric pressure at sea level between Tahiti and Australia shifts the winds that blow across tropical Indonesia from west to east, causing the easterly flowing warm water from near the equator to replace the normally cold Pacific waters. As a result, the weather turns extreme, and ocean currents, rainfall levels, sea surface temperatures and wind strengths become unstable.

In Latin America, the 1997/1998 El Niño, which was the most destructive El Niño recorded to date, spawned severe droughts that led to raging forest fires in Brazil, Central America and Mexico. In the Horn of Africa, it brought the worst flooding in 30 years, displacing more than 15 million people, destroying crops in 17 countries and killing more than 2,000 people. In the United States, El Niño triggered heavy rains, massive flooding and mudslides along both coasts. And in Lake Songkhla, it interrupted normal monsoon patterns, setting off a chain of local ecological disasters.

Lake Songkhla

Lake Songkhla, which is about 150 years old, was created when a series of barrier islands fused into a peninsula that cut off the continuous flow of salt water from the Gulf of Thailand, allowing fresh water to accumulate. As a result, the lake is a highly unusual wetland complex consisting of a freshwater marsh known as Thale Noi at its northern edge, a north basin filled with fresh water, a central basin that is mildly brackish and a southern basin that is more saline.

Typically, the 100,000-hectare wetland is bathed in fresh water during the northeast monsoon, which lasts roughly from November to February. During this period, the monsoon powers northeast winds across the peninsula at the eastern boundary of the lake and into the mountains to the west. With these winds come rain clouds that deposit enough fresh water in the area to raise the water level at Lake Songkhla past the flood stage.

DARYL KARNS

Above: During their fieldwork last summer, the researchers used this community meeting house at the edge of the wetland as their base of operations. Before heading home at night, local fishermen gather in these wooden structures, which are located throughout Lake Songkhla, to share a smoke and discuss the day's events.

Last winter, the northeast winds blew and the sky was gray with clouds, but because of El Niño the rains didn't come.

"The clouds didn't have much moisture in them and what moisture they did have fell up in the mountains," Voris says. "So, there was not enough rain to fill and flood the lake."

The lake's freshwater reserves were further depleted by local farmers who routinely pump water from the northern basin to irrigate their fields and dam portions of the central and southern basins to prevent salty water from entering their rice paddies. This resulted in a massive intrusion of salt water into the mildly brackish central portion of Lake Songkhla where Voris and Karns work as part of an international research team that includes Tanya Chanard of the National Science Museum of Thailand and Vachira Lheknim of Prince of Songkhla University.

Within a few days, the level of salinity in the lake rose to that of pure seawater — 20 to 32 parts per million, compared with 3 to 5 parts per million in previous years. This sudden influx of salt water was intolerable for many of the lake's aquatic fauna, including the rainbow water snake.

The Rainbow Water Snake

The rainbow water snake is one of a subfamily of 35 species of serpents known as the homalopsinae that are found throughout Southeast Asia. These snakes aren't like the reptiles most people are perhaps familiar with, such as the common garter snake or rattlers, which are completely terrestrial and eat, mate and bear their young all on land. Nor are they similar to true ocean-going sea serpents, such as the deadly venomous beaked sea snake, that never leave the sea. As Voris explains, the homalopsines live in the ecological transition zone between aquatic and terrestrial ways of life.

Their aquatic ways of life, however, are pretty much limited to freshwater ecosystems. For instance, the plumbeous water snake (*Enhydris plumbea*) is nearly always confined to freshwater habitats or dry areas that are close to fresh water. The tentacled snake (*Erpeton tentaculatum*) rarely leaves its home in freshwater habitats in Cambodia and Thailand. The tang water snake (*Enhydris chinesis*) is common throughout China and North Vietnam, where it feeds on frogs and snails in irrigation ditches, ponds and rice paddies. And the rainbow water snake (*Enhydris enhydris*), the most common homalopsine at the Lake Songkhla study site, spends most of its time in fresh water, slithering in and out of the tangles of mud and roots that line the edges of a wet meadow that borders the lake.

But many of the homalopsines can live, at least for brief periods, in more salty areas. For example, the dog-faced water snake (*Cerberus rynchops*) is perhaps the most sea-worthy of the group, living in brackish to outright salty environments like estuaries, mudflats, mangrove swamps, tidal creeks and rivers.

What allows these snakes to live in these aquatic environments are a number of unique anatomical features. For example, their nostrils have valves that close when they submerge, and their lower jaw fits so tightly into the upper jaw that they can completely seal their mouth shut. In addition, their tails are slightly compressed to aid in swimming.

Because these snakes don't have a highly developed and functional salt gland, they can't live for very long in pure seawater. These glands, which are found in most birds and reptiles that reside in seawater, ameliorate the physiological stress caused by excessive exposure to salt. For instance, sea turtles excrete excess salt through salt glands in their eyes, whereas seabirds have a salt gland at the base of their bills that allows them to blow the excess salt out through their nasal passages. And true sea serpents, such as the yellow-bellied sea snake, have a salt gland under their tongue that lets them void surplus sodium as drool.

Of the homalopsines, however, only Cerberus is known to have a salt gland, but it's small and somewhat primitive. As far as the scientists can tell, the rainbow water snake lacks any such mechanism, which explains why so many of these snakes died last year.

When the monsoon rains failed to materialize, farmers continued to pump fresh water from the northern basin, which in effect sucked seawater from the Gulf of Thailand into the southern and central basins of the lake. Because of this confluence of natural and man-made conditions, the water snakes' entire local environment was flushed with salt in a matter of days. As a result, the snakes ingested large quantities of salt, forcing their kidneys to shift into overdrive in an attempt to return the sodium balance in their bodies to normal. Since the snakes don't have a salt gland to capture and excrete the excess sodium, their kidneys were fighting a losing battle. Unable to find fresh water in the lake or the nearby meadow, the snakes slowly died of dehydration.

An Ecological Experiment

In June, Voris and the third U.S. member of the homalopsine research team — John Murphy, chair of biology at Plainfield High School in Plainfield, Ill. — returned to Lake Songkhla to learn what has happened to the rainbow water snake population since the team's last trip.

Now that El Niño has passed, the northeast monsoon has returned to normal, rainfall this past winter was heavy and Lake Songkhla was recharged with fresh water. Surprisingly, the researchers expect to trap as many homalopsines as they have in previous years.

Although El Niño decimated the snake population at their study site in 1998, the herpetologists don't believe the extreme weather affected the snakes in

DARYL KARNS

Right: Because rainbow water snakes rarely exceed a foot and a half in length, they mainly prey on small adult fish or the fry of larger ones. Here, Vachira Lheknim, an ichthyologist at Prince of Songkhla University, holds out a sample of the snakes' favorite food.

nearby areas or that the saltwater incursion extended into some of the snakes' favorite freshwater havens, such as rice paddies, ditches and canals. The scientists believe it's possible that when freshwater levels returned to normal earlier this year, snakes from the unaffected regions repopulated Lake Songkhla.

"We know there are water sources nearby where the snakes can survive, so even though the local community of snakes was severely depleted, it can be recolonized by snakes moving from elsewhere," says Karns, who has shown in his studies that the rainbow water snake can travel up to 1,320 feet in only 24 hours.

It's also possible that some of the snakes in Lake Songkhla that survived the saltwater incursion are reproducing.

During their fieldwork this summer, the researchers will examine two hypotheses. The first is that the snake population is already recovering dramatically and quickly because adult snakes are moving from unaffected areas to the study site. "If we find that the population is back to normal and consists mainly of adults, we know it is recuperating through migration," Voris explains.

The second hypothesis is that the population is recovering slowly through reproduction. "If we find a preponderance of young snakes, with very few old ones, that would suggest the population is slowly coming back through births," he adds.

No matter which theory proves correct, the El Niño experience is providing the researchers with a rare opportunity to participate in an experiment designed by nature.

"This is a classic case of a population of animals being devastated by an environmental phenomenon that occurs only occasionally," Voris says. "You can predict *that* such a phenomenon will recur, but you can't predict *when* it will recur."

Consequently, scientists don't encounter this kind of perturbation in a population very often, and almost never on a firsthand basis.

"You could set up a series of experiments in a laboratory where you tested the saltwater tolerance of some of the members of the Lake Songkhla freshwater community to determine the effects of salinity," Karns says. "But last year it actually happened at our study site while we were actively monitoring and we saw the results — a massive die-off not only of the snakes but the rest of the freshwater fauna too. We were in the perfect location to see how the freshwater fauna were nailed by saltwater incursion."

The researchers are now in the enviable position of being able to track the paths of recuperation the snake population will follow.

"Here is an example of looking at a fairly natural ecological system that is bombarded by a natural phenomenon," says Voris. "We have the chance to study the nature of the recovery of the animals and the mechanism of their recovery. This is an opportunity, a gift."

DARYL KARNS

Above: A local fisherman meanders along one of the hundreds of canals known locally as "klongs" that crisscross Lake Songkhla. The meadow in the background is where the snakes spend their days slithering in and out of tangles of weeds and roots.

In addition, the experiment may reveal ways in which animal populations respond to man-made events. For years, the researchers have been interested in learning how animal populations recover from human interference. And in this situation, as Karns points out, humans have exerted influence not only on the local environment of Lake Songkhla, but also on the global environment.

"This is an example of delicate ecological balances," Karns says. "We have a natural climatic phenomenon such as El Niño that may be influenced by humans. We have this very shallow lake of relatively recent origin, and human activities are changing it in a substantial way. So, we have a peculiar set of circumstances that created a mini-catastrophe for the local freshwater community. And as ecological detectives, we wanted to know how and why this happened."

According to Karns, the experiment also may lead to fresh insights about El Niño.

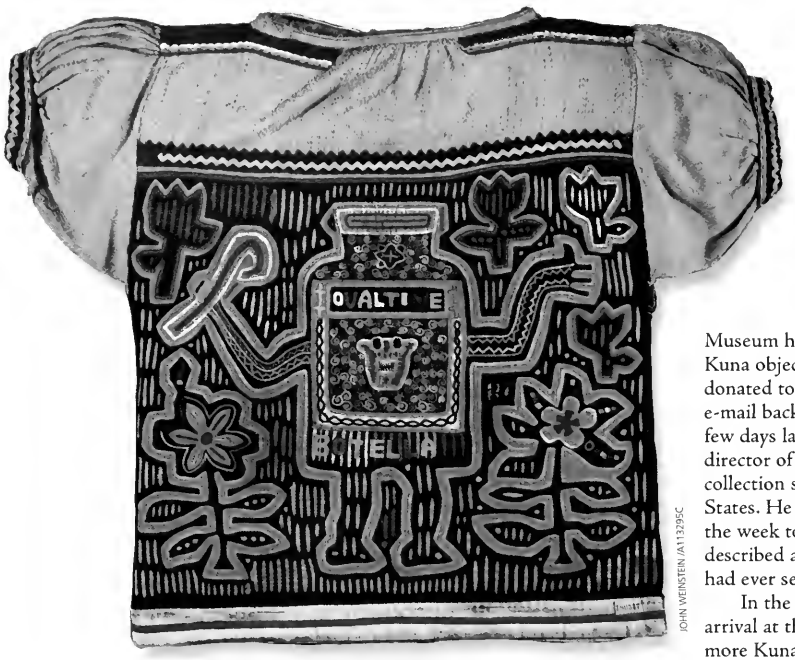
"El Niño has global effects and widespread regional effects like forest fires and floods," he says. "But it also can have an unanticipated and nonspecific impact on a small community of animals."

The herpetologists may also add another level of detail to the emerging picture of global weather extremes: the relationship of these extremes to human activities and their influence on biological systems.

"Animal populations often go up and down, but we don't actually witness the events or appreciate the causes," Voris says. "In this case, we saw an animal population collapse and we know what the contributing factors were."

The research team will now begin trying to unravel the long-term ecological consequences of these factors. **ITF**

Kuna Exhibit Highlights Importance of Museum's Anthropology Collection



JOHN WEINSTEIN / A113295C

Left: The Museum has more than 170 Kuna molas in its collections, ranging in style from the traditional to the experimental. This 35-year-old Kuna mola shows how an object as ordinary as an Ovaltine jar can inspire a wildly colorful pictorial design.

By Robert Vosper

It started with an e-mail.

Janice Klein, former registrar in the Museum's anthropology department, received an e-mail in March 1997 from a colleague at the UCLA Fowler Museum of Cultural History inquiring whether the Museum had any ethnographic material relating to the Kuna, an indigenous community that inhabits the San Blas islands off the northeast coast of Panama.

Anthropologists at the Fowler, Klein's colleague explained, were finalizing an exhibit about Kuna culture and were having difficulty locating Kuna artifacts dating before 1950. What they were especially interested in were molas — form-fitting, short-sleeved blouses on which Kuna women sew brightly colored handwoven panels decorated with unusual geometric shapes or abstract pictorial motifs.

After receiving the e-mail, Klein, who is now the direcror of the Mitchell Museum of the American Indian at Kendall College in Evanston, Ill., began searching through her database of 600,000 cultural artifacts. Within minutes, she discovered that the Museum had about 20 molas and 70 miscellaneous Kuna objects that an engineer from Hammond, Ind., donated to the Museum in 1918. She then sent an e-mail back to her colleague with the good news. A few days later, Klein received a call from Doran Ross, director of the Fowler, informing her that the Kuna collection she had found was the oldest in the United States. He then said he would be in Chicago within the week to examine the collection, which he later described as containing the most dramatic molas he had ever seen.

In the week between the phone call and Ross' arrival at the Museum, however, Klein uncovered two more Kuna collections — one of which contained 148 molas dating between 1954 and 1965 that a donor had purchased sight unseen at a railroad auction of lost luggage. The other collection included bows, several arrows, panpipes, flutes, a headdress and jewelry — all of which were once on display at the 1893 World's Columbian Exposition in Chicago.

When Ross arrived at The Field Museum on March 21, 1997, he spent the day examining the collection and taking photographs. That night, he hopped on a plane back to Los Angeles. Shortly after, Klein received a letter from the Fowler requesting a loan of about 25 objects (mostly pre-1918 molas and some of the Exposition material) for possible inclusion in their exhibit.

"It certainly is a very, very fine collection and very beautiful," says Mari Lyn Salvador, the curator of the Fowler exhibit and associate director of the Maxwell Museum of Anthropology at the University of New Mexico. "Your collection added a wonderful historic depth to the show and the Exposition pieces were very important to the overriding message of the exhibit."

The exhibit, "The Art of Being Kuna," uses the molas and artifacts to show how the Kuna's concern for artistic form guides their language, politics, clothing style, etiquette and rituals. About five months after

opening at the Fowler on Nov. 16, 1997, the exhibit traveled to the George Gustav Heye Center in Manhattan and is now on display at The Field Museum through July 25, 1999.

At this point, you may be thinking that the Kuna artifacts were buried in some dark, dusty corner of the Museum's storage facilities, overlooked and forgotten. Well, you are wrong. For more than 50 years, Field Museum staff have been actively using and studying the collection.

For instance, a few of the molas and artifacts have been on exhibit for decades in the Mexico and Central America Hall on the main floor and some of the molas were on display in a 1969 temporary exhibit titled "The Art and Life of the Cuna [sic] Indians." This exhibit was developed by an anthropologist at Northwestern University who used the objects to illustrate how the Kuna have managed to embrace aspects of Western culture while maintaining their individuality and independence. In addition, a visiting scientist conducted a study during the 1970s in which she compared the designs found on molas with those adorning Pre-Columbian ceramics unearthed on the mainland coast across from the San Blas archipelago. And for the past two years, Field Museum anthropologist Alaka Wali has been using the molas to gain insight into how Kuna women view the world around them.

"There is so much you can learn about Kuna women from the patterns in these molas," explains Wali, who conducted fieldwork in Panama relating to the Kuna in 1979 and 1980. "From these blouses, you can see how they view their culture, cultures outside their community and the natural world around them. In a way, you can actually read the molas and get a sense of what is fascinating to Kuna women and what is important to them."

When Kuna women began sewing molas in the late 19th century, they generally filled the panels on their blouses with designs representing objects they found in nature or used in their daily lives. Many anthropologists believe these early designs evolved from body painting, a Kuna art form that became obsolete with the introduction of cloth on San Blas in the late 1800s. By 1920, however, Kuna women began experimenting with images based on objects they found outside their community — objects, for example, like umbrellas, corporate logos on labels attached to imported goods and illustrations found in books.

Today, the women have perfected mola-making to the point where it is considered an integral part of Kuna culture and important to their ethnic identity. They also are stretching the limits of creativity by drawing inspiration from just about anything they hear or see. For example, it is not uncommon to find molas depicting cartoon characters from cereal boxes, heroes from children's stories and figures from catechism books. What interests Wali and other scholars studying the Kuna is that although these women have access to an unlimited supply of local and "foreign" images and objects, they are very selective in what they depict on their blouses.

"Kuna women know that in a sense their identity stems from living in a particular place and in a particular way," explains Wali. "They don't want to change that, although they have had plenty of opportunities to change. What I think they are trying to do with these images is to manage the process of change by picking what they want to show from other cultures. It is a really fascinating and complex process."

Since Wali has only just started studying the molas, she is hesitant to draw too many conclusions. Her immediate plan is to collaborate with Salvador on this project and to ask the Kuna on San Blas for their help in interpreting the Museum's molas.

However, there is one conclusion Wali is not hesitant about drawing:

"The real story here has nothing to do with my research or the Kuna for that matter," she says. "The real story is that these objects show how important it is for museums like ours to properly conserve, build, maintain and catalog their collections. After all, you never know when someone is going to need the material for their research or when it may have value as an educational tool." ITF

JOHN WEINSTEIN/A113312C

Above: The gandules, or ritual specialists in Kuna society, wear these hats while orchestrating sacred puberty ceremonies. This hat is from the Museum's collection and was once on display at the 1893 World's Columbian Exposition.

Paleontologists Defend Dinosaur Mount

Right: The Field Museum's 40-foot-high replica of Brachiosaurus.

By Olivier Rieppel
Curator of Fossil Amphibians and Reptiles
and Christopher Brochu
Research Scientist of Fossil Vertebrates

The Chicago Tribune and *The Chicago Sun-Times* recently ran stories implying the *Brachiosaurus* in Stanley Field Hall is mounted incorrectly. According to these two articles, the neck of *Brachiosaurus*, which curves majestically toward the ceiling, should be in a much lower, more horizontal position. Their suggestion was based on an article published in the April issue of *Science* in which paleontologists Kent Stevens and J. Michael Parrish presented findings from a study they conducted on the neck posture of plant-eating dinosaurs (sauropods).

While conducting computer simulations on dinosaur biomechanics, Stevens and Parrish, who is a Field Museum research associate, found that sauropods like *Diplodocus* and *Apatosaurus* held their necks more or less horizontal. However, nowhere in their study did they mention *Brachiosaurus*. And although *Brachiosaurus* is a sauropod, it possesses an anatomy quite different from either *Diplodocus* or *Apatosaurus*.

The debate about whether long-necked sauropods kept their heads horizontal, feeding on low-growing vegetation, or held their heads high like swans, feeding on the crowns of trees, is not new. In fact, scientists have been debating this point for years. The reasons for this controversy are that the fossil record offers only limited clues as to the function of complex joints in extinct reptiles like dinosaurs and that the neck musculature of existing reptiles remains too poorly studied to furnish much assistance.

However, fossils do provide some answers, although it's important to keep two questions in mind when using the fossil record to study the neck mobility of dinosaurs: What movements were they *capable* of performing and what was their *preferred* resting position?

For instance, the *Apatosaurus* specimen in our **Life Over Time** exhibit clearly shows that the vertically projecting neural spines on its vertebrae were very low in the dinosaur's anterior chest region. As a result, there was no place on which its powerful neck muscles could have attached that would have allowed *Apatosaurus* to maintain a comfortable swan-like neck posture. Instead, its muscles and tendons were probably attached to the very tall neural spines on vertebrae located toward its posterior stomach, pelvic and anterior tail region. Consequently, the muscles would have supported the dinosaur's neck region on one side and its long tail on the other side in a manner analogous to a hanging bridge. If this scenario is correct, then *Apatosaurus* would have been most comfortable keeping its neck in a more or less horizontal position.

In addition, since dinosaurs descended from bipedal organisms, their forelimbs were usually shorter than their hind limbs. In sauropods like *Apatosaurus* and *Diplodocus*, such limb proportions resulted in their shoulder girdle sitting lower than their pelvic girdle, forcing their backbone to slope downward from back to front. Consequently, if these two dinosaurs had tried to pull their necks up, they would have bent the base of their neck to an almost impossible angle.

Brachiosaurus, however, didn't have these problems. First, its forelimbs are longer than its hind limbs, which brings its shoulders up to a level above the pelvis, with the backbone sloping upward from back to front. Secondly, its most developed neural spines are located in the shoulder-girdle region, allowing for the attachment of muscles that would have permitted *Brachiosaurus* to raise its neck into a giraffe-like posture. This position also appears to have required the least amount of energy for *Brachiosaurus* to maintain. Lowering its head, however, would have resulted in a build up of pressure between the vertebrae, which would have been impossible for the dinosaur's intervertebral discs to counter for extended periods.

This doesn't mean that *Brachiosaurus* couldn't lower its head to eat or drink. As we know, a giraffe can lower its head to drink from a water hole or even turn its head to deal with an annoying itch on its rear.

So, we are happy to report that the neck of our *Brachiosaurus* will remain as positioned — at least until someone proves otherwise. ITF

A Salute to Charles Knight's Mighty *T. rex*

By Richard Faron
Director of Exhibit Development

"Umpph!" I moaned as he drove his head squarely into my stomach.

Like my hero, I was caught off guard: The attack had come hard to my unprotected belly, low and away from my gnashing teeth.

"Mrrah! Mrrah!" he suddenly growled, the sound carrying with it a sinister plant-eater smugness that meat eaters can't stand.

My enemy then wrapped his arms around my torso, sending me crashing to the cold tile floor. Flat on my back, I looked up at the painting on the wall above me. The image of the creature was enormous: blue-green, with a grinning mouthful of sword-like teeth. Inspired, I pushed my elbows tightly against my ribs and forced my "little arms" up to claw at the vacuum in front of my opponent's laughing, grunting face. But as I prepared for a counterattack, my opponent swiftly jabbed his fingered "horns" hard into my chest.

"This isn't suppose to be happening," I thought, wincing from the pain. "He's my little brother. He's just a *Triceratops* and I, the Tyrant Lizard King — the mighty *T. rex*."

Suddenly, mom's voice broke through the din of two dinosaurs fighting, ending our Mesozoic battle royal for the day.

This match between brothers took place at The Field Museum more than 30 years ago below Charles Knight's oil painting of a *Triceratops* squaring off against the massive *T. rex*. Now hanging in the Elizabeth Morse Genius Dinosaur Hall on the second floor, the mural was originally one of 28 paintings Knight created for the Museum in the late 1920s to depict life on Earrh. Incidentally, he painted the mural just 13 years after Barnum Brown mounted the world's first *T. rex* skeleton at the American Museum of Natural History in New York. And although no one will dispute that the American Museum created the first *T. rex* mount, it was Knight and The Field Museum that put the meat on the great dinosaur known affectionately as the Tyrant Lizard King.

Ever since the Museum placed the mural on display in 1928, millions of kids over the years have stood below it, arguing among themselves as to who would have won this ferocious reptilian encounter. His vision also has penetrated its way into films, artwork, books, cartoons and video games. Along with boxed cereal and milk, it has become a staple of childhood in America.

For these reasons, I think Knight's painting should be classified as a cultural icon. Unlike the endless parade of fad objects on which we so easily bestow the title of icon, his painting actually seems to spring from a reservoir of important, shared images that screams DINOSAUR! In an ironic twist, confirmation of its status as an icon comes quite by accident from a certified purveyor of cultural debris: Sotheby's of New York. Long before the Museum joined in the game that led to its acquisition of Sue on Oct. 4, 1997, Sotheby's chose Knight's mural to represent *T. rex* as the gatefold image for its preauction catalog.

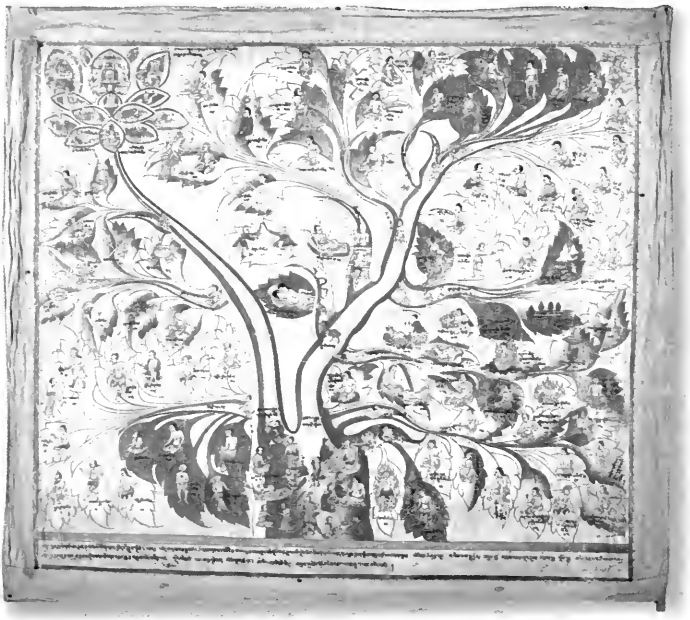
But is that great battle of years ago still being waged? I'd like to believe so. Extensive research and evidence gathered from interviews of my son Sean's friends at day care and by nagging the checkout kid at the toy store confirms my suspicion that the image of Knight's *T. rex* and *Triceratops* at war remains near the top of the dinosaur pile.

As Sue stands on the threshold of becoming the greatest dinosaur attraction in the world, I think that it's only fitting to pause and give a nod to Knight's *T. rex*. His mysterious rendering of a misty Late Cretaceous plain and of a battle of extinct titans has fueled imaginations and the myth of *T. rex* for the better part of a century.

Thanks Charles! **ITF**

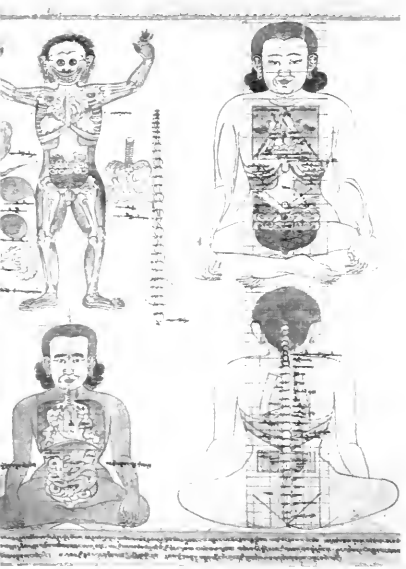
THE FIELD MUSEUM #CK97

Inside



HUGHES DUBOIS BRUSSELS

The Tibetan Art of Healing



HUGHES DUBOIS BRUSSELS

Above: This 300-year-old "thangka" served as a guide for locating vulnerable organs and points of access for diagnosis and surgery.

Top Right: The Root of Physiology and Pathology — *a 17th-century "thangka" that depicts the foundations of a balanced, healthy life and the causes and conditions of disease.*

Under the aegis of the 5th Dalai Lama, Tibet enjoyed a cultural and spiritual renaissance in the 17th century that ushered in 300 years of peace, growth and creative expression. During this renaissance, Sangye Gyatso (1653–1705), the 5th Dalai Lama's favorite disciple and last regent, compiled an exhaustive commentary on the wealth of traditional Tibetan medical literature known collectively as *The Blue Beryl* (named after the Radiant Blue Healing Buddha). Gyatso eventually conceived and supervised the creation of 79 paintings illustrating the entire contents of his treatise. He also founded medical colleges in Lhasa and elsewhere that spread both his treatise and the new canon of *Blue Beryl* paintings. As recently as 1920, the 13th Dalai Lama continued this practice, establishing medical colleges and commissioning copies of *The Blue Beryl* images. Unfortunately, most of these precious works, both ancient and modern, were either destroyed in the 1960s during China's Cultural Revolution or have been lost in remote sites across Asia.

In recent years, however, both the practice of Tibetan medicine and the tradition of *The Blue Beryl* paintings have been revived. In "The Tibetan Art of Healing" exhibit, which is currently on display through Sept. 12, 1999, visitors can view a full set of 79 contemporary renderings of *The Blue Beryl*, juxtaposed with examples from the 17th century and the late 19th century.

Known as "thangkas" in Tibet, these cloth paintings depict in great detail the diverse aspects of ancient Tibetan medical science, which originated in the 8th century and is founded on the belief that the mind is the basis of all phenomena, creating both illness and health. Tibetan medical science also is closely linked to Buddhist tenets, which are, in essence, based on a quest for liberation from suffering. Through a series of vignettes, iconographic depictions, illustrations and anatomical drawings, these ancient and contemporary "thangkas" cover medical topics as diverse as herbal and gemstone remedies; mineral- and animal-based medications; pulse divination; and moxibustion, a treatment where small cones of dried gerbera leaves are partially or completely burned on various areas of the body to promote healing.

Nepalese artist Romio Shrestha, who in 1968 founded a school in the Katmandu valley to preserve and revive this ancient Tibetan art form, created 70 of the 90 "thangkas" on display in the exhibit. The other "thangkas" are from private collections and from the Museum's Tibetan collection.

"The Tibetan Art of Healing," which is free with general Museum admission, is organized by Pro-Cultura Inc. in collaboration with Tibet House, New York. Additional material on display is from private and Field Museum collections.

Insects: 105 Years of Collecting

THE FIELD MUSEUM /93527.43C

Left: A spider sealed for eternity in amber.

In glass cases and wooden boxes stored in rows of cabinets in The Field Museum's insect division are more than 11 million prepared insect specimens, ranging from ants and dragonflies to stoneflies and termites. Together, these specimens constitute one of the largest and most comprehensive insect collections in the world. But who collected these insects and how did so many find their way into the Museum?

You can find the answer in "Insects: 105 Years of Collecting," a new exhibit in the Searle Lounge that opens July 3, 1999, and continues through Jan. 3, 2000.

In the exhibit, visitors will learn that the Museum has relied on a number of different sources in order to assemble its massive insect collection, including donations by specialists in the field and purchases made by Museum staff from private collectors. It also shows how Museum entomologists are constantly adding to the collection through their fieldwork and research in remote locations, as well as by painstakingly sorting through bulk samples (thousands of specimens collected at one time by setting traps).

Some of the insects visitors will see in the exhibit, which is free with Museum admission, include rare butterflies and moths donated to the Museum in 1908 by Herman Strecker, an amateur entomologist; and giant beetles collected in the early 1900s by Frank Psota, a private collector, and purchased by the Museum in 1943. It also will include samples of insects trapped in Baltic amber and watercolor paintings of insects featured in books from the Mary W. Runnells Rare Book Room of The Field Museum Library.

Group Tours at The Field Museum

Did you know that The Field Museum can arrange after-hours, private viewings of exhibits for your club or group?

From 5:30 to 7:30 p.m., your group (50 people or more) can explore the Museum's exhibits and network with associates while enjoying an open bar and a delightful array of hors d'oeuvres. Upcoming temporary exhibits on The Field Museum's schedule include "Sounds from the Vaults," which opens Sept. 4, 1999, and "Cartier: 1900–1939," which opens Oct. 2, 1999. Please call the group sales department at 312.665.7300 for more information.

Sue: The Inside Story

"Sue: The Inside Story" — which is currently on display through Jan. 2, 2000 — profiles the recent discoveries made by Field Museum researchers who have been studying Sue's 2,000-pound skull for the past year.

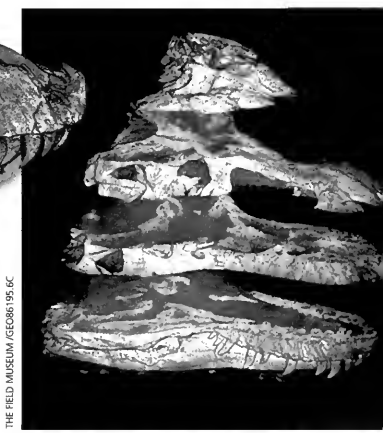
The exhibit includes photographs from the article about Sue that appeared in the June issue of *National Geographic* (see p.13) and two one-third-scale models of Sue's 5-foot-long skull, one of which shows what her head may have looked like when she was alive. It also includes images made from recent computerized tomography (CT) scans that have allowed scientists to see inside the skull of a *T. rex* in ways never before possible.

The scan, which took place in the fall of 1998 at Boeing's Rocketdyne Labs in California, produced some 750 X-ray images, each representing an extremely thin "slice" of Sue's head. Museum researchers then used a computer to stack these pictures like slices in a loaf of bread to create a 3-D image of Sue's 67-million-year-old skull. These scans are the first ever performed on a *T. rex* skull and are yielding significant insight into the animal's physiology and behavior. Some of the discoveries made by Museum scientists from these images will be highlighted in the new exhibit.

THE FIELD MUSEUM /GEO86195.2C

Above: A CT scan of Sue's 5-foot-long skull.

Although the skull will not be on display (Museum researchers are still preparing it), the exhibit will include several of Sue's fossilized bones, including her right shoulder blade and right forelimb. The Field Museum plans to unveil Sue's 45-foot-long mounted skeleton in May 2000.



THE FIELD MUSEUM /GEO86195.6C

Above: Here the skull has been digitally sliced into horizontal sections (the darker colors inside represent areas still containing stone matrix). Before the advent of CT scans, scientists would have been forced to cut Sue's skull in half in order to study its interior bone structure.

JAMES HOWE

Above: The Kuna live in an area that includes a 140-mile stretch of rain forest on the mainland of Panama and a chain of coral islands off the country's Caribbean coast. Named San Blas by outsiders, the region is now called Kuna Yala, which means "Kuna Land."

Community Forum: Common Struggles; New Solutions

7/17, Saturday, 9:30 a.m. & 4:30 p.m.

Join members of the Kuna people of Panama and a group of Native Americans as they discuss different issues and solutions to their common struggle to preserve the environment and the integrity of their cultural heritage. The two morning panels, which will include members of the Chicago Wilderness environmental organization and Field Museum scientists, will discuss "Models of Preservation" and "Partnerships for Preservation: Scientists and Activists." In the afternoon, participants can listen to various community leaders discuss local issues of cultural and environmental preservation. $30 ($25 members) — includes box lunch and coffee. Call 312.665.7400 for more information or to register.

Film: The Spirit of Kuna Yala

7/7, Wednesday, 1 p.m.

The award-winning film "The Spirit of Kuna Yala" presents a lively portrait of an indigenous community determined to survive the encroachment of the western world. It features the Kuna people of Panama's San Blas islands (Kuna Yala) as they unite to protect their rainforest homeland and the traditions it inspires. Told entirely in the words of the Kuna, the film is a plea for environmental conservation from a people who have a deep and intimate relationship with the land. The documentary also shows how the Kuna have rejected the lure of western culture by reaffirming their traditional values and sends the hopeful message that the timeless wisdom of indigenous people has something to offer the rest of the world. "The Spirit of Kuna Yala" also will be shown at 1 p.m. on July 10, 14 and 24. Please call 312.665.7400 for more information.

Music Theater Workshop: Teens Together Ensemble Performance "Faces of Faith"

7/7, Wednesday, 2:30 p.m.

This original musical play about origins and diversity will take the audience on a journey through the Museum with an Irish Catholic boy who consults the wisdom of his ancestors and contemporaries before deciding on whether to maintain a new friendship with a Protestant girl. "Faces of Faith," which is presented from a teen-ager's perspective, begins in Stanley Field Hall and moves through the **Northwest Coast**, **Africa** and **Living Together** exhibits. The play is free with Museum admission and will also be performed every Wednesday and Friday at 2:30 p.m., and every Thursday at 6:30 p.m., from July 8 through August 6. Call 312.665.7400 for more information.

Earth Harp 1999

In late August, the northwest corner of The Field Museum will be transformed into a huge functional harp, complete with 100-foot-long golden strings that will run from the roof of the building to the ground. Designed by Bill Close, an environmental installation artist, and MASS Ensemble, a Chicago-based performing arts group, the harp is scheduled to be fully functional by Sept. 1, 1999 — just in time for the opening of the new "Sounds from the Vaults" exhibit. Accompanied by a cello, a flute and percussion instruments, MASS Ensemble will perform a series of daytime and sunset performances throughout the fall at the base of the harp. See the next issue of In the Field *for more information.*

Naturalist Certificate Program: Local Flora II — Summer

7/13, 7/20 & 7/27, Tuesdays, 6 – 8 p.m., at The Field Museum
7/18, 7/25 & 8/1, Sundays, 9 a.m. – 12 p.m., at an off-site location

Rich Hyerczyk, a Field Museum instructor, will make the landscape come alive as he teaches you how to find and identify local plants in the Chicago region. In this class, which is the second in a three-season sequence of Natural Certificate courses (see below), you will learn the names and characteristics of native and nonendemic plants commonly found in the forests, prairies, wetlands and other areas of northern Illinois. This class should appeal to anyone who has an interest in botany, ecology, gardening or landscape art. $132 ($109 members). Call 312.665.7400 for more information or to register.

Field Trip: Soils to Seeds: Behind the Scenes with The Morton Arboretum and Ball Seed Company

8/24, Tuesday, 8:30 a.m. – 5 p.m.

During this daylong expedition to the Morton Arboretum and the Ball Seed Company, participants will learn about the subject of horticulture, from soil health to plant breeding. The field trip will begin at the Morton Arboretum, where soil scientist Pat Kelsey will give the "dirt" on soil during a tour of the Arboretum's lab, a slide presentation and a review of the organization's "soil pit," which shows how material below topsoil affects plant health. After lunch, participants will learn about plant breeding while touring the field gardens and the seed-packaging facilities of the Ball Seed Company, an international leader in the world of horticulture. Participants should wear comfortable shoes and dress for the weather. $60 ($50 members) — includes bus transportation and lunch. Call 312.665.7400 for more information or to register.

Exploring Culture Through Music

9/8, Wednesday

The Museum's Center for Cultural Understanding and Change (CCUC), in partnership with 12 other Chicago museums, is offering a program beginning in September that explores the cultural diversity of the Windy City. The program, called "Cultural Connections," encourages cultural understanding through learning about the different communities in Chicago and by focusing on three broad themes: history of the community, art as a window into culture and community celebrations. On Sept. 8, 1999, the Museum will kick off the program with "Exploring Culture Through Music," which examines the role of the environment, history and human creativity in shaping diverse music traditions across the world. "Cultural Connections" will then continue over the following months with each of the 12 museums hosting an event that delves into a specific community and culture in Chicago. $20 ($17 members) for the opening ceremony only. Please call 312.665.7475 for more information or to register.

JOHN WEINSTEIN GM89264 69

Above: This oak savanna woodland at Swallow Cliff Woods in Palos Hills, Ill., is home to legions of native plants and animals. Periodically, Cook County Forest Preserve District officials set fires in these woods to suppress the growth of non-native species of plants, release the seeds of endemic flora and curtail the growth of bushes that stop sunlight from penetrating the understory. Before the construction of roads and towns in rural Illinois, fires were part of the natural cycle of growth in the area's forests and prairies.

Naturalist Certificate Program

Created by the Morton Arboretum in 1993, the Naturalist Certificate Program (NCP) has been at the leading edge of environmental education for adults. The goal of the program — which is currently organized by the Morton Arboretum in partnership with The Field Museum and the Chicago Botanic Garden — is to provide students with a basic knowledge of the region's biodiversity through classes that focus on the subjects of botany, ecology, geology and zoology. This summer, NCP is offering three courses: **Local Flora II: Summer** *(see above),* **Field Ecology: Summer** and **Conservation Biology.** *Please call 312.665.7400 for more information.*

The Medicine Buddha: An Evening with Robert Thurman

Thursday, July 8, 6:30 p.m.

To complement the opening of "The Tibetan Art of Healing" exhibit, Robert Thurman, director of Tibet House, New York, will speak at The Field Museum about the Tibetan vision of healing and how it is integrated within a total life transformation, from a condition of life to a life of enduring happiness.

Called a "good friend" by His Holiness the Dalai Lama, Thurman has made the teachings of the Buddha more accessible to westerners through his lectures, articles and numerous books, which include *Essential Tibetan Buddhism, The Tibetan Book of the Dead, Wisdom and Compassion: The Sacred Art of Tibet* and *Inner Revolution*.

Thurman, who has spent 35 years studying Tibetan culture and Buddhist art and politics, has a Ph.D. from Harvard and was the first American ordained as a Tibetan Buddhist monk. He also is the cofounder of Tibet House, New York — a nonprofit organization dedicated to the preservation of Tibetan culture.

A book signing will follow the lecture. $15 ($12 students; $10 members). Call 312.665.7400 for more information or to purchase tickets.

Tibetan Activity Days

Saturday, July 31 and
Saturday, September 11
10 a.m. – 2 p.m.

Celebrate Tibetan culture with The Field Museum and members of the local Tibetan community by participating in hands-on demonstrations of Tibetan games, block printing, calligraphy and regional costume-making. After watching performances of Tibetan dance and storytelling, Museum visitors can observe a Tibetan monk create a sand mandala, a sacred illustration that is believed to bring balance, peace and health to the yearly cycle. Please call 312.665.7400 for more information.

JAMES BALOGH/MAS /GN85775 26

JOHN WEINSTEIN /GN85878 53C

Right: A Tibetan buddhist monk uses a metal funnel to carefully place colored sand on his blueprint of a sand mandala — a sacred illustration used in Buddhist initiation ceremonies. When complete, mandalas are dismantled and the sand carried to a river or lake, where it is "offered for the benefit of marine life."

Summer Festivals of Guerrero and Oaxaca: The Cycle of Propitiation and Sacrifice

For the past 10 years, George Jackson has been photographing the agricultural festivals of Mexico's 54 indigenous folk cultures for a research project called Essence of Mexico. On Aug. 21, 1999, a selection of photographs Jackson took in the Mexican states of Guerrero and Oaxaca for this project will be on view in the exhibit "Summer Festivals of Guerrero and Oaxaca."

The exhibit — which is on display at the Museum through Oct. 30, 1999 — examines the agricultural rituals and harvest festivals of 11 Mexican cultures: the Nahua, Tlapanec and Amusgo of central and eastern Guerrero; and the Trique, Tacuate, Chontal, Huave, Chtino, Afro-Mestizo, Mixteca and Zapotec of western Oaxaca. Although these festivals reflect the unique beliefs and traditions of the different cultures that created them, they all are linked by a common landscape that receives rain only three months out of the year.

"Summer Festivals of Guerrero and Oaxaca," which is free with general Museum admission, was circulated by the Houston Museum of Natural Science. It was made possible by a grant from the U.S.-Mexico Fund for Culture, created and sponsored by the Bancomer Cultural Federation, the Rockefeller Foundation and Mexico's National Fund for Culture and the Arts.

GEORGE JACKSON

Above: Musicians from the Amusgo culture of Guerrero perform at an agricultural festival in the county of Xochistlahuaca, Mexico.

As a side note, the Mexican Fine Arts Center Museum in Chicago is currently hosting an exhibit of more than 98 black-and-white photographs by Graciela Iturbide that show the everyday life and seasonal celebrations of communities throughout Mexico. For almost a quarter of a century, Iturbide has explored ways of capturing the intricate combinations of histories and cultural practices that define Mexico and the cultural rifts that exist within Mexican society. The exhibit, "Images of the Spirit: Photographs by Graciela Iturbide," is currently on display through Aug. 29, 1999, and was organized by the Alfred Stieglitz Center of the Philadelphia Museum of Art. Please call the Mexican Fine Arts Center at 312.738.1503 for more information.

MARILYN SALVADOR

Above: A young woman dressed in traditional Kuna clothing.

"Daughters from the Stars: Nis Bundor"

Saturday and Sunday,
July 24 and July 25, 1 p.m.

As part of the ongoing educational programming for "The Art of Being Kuna" exhibit, Spiderwoman Theater will perform "Daughters from the Stars: Nis Bundor" — an original play based on the Kuna myth of five sisters who came from the heavens to protect the cycle of birth, life and death. According to the myth, the sisters visited Earth when a mother tried to prevent her son from marrying, thus threatening to interrupt the life cycle. The play begins with the myth, but progresses to include Kuna themes of heritage, ancestry, history and the importance of culture and family. Starring three Kuna sisters, Spiderwoman Theater draws its name from the Hopi goddess known as Spiderwoman who taught the Hopis how to weave. In their plays, the sisters use an unusual performance technique in which they weave stories with words and movement, creating a fascinating layer of interlocking stories. $10 ($8 members, students and educators). Please call 312.665.7400 for more information or to register.

Free Visitor Programs

Daily
1 p.m. **Story Time: Facts, Fables and Fiction.** Hear a story, learn new songs and have fun creating artwork — all in a 15-minute program for preschoolers and their families in the Crown Family Place for Wonder. One adult for every three children please.

Interpretive Station Activities: Drop by hands-on activity carts located throughout the Museum (check informational directories for daily listing) and delve into the fascinating world of natural history.

July 3 — Saturday
1 p.m. **Guided Tour of the Africa Exhibit and Screening of "I'll Make Me A World."** Opened in 1993, the **Africa** exhibit presents a portrait of the continent's cultural, geographical, political and social diversity. Following a tour of the exhibit, you can watch a documentary that celebrates a century of African-American arts and culture.


JOHN WEINSTEIN /2088033C

2 p.m. **Millennium at the Museum Film: The Native Americans —The Plains Part I.** Listen to a discussion about the various aspects of Plains culture with several elders and activists from Native American tribes.

July 6 — Tuesday
2:30 p.m. **Faces of Faith.** Watch an original play about diversity and faith from a teen-ager's perspective.

July 7 — Wednesday
1 p.m. **Film: The Spirit of Kuna Yala.** View a film that depicts the Kuna people of Panama's San Blas islands (Kuna Yala) uniting to protect their rainforest homeland and the traditions it inspires.

2:30 p.m. **Faces of Faith.** See July 6.

July 8 — Thursday
2:30 p.m. & 6:30 p.m. **Faces of Faith.** See July 6.

July 9 — Friday
2:30 p.m. **Faces of Faith.** See July 6.

July 10 — Saturday
10 a.m. – noon. **Mud Management Interpretive Station.** Visit the new Mud Management Station to learn about soil, the work of soil scientists and the importance of soil conservation.

1 p.m. **Film: The Spirit of Kuna Yala.** See July 7.

2 p.m. **Underground Café Performance.** Partake in an interactive play and discover the importance of soil.

July 14 — Wednesday
10 a.m. – noon. **A Day in Kuna Yala Interpretive Station.** Learn about Kuna culture through hands-on materials.

1 p.m. **Film: The Spirit of Kuna Yala.** See July 7.

2:30 p.m. **Faces of Faith.** See July 6.

Left: A Kenyan woman returns home after spending the day at the market in the town of Wundanyi Taita. Weekly market days are still held in most parts of rural Africa and are places where people not only purchase and trade goods, but also exchange stories and gather news. This and other cultural themes of rural Africa are explored in more detail in the Museum's ***Africa*** *exhibit on the main floor.*

July 15 — Thursday
2:30 p.m. & 6:30 p.m. **Faces of Faith.** See July 6.

July 16 — Friday
2:30 p.m. **Faces of Faith.** See July 6.

July 17 — Saturday
10 a.m. – noon. **A Day in Kuna Yala Interpretive Station.** See July 14.

11 a.m. – 2 p.m. **Scientists on the Floor.** Examine rarely displayed specimens from the Museum's collections and listen to scientists discuss their research as it relates to the new **Underground Adventure** exhibit.

1:30 – 3 p.m. **Community Storytelling: Preserving Our Culture and Environment.** Join community storytellers in a discussion about environmental conservation.

July 18 — Sunday
2 p.m. **Millennium at the Museum Film: The Native Americans — The Plains Part I.** See July 3.

July 21 — Wednesday
2:30 p.m. **Faces of Faith.** See July 6.

July 22 — Thursday
11 a.m. – 2 p.m. **Scientists on the Floor.** Extend your **Underground Adventure** by touching soil deposited by glaciers and examining tunnels created by soil critters. A soil scientist from the U.S. Department of Agriculture also will be on hand to discuss the process of soil formation.

2:30 p.m. & 6:30 p.m. **Faces of Faith.** See July 6.

July 23 — Friday
2:30 p.m. **Faces of Faith.** See July 6.

July 24 — Saturday
10 a.m. – noon. **Mud Management Interpretive Station.** See July 10

2 p.m. **Underground Café.** See July 10.

July 25 — Sunday
10 a.m. – noon. **A Day in Kuna Yala Interpretive Station.** See July 14.

1 p.m. **Film: The Spirit of Kuna Yala.** See July 7.

July 28 — Wednesday
2:30 p.m. **Faces of Faith.** See July 6.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

JOHN WEINSTEIN /29876230

Above: In Africa, the drum is the core instrument of most musical compositions and has been used by Africans for centuries as both an instrument of music and communication. On July 31 and August 21, drummer Lenny Marsh will discuss the role of the drum in different cultures.

July 29 — Thursday
11 a.m. – 2 p.m. **Scientists on the Floor.** See July 22.

2:30 p.m. & 6:30 p.m. **Faces of Faith.** See July 6.

July 30 — Friday
2:30 p.m. **Faces of Faith.** See July 6.

July 31 — Saturday
10 a.m. – 12 p.m. **The Great Interchange Interpretive Station.** Explore the origins of various plants and animals through hands-on activities.

10 a.m. – 2 p.m. **Activity Day: Tibetan Art of Healing.** Join the Museum for a celebration of Tibetan culture.

1 p.m. **Drumming Demonstration.** Join Lenny Marsh and discover how the drum is used in different communities.

1 p.m. – 3 p.m. **Games Around the World.** Learn how games of skill and chance contribute to cultural identity.

August 4 — Wednesday
2:30 p.m. **Faces of Faith.** See July 6.

August 5 — Thursday
2:30 p.m.& 6:30 p.m. **Faces of Faith.** See July 6.

August 6 — Friday
2:30 p.m. **Faces of Faith.** See July 6.

August 7 — Saturday
10 a.m. – noon. **Mud Management Interpretive Station.** See July 10

2 p.m. **Underground Café.** See July 10.

August 14 — Saturday
11 a.m. – 2 p.m. **Scientists on the Floor.** See July 17.

2 p.m. **Millennium at the Museum Film: American Indian Elders.** Elders from several Native American tribes will speak about the U.S. government's long trail of broken promises.

August 19 — Thursday
11 a.m. – 2 p.m. **Scientists on the Floor.** See July 22.

August 21 — Saturday
1 p.m. **Drumming Demonstration.** See July 31.

10 a.m. – 12 p.m. **The Great Interchange Interpretive Station.** See July 31.

1 p.m. – 3 p.m. **Games Around the World.** See July 31.

2 p.m. **Underground Café.** See July 10

August 22 — Sunday
2 p.m. **Millennium at the Museum Film: Appeals to Santiago.** Watch a documentary about an eight-day Maya Indian festival in Chiapas, Mexico.

Resource Centers
Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center; the Daniel F. & Ada L. Rice Wildlife Research; and the Webber Resource Center — Native Cultures of the Americas. Open daily from 10 a.m. to 4:30 p.m.

Pawnee Earth Lodge
Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains. Open from 10 a.m. to 4:30 p.m. on weekends and 11 a.m. to 2 p.m. on weekdays. Check the informational directories or the sign in front of the lodge for program times.

Ruatepupuke: The Maori Meeting House
Discover the world of the Maori people of New Zealand at the treasured and sacred Maori Meeting House. Open daily from 9 a.m. to 5 p.m.

McDonald's Fossil Preparation Laboratory
Watch Field Museum preparators work on Sue, the largest and most complete *T. rex* ever unearthed. Open daily from 9 a.m. to 5 p.m.

The Crown Family Place For Wonder
A hands-on area for children that is open weekends from 10 a.m. to 4:30 p.m. and on weekdays from 1 to 4 p.m.

Daily Highlight Tours

Visit the exhibits that make this Museum one of the world's finest and get the scoop on the stories behind these historic displays. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Members' Nights 1999

When The Field Museum closes its doors on most weeknights at 5 p.m., an eerie silence envelops the building. But from 5 to 11 p.m. on May 6 and 7, the Museum's halls came alive with the sound of 8,000 members embarking on a behind-the-scenes journey into the heart of The Field Museum. During these two nights, members got to see areas normally off limits to the public, including the research labs and collections facilities. They also had the opportunity to meet the curators, researchers, exhibit developers and educators who bring the world and its people to Chicago.

JOHN WEINSTEIN /GN89275.13AC

JOHN WEINSTEIN /GN89274.33AC

JOHN WEINSTEIN /GN89...

Above: A young girl examines a Polyporus squamosus *—a species of fungus commonly found growing on rotting wood.*

Top Right: William Stanley, collection manager of mammals, demonstrates the art of preparing a coyote for scientific study. The specimen used in this demonstration was found dead on the side of a road in Wisconsin.

Right: A family tours the insect research laboratory on the third floor.

Far Right: A member gets an upclose view of a scarlet tanager (Piranga olivacea).

JOHN WEINSTEIN /GN89274.02AC

Membership Events

Members' Previews for "Cartier: 1900-1939"

Thursday, Sept. 30, 1999, and Sunday, Oct. 3, 1999

Under Louis Cartier's leadership from 1900 to 1939, the designers of the House of Cartier in Paris, London and New York created elegant objects using the most luxurious materials, brilliant craftsmanship and masterful technical innovations available at the time. Tracing a progression of design styles from turn-of-the-century opulence through the innovative geometries and exoticism of the 1920s and 1930s, the exhibit "Cartier: 1900–1939" presents more than 200 works, including jewelry, clocks, watches, vanity cases, cigarette boxes and other ornamental accessories. Of special note are original client-order books, idea sketches and recently discovered original plaster casts of jewels — all of which offer a rare behind-the-scenes look into the creative process of one of the world's premier houses of design.

In September, members will receive invitations to the exhibit previews. Additional information about these previews and the exhibit, which is on display from Oct. 2, 1999, through Jan. 16, 2000, will also be included in the next issue of *In the Field*.

"Cartier 1900-1939" has been organized by The British Museum, London, and the Metropolitan Museum of Art, New York, with generous loans from the Art of Cartier Collection, Geneva.

MITCH FEINBERG

Right: A "Hindu" necklace designed by Cartier in 1936, complete with emeralds, sapphires, rubies and diamonds set in platinum.

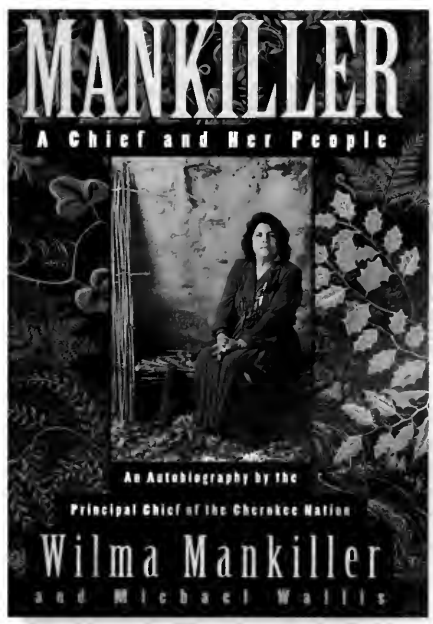
Members' Lecture Series: Wilma Mankiller

Tuesday, July 13, 1999, at 7 p.m.
$10 members
$15 nonmembers; $12 students

When Wilma Mankiller took over as principal chief of the Cherokee Nation in 1985, she became the first woman to lead a major Native American tribe.

For the 10 years she served as the tribe's leader, Mankiller dramatically increased the revenue, services and stature of the Cherokee Nation. She also developed worldwide prominence as a speaker, not only for her people, but also for countless women's rights and minority organizations.

After the lecture, in which she will speak about contemporary Native American issues, Mankiller will be available to sign her book Mankiller: A Chief and Her People. *Call 312.665.7700 for more information or to reserve tickets.*



Let the Museum Plan Your Next Event

Are you looking for a place to host an upcoming corporate event, association meeting, awards banquet or a wedding? If so, The Field Museum has everything you need: a choice of Chicago's finest caterers, a 900-seat theater, a lecture hall with state-of-the-art audiovisual systems and dining and cocktail facilities highlighted by neoclassical architecture. Please call the special events department at 312.665.7600 for more information.

THE FIELD MUSEUM A CS256323

From the Photo Archives

During their seven-month expedition to Ethiopia beginning in the fall of 1926, Wilfred Osgood, curator of zoology, and Louis Agassiz Fuertes, a scientific illustrator and ornithologist, collected 1,400 mammals and 2,000 birds for The Field Museum. To accomplish this monumental task, they trekked across more than 2,000 miles of the most treacherous terrain in northeast Africa. One of the many areas they explored along the way was Gojam, a mountainous province of northern Ethiopia that stretches from the Sudan border in the west to the big bend of the Blue Nile in the east, and from Lake Tana in the north to the city of Debre Markos in the south.

While in Gojam, the two scientists stayed with Ras Hailu, the ruler of the province (pictured above in front of his guarded tent), who showered the two weary travelers with gifts and food and even helped them capture several animals for their collection. Before long, the scientists befriended their host.

"So cordial and warmhearted a man is hard to get away from, and we are really very glad to stay, as he makes everything so interesting and delightful," wrote Fuertes in his diary.

Little did Osgood and Fuertes know that only six years later, this "delightful" and "warmhearted" man would be involved in a sinister plot to overthrow one of the most important figures in Ethiopian history.

At the time of the expedition, Empress Zawditu and her cousin Ras Tafari ruled jointly over Ethiopia, which was one of only a few independent states remaining in European-dominated Africa at the time. After Zawditu 's death in 1930, Ras Tafari assumed the role of emperor and changed his name to Haile Sellassie. Within months of assuming power, Sellassie had stabilized the economy and introduced a number of "democratic" reforms.

As Sellassie's popularity grew, however, Italian Prime Minister Benito Mussolini began to get nervous, believing Sellassie might threaten Italy's control over the Horn of Africa. To undermine Sellassie's power, Mussolini dispatched spies to Ethiopia to bribe the provincial rulers to turn against their emperor.

Hailu was among many of the rulers that accepted Mussolini's money. When Sellassie found out about Hailu's betrayal, he threw him in jail, where he remained until the Italians invaded Ethiopia in 1935 and forced Sellassie into exile. Upon returning to his throne after Ethiopia and Britain defeated Italy in 1941, Sellassie once again imprisoned Hailu, who died in 1950.

Twenty-four years after Hailu's death, a military coup deposed Sellassie and held him under armed guard in his palace. On Aug. 22, 1975, Sellassie was strangled in the basement of his palace. ITF

From the Field Archives

July 1939

Museum zoologists set sail for South America to explore the shores along the Strait of Magellan and the Tierra del Fuego island chain. Their main objective was to supplement the fragmentary faunal collections made by Charles Darwin in this region while serving as the naturalist aboard the *H.M.S. Beagle* in 1834.

Botanist Paul Standley returned to the Museum after spending six months in Guatemala collecting botanical specimens. In all, Standley brought back more than 15,000 plant specimens from many areas previously unexplored by botanists, including the *Bocacosata* — a region of fertile, volcanic soil found in an elevation range of 2,000 feet to 5,000 feet along Guatemala's northwest coast.

The Museum exhibited the fossilized remains of a *Moropus*, a mammal with a horse-like head, a long neck, the torso of a tapir and sloth-like feet armed with large claws used for digging up roots and bulbs. This distant relative of the horse roamed North America and Asia about 20 million years ago.

August 1939

Museum scientists returned from an expedition to Florida where they collected more than 6,000 invertebrates. Their main objective was to gather material and data for an exhibit about the loggerhead turtle.

A farmer from Mapleton, Iowa, sold the Museum a 108-pound iron meteorite he found while plowing his cornfield on June 17, 1939. Because the meteorite showed little evidence of oxidation, scientists estimated that it fell to Earth in the 1920s.

A Museum-sponsored paleontological expedition left for Mesa County, Colo., to collect fossil mammals. During the expedition, the team unearthed two partial skeletons of a *Barylambda faberi* — an 8-foot-long mammal that inhabited North America 58 million years ago.

Llewlyn Williams, curator of economic botany, returned to Caracas, Venezuela, after spending four grueling months collecting botanical specimens in the rain forests along the upper and lower reaches of the Rio Caura. Though Williams nearly died from malaria during the expedition, he still managed to collect more than 400 different botanical samples from this region.

National Geographic Profiles Sue

Sue may soon need to hire a publicist. Within the past few months, she has graced the pages of *The Chicago Tribune Magazine*, starred in a new exhibit and has had a Web site developed in her honor that is outfitted with a live Web cam. Then in June, she hit the publicity jackpot: a feature article in *National Geographic* magazine.

The article, "A Dinosaur Named Sue," covers the entire Sue saga, from how a group of fossil hunters unearthed her remains in the badlands of South Dakota to the legal woes that sent her to the auction block at Sotheby's on Oct. 4, 1997. More importantly, it reveals the discoveries Museum scientists have made over the past year while examining her bones and studying a CT scan of her skull that Boeing's technicians performed in the fall of 1998. One of the most interesting discoveries reported by *National Geographic* is that Sue has a massive olfactory passage in her skull that once carried nerves from her nose to her brain. As Field Museum paleontologist Christopher Brochu reports in the article, this suggests that *T. rex* "must have smelled its way through life."

Some of the other discoveries disclosed in the article are more specific to the specimen, such as Brochu's theory that Sue didn't die in a ferocious battle with another dinosaur as previously reported. "Best I can tell," Brochu says in the article, "this animal simply died." He also believes that the unusual holes on Sue's right jaw that scientists initially thought were teeth marks were actually caused by an infection. Now to the question everyone has been waiting for: Is Sue a boy or a girl? The answer can be found on p. 58 of the article.

Sorry folks! **ITF**

Right: A model by sculptor Brian Cooley of what Sue may have looked like when alive.

Field Museum Tours at a Glance

JAMES GODDARD

Enjoy a fascinating and relaxing week in the Virgin Islands next February aboard a 50-cabin ship with Field Museum zoologist Harold Voris. During leisurely hiking, swimming and snorkeling excursions, you will learn firsthand about many of the region's ecological marvels.

Natural History of Borneo

September 9 – September 24
Duration: 16 days
Leaders: Museum biologists Tan Fui Lian and Robert Inger
Price: $4,290, including airfare from Chicago

Operation Titanic

September 11 – September 22
Duration: 12 days
Leaders: A team of experts, including Alfred McLaren, Anatoly Sagalevitch and Ralph White
Price: $35,500, not including airfare

For more information and free brochures, please call Field Museum Tours at 800.811.7244, or send them an e-mail at <fmtours@sover.net>.

Natural History of Patagonia

October 28 – November 11
Duration: 15 days
Museum Leader: botanist Gregory Mueller
Price: Starts at $6,170, including airfare from Chicago

Atlantic Island Odyssey: Canary Islands, Cape Verde islands, Ascension and others

November 7 – December 8
Duration: 32 days
Guest Leader: Don Walsh, explorer and oceanographer
Price: Starts at $6,115, not including airfare

Splendors of Antiquity

November 26 – December 8
Duration: 13 days
Museum Leader: Vice President Willard White
Price: Starts at $7,590, including airfare from Chicago

Costa Rica and Panama Voyage

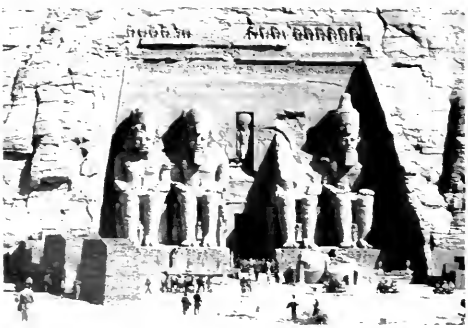
December 8 – December 14
Duration: 7 days
Museum Leader: botanist William Burger
Price: Starts at $2,090, not including airfare

Amazon by 14-Cabin Riverboat

December 11 – December 19
Duration: 9 days
Museum Leader: zoologist Barry Chernoff
Price: $3,090, including airfare from Miami (airfare from Chicago to Miami is $231)

ROBERT DEMAYO

In February, accompany zoologist William Stanley and Mary Anne Rogers on a safari in Tanzania and watch as thousands of wildebeest and zebra amass in the Serengeti Plains. As these herds migrate across the plains, they are joined by lions, cheetahs, hyenas and other predators.



TODD BIELSEN

Join Field Museum Egyptologist Frank Yurco in January as he explores the world of the ancient pharaohs by land and riverboat.

In the Planning Stages

Costa Rica's Wildlife and Ecosystems

Egyptian Odyssey

Exploring the Virgin Islands

Tanzania Wildlife Safari

Where the Spirits Dwell: Australia and New Guinea

Islands of Diversity: Indonesia and the Philippines

British Columbia and Southeast Alaska

Fire & Ice: Japan, the Kuril Islands and Kamchatka Peninsula

Archaeology and Landscapes of China

The Ancient Silk Road: Through China and Central Asia by Private Train

Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.

IN THE FIELD

The Field Museum's Membership Publication

September
October
1999

CARTIER 1900–1939

Opens October 2, 1999

The Rain Forest's Medicinal Treasures

JOHN WEINSTEIN /GN88119.6

The Field Museum: Your Lifelong Learning Center

More than 300,000 students visit The Field Museum annually on organized school field trips, while another 310,000 come in contact with us through hands-on learning exhibits and materials distributed to local schools by our Harris Loan Center. School children, however, comprise just a small percentage of those who partake in formal educational programs at The Field Museum.

Each year, our education department attempts to serve the Museum's many constituents, from the most advanced scholar to the youngest toddler. When I think of the many ways people use this Museum, I'm reminded of the Zen saying, "You can never step in the same river twice." It is, I think, an apt description of how we view education at the Museum. The river (the Museum in our case), for all its appearance of sameness, is something different to each person; it even changes for an individual over time. In other words, The Field Museum is a lifelong learning center.

While we serve people of all ages and with different levels of interest, we do have a distinct focus. The essence of the Museum is its research, collections and exhibits. Like our exhibits, all the Museum's educarion programs focus on the diversity and relationships among nature and cultures, as well as the content of our collections. This is what draws people to The Field Museum and it is the foundation for all our educational activities — from family overnights to lectures.

Last year, for example, we organized a number of lectures by some of the great names in science and most respected intellectuals of our time, including Edward O. Wilson on biodiversity; Cynthia Moss on the social dynamics of elephants; Meave Leakey on human origins; and Cornel West on race relations.

We also try to ensure that the Museum's staff is available to mentor the next generation of scientists. Each year, for instance, we take under our wing about 200 graduate students, providing them with access to our collections, research facilities and curatorial staff. Many of our curators also hold faculty appointments at the University of Chicago, the University of Illinois at Chicago and Northwestern University, where they teach more than 40 graduate and undergraduate courses each year. In addition, undergraduates from across the nation fill our "campus" during the summer as interns, with many from local colleges staying through the academic year.

The Museum also is involved in the school reforms led by Paul Vallas, chief executive officer of the Chicago Public Schools, and Gery Chico, president of the Chicago School Reform Board of Trustees. As part of their reform efforts, Vallas and Chico, who also is a member of our board, are working to ensure that the city's enviable museum resources are part of school life for every Chicago child. This summer, the Museum and the other eight Museums in the Park began working closely with Chico to create a program that would introduce new public-school teachers to the museum resources available in the city. With efforts like this — as well as through partnerships with local schools, distance learning projects with students outside Chicago and literacy programs in the community — we have made a long-term commitment to "turn the Museum over to teachers and students."

As we begin another school year, I hope you will find ways to take part in the lifelong learning center that is an integral component of your museum. We have more than 250 programs planned this fall for all ages. These programs delve into the fascinating world of natural history and cultural diversity.

And just like the river that you can return to again and again, there is always something new for you at The Field Museum. Whether you are coming here for the first time or the 100th time; whether you are coming as a seasoned scholar or a student, you will find an educational program at the Museum suited to your learning needs.

John McCarter

John W. McCarter Jr.
President & CEO

We would like to know what you think about "In the Field" . . . .

Please send comments or questions to Robert Vosper, publications department, The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-2496, or via e-mail at <rvosper@fmnh.org>.

Inside

This 1936 "Hindu" necklace of precious stones and platinum is one of the more than 200 *objets d'art* on display in the "Cartier 1900-1939" exhibit. See **Calendar Section** for details.

Last year, a team of scientists captured one of the most elusive predators that inhabits the ocean depths.

With the help of digital technology, the Museum has brought back to life more than 50 musical instruments from its collections. See **Calendar Section** for details.

INTHEFIELD

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This issue's cover photograph is by Nick Welsh of a pylon and sphinx pendant designed by Cartier in 1913 and made by Lavabre for Cartier Paris in 1921.

The Field Museum

The Field Museum salutes the people of Chicago for their long-standing, generous support of the Museum through the Chicago Park District.

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1400 South Lake Shore Drive
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Around Campus

Shedd Aquarium

Interested in having a bit of the ocean in your living room? Let the fish experts at Shedd Aquarium show you how to set up your own home aquarium and take care of your aquatic friends during **The ABC's of Fish Care** on September 18 and 19, from 10 a.m. to 4 p.m. Among the things you will learn are which fishes make good roommates, how to keep your new pets healthy and how much to feed them. While you learn the ins and outs of fish care, your kids can make fun fishy crafts. For more information, please call 312.939.2438 or check out the Shedd's Web site at <www.shedd.org>.

Adler Planetarium

As part of its grand reopening on Oct. 1, 1999, the Adler will be presenting the show **Blueprint for a Red Planet** in its new StarRider™ Theater. In this show, you can journey to Mars in the year 2031 and explore a human colony on the planet's harsh red surface. In addition, you can check out the Adler's newly remodeled Sky Theater while watching **Millennium Mysteries**, a sky show that explores the different ways people have kept track of time through the ages by following astronomical cycles. Please call 312.922.STAR for more information.

The Rain Forest's Medicinal Treasures

And the Story of How Scientists Found an Anti-AIDS Compound

WILLIAM BURGER

For years, scientists have been searching tropical rain forests like this one in Costa Rica for botanical extracts that might harbor cures to the world's deadliest diseases. Most of these extracts are defensive chemicals used by the plants and trees to protect themselves from the armies of insects that patrol the forests in search of food and from invasive diseases looking to eradicate their next host. Unfortunately, most of these extracts either do not contain any medicinal properties or are too toxic to provide any health benefit. However, some compounds do, like those found in two trees growing in a rain forest in Sarawak on the island of Borneo.

By William Burger
Curator of Vascular Plants
and Robert Vosper
Editor of "In the Field"

While working in a Panamanian rain forest in 1967, Robin Foster, an ecologist with The Field Museum's Environmental Conservation Program, discovered a tree that never flowered, at least not during the three years he studied it.

One day in 1970, however, he noticed that several trees of this species (*Tachigali versicolor*) suddenly flowered simultaneously, producing a spectacular array of pale-yellow and pink flowers. Then came the real surprise. Within a year of flowering and fruiting, the trees all died. Although some palms, bamboos and little herbs often flower once then die, it is a life cycle rarely found in a rain forest tree. Because of the tree's dramatic demise, Foster nicknamed it the "suicide tree."

Robin also discovered something else unusual about the tree: As soon as it flowered, boring beetles and wood-decaying fungi attacked the tree's smooth orange-brown trunk. But why would a tree that had stood tall for many decades suddenly come under assault as it bloomed. Apparently, *Tachigali versicolor* was diverting the energy it once used to defend itself in order to flower and fruit. And as soon as the tree lowered its defenses, it was doomed.

The Rain Forest's Defensive Arsenal

The rain forest is no Garden of Eden — chewing animals and invasive diseases will quickly decimate unprotected trees or plants. Consequently, the plants and trees of the rain forest have evolved to produce a number of different chemical defense mechanisms.

Although scientists are not sure why the cinchona tree, for instance, produces quinine, why the coca shrub produces cocaine or why coffee beans contain caffeine, they believe all are chemical defenses that help the plant survive in the hostile world of tropical environments. Such chemical compounds, however, do not always need to be deadly; they just need to be nasty enough to convince an animal that chews on the tree's leaves or bark to not want to return for a second meal. Sometimes, however, these chemical compounds work in subtler ways.

Foster, for example, discovered that leaf-cutter ants — which use leaves in their underground burrows to grow fungi for food — never raid the "suicide tree." The fungi, it seems, will not grow on the leaves, a lesson the ants presumably "learned" over many generations. Undoubtedly, the *Tachigali* tree is producing a powerful anti-fungal compound, an inference supported by the indigenous people of the Amazon rain forest who use the tree's extracts to treat fungal skin infections. And it is this extract that was one of the ways the "suicide tree" protected itself until it flowered.

ROBIN FOSTER

Above: Once the Tachigali versicolor *tree lowers its chemical defenses to flower, its trunk and buttresses are soon besieged by an army of chewing insects and invasive diseases. Buttresses, which are found in many trees in the rain forest, extend from the base of the trunk and help support the tree during high winds.*

Transforming Poison into Medicine

The indigenous people of the Amazon rain forest are not the only ones who have discovered the medicinal value of defensive plant chemicals. For thousands of years, humans all over the world have been transforming these chemicals into medicines. In fact, most of the world's drugs are derived from the nasty molecules plants produce for protection.

It is important to note, however, that even though these chemicals have "medicinal" value, they all can be deadly in high dosages. In Europe, for instance, people once poisoned each other with an extract from the garden flower *Digitalis*. Today, doctors use that same poison in carefully measured prescriptions to treat heart ailments and edema. Even aspirin, which was originally discovered in willow stems, can be lethal to adults and especially children when taken in excess.

Although scientists have found medicinal plants growing in just about every corner of the planet, the best place to find new drugs is in the rain forest — a place where plants and animals have been battling it out for a long time. In addition, no environment on this planet is richer in plant variety than the rain forest, with diversity occurring at many different levels of the taxonomic hierarchy. At higher levels of this hierarchy (genera, families and orders), researchers have found not only many different types of flowers and plants, but also a wide variety of defensive plant chemicals — some of which have been found to contain anti-AIDS and antitumor properties.

The Search for an Anti-AIDS Compound

Because very little is known about the plants of the rain forest, the natural products branch of the National Cancer Institute (NCI) began testing tropical plants (as well as marine organisms in the Indo-Pacific region) for antitumor agents in 1986. Since the tropics are so vast, NCI contracted with a number of U.S. and international research institutions to collect plants in four major geographic regions: Tropical Asia, Latin America, North America and Africa. Among the U.S. institutions NCI contracted with were the Morton Arboretum in Lisle, Ill., the New York Botanical Garden in the Bronx, the Missouri Botanical Garden in St. Louis, Mo., and the University of Illinois at Chicago (UIC). This plant-collecting program was so successful that NCI expanded the scope of its research and testing in 1988 to include plant compounds that might be effective in combating AIDS.

To date, NCI has screened more than 40,000 plant specimens for anti-AIDS compounds, of which only a handful have made it to preclinical trials. Two of those compounds came from a batch of plant and tree samples collected by the Program of Collaborative Research in the Pharmaceutical Sciences at UIC.

Since the start of NCI's program, the UIC team, led by university botanist Djaja Doel Soejarto, has collected more than 10,000 plant samples from Southeast Asia, of which 106 demonstrated some effect at inhibiting the growth of the HIV virus in laboratory tests. However, only two of these samples proved 100 percent effective in stopping certain strains of the virus from replicating and were also low enough in toxicity to merit further work. The team found both of these compounds in trees of the same genus growing in the rain forests of the Malaysian state of Sarawak on the island of Borneo.

The UIC collection team discovered the first chemical in a subspecies of *Calophyllum lanigerum*, a tree that Harvard botanists John Burley and Bernard Lee found growing in a swamp in a rain forest in northern Borneo in 1987. NCI first tested the tree for anticancer properties, but it had none. Four years later they tested it for anti-AIDS properties and discovered that it stopped certain strains of the HIV virus from replicating. After studying the compound, they named it calanolide — a complex molecule with a central core of four benzene rings tightly bound together (simple benzene rings are the stuff you put in your car's gas tank).

Because of its complexity, calanolide comes in a variety of slightly different configurations; some of which are effective against the HIV virus and others that are not. In this case, the effective configuration was (+)-calanolide A. However, NCI discovered problems with the compound: The tree produced the chemical in almost undetectable quantities. This meant that in order for them to transform (+)-calanolide A into a marketable drug they first would have to create a synthetic version of it, an expensive and difficult task. There also was one other problem: When Soejarto's team went back to find the original tree that produced the compound, it was gone. Whether someone had cut it down or it had met a natural end is unclear. They also were unable to locate another tree of the same subspecies in the immediate area. Thankfully, when the team found the original tree in 1987, they sent a voucher specimen to The Field Museum's botany department to be named, recorded and stored. As a result, the team was able to locate and identify another specimen within six months.

Meanwhile, Soejarto began scouring the forests of Sarawak for other species of the same genus in hopes of finding calanolide in higher quantities. In 1992, he sent NCI a sample of a subspecies of *Calophyllum teysmannii*, a tree of the same genus as *Calophyllum lanigerum* that grows in the westernmost part of Sarawak. While testing the sample, NCI discovered the tree contained a compound almost identical to (+)-calanolide A. In addition, they found that the tree produced extremely high quantities of the compound, which they identified as (-)-calanolide B. The team's

JOHN WEINSTEIN /83348C

Right: The Field Museum's voucher specimen of the subspecies of Calophyllum teysmannii *that produced (-)-calanolide B. Scientists use voucher specimens as a reference when identifying plants and trees.*

next step was to determine whether they could harvest the compound as a sustainable resource.

This challenge went to Marian R. Kadushin, a graduate student studying pharmaceutical botany at UIC. Not only did she have to determine whether (-)-calanolide B could be extracted as a sustainable resource, but she also had to figure out which parts of the tree contained the highest levels of the compound and at what time of year the tree produced these levels. Kadushin soon discovered that concentrations of (-)-calanolide B were much higher in the summer months and that the latex in the tree contained much higher concentrations of the compound than did the leaves or stems. This was a major discovery because latex forms in cells outside the actively growing cambium tissue that forms new wood, allowing Kadushin to tap the tree like a rubber plant without killing it.

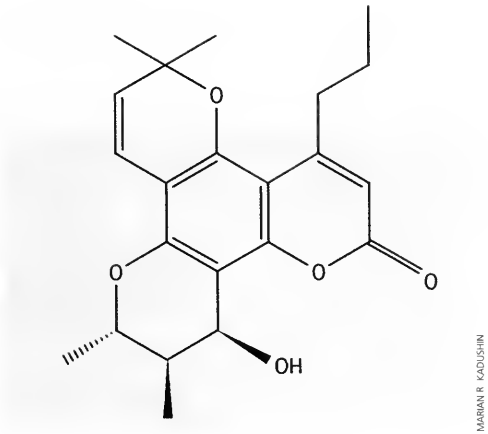
Perhaps her most surprising discovery was that some of these trees produced as much as six grams of calanolide from just 10 grams of dried latex (typically, she found that 35 percent of the latex from *Calophyllum teysmannii* contained the active compound). This is a phenomenal concentration when compared to something like the coca plant, which yields only one or two grams of cocaine from 100 grams of dried leaf tissue. But why would these trees produce so much of this compound?

Kadushin and her colleagues believe that calanolide is perhaps an important part of the tree's defensive arsenal, just like the anti-fungal compound is part of the defensive system of the "suicide tree." And since calanolide blocks the HIV virus from replicating, it probably interferes with the cell machinery of the organisms that try to attack it. What is also interesting is that only certain species of the genus produce the active compound, which means that other lineages never "learned" to make it or are relying on different biosynthetic pathways to defend themselves.

Status of the Calanolides

In 1995, Sarawak MediChem Pharmaceuticals Inc., a joint venture between Chicago-based MediChem Research Inc. and the Sarawak government, received the exclusive license from NCI to develop the calanolides as commercial drugs. Within a few years of receiving the license, the company successfully synthesized (+)-calanolide A, which they now are testing on volunteers inflicted with the HIV virus (clinical trials). So far, the compound shows only mild side effects, such as dizziness and nausea. This is great news as doctors usually have to abandon clinical tests because the chemical is likely to kill the patient before it cures them. MediChem expects to finish these trials later this year, at which point doctors will evaluate the drug in combination with other anti-HIV agents such as AZT.

MediChem is also proceeding with preclinical trials of (-)-calanolide B, in which they are testing the toxicity of the compound on animal models. The



MARIAN R. KADUSHIN

Above: The chemical structure known as (-)-calanolide B that stops the HIV virus from replicating in laboratory tests. The only difference between it and (+)-calanolide A is the order of the three chemical "substituents" attached to the lower benzene ring.

advantage of (-)-calanolide B over (+)-calanolide A is that it would be a much cheaper drug to mass produce because it is natural and sustainable. This also would make it more accessible to developing countries where AIDS is rampant. It is, however, too early to determine whether (-)-calanolide B is as effective as its counterpart in stopping the HIV virus from replicating in the human body or whether either drug will even make it through clinical trials and through the U.S. Food and Drug Administration's approval process.

The UIC team and the Sarawak government, however, are not waiting around to find out. As soon as the team discovered the medicinal value of *Calophyllum teysmannii* and *Calophyllum lanigerum*, the government made it illegal to chop down these trees. In addition, the Sarawak forestry department, with the assistance of Kadushin, began growing seedlings of *Calophyllum teysmannii* in nurseries; then planting the young trees in the rain forest. Therefore, if (-)-calanolide B does become an effective drug, there hopefully will be more than enough of the compound to meet the demand.

Kadushin has been fortunate to work with a government with such foresight. Unfortunately, most scientists are in a race against the ongoing deforestation that claims thousands of acres of rain forest each year. Unless these forests are seen to be of real value, most will not likely be preserved. And as the trees and plants are destroyed, so too are the hundreds of yet undiscovered defensive chemicals they contain that might one day be useful in the battle against the world's deadliest diseases — some of which have yet to rear their ugly heads. **ITF**

Scientists Capture One of the World's Most Elusive Ocean Creatures

TIM SHANK (WHOI)

Above: The Museum's new specimen of Cirroteuthis magna *on the deck of* Atlantis. *To the left of its upper body is a 6-inch orange ruler for scale.*

By Robert Vosper

In 1873, British researchers discovered a species new to science, which would have been a fairly unremarkable footnote in the annals of science if it wasn't for one thing . . . actually, two things.

Following the discovery of this new species, scientists have collected only two more of these animals: one in 1976 and the other in 1992. But it is not as if this animal is a small insect that spends its entire life burrowing underground, or is a tiny mammal that lives in the densest Amazonian rain forest hundreds of miles from the prying eyes of scientists. Rather, it is a cephalopod mollusk, about the same height as an 11-year-old child, that some scientists believe lives in all four oceans — a total of about 129 million square miles of wide-open space.

The species in question is *Cirroteuthis magna*, a finned octopod that can grow to the length of nearly four feet and that was first collected in the Indian Ocean and then the Atlantic Ocean. Although found in all four oceans, the octopod lives at depths of more than a mile below sea level where there is no light, temperatures hover around freezing and the water pressure is so extreme it would crush a human lung filled with air in an instant.

Consequently, zoologists know very little about this creature's natural history; they aren't even sure the three known specimens are the same species. About the only thing they know for certain is that it is a member of the suborder of octopuses called cirrate or finned octopods (the other suborder is the incirrate or finless octopuses). Cirrates, of which *Cirroteuthis magna* is the largest, have two fins that protrude from their bodies like the wings of a bird, an internal shell of cartilage and two rows of thin, flexible filaments called cirri that parallel the suckers on each of their eight arms.

But thanks to the foresight of a team of scientists supported by the National Science Foundation, zoologists may be one step closer to understanding this truly majestic ocean creature.

On Oct. 29, 1998, the team, which included Tim Shank, a researcher at the Woods Hole Oceanographic Institution (WHOI), caught what may be the fourth known specimen of *Cirroteuthis magna* 8,841 feet below the surface of the South Pacific Ocean. In June, Shank donated that specimen to The Field Museum, where Janet Voight, associate curator of invertebrates, will begin studying it later this year.

"To have a specimen of *Cirroteuthis magna* in such great condition is a real advance for science and having one at the Museum is invaluable to my research," explains Voight, who has been studying octopuses for more than 15 years.

Shank and the team of scientists — which included Marvin Lilley, Karen Von Damm, Rachel Haymon and Betsy McLaughlin-West — caught the octopod while sampling the fluid chemistry of hydrothermal vents in the Pacific Ocean about 2,500 miles off the coast of northern Peru. Spewing a toxic brew of poisonous chemicals and heavy metals, these vents sit along the Southern East Pacific Rise, a section of a 46,000-mile tear in the Earth's crust caused by the separation of tectonic plates. Ironically, the noxious chemicals released by these vents nourish colonies of bacteria, which in turn support a host of animals, including tubeworms, crabs, mussels, clams and small fish. Apparently, they also support large predators.

On the morning of October 29, Haymon and McLaughlin-West were diving in WHOI's 23-foot-long deep-submergence vehicle *Alvin* to sample water and rocks at one of the vent sites when they spotted the octopod. According to Shank, who was providing support with the rest of the team aboard WHOI's research vessel *Atlantis*, the *Alvin* crew decided around noon to investigate a nearby unexplored vent. About 33 feet from this site, Matt Heintz, *Alvin's* pilot, saw the almost translucent octopod gliding through the pitch-black, 35-degree waters about 15 feet above the ocean floor. Knowing that Shank, who was studying vent fauna on this cruise, would be interested in the

specimen, Haymon, the senior scientist on the dive, gave Heintz the go-ahead to capture the octopod.

Heintz slowly maneuvered *Alvin* toward the octopod and grabbed it with one of the submarine's two manipulator arms. After struggling to hold onto the squirming creature for about 20 minutes, he finally managed to maneuver it into the PVC basket attached to the side of *Alvin*. After placing a manipulator arm on top of the lid of the basket to ensure their precious cargo didn't escape, the crew spent the remaining two hours of bottom time exploring the new vent site, which they later named "Dumbo" in honor of their captive.

"Although it was a shame to sacrifice one of these graceful animals, it was wonderful to hear they were bringing this thing up," says Shank, whom Heintz radioed with the news of the capture during *Alvin's* two-hour ascent to the surface. "I've seen guys like this on the bottom during previous dives, so I was really elated to get the chance to look at one up close."

After taking a tissue sample for DNA analysis and preserving the specimen in Formalin, Shank contacted Voight, whom he knew was an expert on vent octopuses, to see if she wanted the specimen for her research. Voight was more than happy to take it off his hands.

"I am totally shocked we got it," says Voight, who had to wait six months until *Atlantis* docked in San Diego before she could examine the specimen. "Other than the fact that this guy may be only the fourth known specimen of this species, it is important because it is in a relatively good state of preservation, which is not the case with the other three."

Although other kinds of octopuses fare well in preservation, cirrates — with their fluid-filled bodies and delicate threads of muscles — tend to shrink and dissolve. In addition, scientists caught the first two specimens in deep-sea trawl nets, which often damage the animals, both when they are caught and as they are brought to the surface. As a result, there is not enough anatomical information left of the first two specimens of *Cirroteuthis magna* from which scientists can make detailed comparative studies.

Over the course of the next few months, Voight will dissect the Museum's specimen, documenting its anatomy and comparing it to that of other cirrates. She also will examine its digestive system, hoping it will provide some information about what this octopod was preying upon near the vent communities. In addition, she will examine a videotape the *Alvin* crew took before collecting the specimen, which may reveal new information about how these deep-sea predators use their fins to move through the water.

Although the specimen is an important step in further understanding and determining the taxonomic status of *Cirroteuthis magna*, it also illustrates how little is known about animals that spend their lives deep below the surface of the oceans.

"It is amazing when you realize that half of the oceans are deeper than a mile and a half, and that we know almost nothing about these environments and the fauna that inhabits them," Voight says. "This specimen is just a tiny piece of a much larger puzzle. But the more pieces we get, the more the picture of life in these environments unfolds." ITF

VIDEO STILL COURTESY OF WHOI

TIM SHANK /WHOI

Left: A video still of the octopod seconds before its capture. Cirrates like Cirroteuthis magna *use the fins on the sides of their bodies to propel themselves through the water.*

Below: The octopod's mouth surrounded by suckers and cirri.

Cultural Connections: Exploring Cultural Diversity in Chicago

Thirteen Chicago museums and cultural institutions have joined forces to develop an innovative program this fall that allows participants to explore the city's various ethnic communities while learning about the ways in which anthropology collections can address contemporary issues of cultural diversity.

The program, *Cultural Connections*, consists of a series of events hosted by the participating museums (see list below) in which you can interact with people of diverse backgrounds, explore a variety of cultural traditions and examine anthropological collections from each museum. In the process, you will learn about each community's culture and also gain a better understanding of the reasons for cultural diversity.

"One of the things I hope participants get out of this program is a better understanding of themselves and their relationship to the rich cultural practices in Chicago," says Alaka Wali, associate curator of anthropology and director of the Museum's Center for Cultural Understanding and Change. "I also hope they come away with a deeper appreciation of the museums and cultural resources that exist in the city."

Cultural Connections will kick off at The Field Museum on September 8 with a discussion of how anthropology can be used to understand cultural diversity. Afterward, Museum anthropologists will use the new "Sounds from the Vaults" exhibit (see "Exhibits" page for details) to demonstrate how environment, history and human creativity shape diverse musical traditions throughout the world.

Tickets to each event are $20 ($17 for current members of any of the participating institutions). Those who sign up for three events will receive a complimentary ticket to a fourth event. For more information or to register, please call 312.665.7474 or visit the Cultural Connections Web site at <www.fieldmuseum.org/connect>. ITF

THE FIELD MUSEUM, A56784

Left: During the "Frederick H. Rawson Ethnological Expedition to West Africa" in 1929, Field Museum curator Wilfrid Hambly recorded the language and music of the Ovimbundu people of Angola. His recordings — which can be heard in the computer work stations in "Sounds from the Vaults" — were among the world's first sound recordings.

Schedule of Events

Exploring Culture Through Music
September 8; 6 – 8 p.m.
The Field Museum

Reinventing Yourself with the Jewish New Year
September 30; 6 – 8 p.m.
Spertus Museum

History of Chicago's Lithuanian Community
October 6; 6 – 8 p.m.
Balzekas Museum of Lithuanian Culture

Filipino Immigration Experiences
October 13; 6 – 8 p.m.
Filipino American Historical Society

Chicago's Diverse Heritages
October 19; 6 – 8 p.m.
Chicago Historical Society

Greek American History and Gyros
October 27; 6 – 8 p.m.
Hellenic Museum and Cultural Center

Eyes on Ethiopian Culture: Healing Arts
November 4; 6 – 8 p.m.
DuSable Museum of African American History

Andersonville: From Swedish Farm to Urban Swedish Center
November 10; 6 – 8 p.m.
Swedish American Museum

Art Deco Poland
November 17; 6 – 8 p.m.
Polish Museum of America

Ukrainian Christmas Traditions
December 10; 6 – 8 p.m.
Ukrainian National Museum

Celebrate Korean New Year!
December 15; 6 – 8 p.m.
Korean American Resource and Cultural Center

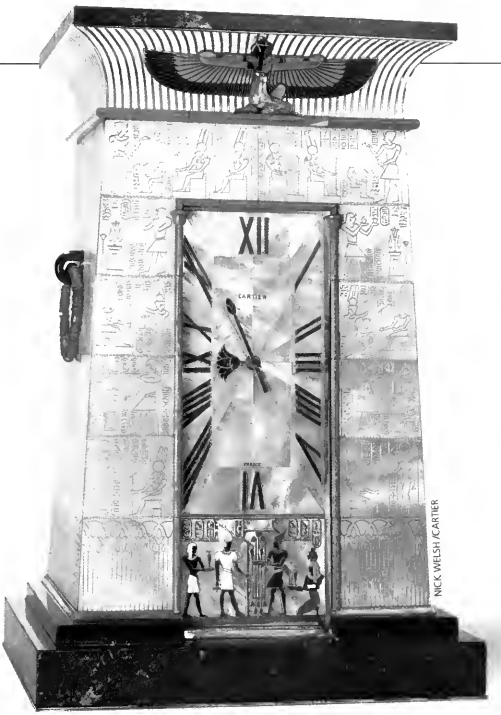
Members' Viewing Nights: Cartier 1900–1939

September 31, October 2 and October 3
5:30 – 9 p.m.

The Museum has reserved three nights (above) during which members will have exclusive access to "Cartier 1900–1939," a new exhibit that uses more than 200 pieces of jewelry and *objets d'art* — including bracelets, necklaces and watches — to explore the fascinating designs made by Cartier during the first four decades of the 20th century. During this period, Cartier emerged as one of the world's premier houses of jewelry design and became the principal exponent of the art deco style. Many of the firm's designs in this period reflect Cartier's passion for Egyptian, Chinese, Indian and Japanese culture, as well as their interest in the 1922 discovery of ancient artifacts buried in King Tutankhamen's tomb. "Cartier 1900–1939" has been organized by the British Museum, London, and The Metropolitan Museum of Art, New York, with generous loans drawn from the Art of Cartier Collection, Geneva.

As part of these free viewing nights, the Museum has arranged for Judy Rudoe, the curator of the exhibit from the British Museum, to give members a half-hour introductory presentation about Cartier at 6 p.m. and 7:30 p.m. in James Simpson Theatre. Rudoe is an authority on jewelry and 19th- and 20th-century decorative arts, and author of *Cartier 1900–1939*, the official exhibition catalog.

Members will receive invitations to the Viewing Nights in September by mail, at which point they will need to choose among various time slots on the day most convenient for them to attend. In order to receive their tickets in the mail, members should mail or fax the response form indicating their time and date preferences to the membership department by Sept. 20, 1999 (the department will not accept reservations over the phone). On all three nights, the Corner Bakery and McDonald's restaurants will be open until 8:30 p.m. and parking will be available in the Soldier Field lot for $7 per vehicle. **ITF**



Above: Considered Cartier's most spectacular piece of "Egyptomania," this Egyptian temple gate clock was made by Couet for Cartier Paris in 1927. Cartier based the design of this piece — which contains mother-of-pearl, lapis lazuli, coral and enameled gold — on a temple gate of the Ptolemaic or Graeco-Roman period.

Membership Benefit Update: Transmedia Dining Program

Effective immediately, the Museum has discontinued the Transmedia discount-dining program it began offering members in 1997. Recently, the Transmedia Company notified the Museum that it had eliminated the no-fee, 20-percent dining program to all members of nonprofit organizations. Therefore, new Field Museum members will now have to pay $50 to join the program. As a result of the company's drastic change in policy, the Museum has decided to eliminate the program as a member benefit. However, Transmedia has agreed to honor the no-fee status indefinitely for members who are currently enrolled in the program. The Field Museum apologizes for this change in its benefit package and any inconvenience it may cause.

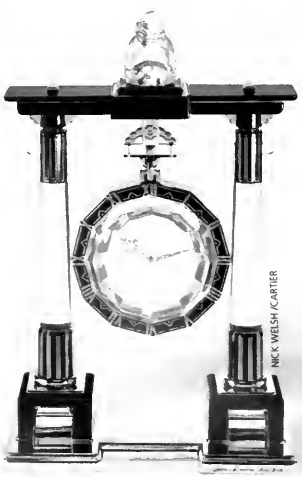
— The Membership Department

Inside

CARTIER 1900–1939

Above: A winged scarab brooch from the Cartier Collection made by Cartier London in 1924 that was to be worn as either a brooch or buckle. The scarab is cut in smoky quartz and the wings in Egyptian blue-glazed faience, highlighted with diamonds and emeralds.

"Cartier 1900–1939," which is on display from Oct. 2, 1999, through Jan. 16, 2000, explores the spectacular creations of the House of Cartier and traces the company's design styles from the opulence of the turn of the century through the innovative geometries and exoticisms of the 1920s and 1930s. In the process, it highlights the achievements of three Cartier brothers (grandsons of founder Louis-François Cartier) who introduced the world to a totally new concept in jewelry, while leading the company through some of the century's most turbulent times, including World War I and the Great Depression.



Left: One of the six mystery clocks that Cartier Paris produced between 1923 and 1925 in the form of Japanese Shinto shrine gates.

More than 200 *objets d'art* will be on display in the exhibit, from a 1907 bracelet of diamonds mounted on ribbed black silk to a 1923 mystery clock made of rock crystal that combines Japanese and Chinese design styles. In addition, many of the most stunning pieces on display show how Cartier drew inspiration from newly discovered archaeological finds from around the world. For example, the 1922 discovery of King Tutankhamen's tomb and its ancient Egyptian treasures contributed a range of highly structured motifs and inspired a new generation of Cartier designers.

One such designer was Charles Jacqueau, a master of style, color and innovation, who joined the company in 1909. He and Louis Cartier worked closely together and shared a passion for the arts of Egypt, India, China, Japan and the Middle East. Both men viewed jewelry not only as an adornment, but also as a highly specialized art form requiring imagination and superior technique, as well as an understanding of ancient design styles, motifs and techniques.

"Cartier is one of the few internationally renowned jewelry designers that have made truly effective use of ancient and non-Western jewelry in creating their own designs," says Ben Bronson, curator of Asian archaeology and ethnology. "The Field Museum has an extensive collection of jewelry and accessories from around the world, so it's particularly exciting to look at and exhibit the work of Cartier."

In addition to the jewelry, cigarette boxes, watches, clocks and accessories that visitors will find on display are more than 70 design drawings from Cartier's remarkable archives, as well as client order books, idea sketches and recently discovered original plaster casts that are records of the company's early pieces that no longer exist. Together with new research, these materials offer a rare behind-the-scenes look into the creative process of one of the world's premier houses of design.

"Cartier 1900–1939" has been organized by The British Museum, London, and The Metropolitan Museum of Art, New York, with generous loans drawn from the Art of Cartier Collection, Geneva.

Depending on their membership category, Field Museum members will receive up to four free tickets to the exhibit. Admission to the exhibit for nonmembers is $12 for adults, $6.50 for children ages 3 to 11 and $8 for seniors and students with an ID (ticket prices include general admission fees). During the Museum's free day on Wednesdays, tickets to the exhibit are $6 for adults, $3 for children ages 3 to 11, and $4 for seniors and students.

Sounds from the Vaults

For decades, more than 6,000 musical artifacts in the Museum's collections have rested in silence. They come from around the world and their voices are as diverse as the people who created them. Now, through the magic of digital technology, 50 of these artifacts will perform again — some for the first time in 100 years.

"Sounds from the Vaults" — which is on display from Sept. 4, 1999, through March 5, 2000 — features the digitally recorded sounds of 50 musical artifacts of all shapes and sizes, from finger cymbals to a 12-foot-long Tibetan trumpet. Although the artifacts themselves are displayed behind glass in traditional wooden cases, visitors can "play" them by tapping on large, touch-sensitive pads mounted in front of each case.

"This exhibit is a new direction for us . . . we wanted to do something different for the new millennium," explains Field Museum anthropologist Alaka Wali. "We're pushing the envelope here, using the latest interactive media technologies to give visitors a whole new way of interacting with our collections."

When visitors activate the touch pads below each case, they trigger a sampler that plays back the digitized sound of the instrument on display. And if a person keeps their finger on the pad, a rhythmic pattern is heard until the pad is released. If someone does the same thing at the same time with another pad, the rhythms of the two instruments synchronize to reveal *Vault Grooves*, an original composition created by sound installation artists Bruce Odland and Sam Auinger.

MARK WIDHALM/A113769C

Above: Among the artifacts on display in the exhibit are a thumb piano or "mbira" from Angola; a Pacific triton conch shell from New Ireland; and a "bedug" drum from Java.

"All the artifacts were recorded with a common tempo, so they can mix rhythmically in interesting ways," says Odland, the cofounder of 30/70 Productions, the New York company that collaborated with The Field Museum on the project. "People will find themselves participating in making a new kind of world music."

In addition, the exhibit will include computer workstations where visitors can trace the stories behind each artifact on display, including how the instrument was made, what it was used for, who collected it and how it came to the Museum. With some of the artifacts, visitors can even view original field maps, notes, movie clips and wax cylinder recordings made by the anthropologist who collected the artifact.

In conjunction with the exhibit, The Field Museum also has developed a Web site < www.fieldmuseum.org/sounds> that allows computer users to learn about the history and play virtual replicas of the instruments on display.

The Chicago Bears: 80 Years of Gridiron Legends

PHOTO COURTESY OF THE CHICAGO BEARS

In celebration of their 80th anniversary, the Chicago Bears opened its vaults and allowed the Museum to develop and host the first-ever exhibit of Bears memorabilia spanning the entire history of this storied NFL franchise. That exhibit — "The Chicago Bears: 80 Years of Gridiron Legends" — is on display from Sept. 1, 1999, through Jan. 2, 2000, and includes a collection of about 25 objects from the team's history.

Left: Bronko Nagurski, a fullback with the Bears and charter member of the Pro Football Hall of Fame, was once described as the "most battering, bruising ballplayer of the 1930s."

For example, visitors will be able to see the Bears 1963 World Championship Trophy and the 1985 Super Bowl Trophy, as well as an assortment of helmets, jerseys and Super Bowl rings owned by some of the great legends of the team. Even Papa Bear's signature brown fedora hat will be on display.

In addition, the SCORE 1160 AM Sports Radio, the radio sponsor of the exhibit, will host a live broadcast from the Museum from 9 to 11:30 a.m. before every home game in 1999. During each broadcast, a different Bears legend will be on hand to greet fans and talk football.

Earth Harp 1999: A Musical Performance by Mass Ensemble

9/4, Saturday, noon, 3 p.m. & 8 p.m.
9/7, Tuesday, 7:45 p.m.
9/18, Saturday, 1 p.m.
9/19, Sunday, 3 p.m.
9/21, Tuesday, 8 p.m.
9/25, Saturday, 8 p.m.

Designed and built by Bill Close, an environmental installation artist, and *Mass Ensemble*, a Chicago-based performing arts group, Earth Harp 1999 is a 100-foot-high functional instrument complete with golden strings that run from the roof of the building to the ground. The harp, which visitors can actually play, will be operational by Sept. 1, 1999 — just in time for the opening of the "Sounds from the Vaults" exhibit on September 4. Accompanied by a cello, a flute and percussion instruments, *Mass Ensemble* will perform a series of free daytime and sunset performances in September (see schedule above) around the base of the harp. Please call 312.665.7400 for more information.

JOHN WENSTEN

Left: The main highlight of Starved Rock State Park is its fascinating rock formations of sandstone that was deposited more than 425 million years ago by a huge shallow inland sea. On October 9, the Museum will lead a tour to this historic state park.

Exhibit Walk-Through with Composer Philip Glass

9/7, Tuesday, 8 p.m.

American composer Philip Glass will take visitors on a tour of "Sounds from the Vaults," a new exhibit that allows you to "play," hear and view about 50 musical artifacts from the Museum's anthropology collections. Glass is one of the most recognized and successful American composers of concert and opera music in the world. Although he disavows the term, Glass is generally considered a "minimalist" composer and is best-known for his collaboration with the theatrical director and designer Robert Wilson on the groundbreaking opera *Einstein on the Beach*. $60 ($54 students and educators; $50 members). Call 312.665.7400 for more information or to register (limited tickets available).

Naturalist Certificate Program: Tree Identification and Ecology

9/29 and 10/6, Wednesdays, 6 – 9 p.m. (at The Field Museum)
10/2, 10/9, 10/16 and 10/23, Saturdays, 9 a.m. – noon (in the field)

Increase your enjoyment and understanding of the outdoors by learning to identify native and commonly planted trees of the Chicago region with Casey Sullivan, a Field Museum instructor and urban forester. During the program, Sullivan also will teach participants about tree biology and ecology. Created by the Morton Arboretum in 1993, the Naturalist Certificate Program (NCP) has been at the leading edge of environmental education for adults for many years with its introductory classes on the region's biodiversity. Participants should bring a field guide and a magnifying glass on all scheduled field trips. $132 ($109 members). Call 312.665.7400 for a complete listing of upcoming NCP classes or to register.

PAULA COURT

Above: Philip Glass, whom some critics have credited for making opera a viable art form again, began playing the violin at 6 and the flute at 8.

Adult Field Trip: Fall Hike at Starved Rock

10/9, Saturday, 8:30 a.m. – 4:30 p.m.

Join John Wagner, a scientist in the Museum's insect division, for an in-depth tour of historic Starved Rock State Park, the natural jewel of the Illinois River Valley in Utica, Ill. During this tour, Wagner will lead a hike to Starved Rock Dam and along forested trails to St. Louis Canyon — one of the park's 18 stream-fed canyons formed by glacial meltwater and stream erosion. Along the way, he will discuss the region's geologic history and show participants how to identify trees and animal tracks. Participants should bring lunch and beverages and wear comfortable shoes. $50 ($43 members). Transportation by coach bus — which departs from the west door at 8:30 a.m. — is included with registration. Call 312.665.7400 for more information or to register.

Right: "Night Patrol" (Munga Watingki Patu) — a 30-minute Australian film from the Margaret Mead film festival that shows how a daring group of aborigine women took control of their community by forming their own police force.

Margaret Mead Traveling Film and Video Festival

10/16, Saturday, 11:30 a.m. – 7 p.m.

Founded in 1977 by the American Museum of Natural History, the *Margaret Mead Traveling Film and Video Festival* is the largest showcase for independent cultural documentaries in the United States, encompassing a broad spectrum of work, from indigenous community media to experimental nonfiction. The American Museum created the festival in honor of pioneering anthropologist Margaret Mead on her 75th birthday and her 50th year at the museum. The Chicago festival at The Field Museum, which is free with general Museum admission, will highlight three programs moderated by ethnographic film specialist Martha Foster: *Women and Taboo* (11:30 a.m.– 2:20 p.m.); *Border Crossings* (2:30 – 4:10 p.m.); *From Sand to Celluloid: Australian Indigenous Media* (4:20 – 7 p.m.). Please call 312.665.7400 for a complete listing of film titles and times.

Persistence, Change and Meaning in Pacific Art: A Retrospective View with an Eye Toward the Future

10/22, Friday, 6 p.m.

Philip Dark, professor emeritus of anthropology at Southern Illinois University, is one of the leading scholars of Pacific art and culture in the world. Trained at the University of London and Yale University, Dark taught anthropology at Southern Illinois University in Carbondale for many years and has been a Field Museum research associate since 1963. During his slide-illustrated lecture, Dark will reflect on what he has learned about Melanesian art while conducting research on the Pacific islands for more than 40 years. $12 ($10 students; $8 members). Call 312.665.7400 for more information or to register.

Chicago Humanities Festival X: New & Old

11/4 – 11/14, Thursday to Sunday

The Chicago Humanities Festival (CHF) will explore the theme "New & Old" through more than 150 lectures, discussions, concerts, dramatic performances, exhibits and film screenings at 20 Chicago cultural institutions. During the festival, novelists, scholars, musicians, artists and others will offer their insight into a variety of questions, such as "What's new?" "Is the conflict between generations inevitable?" and "Is history fact or fiction?" This year, The Field Museum will host a number of CHF presentations, including a daylong tribute to Duke Ellington in Simpson Theatre on Sunday, November 7. This tribute will include a performance by the Chicago Jazz Ensemble of *Black, Brown & Beige: A Tone Parallel to the History of the American Negro*, an Ellington composition that traces the African-American experience from slavery through World War II. For more information about the festival or for a list of events scheduled at The Field Museum, please call 312.661.1028 or visit CHF's Web site at <www.chfestival.org>.

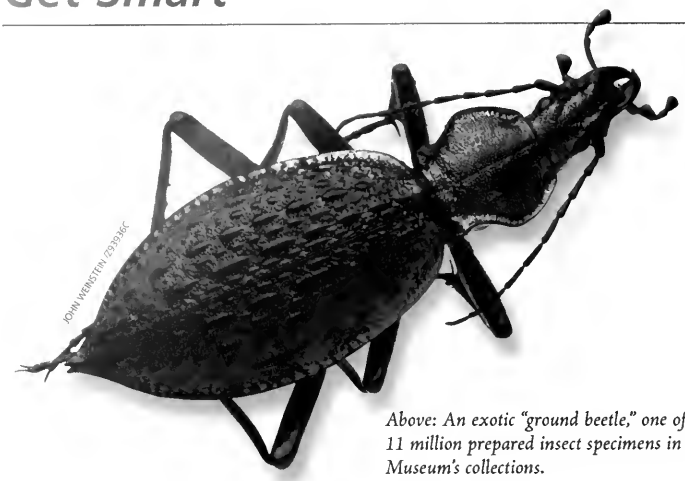
Family Workshop Much Ado About Sue

11/20, Saturday, 10 a.m. – 12 p.m.

The radius is connected to the ulna; the scapula is connected to the humerus. What does it take to piece together a *T. rex* skeleton? Find out as Field Museum instructor Dennis Kinzig explains how bones become fossils and how paleontologists transform these fossilized remains into museum displays. $10 ($8 members). Call 312.665.7400 for more information or to register.

JOHN WEINSTEIN /CNK89358 62C

Right: A preparator works on one of Sue's bones in the McDonald's Fossil Preparation Laboratory.



Above: An exotic "ground beetle," one of the 11 million prepared insect specimens in the Museum's collections.

Insects: 105 Years of Collecting

In glass cases and wooden boxes stored in rows of cabinets in the Museum's insect division are more than 11 million prepared insect specimens, ranging from ants and dragonflies to stoneflies and termites. Together, these specimens constitute one of the largest and most comprehensive insect collections in the world. But who collected these insects and how did so many find their way into the Museum?

You can find the answer in "Insects: 105 Years of Collecting," an exhibit in the Searle Lounge that is currently on display through Jan. 3, 2000.

In the exhibit, visitors will learn that the Museum has relied on a number of different sources to assemble its massive insect collection, including donations by specialists in the field and purchases made by Museum staff from private collectors. It also shows how Museum entomologists are constantly adding to the collection through their fieldwork and research in remote locations, as well as by painstakingly sorting through bulk samples (thousands of specimens collected at one time by setting traps).

Cartier 1900–1939 Opening Weekend Festivities

In conjunction with the opening of the "Cartier 1900–1939" exhibit on Oct. 2, 1999, The Field Museum is offering a series of educational activities designed to provide insight into one of the world's most prestigious houses of jewelry design.

Family Field Days: The Nature of Jewelry

Saturday and Sunday, October 2 and 3, 11 a.m. - 3 p.m.

Watch local artists demonstrate how jewelry designs are inspired by nature and world cultures. During the demonstration, visitors can make a crown of jewels or create their own jewelry designs on magnetic boards. Throughout the event, visitors also can explore different methods of making jewelry and wearable art, while learning how artists translate traditional motifs into contemporary designs. In addition, a scientist from the Museum's insect division will be on hand to display some exquisite examples of insect jewelry from the collections. This event is free with Museum admission.

Jeweler of Genius — Judy Rudoe, Curator at the British Museum

Saturday, October 2, 2 p.m.

Judy Rudoe, curator of the "Cartier 1900–1939" exhibit, will discuss Cartier's most renowned designs, while providing a historical overview of 19th- and 20th-century jewelry design. Following this free lecture, Rudoe will sign copies of her book *Cartier 1900–1939*, which is the official exhibition catalog. Please call 312.665.7400 for more information.

Celebración '99

Saturday and Sunday,
October 16 and 17, 11 a.m. – 4 p.m.
Monday and Tuesday,
October 18 and 19, 10 a.m. – 1 p.m.

This year's annual celebration of Latin American culture focuses on the exhibit "Summer Festivals of Guerrero and Oaxaca," which uses photographs by George O. Jackson to bring to life the agricultural festivals of the indigenous peoples of Mexico. This free festival includes performances by a Mexican dance group and a concert by a traditional Mexican folk band. Please call 312.665.7400 for more information.

In addition, the Museum and EXITO! *newspaper will present the musical ensemble* Los Folkloristas *for an evening of Latin American and pre-Columbian music on October 16 at 7 p.m. $15 ($12 students/educators, $10 members). Please call 312.665.7400 for tickets or more information.*

Celebración is made possible through the generosity of Abbott Laboratories.

Above: A woman dances with decorated corn stalks in an agricultural ceremony performed each summer in the Mexican state of Guerrero.

Sounds from the Vaults
Opening Festivities

Join The Field Museum as it celebrates the opening of the new exhibit "Sounds from the Vaults," a collaboration between the Museum and 30/70 Productions in New York. In this exhibit, visitors can explore the culture of sound by "playing" 50 musical artifacts from the Museum's anthropology collections (see "Exhibit" page for details). For more information about educational activities relating to the exhibit, please call 312.665.7400.

Sounds from the Hall

Saturday to Monday, September 4 to September 6, 11 a.m. to 3 p.m.

Meet the community musicians who played the instruments during the digital recording sessions for "Sounds from the Vaults." Throughout the three days, the musicians will be stationed in the exhibit to answer questions about the instruments on display and the making of the exhibit. They also will be performing a free concert in Stanley Field Hall at different times throughout the opening weekend.

World Music Festival: Chicago '99

Tuesday, September 21, 5 – 11 p.m.

From September 21 to 30, the City of Chicago will host its first multivenue music festival showcasing traditional and contemporary music from cultures around the world. The festival will kick off at The Field Museum with a free concert at the north steps on September 21 and will feature the Indian gypsy group *Musafir;* the *Zimbabwe Leaders*, an African group that incorporates the thumb piano (mbira) into their compositions; and the Afro-Caribbean rhythms of the Brazilian group *Olodum*. Please call 312.655.7440 for information about this event. All inquiries about the festival should be directed to the Chicago Department of Cultural Affairs at 312.744.6330.

An Evening with Composer Philip Glass

Tuesday, September 7, 6:30 p.m.

Winner of the 1999 Golden Globe Award for best score, Philip Glass is one of the most recognized and successful American composers of concert and opera music in the world. Most recently, Glass composed the music for Martin Scorsese's film *Kundun* and Peter Weir's *The Truman Show*. During this presentation, Glass will be interviewed by his second cousin Ira Glass, the producer and host of public radio's *This American Life*. $15 ($12 students and educators; $10 members). Call 312.665.7400 for more information or to register.

Right: Beauler Dyoko is Zimbabwe's first female mbira recording artist and singer. She is also one of the six members of the Zimbabwe Leaders, a group of master mbira musicians.

Left: The Field Museum served as the backdrop for the 1996 film The Relic.

Field of Screams: Halloween Festivities

Celebrate the Halloween season in a safe and unique way at the Museum's Harvest Festival on October 30 from 11 a.m. to 4 p.m. During this festival, visitors can make their own costumes, paint a pumpkin and tour the Museum's "spooky" halls. The festival will culminate with a puppet show by Red Moon Theatre.

In addition, the Museum will be showcasing a number of "horror" flicks throughout the Halloween season that were either shot at the Museum or are based on a Museum story. These films include The Ghost and the Darkness *(PG-13) on October 23 at 7 p.m.;* Them *(NR) on October 30 at 7 p.m.; and* The Relic *(R) on October 31 at 7 p.m. All screenings include a presentation by Museum staff on the story behind each film, a special tour of areas of the building relating to the movie and three complimentary beverages. $15 ($12 members). This film series is recommended for mature audiences. Please call 312.665.7400 for more information or tickets.*

Free Visitor Programs

PHOTO COURTESY OF MASS ENSEMBLE

Above: A member of Mass Ensemble performs in front of Earth Harp 1999 — a shimmering, 100-foot-tall harp the Museum will install near its west entrance at the beginning of September.

Daily Through September 6
Weekends After September 6
1 p.m. **Story Time: Facts, Fables and Fiction.** Learn new songs and stories, and have fun creating artwork — all in a 20-minute program for preschoolers in the Grainger Gallery.

Every Saturday and Sunday
Interpretive Station Activities. Drop by hands-on stations located throughout the Museum (check informational directories for daily listing) and delve into the fascinating world of natural history.

Weekends in October
10 a.m. – 3 p.m. **Creation Station: Colorful Costumes.** Transform yourself into an animal or plant by creating a costume based on an object in one of The Field Museum's exhibits.

September 4 — Saturday
11 a.m. Performance: **Fambondui.** Stop by the main stage in Stanley Field Hall and enjoy the sounds of Senegalese music.

11 a.m. – 3 p.m. Family Field Days: **Sounds from the Hall.** Interact with community musicians in the new "Sounds from the Vaults" exhibit.

11 a.m. – 3 p.m. **Unity Day.** Celebrate cultural diversity with hands-on and music-related activities.

Noon, 3 p.m. & 8 p.m. **Earth Harp Performance.** *Mass Ensemble*, a Chicago-based performing arts group, will present a special concert on and around Earth Harp 1999 — the world's largest stringed instrument.

1 p.m. **Guided Tour of Africa Exhibit and Screening of "I'll Make Me A World."** Travel through the **Africa** exhibit; then watch a 20-minute documentary that celebrates a century of African-American culture.

2 p.m. **Film: On the Pow Wow Trail.** Watch a film about the preservation of Native American customs.

September 5 — Sunday
11 a.m. **Performance: Friends of the Gamelan.** Stop by the main stage in Stanley Field Hall and listen to the sounds of Javanese music.

11 a.m. – 3 p.m. **Sounds from the Hall.** See September 4.

2 p.m. **Film: Maneaters of Tsavo.** Catch a screening of a documentary that explores the spine-chilling account of two lions that killed 130 railroad workers in Kenya in 1898.

September 6 — Monday
11 a.m. – 3 p.m. **Sounds from the Hall.** See September 4.

September 11 — Saturday
10 a.m. – 2 p.m. **Family Field Days: The Tibetan Art of Healing.** Join the Museum for a celebration of Tibetan culture and visit the "Tibetan Art of Healing" exhibit.

1 – 3 p.m. **Millennium at the Museum Future Feature: Drumming Demonstration.** Lenny Marsh and Lanialoha Lee will share the origins and techniques of African and Pacific island drumming.

2 p.m. **Millennium at the Museum Film: Twentieth Century Medicine Man.** Follow an ethnobotanist through a Brazilian rain forest as he searches for a cure for cancer.

September 12 — Sunday
1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** Go back in time with a Museum guide to a period when the pre-Columbian Mayan culture was thriving.

2 p.m. **Film: Maneaters of Tsavo.** See September 5.

September 18 — Saturday
9:30 a.m. – 3 p.m. **UNO Day.** Help the United Neighborhood Organization (UNO) kick off its annual parental involvement program and partake in educational activities designed for visitors of all ages. UNO day also includes an Earth Harp performance at 1 p.m.

September 19 — Sunday
11:30 a.m. & 2:30 p.m. (English); 1 p.m. (Spanish). **Gallery Tour: The Aztec, Maya and Their Predecessors.** Tour the Museum's Mesoamerican Halls and explore the cultures of various pre-Columbian civilizations.

3 p.m. **Earth Harp Performance.** See September 4.

Daily Highlight Tours

Take a guided tour of the exhibits that make this Museum one of the world's finest and learn about the history of these displays. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

September 21— Tuesday
5 – 11 p.m. **World Music Festival Chicago '99.** See "Get Smart" page for details.

September 25 — Saturday
8 p.m. **Earth Harp Performance.** See September 4.

September 26 — Sunday
1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** See September 12.

October 2 — Saturday
11 a.m. – 3 p.m. **Family Field Days: The Nature of Jewelry.** Celebrate the opening of the "Cartier 1900-1939" exhibit with programs that show how jewelry design is influenced by nature and culture. The program includes a 2 p.m. lecture and book signing with Judy Rudoe, the exhibit curator.

1 p.m. **Guided Tour of the Africa Exhibit and Screening of "I'll Make Me a World."** See September 4.

October 3 — Sunday
11 a.m. – 3 p.m. **Family Field Days: The Nature of Jewelry.** See October 2.

1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** See September 12.

October 9 — Saturday
1 – 3 p.m. **Millennium at the Museum Future Feature: Drumming Demonstration.** See September 11.

2 p.m. **Performance: The Field Museum/Teens Together Ensemble.** Watch the *Teens Together Ensemble* perform an original musical play relating to the new "Sounds from the Vaults" exhibit.

2 p.m. Film: **Maneaters of Tsavo.** See September 5.

2 p.m. **Book Reading and Signing: Keeper of the Delaware Dolls.** Listen to Native American author Manny Skolnick read excerpts from and sign copies of his new book, *Keeper of the Dolls*.

October 10 — Sunday
2 p.m. **Performance: Teens Together Ensemble.** See October 9.

October 16 — Saturday
11 a.m. – 4 p.m. **Celebración '99.** Join the Museum for a four-day Latin American festival. See the "Get Smart" page for details.

11:30 a.m. – 7 p.m. **Margaret Mead Traveling Film and Video Festival.** See "Calendar of Events" page for details.

2 p.m. **Performance: Teens Together Ensemble.** See October 9.

October 17 — Sunday
11 a.m. – 4 p.m. **Celebración '99.** See October 16.

1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** See September 12.

2 p.m. **Performance: Teens Together Ensemble.** See October 9.

October 23 — Saturday
2 p.m. **Performance: Teens Together Ensemble.** See October 9.

2 p.m. **Film: Maneaters of Tsavo.** See September 5.

October 24 — Sunday
2 p.m. **Performance: Teens Together Ensemble.** See October 9.

October 30 — Saturday
11 a.m. – 4 p.m. **Halloween Harvest Festival.** See "Get Smart" page for details.

October 31 — Sunday
2 p.m. **Performance: Teens Together Ensemble.** See October 9.

Resource Centers*
Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center and the Daniel F. & Ada L. Rice Wildlife Research Station. Open daily from 10 a.m. to 4:30 p.m.

**Please note that the Webber Resource Center and Crown Family Place for Wonder will be closed for renovations from Sept. 7, 1999, through May 2000.*

Pawnee Earth Lodge
Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains. Open from 10 a.m. to 4:30 p.m. on weekends and at 1 p.m. during weekdays. Check the informational directories or the sign in front of the lodge for program times.

Ruatepupuke: The Maori Meeting House
Discover the world of the Maori people of New Zealand at the treasured and sacred Maori Meeting House. Open daily from 9 a.m. to 5 p.m.

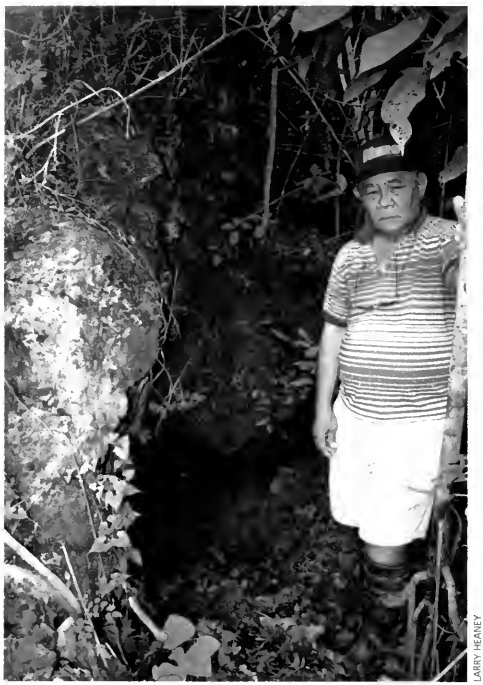
McDonald's Fossil Preparation Laboratory
Watch Field Museum preparators work on Sue, the largest and most complete *T. rex* ever found. Open daily from 9 a.m. to 5 p.m.

THE FIELD MUSEUM /Z93658

Right: British army officer John Patterson with one of the two Tsavo lions he shot and killed in 1898. Museum visitors can watch a documentary about Patterson's harrowing ordeal on September 5 and 12; and October 9 and 23.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Filipino Mining Engineer Unravels New Chapter in the Natural History of the Philippines



LARRY HEANEY

Left: Michael Armas in front of the entrance to the shaft in which he found the fossils. Because the shaft had collapsed, Larry Heaney was unable to search for any additional fossils.

By Robert Vosper

About four years ago, Dr. Hamilcar Intengan of Chicago climbed the Museum's south steps carrying a white box full of small bones and entered Stanley Field Hall through the building's large bronze doors. He then strolled past the long lines of visitors waiting to pay admission and asked an employee if he could talk to a paleontologist. After making a couple of phone calls, the employee informed Intengan that one of the Museum's scientists had agreed to see him, but that he would have to wait until a security guard could escort him upstairs.

After sitting on a bench for about 10 minutes, Intengan told the employee that he had to leave to attend an important meeting. He then handed the him the box and scribbled a note on the back of his business card indicating the bones had come from the Philippine island of Cebu. Intengan then turned around and left.

A few months later, John Flynn, MacArthur Curator of Fossil Mammals, examined the bones, which included a humerus, some teeth and several vertebrae. It took Flynn only a few seconds to determine the bones were the fossilized remains of an adult mammal not much bigger than a pig. After reading the note on the back of the business card, Flynn decided to show the fossils to Larry Heaney, associate curator of mammals.

Heaney, who has spent most of his career studying the exceptionally diverse mammalian fauna of the Philippine archipelago, began comparing the fossils to the Museum's vast collection of mammal bones, finding a perfect match within a half-hour. Although much smaller, the bones were almost identical to those of a Tamaraw (*Bubalus mindorensis*) — an endangered species of dwarf water buffalo that inhabits the Philippine island of Mindoro.

However, there was just one problem with the identification: the Tamaraw had never been known to inhabit Cebu, which is about 205 miles south of Mindoro. In addition, an adult Tamaraw stands about 3.3 feet tall, whereas the bones in the box were those of an adult dwarf water buffalo about half that size.

After sharing his findings with Flynn and sifting through the scientific literature relating to the Tamaraw, Heaney concluded the fossils belonged to an extinct species of dwarf water buffalo that was new to science. In other words, the bones Intengan had delivered to the Museum were from an animal that only Heaney and Flynn knew existed. Heaney then picked up the phone to share the news with Intengan. The story that unfolded turned out to be as remarkable as Heaney and Flynn's findings.

Intengan explained that his childhood friend Michael Armas, a 73-year-old mining engineer from Cebu, found the bones in 1958 while digging a 35-foot tunnel into a hill on Cebu in search of phosphate. But Armas had never seen bones like this before; they were dark brown and seemed deformed. Although Armas had no formal paleontological training, he quickly surmised they were fossils, believing at first they were the remains of a human. Satisfied there were no more bones in the area, Armas put them in his pocket and continued working. Upon returning home that night, he carefully placed them in a glass jar on his bookshelf.

Over the course of the next 37 years, Armas showed the fossils to everyone he could think of, hoping someone could identify them. Nobody could. In fact, most people thought he was crazy to keep some old bones in his house and advised him to throw them away. Fortunately, Armas never heeded their advice.

Then four years ago, Intengan, who had left Cebu for Chicago in 1967 to pursue a medical career, returned to the island to visit his family. At some point during his vacation, he stopped by to see Armas. As the two sat around the house reminiscing about the old days, Armas brought up the story of his fossils. After examining the bones, Intengan could only confirm they were the remains of an animal, and not a human as Armas had initially thought. He then offered to take some of the fossils back with him to Chicago, where, he explained, there was a large natural history museum that might be able to identify them.

After listening to the story, Heaney made arrangements to meet Armas and examine the area where the engineer had unearthed the fossils, which Heaney estimates are at least 12,000 years old.

"He was immensely excited by all of this," says Heaney, who finally met up with Armas last April while conducting unrelated fieldwork on the archipelago. "He was just glowing with excitement . . . he was so happy that somebody was taking an interest in his fossils and was doing something with them."

After spending the day with Armas at the discovery site, Heaney then took the remaining bones to the Philippine National Museum, where he invited his colleague Angel Bautista, a paleontologist and archaeologist, to help him study and describe the new animal. He also wanted to compare Armas' bones to some unusual fossils he had seen on display at the museum. Once again, the story took a strange twist.

Researchers at the Philippine National Museum discovered these fossilized bones in the 1950s at different locations on the island of Luzon, which is about 100 miles north of Cebu. Since the bones looked very similar to a Tamaraw, the researchers simply described them as belonging to a "small bovid." However, upon comparing the bones to Armas' fossil, Heaney concluded they were the remains of another extinct species of dwarf water buffalo, only slightly taller than the one on Cebu. This animal was also new to science.

Heaney now believes that about 200,000 years ago, the ancestor of the domestic water buffalo that is found throughout Southeast Asia crossed the South China sea and populated at least three different Philippine islands: Cebu, Mindoro and Luzon. As they evolved, these water buffaloes got smaller, a common phenomenon on island ecosystems in which nature favors animals that consume the fewest calories. At some point, the dwarf water buffaloes on Cebu and Luzon, which had been separated long enough for them to evolve into different species, became extinct, leaving only their close relative the Tamaraw to carry on their legacy. If Heaney's theory is correct, then Armas' fossil has unveiled a new chapter in the natural history of the Philippines.

"What Armas has done by keeping this fossil is fill an enormous hole in our understanding of the biogeographical distribution of the dwarf water buffalo," Heaney explains. "For years, we have been hampered by the fact that there is almost no Philippine mammal fossil record to work from. So, what he has done is also open the door a crack to the fossil history of Philippine mammals."

Within the next few months, Heaney will determine the exact age of the fossils by sending them to a laboratory for Carbon-14 dating. When the test results come back, Heaney, Flynn and Bautista will officially describe and name the species.

Afterward, Heaney will send the fossils back to the Philippine National Museum, while The Field Museum will keep a cast replica for further study.

Heaney will also send a replica to Armas so he can fill the empty jar on his bookshelf and prove to his friends that he wasn't crazy after all. ITF

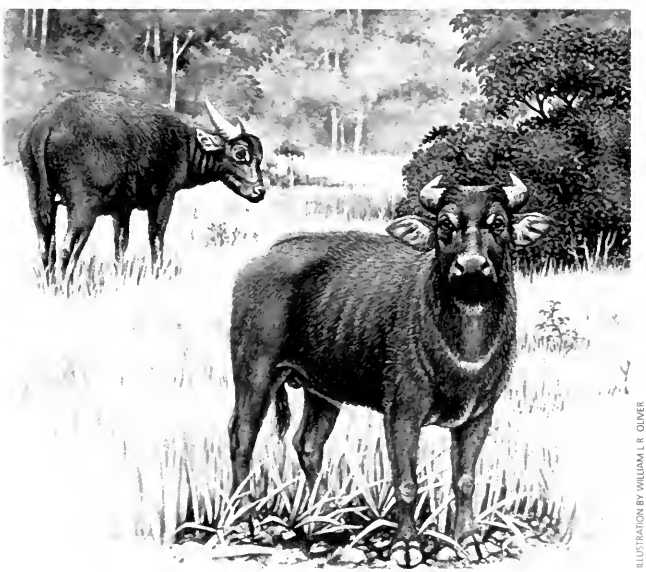
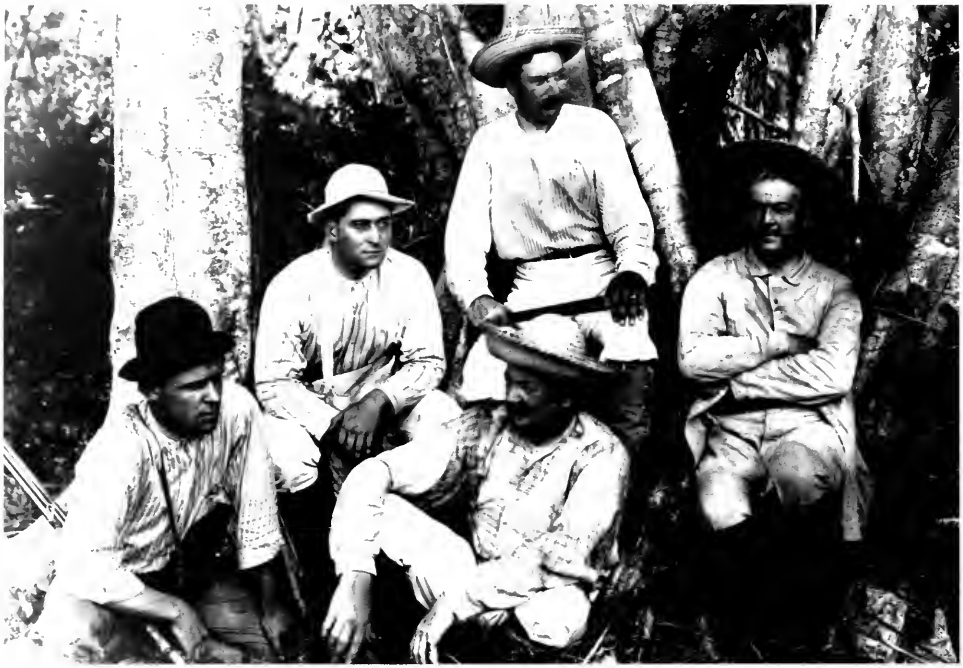


ILLUSTRATION BY WILLIAM L.R. OLIVER

Right: The Tamaraw, the living species of Philippine dwarf water buffalo, is one of 111 species of mammals unique to the island nation. Due to habitat destruction and over hunting, however, the Tamaraw has joined the list of 51 Philippine mammals officially recognized as endangered. This illustration is reprinted from Larry Heaney's book "Vanishing Treasures of the Philippine Rain Forest," published by The Field Museum in 1998.



THE FIELD MUSEUM /A83187

From the Photo Archives

As The Field Museum's first botany curator, Charles Millspaugh — shown here on the left holding a rifle during an expedition to Mexico at the turn of the century — didn't have much time to conduct scientific research or to publish. From the day he joined the Museum in 1894, Millspaugh dedicated his career to transforming several thousand plant specimens into one of the world's largest and most complete botanical collections in the world.

When he died on Sept. 15, 1923, at the age of 70, he had, by most accounts, achieved his mission. Ironically, the man who is considered the father of The Field Museum's botany department had never taken a course in botany in his life.

After graduating from New York Homeopathic Medical College in 1881, Millspaugh opened a small practice in Binghampton, New York. But Millspaugh, who as a child loved to explore the woods around his house in Ithaca, New York, became increasingly distracted by the lure of the outdoors. During his free time, he also began studying medicinal plants; a hobby that soon blossomed into an obsession and a book titled *American Medicinal Plants*. This comprehensive guide, which Dover Publications re-released in 1974, not only showed his mastery of the subject, but also revealed his artistic talent. Included in the book are 180 of Millspaugh's botanical watercolors, the originals of which are housed in the Museum's rare book room.

After publishing the book, Millspaugh abandoned his medical practice to take a job at West Virginia University in 1889 cataloguing the state's flora. While at the university, state officials commissioned him to create a display about West Virginia's commercial timber industry for the 1893 World's Columbian Exposition in Chicago. Millspaugh not only developed the exhibit, but also collected all the specimens, personally shipped the display to Chicago and supervised its installation.

The exhibit, which contained sections of logs, photographs of logging operations and a selection of logging tools, became the main attraction in the Exposition's forestry building. "The display is the best commercial timber exhibit, the most tastily (sic) arranged and easiest of comprehension," noted one reviewer in the 1893 issue of *Lumber Trade Journal*.

Trade journals were not the only ones impressed with Millspaugh's work. Toward the end of the Exposition, Museum officials began searching for someone to oversee their newly created botany department and herbarium. They didn't have to look far. Although Millspaugh had no formal training in the natural sciences, Museum officials nonetheless decided to take a gamble on the wayward doctor.

During Millspaugh's 30 years of service, the officials never once regretted their decision. ITF

From the Field Archives

September 1934

Nature documentarian Frank Buck donated a 14-foot-long king cobra he captured while on assignment in India. The snake, which was the largest king cobra on record at the time, died while on exhibit at the 1933 Century of Progress World's Fair in Chicago.

A donor gave the Museum the partial remains of a mammoth carcass (including some skin and hair samples) that gold miners in northern Alaska unearthed while loosening gravel with a high-pressure water cannon.

The Museum exhibited a specimen of the Arctic tern, a small, gull-like seabird that each autumn migrates from its summer breeding home in the Arctic region to its winter quarters in the Antarctic, returning home in the spring. In all, this bird travels some 21,750 miles each year — roughly the same distance as the Earth's circumference.

Museum paleontologist Elmer Riggs unearthed the fossilized remains of two rhinoceroses in the Badlands of South Dakota. Earlier in the month, he also found the remains of a mastodon and a camel in a layer of peat in Ainsworth, Nebraska.

October 1934

Kokichi Mikimoto presented the Museum with a collection of cultured pearls he harvested in a bay on what is now known as Mikimoto Pearl Island in Japan. Mikimoto, the son of a noodle maker, was the first person to successfully cultivate a pearl in 1893.

Exhibit staff created a replica of a jaboticaba tree (*Myrciaria cauliflora*) for the Hall of Plant Life. This tree, a native of the Minas Gerais region of Brazil, is a slow-growing tropical evergreen that bears a delicious grape-like fruit that is consumed throughout Brazil.

Museum zoologists returned from an eight-month field expedition to West Africa in search of specimens for a bird habitat group the Museum was designing in the hall of exotic birds. In all, the team collected 650 birds, 2,000 insects, 600 mammals and 1,000 fish and reptiles.

Several 200-year-old embroidered silk panels that once decorated a huge altar in a Buddhist temple in Peking, China, went on display.

Japanese Royals Visit Field Museum Curator

By Mark Schmeltzer
Campaign Writer

Two very special soccer fans took a slight detour on their way to Soldier Field to see the women's World Cup match between Japan and Norway on June 26, 1999. Their Imperial Highnesses Prince and Princess Takamado of Japan arrived early to examine The Field Museum's vast collection of ethnographic material from Arctic North America.

More importantly, the royal couple, who share a concern for the cultures and environments of the world's oceans and polar regions, wanted to meet James VanStone, Curator Emeritus of Arctic and subarctic ethnology and archaeology.

For nearly a half century, VanStone's research on Arctic peoples has crossed cultural, geographical, topical and disciplinary boundaries. A recent special edition of *Arctic Anthropology* honored VanStone through articles about his contributions to the anthropology of the north and a bibliography of his more than 140 publications.

After talking to the prince and princess about his work, VanStone took the couple on a tour of the **Maritime Peoples of the Arctic and Northwest Coast** exhibit. The exhibit, which VanStone developed in the early 1980s, compares and contrasts the life and culture of the Northwest Coast Indians and Inuit.

Following their meeting with VanStone, the prince and princess explored the new **Underground Adventure** exhibit and a display of Japanese inro and netsuke on the second floor. The Prince is an avid collector and expert on these elaborately decorated lacquer cases worn by men during the Tokugawa period (1600–1850).

Although their schedule didn't allow for a longer visit on Saturday, the couple returned the following morning to view inro in the Museum's research collections.

PAUL BAKER /GN89327 12C

Above: Their Imperial Highnesses Prince and Princess Takamado peruse The Field Museum's display of Japanese inro and netsuke cases.

Field Museum Tours at a Glance

JACK S. GROVE, ROZELGRAHM EXPEDITIONS

During tours to Australia and New Guinea in March, and the Philippines and Indonesia in April, participants will get an upclose view of the volcanoes that comprise the infamous "Ring of Fire." Many of these volcanoes, like those that exist on the fabled Moluccass islands in Indonesia (above), have been inactive for centuries.

Costa Rica and Panama Voyage

December 8 – December 14, 1999
Duration: 7 days
Museum Leader: botanist William Burger
Price: Starts at $2,090, not including airfare

Amazon by 14-Cabin Riverboat

December 11 – December 19, 1999
Duration: 9 days
Museum Leader: zoologist Barry Chernoff
Price: $3,090, including airfare from Miami (airfare from Chicago to Miami is $231)

Costa Rica's Wildlife and Ecosystems

January 28 – February 6, 2000
Duration: 10 days
Museum Leader: botanist William Burger
Price: $2,995, not including airfare of $675 from Chicago

Egyptian Odyssey

January 9 – January 23, 2000
Duration: 15 days
Museum Leader: Egyptologist Frank Yurco, as well as expert tour managers and local guides
Price: $4,895, including airfare from Chicago

For more information or free brochures, please call Field Museum Tours at 800.811.7244, or send them an e-mail at <fmtours@sover.net>.

The Seychelles, Madagascar and the Shores of East Africa

February 3 – February 17, 2000
Duration: 15 days
Museum Leader: zoologist Janet Voight
Price: Starts at $7,295, not including airfare

Exploring the Virgin Islands

February 6 – February 13, 2000
Duration: 8 days
Museum Leaders: zoologist Harold Voris and James Goddard, director of education at the Denver Museum of Natural History
Price: Starts at $1,800, not including airfare

Classic Tanzania Safari

February 14 – February 27, 2000
Duration: 14 days
Museum Leaders: zoologists William Stanley and Mary Ann Rogers
Price: $7,540, including airfare from Chicago

DAVE BLANTON

This winter, Museum botanist William Burger will lead a cruise to the coastlines and jungles of Costa Rica and Panama. In addition, he will lead a land tour in January 2000 that focuses on Costa Rica's national parks — home to this unique tree frog (left).

ROBERT DEMAYO

In February, accompany Museum zoologists William Stanley and Mary Anne Rogers on a safari in Tanzania, and watch as thousands of wildebeest and zebra amass in the Serengeti Plains.

Where the Spirits Dwell: Australia and New Guinea

March 21 – April 6, 2000
Duration: 17 days
Leaders: A team of experts, including anthropologist Tobias Schneebaum
Price: Starts at $6,990, not including airfare from Los Angeles of $1,980

Islands of Diversity: Indonesia and the Philippines

April 2 – April 19, 2000
Duration: 18 days
Museum Leader: zoologist Lawrence Heaney and a team of experts
Price: Starts at $7,990, not including airfare from Los Angeles of $1,490

In the Planning Stages

Circumnavigation of Crete

British Columbia and Southeast Alaska

Fire & Ice: Japan, the Kuril Islands and Kamchatka Peninsula

Archaeology and Landscapes of China

The Ancient Silk Road: Through China and Central Asia by Private Train

Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.

INTHEFIELD

The Field Museum's Membership Publication

November–December 1999

Sounds from the Vaults

JOHN WEINSTEIN /GN88119.6

Museum Groups Uncover Nature's Mysteries

While peering through high-powered microscopes at grains of sediment from Madagascar, Museum volunteers Dennis Kinzig and Ross Chisholm discovered three tiny teeth embedded in a small jawbone. Museum paleontologists coordinating the project identified the jaw as belonging to a new species of mammal that is about the same size as a shrew.

In the Sept. 2, 1999, issue of *Nature*, the scientists and their colleagues suggested that this 165-million-year-old fossil is evidence that an advanced subgroup of mammals evolved in the Southern Hemisphere, challenging the prevailing notion that they arose first in the north.

Obviously, not all of our 684 volunteers will be involved in such major scientific breakthroughs while working here. Nevertheless, their contributions to this institution are just as valuable. Quite simply, they make it possible for us to keep the doors open by supporting our administrators, exhibit developers and scientists.

But what do these volunteers get in return?

Most will tell you that volunteering at the Museum offers them unique opportunities to delve into the wonders of natural history and to uncover the many "hidden" treasures that exist within our four walls. Volunteering, however, is only one of the ways you can acquire these rewards.

Over the years, we have esrablished a number of groups that allow you to unmask the complexities of the natural world while supporting the Museum's research programs and educational mission.

For example, The Founders' Council, one of several annual donor groups, makes major contributions to our educational, research and exhibition programs. During regular meetings, Museum curators present these donors with updates about their fieldwork, often providing intimate glimpses into the world of discovery and exploration. This group also organizes and presents the Museum's annual award for environmental conservation (see page 11) and the Award of Merit, given to an individual who has made great strides in bringing issues of environmental and cultural understanding to the forefront of public attention.

Since many of our members and visitors are young professionals, we recently created The Field Associates, a group that serves young individuals interested in promoting awareness of the Museum's mission. During the past two years, this group has organized a number of successful fund-raisers and social events in support of our community outreach programs. In the process of becoming our ambassadors in the community, they have gained unprecedented access to The Field Museum and the scientists who labor to uncover the mysteries of the world and its people.

Some groups focus on providing participanrs with an in-depth look at certain areas of the Museum. For instance, members of The Collections Committee enjoy frequent programs about the wealth of cultural artifacts housed at The Field Museum. They also participate in behind-the-scenes tours of specific ethnographic collections and attend lectures by anthropologists on the subjects of collecting and conservation.

We also have a group called the Friends of The Field Museum Library, which meets throughout the year to examine the vast resources of our library, one of the largest natural history research libraries in the world. Every few months, we offer programs for the Friends that address issues relating to the library and the rare book room, which contains more than 7,500 priceless works and watercolor illustrations, including an original double elephant folio of Audubon's *The Birds of America*.

As you can see, there are many ways to explore the vast resources that exist beyond the Museum's public areas. I hope you will take advantage of some of these opportunities, which we designed to shed light on the many facets of the Museum and the work of our scientific staff. For more information about these groups, please call 312.665.7136.

John McCarter

John W. McCarter Jr.
President & CEO

We would like to know what you think about "In the Field" . . . .

Please send comments or questions to Robert Vosper, publications department, The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-2496, or via e-mail at <rvosper@fmnh.org>.

Inside

The new "Sounds from the Vaults" exhibit breaks from museum tradition by allowing visitors to interact with priceless artifacts. See **Calendar Section** for details.

What was it about this garden-variety katydid that made Field Museum entomologists see red?

Thousands of Chicagoans, as well as a few Hollywood stars, descended upon The Field Museum in August to hear the 14th Dalai Lama discuss ethics for the new millennium.

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This issue's cover photograph (GN89438C-A) is by Mark Widhalm of an interactive display case in the "Sounds from the Vaults" exhibit.

The Field Museum

The Field Museum salutes the people of Chicago for their long-standing, generous support of the Museum through the Chicago Park District.

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Around Campus

Shedd Aquarium

Shedd Aquarium's **beluga calf has made her public debut**. The calf, born August 3, and her mother are on view daily in the underwater viewing gallery of the Oceanarium. Prior to visiting the calf, guests will see a short video about her in Phelps Auditorium and will have a chance to ask staff about the young whale. Staff will then escort visitors downstairs for a timed visit with the calf, which is still being observed around the clock by animal-care staff. The best times to see the calf are Tuesdays through Fridays and Sunday mornings. Please call 312.939.2438 for more information.

Adler Planetarium

If you missed it the first time, now is your chance to see the temporary exhibit **"Awestruck by the Majesty of the Heavens: Artistic Perspectives from the History of Astronomy Collection."** On display at the Adler until January 2, the exhibit explores the connections between art and astronomy from the 15th to the 19th century. It features some of the finest celestial charts, astronomical illustrations and portrait prints in the Adler's collection. "Awestruck" was curated by Anna Felicity Friedman, assistant curator in the history of astronomy department, and organized by the Adler and the Chicago Department of Cultural Affairs. The exhibit was originally on display at the Chicago Cultural Center in 1997.

The Culture of Sound

"Sounds from the Vaults" Sheds Light on History of the Museum's Anthropology Collections

Above: Museum anthropologist Albert Lewis collected this friction drum (center) at the turn of the century while conducting research in the South Pacific. The drum is one of 6,000 musical instruments that reside in the Museum's anthropology storerooms and is one of 50 instruments that are currently on display in the new "Sounds from the Vaults" exhibit.

Carolyn Schiller Johnson
Research Associate, Anthropology Department

When people step into the Museum's anthropology storerooms for the first time, they often stop in mid-stride, amazed by the sight before their eyes. On row after row of ceiling-high metal shelves are more than a million ethnographic objects that serve as windows into the cultures of the world. Some of these objects are products of societies that have long since disappeared, while others represent societies that still exist today. Among these objects — which include everything from tiny pottery shards to towering wooden totem poles — are about 6,000 objects classified by anthropologists as musical instruments that were collected by Museum staff or donated by the public over a span of 106 years.

While they represent many different cultures and are unique in both appearance and purpose, many of these instruments have one thing in common — since arriving at the Museum, they have been silent. That has changed, however, for 50 instruments that are at the heart of "Sounds from the Vaults," a temporary exhibit that is on display at the Museum through March 5, 2000.

The Museum, in collaboration with the New York company 30/70 Productions, designed "Sounds" to encourage visitors to explore the magnificent diversity and creativity of human sound-producing activities and tools. For more than two years, Bruce Odland, the sound installation artist and composer who founded 30/70 Productions, worked with Museum exhibit developers and anthropologists to select the 50 objects for display. Some are quite old and rare, such as clay flutes from Mexico and Central America, a bronze temple bowl and white jade flute from China, and giant slit drums from New Guinea. Others are contemporary, such as maracas from Venezuela, drums from West Africa and a rattle from Kenya.

In the process of choosing the instruments, Odland and the Museum staff invited musicians from the Chicago area to play 70 of the Museum's musical instruments at digital recording sessions held in a makeshift studio in The Field Museum's basement. Many of the musicians became quite emotional as they sounded drums, for instance, that had been silent for more than a century or enticed complex notes and melodies from tiny flutes. It was a moving experience for these musicians in part because most had ties to the people who created the instruments. For example, the Museum invited a Tibetan lama who had just flown in from India to play a 12-foot-long metal lapa, or horn, that had been on a collection shelf since it arrived from Southern China in 1905.

Inside the exhibit, visitors can hear these digital recordings by using touch-sensitive pads located in front of wooden display cases that protect the artifacts. By touching the pads, visitors can hear a few notes from the instrument and also create their own complex rhythms and compositions. In addition to the touch pads, the Museum installed computer workstations near the cases so visitors can learn about how the instrument was made, what it was used for, who collected it and how it ended up at the Museum.

Buried within this wealth of information is a story of the birth of American anthropology and of The Field Museum, as well as an overview of the many different ways the Museum has built its anthropology collections. Three of these sound-producing objects — a *bonang* from West Java, a *gansa* from the Philippines and a *njari* from Zimbabwe — exemplify some of the different paths these 50 objects have taken, leading to their display in "Sounds." They also bring to life the fascinating journey The Field Museum has taken to become one of the most prominent natural history museums and cultural institutions in the world.

The bonang: 1893, West Java

Sealed inside an exhibit case with a bronze bowl gong from China and tambaran pipes from New Guinea is a 5-foot-long ornately carved and painted wooden rack that supports 14 shining bronze gongs. This instrument, called a *bonang*, was made in West Java in the mid-19th century as part of an instrumental ensemble known as a gamelan and was played by striking the surface of the round gongs with wooden beaters covered in cloth. The *bonang* was among the first objects the Museum acquired as part of a collection of ethnographic material that was on display at the 1893 World's Columbian Exposition. This fair, which 27 million people visited during its six-month run in

RON TESTA/A106242

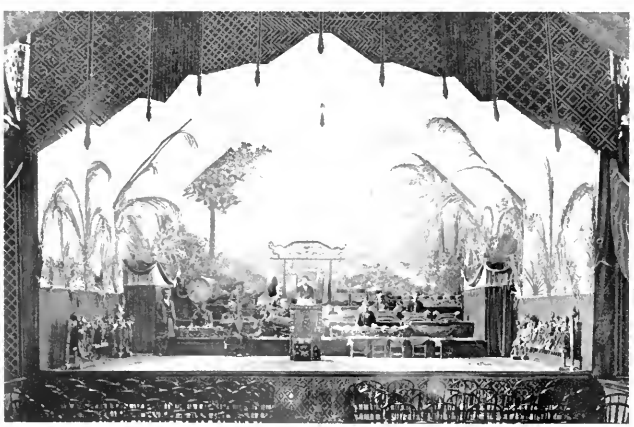
Above: The center portion of the bonang *from West Java. The Museum purchased this instrument from the 1893 World's Columbian Exposition in Chicago.*

Chicago, was designed to vividly demonstrate and celebrate "the advance of American civilization" since Christopher Columbus' arrival on the South American mainland in the 15th century.

In November 1893, Marshall Field gave a group of local civic leaders and businessmen $1 million to create a permanent home in Chicago for the exposition objects. That permanent home was named The Field Columbian Museum, which was later shortened to The Field Museum. A few days after Field's philanthropic gesture, the Museum's newly hired directors and buyers raced down to the now-closed exposition in Hyde Park. Entering the deserted and fenced Midway Plaisance and White City, these officials stopped at the Java Village display, which an owner of a Dutch colonial tea plantation had shipped to Chicago from West Java. The 100 or so Javanese living in this mock village were anxious to go home — they had no winter clothes and the bitter November winds whipping off Lake Michigan had already claimed the life of one of their musicians.

In all, the Museum purchased more than 500 objects at the Java Village, including a set of gamelan instruments containing the *bonang* that is now on display, as well as nearly 100 carved and painted dance masks and rod puppets. They also purchased velvet dance costumes, metal and leather headdresses and some jewelry worn by the Javanese exhibitors during their daily theatrical and musical performances at the exposition.

The *bonang* is just one of several instruments featured in "Sounds" that the Museum acquired from the 1893 World's Columbian Exposition. Museum buyers literally moved thousands of items from the closed fairgrounds to the nearby Palace of Fine Arts in Jackson Park, the Museum's home for its first 28 years. In 1921, the Museum moved out of that building (which eventually became the site of the Museum of Science and Industry) to its present location near Grant Park.



THE FIELD MUSEUM /A106223A

Above: An 1893 photograph of the interior of the Java Village Theatre at the World's Columbian Exposition. The Museum owns the complete set of the instrumental ensemble (gamelan) shown here.

Although the Museum has kept hundreds of documents relating to the exposition objects, it has no record of who decided to buy the material or why they bought it. This was not unusual for these early Museum acquisitions. However, the opposite is the case for the gansa, which Fay-Cooper Cole purchased while on a Museum-sponsored research and collecting expedition in the Philippines in 1907.

Gansa: 1907, Northern Luzon, the Philippines

Fay-Cooper Cole, an anthropologist who started his career at the Museum in 1906, conducted extensive research in the Philippines and Malaysia before accepting a position at the University of Chicago in 1924 (five years later he was named chairman of the university's anthropology department). In December 1906, the 26-year-old scientist and his wife, Mabel, left Chicago to lead the R.F. Cummings Expedition into the mountains of the Abra Province on the Philippine island of Luzon.

After spending part of the year conducting extensive research and collecting objects in a number of villages inhabited by the Tinguian people of this northern province, the couple in October 1907 decided to travel to Patoc, a tiny Tinguian village nestled on the side of a thickly wooded mountain. It was here, in the middle of the rainy season, that Cole purchased a round bronze gong known as a *gansa*.

In his field notes, Cole never described how the villagers played this instrument, although he did make sound recordings of musical performances at Patoc (from archival photographs, it is clear that the musicians used both their hands and sticks to play these instruments). At the time, most anthropologists believed that only scholars with formal training in Western musicology were qualified to write about musical practice. So, when it came time for Cole to write his 1922 book *The Tinguian*, he had musicologist Albert Gale author the chapter on music, which he based for the most part on Cole's recordings. However, Mabel, in her 1929 book *Savage Gentlemen*, did describe the context in which the gansa was played in Patoc in 1907:

From time to time the mediums summoned different spirits and their wishes were carried out. Sometimes the evening events took place indoors, but usually a fire was built in the yard and the people all gathered around. One played on a nose flute; another sang the praises of our host and his various guests; often they danced tadek. *This dance, always accompanied by the compelling music of copper gongs and a wooden drum, was performed by a man and a woman, each holding a cloth at arm length in front. They faced each other as they danced. When either snapped the cloth the performance was over, and a new partner was chosen. My husband became quite popular in this dance and was often chosen by the women. He became skillful in dancing it out-*

doors, but in the house it was more difficult and he found it necessary to remove his shoes, dancing in his stocking feet on the bamboo floor.

Using the couple's descriptions, phorographs and recordings, anthropologists today can piece together how this specific instrument was played and used in Tinguian society 90 years ago. This story also demonstrates the difference between having a scientist go into the field to collect objects and purchasing them at an exposition where the objects are separated from their usual context. However, even the most meticulous Museum anthropologists were unable to gather all the information about an object while in the field.

Njari: 1927, Zimbabwe

While on an expedition to Madagascar from 1926 to 1928, Ralph Linton, who began working for the Museum in 1922, made a short side trip to the African continent where he purchased an 8-inch long *njari* in southern Zimbabwe. This instrument, which is a type of mbira, demonstrates remarkable Shona craftsmanship in metal and wood. However, Linton left no clues as to how the Shona played or used this intricately designed instrument.

Anthropologists at that time often collected miscellaneous objects as they passed through areas or conducted side trips while in the field. As a result, they often didn't have the opportunity to observe how a particular object was used on a daily basis. In general, Linton made very detailed descriptions of the thousands of objects he collected while in Madagascar and Southeast Africa. In a 1926 report to the Museum, Linton, who went on to become the chairman of Columbia University's anthropology department, outlined his collecting philosophy:

Experience has shown that very little information or material can be obtained while actually traveling. The best method is to remain in one place for ten days to a month. I select some town which is a trading center for the surrounding villages, settle down there, and make friends with the natives. . . . As far as possible, material is catalogued and notes are written up at night.

Just because Linton didn't provide any descriptions with the *njari* does not mean that it is useless to anthropologists today. While researching the instrument's ethnological history for the exhibit workstations, Patricia Sandler, an ethnomusicologist and mbira musician, consulted a number of musicians and ethnomusicologists, analyzed archival photographs from Linton's expeditions and interviewed contemporary mbira musicians.

According to Sandler, the musicians played the mbira by plucking the instrument's 26 metal keys with their thumbs and fingers. She also believes the *njari* was played inside a small resonator, which allowed the musicians to manipulate the instrument's tone and volume. On the sides of these half-mooned shaped

THE FIELD MUSEUM /A29198

Above: During his expedition to the Philippines in 1907, Museum anthropologist Fay-Cooper Cole made sound recordings of musical performances at a number of villages on the island of Luzon. Here, a member of Cole's expedition party entertains his hosts with a portable phonograph.

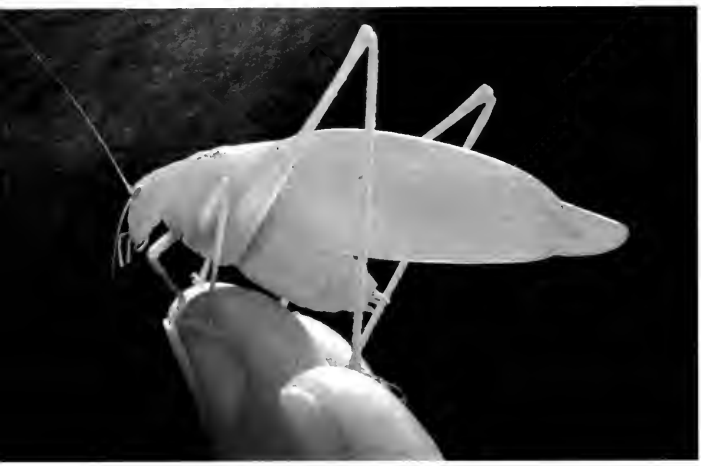
resonators, the musicians may have attached shells or rattles to enhance the natural buzzing sound of the instrument. As a result of her research, the "Sounds" team decided to display the *njari* inside a contemporary resonator gourd to give visitors a better idea of how the instrument was originally played.

Three Generations of Museum Anthropology

The stories of these three musical instruments are not just about music; they simultaneously narrate three generations of anthropological work at The Field Museum. The *bonang* illustrates how The Field Museum was founded and how it built the base for its anthropology collections. The *gansa* highlights second-generation American anthropologists — such as Fay-Cooper Cole, Albert Lewis, Margaret Mead and Edward Sapir — who became leaders in museum- and university-based anthropology well past the turn of the century. The *njari* tells the story of younger scholars, such as Ralph Linton, who learned his trade from these early pioneers of American anthropology.

Now, at the close of another century, Field Museum visitors can interact with an exhibit developed and conceived by the current generation of anthropologists and scholars. Whether visitors choose to play these instruments simply to hear their sounds, or whether they delve into the workstations to learn more about these artifacts, they cannot help but come away with a great appreciation for the incredible human creativity that gave rise to the tools that produce what some people call "music." And in that sense — appreciating human creativity — they have discovered what the field of anthropology is all about. **ITF**

Nine-Year-Old Boy Discovers Rare Pink Katydid



JOHN WEINSTEIN /GN89390.18C

Left: Most katydids in the species Amblycorypha oblongifolia *are green. However, a small percentage are born pink and sometimes even yellow.*

Robert Vosper

Nine-year-old Sean Bonser created quite a buzz in the normally sedate halls of the insect division on Aug. 3, 1999, when he dropped off a live, two-inch-long *Amblycorypha oblongifolia*, a species of katydid common to the eastern United States. Sean's specimen, however, isn't like the green katydids you find crawling in the trees of your backyard. His is pink, bright pink.

"A live pink katydid is probably something you see once in a lifetime," says curatorial assistant Philip Parrillo. "Sean was excited by this and we were happy to accept it — our first pink katydid in an insect collection of 11 million prepared specimens."

Because nobody has studied the pink color morph in *A. oblongifolia*, scientists are at a loss to explain why pink katydids are so uncommon; they can't even agree as to how uncommon they are. However, many entomologists believe that the pink katydid is a genetic rarity or mutation within the population and that this anomaly occurs in less than one of every 100 katydids. In many cases, insects born with mutations are at a competitive disadvantage and will disappear over time from the population mix. This, however, doesn't seem to be the case with the pink katydid, which is surviving quite well either by chance (the genetic drift theory) or because it has found an environmental niche that gives it an advantage over its green brethren (the balancing selection theory).

Daniel Summers, who has been in charge of the insect collection for 25 years, believes it is the latter and that the niche might be a reddish green plant like sumac, which turns completely red in late summer.

"My guess is that pink forms of katydids can survive under these plants because they are one of the few plants that offer them camouflage," says Summers, who has seen pink katydids hiding out in sumac while conducting fieldwork in Illinois. "However, it's still pretty rare that anyone would be able to find anything that most of us in this department haven't seen, especially from this area. You literally have to be an expert to know what you are looking for, unless one of these pink katydids strays from its habitat, which is what I think happened in Sean's case."

Sean, a fourth grader at Lake Forest Country Day School, found the insect on a leaf of a green hosta plant growing in his parents' yard in Lake Forest, Ill.

"I've never seen a bug like this before in my yard," he confirms. "It looked really cool."

After placing the insect in a plastic container, Sean showed it to the father of one of his friends who is an amateur entomologist. He told Sean that despite its color, the insect resembled a katydid and suggested that Sean take it to The Field Museum for proper identification. That same day, Sean and his father drove to Chicago.

"When I discovered what it was, I was really excited to get it for the collections," says Parrillo, who identified the insect for the Bonsers. "Basically, the Museum is a repository for the natural and biological phenomenon around us. It's important to have these types of phenomenon in our collections for our research and for identifying insects."

Because pink katydids are relatively rare, Museum staff tried to breed the specimen with another katydid; however, the insects died before consummating their relationship, which didn't surprise the scientists.

Katydids, which are closely related to crickets, have a very short life span, hatching in the spring and mating in the late summer. During this period, males attract their mates by producing a chirping sound that resembles the phrase, "Katy did, Katy didn't." After depositing their eggs in the ground, the insects then await their eventual demise, which usually occurs during the first major frost. The next generation then repeats the cycle the following spring.

So, if Sean wants to find another pink katydid for the Museum's collections, he will have to wait another six months or so. In the meantime, he plans to hone his entomology skills.

"I don't usually collect bugs, but I like them because they are really cool," he says. "At school I like science and learning about sharks and bugs."

"I also like drama," he adds, "but I like science better now."

That's what we like to hear. ITF

Thailand's Rainbow Water Snakes Recuperate After El Niño Disaster

Karen Sandrick
Volunteer, Division of Amphibians and Reptiles

Except for a few barren or yellowed patches of marsh grass, Field Museum research associate John Murphy could see few signs this summer that Ban Tha Hin — a wet meadow that borders the southern portion of Lake Songkhla in Thailand — had been the site of a recent environmental disaster. As in previous years, the heron and ibis were tending to their nests; fishermen were snaring walking perch and gouramies; and frogs and snails were crowding pools of fresh water.

As chronicled in the July/August 1999 issue of *In the Field*, this meadow was the center of a cascading series of natural and man-made events in 1998 set in motion by El Niño. This global climatic phenomenon interrupted rainfall patterns, which reduced the amount of fresh water entering the lake system and forced farmers to pump more than the usual amount of water from the lake to irrigate their rice paddies. This resulted in a sudden incursion of salt water from the Gulf of Thailand into Lake Songkhla that killed thousands of freshwater animals, including the rainbow water snake, one of a subfamily of 35 species of serpents known as the homalopsinae that are found throughout Southeast Asia. It was the condition of this snake population that was of greatest interest to Murphy and Field Museum zoologist Harold Voris when they returned to Ban Tha Hin over the summer.

Voris, Murphy and their colleague Daryl Karns, professor of biology at Hanover College in Indiana, have been studying the rainbow water snake at Ban Tha Hin for five years. In the past, they had few problems locating the snakes for their research (in 1997 alone, for example, they trapped as many as 230 of them in one two-week period). However, during the El Niño year, they captured only two.

As a result, Voris and Murphy weren't sure what they were going to find on this trip. Their associate in Thailand, Vachira Lheknim, professor of biology at the Prince of Songkhla University, assured them that the El Niño effect was gone. The rainfall, he explained, had been plentiful during the monsoon season, dropping enough fresh water into the lake to lower the salinity levels. Freshwater fish that were the first to suffer from the effects of the high salinity were back in large numbers, Vachira added, as were snails, frogs and freshwater crustaceans.

And the rainbow water snake? During the 14 days the team was at the site, they caught 180 adult and baby snakes, indicating that the density of the snake community had rebounded to between 50 percent and 70 percent of pre-El Niño levels.

According to the scientists, the presence of baby snakes suggests that the saltwater incursion may have had no lasting effect on reproduction. And the presence of large numbers of adult snakes, they add, shows how adaptable these reptiles are.

"While some animals died due to the rise in salt water, others were able to move into freshwater areas in rice paddies or roadside ditches that were not impacted by the salt," says Murphy, who is the chair of the science department at Plainfield High School in Illinois. "Then once the salt water was diluted and flushed out of the lake, some of those animals moved back in."

The return of the rainbow water snake to Ban Tha Hin not only reflects the resiliency of the species, but also the richness of the local environment, which provided plenty of food for the snakes as they slowly recuperated from the disaster.

But the severe fluctuations in the snake population that the scientists observed over the span of a year could have been missed entirely if they hadn't been engaged in long-term ecological research.

"It is important to go back to the same study site for a number of years and at a number of different times of year to determine whether what one observes is a consistent, predictable pattern," Voris explains. "Long-term research programs address the issue of changing patterns of community structure through time. And they can produce insights into the natural fluctuations in animal communities that tend to be the rule rather than the exception." ITF

JOHN C. MURPHY

Above: Unlike its close relative the dog-faced water snake, the rainbow water snake, like this juvenile from Lake Songkhla, lacks a salt gland to ameliorate the physiological stress caused by prolonged exposure to salt.

Chicago Humanities Festival: New & Old

November 4–14, 1999

Since 1990, the world's most exciting artists and thinkers have been flocking to the Windy City every November for the Chicago Humanities Festival (CHF), a two-week program commemorating the power of ideas in human culture. Each festival brings together novelists, scholars, musicians, artists, poets, policy-makers and others to offer insight into a theme of universal interest, such as "crime and punishment," "work and play" and "he and she."

With the help of 34 of the city's leading educational and cultural institutions, CHF this year will explore the contrast, conflict and rivalry between new and old. It will also try to answer some age-old questions, such as "What's new?" "Is conflict between generations inevitable?" and "Is history fact or fiction?"

As in years past, the Museum will host a number of CHF programs this November, including a daylong tribute to Duke Ellington in James Simpson Theatre on Sunday, November 7. This tribute will include a performance by the Chicago Jazz Ensemble of Ellington's *Black, Brown and Beige: A Tone Parallel to the History of the American Negro*. First performed at Carnegie Hall in 1943, this 45-minute orchestral suite traces the African-American experience from slavery through Emancipation and World War II.

For more information about the festival, please call 312.661.1028 or visit CHF's Web site at <www.chfestival.org>. Tickets ordered before November 4 are $3 and can be purchased in advance by calling 312.294.3000 or visiting the Symphony Center Box Office at 220 S. Michigan Ave. During the festival, tickets can be purchased at the door at each site for $5 (cash only).

PHOTO COURTESY OF THE CHICAGO HUMANITIES FESTIVAL

Right: Antonio Canaletto's 18th-century painting depicting Venetians selling their old and new wares.

Below: Duke Ellington — one of the greatest musicians of the 20th century.

Chicago Humanities Festival Programs at The Field Museum

© WILLIAM P. GOTTLIEB

Language and Cultural Change
Saturday, Nov. 6, 1 – 2 p.m.
Cambridge University professor Rod Mengham explores the role that language plays in the formation of new ideas.

New and Old Politics
Saturday, Nov. 6, 3 – 4 p.m.
Dan Rostenkowski discusses the changing nature of American political life.

The Best of Jackson Payne
Sunday, Nov. 7, 2 – 3 p.m.
Jack Fuller reads from his book The Best of Jackson Payne, *a fictional account of a jazz musician.*

Jazz Unites
Sunday, Nov. 7, 4 – 5 p.m.
Singer and composer Geraldine de Haas and Jazz Unites perform the music of Duke Ellington.

Black, Brown and Beige
Sunday, Nov. 7, 6 – 7 p.m. (lecture) and 7 – 9 p.m. (performance)
Author Mark Tucker talks about the keyboard artistry of Duke Ellington; then composer Bill Russo and the Chicago Jazz Ensemble perform Ellington's Black, Brown and Beige.

Iris & Her Friends
Saturday, Nov. 13, 10 – 11 a.m.
Author John Bayley traces the effect of Alzheimer's disease on both patient and caregiver.

The Changing Face of Feminism
Saturday, Nov. 13, noon – 1 p.m.
Novelist Fay Weldon reads from her works and discusses the new and old challenges women face.

Ancestors as Muses
Saturday, Nov. 13, 2 – 3:30 p.m.
Writer David Henry Hwang reveals how, with a unique appreciation of his literary ancestors, he has made the classics his own.

Holiday Tea Celebration

Dec. 8, 1999, 4 – 6:30 p.m.

KIMBERLY MAZANEK - (GN89042 24C

Every December the Women's Board hosts the Museum's Holiday Tea Celebration for Field Museum members and their families. This year, the Women's Board will spotlight Sue through a variety of craft-making activities and educational programs relating to dinosaurs. Guests can also go on a Winter Wonderland Walk through exhibits depicting winter scenes to learn how animals and humans adapt to Mother Nature's harshest season.

As is tradition, the celebration will also include an appearance by Santa Claus and one of his merry elves, holiday music by the Stu Hirsh Orchestra and performances by the Jessie White Tumblers; Mr. Imagination; Ballet Chicago Youth Troupe (right); the Chicago Children's Choir; and stilt walkers Andy Head and Frank Birdsall. Throughout the afternoon, guests can feast on pizza, popcorn, hot dogs, ice cream and a host of holiday treats and refreshments.

If you would like to attend, please fill out the form on the right, cut it out (or photocopy it) and mail it to: Holiday Tea Celebration, The Field Museum, Women's Board Office, 1400 South Lake Shore Drive, Chicago, IL 60605.

To receive your tickets by mail, please include a self-addressed stamped envelope and a check made payable to The Field Museum. Guests cannot purchase tickets at the door. Reservations are limited, so please reply early. For more information, please call 312.665.7135.

The Women's Board Holiday Tea Celebration

PLEASE FILL OUT THIS FORM, CUT IT OUT AND MAIL IT TO
HOLIDAY TEA CELEBRATION, THE FIELD MUSEUM, WOMEN'S BOARD OFFICE, 1400 SOUTH LAKE SHORE DRIVE, CHICAGO, IL 60605

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE _____

	No. of Tickets	Price
Adult members at $12 each		
Adult nonmembers at $17 each		
Children (13 and under) at $7 each		
Total		

Cartier Ball Raises $500,000 for The Museum

As the 1,000 guests entered Stanley Field Hall for the Women's Board annual fund-raising ball on Oct. 1, 1999, they were immediately transported back in time to the early 1900s, a period marked by the arresting jewelry designs of Cartier, the birth of the Jazz Age and the creative spirit of flappers. To capture the essence of this period, the Women's Board used simple, elegant design touches (with a hint of the art deco) to decorate the hall, filled the air with the big-band sound of the David Humphreys Orchestra and stationed Cartier pageboys at all the building's entrances. Throughout the evening, guests also were invited to explore the "Cartier 1900–1939" exhibit, which showcases the exquisite artistry and brilliant craftsmanship of the House of Cartier.

Organized by Women's Board members Marge Hartigan and Bonnie Stearns, and underwritten by Cartier and United Airlines, the ball raised $500,000 in support of the Museum's research and education programs. Among those in attendance were Mayor Richard M. Daley and his wife, Maggie; Simon Critchell, president and CEO of Cartier Inc.; and Christopher Bowers, senior vice president of United Airlines. At the conclusion of the evening, Critchell and Bowers raffled off a Cartier watch and two United Airlines tickets to Europe, as well as 10 other prizes.

Above: Women's Board President Laura Front accepts a raffle ticket from one of the Cartier pageboys.

Inside

Above: A Pacific triton shell from New Ireland that fishermen used to signal their colleagues that they had caught a shark. The shell came to the Museum as part of a "shark-catching" kit.

SOUNDS FROM THE VAULTS

For decades, more than 6,000 musical artifacts in the Museum's collections have rested in silence. They come from around the world and their voices are as diverse as the people who created them. Now, through the magic of digital technology, 50 of these artifacts will perform again — some for the first time in 100 years.

"Sounds from the Vaults," which is on display through March 5, 2000, and is free with general Museum admission, features the digitally recorded sounds of 50 musical artifacts of all shapes and sizes, from finger cymbals to a 12-foot-long Tibetan trumpet. Although the artifacts themselves are displayed behind glass in traditional wooden cases, visitors can "play" them by tapping on large, touch-sensitive pads mounted in front of each case.

Left: Using the pad in front of this case, visitors can either play the Pacific triton shell from New Ireland or the bronze kettledrum from Thailand.

"This exhibit is a new direction for us," explains Field Museum anthropologist Alaka Wali. "We're pushing the envelope here, using the latest interactive media technologies to give visitors a whole new way of interacting with our collections."

When visitors activate the pads below each case, they trigger a sampler that plays back the digitized sound of the instrument on display. And if a person keeps their fingers on the pad, a rhythmic pattern is heard until the pad is released. If someone does the same thing at the same time with another pad, the rhythms of the two instruments synchronize to reveal *Vault Grooves*, an original composition created by sound installation artists Bruce Odland and Sam Auinger.

"All the artifacts were recorded with a common tempo, so they can mix rhythmically in interesting ways," says Odland, the cofounder of 30/70 Productions, the New York company that spearheaded the project for the Museum. "People will find themselves participating in making a new kind of world music."

To create the exhibit, Odland and Field Museum exhibit developers enlisted the expertise of videographers, researchers, computer programmers, set designers and professional musicians, such as Leddie Garcia of the Chicago-based band Poi Dog Pondering. For a year, the team worked in a makeshift recording studio at the Museum, choosing artifacts, learning how to play them and recording their sounds. When they couldn't figure out how to play some of the older and more obscure instruments, the team enlisted the help of community musicians who had a connection to the people who created the objects. Among the musicians who assisted with the recordings were a Chinese master flute player now living in Chicago, a South African graduate student from the University of Illinois and a Tibetan monk from a Wisconsin monastery.

Although the exhibit focuses on the sounds of these artifacts, visitors can trace the stories behind each artifact on display by accessing computer workstations located along one side of the exhibit. In these workstations, they can learn how the instrument was made, what it was used for and how it came to the Museum. With some of the artifacts, visitors can even view original field maps, notes, movie clips and wax cylinder recordings made by the anthropologist who originally collected the object.

In addition to the exhibit, the Museum and 30/70 Productions have developed a Web site at <www.fieldmuseum.org/sounds> that allows computer users to learn about the history and play virtual replicas of the instruments on display.

Cartier 1900–1939

"Cartier 1900–1939," which is on display through Jan. 16, 2000, explores the spectacular creations of the House of Cartier and traces the company's design styles from the opulence of the turn of the century through the innovative geometries and exoticisms of the 1920s and 1930s.

More than 200 *objets d'art* will be on display in the exhibit, from a 1907 bracelet of diamonds mounted on ribbed black silk to a 1923 mystery clock made of rock crystal that combines Japanese and Chinese design styles. In addition, many of the most stunning pieces on display show how Cartier drew inspiration from newly discovered archaeological finds from around the world. For example, the 1922 discovery of King Tutankhamen's tomb and its ancient Egyptian treasures contributed a range of highly structured motifs and inspired a new generation of Cartier designers.

One such designer was Charles Jacqueau, a master of style, color and innovation, who joined the company in 1909. He and Louis Cartier (grandson of founder Louis-François Cartier) worked closely together and shared a passion for the arts of Egypt, India, China, Japan and the Middle East. Both men viewed jewelry not only as an adornment, but also as a highly specialized art form requiring imagination and superior technique, as well as an understanding of ancient design styles and motifs.

"Cartier is one of the few internationally renowned jewelry designers that have made truly effective use of ancient and non-Western jewelry in creating their own designs," says Museum anthropologist Ben Bronson. "The Field Museum has an extensive collection of jewelry and accessories from around the world, so it is particularly exciting to look at and exhibit the work of Cartier."

In addition to the jewelry, cigarette boxes, watches, clocks and accessories that visitors will find on display are more than 70 design drawings from Cartier's remarkable archives, as well as client order books, idea sketches and recently discovered original plaster casts that are records of early pieces that no longer exist.

"Cartier 1900–1939" has been organized by The British Museum, London, and The Metropolitan Museum of Art, New York, with generous loans drawn from the Art of Cartier Collection, Geneva.

Admission to the exhibit is $12 for adults, $6.50 for children ages 3 to 11 and $8 for seniors and students with an ID (ticket prices include general admission fees). During free day every Wednesday, tickets to the exhibit are $6 for adults, $3 for children ages 3 to 11, and $4 for seniors and students. To purchase tickets in advance, please call Ticketmaster at 312.902.1500. Members can also receive two free tickets (family members can receive four) through Ticketmaster. These free tickets are in addition to those that members may have used for the October preview.

Right: A 1924 pencil, ink and watercolor drawing of a rock-crystal tassel brooch — one of the more than 70 design sketches from the Cartier archive in Paris that will be on display in the exhibit.

The Chicago Bears: 80 Years of Gridiron Legends

PHOTO COURTESY OF THE CHICAGO BEARS

Above: Gale Sayers outruns the entire Minnesota Vikings team for a game-clinching 96-yard touchdown run in 1965.

In celebration of their 80th anniversary, the Chicago Bears opened their vaults and allowed the Museum to develop and host the first-ever exhibit of Bears memorabilia spanning the entire history of this storied NFL franchise. That exhibit — "The Chicago Bears: 80 Years of Gridiron Legends" — is on display through Jan. 2, 2000, and includes a collection of about 25 objects from the team's history.

Few franchises better symbolize the sport of football than the Chicago Bears. From Papa Bear Halas to the present, this is a team rich in tradition and history. With a total of nine World Championships, including a Super Bowl title, the Bears have accumulated countless pieces of priceless memorabilia.

For the first time, visitors can see the Bears 1963 World Championship Trophy and the 1985 Super Bowl Trophy in all their glory. Also on display is a rare assortment of helmets, jerseys and Super Bowl rings — owned by the greatest Bears legends from yesterday and today. Even Papa Bear's signature brown fedora will be on exhibit.

In addition, the SCORE 1160 AM Sports Radio, the radio sponsor of the exhibit, will host a live broadcast from the Museum from 9 to 11:30 a.m. before every home game in 1999. During each broadcast, a different Bears legend will be on hand to greet fans and talk football.

"The Chicago Bears: 80 Years of Gridiron Legends" is free with general admission.

Calendar of Events

When Worlds Collide

11/11, Thursday, 6:30 p.m.

Uncover the extraordinary world of the Yanomamö people of the Amazon rain forest with Timoteo Shoefoot, a member of this indigenous community from southern Venezuela. During the lecture, Shoefoot will discuss his life, the influences of Western civilization on Yanomamö society and some of the major social and cultural issues facing his people. At the conclusion of the lecture, visitors can purchase copies of Mark Ritchie's book *Spirit of the Rainforest: A Yanomamö Shaman's Story.* Tickets to the lecture are $12 ($10 students/educators; $8 members). Please call 312.655.7400 for more information.

Pollination and Conservation Workshop with Gary Nabhan

11/8, Monday, 3 – 5 p.m.

According to ethnobiologist and nature writer Gary Paul Nabhan, it's impossible to preserve endangered plant species unless you also preserve the plants' pollinators and the conditions that encourage plant-pollinator interactions. In this workshop, Nabhan, the cofounder of the Native Seeds grass-roots organization and director of conservation at the Arizona-Sonora Desert Museum, will examine the degree to which pollinators are currently endangered and the measures that must be taken to preserve them. He also will demonstrate how both professional researchers and backyard gardeners can apply the results of his research. $42 ($38 students/educators; $35 members). For more information about this workshop, please call 312.665.7400.

Field Museum Literary Series: A Reading by Gary Nabhan

11/8, Monday, 6:30 p.m.

Gary Nabhan (see above) has won numerous awards for his books and essays about nature, including a John Burroughs medal for nature writing. He also is a distinguished scholar whose research focuses on the relationship between biodiversity and cultural diversity. During this evening of literary insight into the natural world, Nabhan will read from a selection of his books and essays, which include *Cultures of Habitat, Forgotten Pollinators, The Geography of Childhood* and *The Desert Smells Like Rain.* $15 ($12 students/educators, $10 members). Call 312.665.7400 for more information.

CHARLES CARPENTER /CSA15152

Above: Two Jicarilla Apache women weaving baskets at the Louisiana Purchase Exposition, St. Louis, Mo. Women in Apache society were generally in charge of managing the family property, rationing the food, raising the children and making decisions about monetary matters. In November, Rosalyn LePier will examine the role of women in Native American society and how their roles are often defined by their tribes' cosmological histories.

The Role of Native American Women in Ritual and Religion

11/15 and 11/22, Mondays, 6 – 8 p.m.

Explore the important role that Native women played within the cosmology of their people with Rosalyn LePier, an instructor from the Native American Educational Services College and a member of the Blackfeet Nation of Montana. Most scholars acknowledge that precolonial Native women did have status and power similar to men within their societies. However, the two questions that still remain unanswered are how and why these women obtained this status. According to LePier, most scholars look for the answers in the economic, political and social fabric of the tribe. LePier, however, believes that the answers more likely reside in the tribe's origin narratives and cosmological history. $40 ($34 members). Please call 312.665.74000 for more information or to register.

Evening Concert: Mariachi Reyna de Los Angeles

11/19, Friday, 7 p.m.

At the 1996 Sor Juana Festival in Chicago, Mariachi Reyna de Los Angeles delighted and thrilled audiences with its unique blend of traditional and contemporary music played in the mariachi style. As part of the Mexican Fine Arts Center's presentation of the 1999 Sor Juana Festival on November 19, this all-female mariachi group will return to the Windy City for an exclusive appearance at The Field Museum. Recruited by José Hernández, the founder of the Mariachi Heritage Society, this talented group of young women has performed all over the country, from the Hollywood Bowl to the New Mexico State Fair. Their harmonious command over one of Mexico's most cherished musical forms is not only breaking down cultural barriers, but also is popularizing mariachi music around the globe. $15 ($12 students/educators; $10 members).

Above: Paul Zaloom as the zany scientist in the hit CBS show "Beakman's World."

Sixth Annual First Nations Film and Video Festival

11/20, Saturday, 1 – 5 p.m.

Funded by the Illinois Arts Council and organized by the Red Path Theater Company, the Sixth Annual First Nations Film and Video Festival (November 19 – 21) provides a forum for a diverse selection of films and videos produced, directed or written by Native Americans. The purpose of this festival is to encourage Native American filmmakers to produce and showcase their work, as well as to eliminate racial stereotypes and promote awareness of Native American issues. On November 20, The Field Museum will present a series of videos from this festival throughout the day ($5 admission fee). The Chicago Cultural Center, Facets Multi-Media and the Institute of Native American Development at Truman College also will be presenting screenings and programs during the entire weekend. For a complete schedule of events taking place in the city and a listing of films being shown at the Museum, please call 773.907.4665.

Windy City International Documentary Festival

11/21, Sunday, 11 a.m. – 4 p.m.

Organized and directed by visual anthropologist Martha Foster, this one-day film festival, which is free with general Field Museum admission, will feature documentaries about social life in China that are written, produced or directed by some of the newest and best television documentarians in China. These films examine everything from family life and social change in China, to recreational activities and work life. Foster will introduce the program and will lead discussions following each documentary. For more information, please call 312.665.7400.

Live at the Field: Paul Zaloom as "Beakman"

12/5, Sunday, 11 a.m. and 2 p.m.

Join Paul Zaloom, the star of the hit CBS show *Beakman's World*, as he takes on the persona of "Beakman," the humorous and inquisitive scientist who answers questions about science and nature. During his appearance at the Museum, "Beakman" will explore the outer edges of science through zany experiments and thought-provoking demonstrations with everyday household objects. In just six seasons on the air, *Beakman's World* has captured the imaginations of children everywhere and has been nominated for numerous Emmys, including best children's show. Zaloom's presentation in December is part of the Museum's new performing arts initiative, which uses the arts to build an appreciation for cultural and biological diversity. $15 ($12 students/educators, $10 members). For more information, please call 312.665.7400.

New Advances in Ice Age Art

12/13, Monday, 6:30 p.m.

Learn about new developments in the study of Ice Age art over the past several years from archaeologist Paul Bahn, an expert on prehistoric art and the author of numerous books on the subject, including *Images of the Ice Age*, *Journey Through the Ice Age*, and *The Cambridge Illustrated History of Prehistoric Art*. During his lecture, Bahn will discuss the controversial results of pigment analyses and direct-dating methods that have recently been applied to some prehistoric art forms and will provide an overview of the recent discoveries of prehistoric art at open-air sites in southern Europe and in cave sites in France, such as Cosquer and Chauvet. $12 ($10 students/educators, $8 members). Please call 312.665.7400 for more information or to register.

THE FIELD MUSEUM/ A111679 6C

Right: Once on display in the "Hall of the Stone Age of the Old World" exhibit, this diorama of a cave painting was based on prehistoric art found in the Gargas Cave in southwestern France. The Museum dismantled the 61-year-old "Stone Age" exhibit in 1994 because parts of it were scientifically inaccurate.

Cartier 1900–1939 Festivities

"Cartier 1900–1939," which is on display through Jan. 16, 2000, examines the design styles and innovative creations of the House of Cartier, one of the world's greatest designers and creators of jewelry and *objets d'art*. In conjunction with the exhibit, the Museum is offering a series of educational programs designed to provide insight into this prestigious house of jewelry design, the styles and fashions of the early 20th century and the influence of worldwide cultures on style.

The Glamour of Couture

Tuesday, November 2, 6:30 – 8 p.m.

Join Gillion Skellenger Carrara, associate professor in the School of the Art Institute's fashion department, for a slide lecture that highlights the fashions of the first four decades of the 20th century and the links between the jewelry designs of Cartier and fashions in *haute couture*. After the lecture, Carrara will take participants on an informal tour of "Cartier 1900–1939." $18 ($15 members). Please call 312.665.7400 for more information or to register.

Activity Days: The Nature of Jewelry

Saturdays, November 6 and December 11; Sunday, January 16, 11 a.m. – 3 p.m.

Throughout these three days of Cartier-related programming, local artists will be on hand to demonstrate how jewelry designs are inspired by nature and world cultures. Visitors also can partake in a number of activities, listen to stories about the people and events of the first 40 years of the 20th century and create their own jeweled crown. All activities are free with general Museum admission. Please call 312.665.7400 for more information.

The Supreme Power of Style: An Evening with Lauren Hutton

Tuesday, November 16, 6:30 p.m.

Spend an evening with Lauren Hutton, one of the most popular and successful models of her generation. At 55, Hutton is busier than ever as she continues to challenge stereotypes regarding feminine beauty and how women over 30 are portrayed in the media. Besides working for some of the world's largest cosmetic companies, Hutton is a constant feature on TV shows and magazine covers throughout the world. During her presentation, Hutton will discuss the wider arena of style, especially personal style. Please call 312.665.7400 for more information or to register.

Above: Lauren Hutton has graced the cover of Vogue *more than 25 times and has been photographed by many of the fashion industry's most celebrated photographers.*

Left: A model by sculptor Brian Cooley of what Sue may have looked like when alive.

Dinosaurs and More Festival

Saturday and Sunday, November 20 and 21; 11 a.m. – 3 p.m.
Monday, November 22; 10 a.m. – 1 p.m.

Delve into the world of dinosaurs and fossilized creatures through activities and presentations designed for the entire family. During the festival, for instance, you can watch a puppet show about a child's encounter with a dinosaur and participate in a dinosaur sing-along that explains the field of paleontology and the work of paleontologists. Throughout this event, which is free with general Field Museum admission, staff members will demonstrate the art of preparing fossils and answer questions about the life and times of Mesozoic animals. You can even trade your old dinosaur toys and memorabilia with other visitors at the Dinosaur Trading Post. So, before heading out to the "Dinosaurs and More Festival," dig through your closets and toy chests and bring in the unwanted "prehistoric" stuff you unearth. Please call 312.665.7400 for more information.

Eureka! The Archimedes Palimpsest

While examining a 12th-century Christian prayer book in 1907, a Danish philologist by the name of Johan Heiburg detected the barely visible remains of ancient Greek text appearing underneath the religious writing. After painstakingly transcribing the Greek text with a magnifying glass, Heiburg discovered that the text represented a previously unknown mathematical treatise by Archimedes of Syracuse, a Greek mathematician born in 287 B.C.

Ninety-one years after Heiburg's discovery, which made headlines around the world at the time, an anonymous collector purchased the manuscript for $2 million in an auction at Christie's of New York. The book, now known as the *Archimedes Palimpsest*, was recently placed in the care of The Walters Art Gallery in Baltimore.

With the help of an ultraviolet light display and computer-aided digital enhancements, Field Museum visitors can now view the book and Archimedes' hidden theorems in "Eureka! The Archimedes Palimpsest," an exhibit that will be on display at The Field Museum from Nov. 3, 1999, through Jan. 3, 2000. Because the manuscript is in need of conservation work, the Museum will be the last place to host this exhibit for at least the next five years.

Among the theorems contained in the palimpsest is the "Method of Mechanical Theorems," in which Archimedes explains how he drew upon mechanical means to develop his mathematical findings, which include the principles behind such devices as the pulley and the mathematical concepts that would later form the roots of modern calculus. The palimpsest also contains his treatise "On Floating Bodies," which explores the physics of flotation and explains the formal proof for the principle of specific gravity.

During the Roman siege of Syracuse in 212 B.C., a soldier killed the 75-year-old Archimedes while he was working on a mathematical problem. Fortunately, Archimedes had made it a habit to record all his mathematical discoveries on papyrus, which succeeding generations preserved by copying the contents onto scrolls. At some point in the 4th century, scribes began transcribing these scrolls onto parchment paper and binding the pages between two boards to form a book.

However, during the 12th century, when religious books were in high demand and parchment was scarce, scribes cut out the pages of the book, scraped off the text and wrote religious prayers on top of it. They then rebound the book and sent it to the monastery of Mar Saba in Israel, where it remained for nearly half a millennium.

Although the book fetched $2 million at auction, it is priceless to many scholars because only about 1 percent of all ancient writings have survived to the present.

"Eureka! The Archimedes Palimpsest," which is free with general Museum admission, was organized by The Walters Art Gallery, Baltimore.

Holiday Festivities at The Field Museum

Celebrating New Beginnings
Friday, December 31, 11 a.m. – 4 p.m.

Help the Museum celebrate the new millennium by partaking in a host of activities and performances that highlight the diversity of cultures around the world. Featured performers during this festival will include The Stars of the South Pacific, *which will captivate the audience with the sounds of New Zealand;* Umbral, *which will perform Andean music on traditional instruments like the pan flute and "charango"; and* Stillwater Productions, *which will host an interactive drumming performance. In addition, visitors can learn the "Milly," Chicago's dance for the new millennium, and meet the Museum's Y2K bug. Please call 312.665.7400 for more information.*

Peaceable Kingdom
December 26 – 30; 11 a.m. – 4 p.m.

Take a break from the hustle and bustle of the holiday season by joining the Museum in a celebration of the peace that blankets the landscape in the winter months. During this free festival, visitors can take a self-guided tour along the "Winter Wonderland Walk" — a series of exhibits that show how animals and humans in different regions of the world have adapted to Mother Nature's harshest season. Throughout this five-day festival, a harp and flute duet and a woodwind trio will fill the halls with the soothing sounds of the winter season and The Field Museum will offer demonstrations of tai chi and yoga.

Above: One of four exhibits that Field Museum taxidermist Carl Akeley designed in 1902 to represent the four seasons.

Free Visitor Programs

JOHN WEINSTEIN /98752SC

Left: A young woman pounds corn outside her home in the Kenyan village of Gede. In the permanent exhibit **Africa**, *visitors can learn about village life in East Africa, as well as many other aspects of African culture.*

Every Saturday and Sunday
1 p.m. **Story Time: Facts, Fables and Fiction.** Learn new songs and stories, and have fun creating artwork — all in a 20-minute program sponsored by the Siragusa Foundation Early Childhood Initiative.

Interpretive Station Activities. Drop by hands-on stations located throughout the Museum (check informational directories for daily listings) and uncover the fascinating world of natural history.

November 1 — Monday
7:30 p.m. **Making an Exhibition Historical.** During this free lecture, Michael Roth, the curator of the upcoming temporary exhibit "Freud: Conflict and Culture," will talk about the exhibit's controversial beginnings and the process that led to its final form.

November 6 — Saturday
2 p.m. **Performance: Teens Together Ensemble.** Watch the *Teens Together Ensemble* perform "Gongs, Ghosts and Ancient Anthems: Releasing the Spirits of Sound," an original musical play based on the "Sounds from the Vaults" exhibit.

11 a.m. – 3 p.m. **Cartier Family Field Day: The Nature of Jewelry.** Take part in a variety of programs designed to complement the "Cartier 1900–1939" exhibit.

1 p.m. **Guided Tour of the Africa Exhibit and Screening of "I'll Make Me a World."** Travel through the **Africa** exhibit; then watch a 20-minute documentary that celebrates a century of African-American culture.

November 7 — Sunday
2 p.m. **Performance: Teens Together Ensemble.** See November 6.

November 13 — Saturday
11 a.m. – 3 p.m. **Millennium at the Museum Future Feature: Beadwork Through Time.** Members of the Bead Society of Greater Chicago will demonstrate how artists today use traditional beading techniques in their contemporary designs.

1 p.m. **Drumming Demonstration.** Join Lenny Marsh as he demonstrates different types of drumming and provides insight into the origins of this versatile instrument.

2 p.m. **Performance: Teens Together Ensemble.** See November 6.

November 14 — Sunday
1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** Step back in time with a Museum guide to a time when the Maya culture was thriving.

2 p.m. **Performance: Teens Together Ensemble.** See November 6.

November 20 — Saturday
11 a.m. – 3 p.m. **Dinosaurs and More Festival.** During this festival — which includes a puppet show, a dinosaur trading post and various hands-on activities — visitors can learn about dinosaurs, fossils and the field of paleontology.

11:30 a.m. & 2:30 p.m. (English); 1 p.m. (Spanish). **Gallery Tour: The Aztec, Maya and Their Predecessors.** Tour the Museum's Mesoamerican Halls and explore the cultures of various pre-Columbian civilizations.

2 p.m. **Performance: Teens Together Ensemble.** See November 6.

2 p.m. **Millennium at the Museum Film: Dreamers with Power.** Learn about the history that has shaped contemporary Menomini life through a play presented on film that was conceived, written and performed by the youth of this Native American community.

November 21 — Sunday
11 a.m. – 3 p.m. **Dinosaurs and More Festival.** See November 20.

11 a.m. – 4 p.m. **Windy City International Documentary Festival.** This full day of programs will feature documentaries that explore the social fabric and culture of China.

2 p.m. **Performance: Teens Together Ensemble.** See November 6.

November 22 — Monday
10 a.m. – 1 p.m. **Dinosaurs and More Festival.** See November 20.

November 25 — Thursday
11 a.m. – 3 p.m. **Thanksgiving Festivities.** Walk through the Museum's halls and examine the Interpretive Stations that allow you to touch objects relating to various exhibits.

Daily Highlight Tours

Visit the exhibits that make this museum one of the world's finest and hear the stories behind these displays. Tours are offered Monday through Friday at 11 a.m. and 2 p.m. Check the informational directories for weekend tours.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

November 26 — Friday
11 a.m. – 3 p.m. **Thanksgiving Festivities.** See November 25.

November 27 — Saturday
11 a.m. – 3 p.m. **Thanksgiving Festivities.** See November 25.

1:30 p.m. **Tibet Today and a Faith in Exile.** This slide presentation takes you to places now open to tourists in Tibet and Tibetan refugee sites around the world.

November 28 — Sunday
11 a.m. – 3 p.m. **Thanksgiving Festivities.** See November 25.

November 28 — Sunday
1:30 p.m. **Gallery Tour: The Maya and Their Predecessors.** See November 14.

December 11 — Saturday
11 a.m. – 3 p.m. **Cartier Family Field Day: The Nature of Jewelry.** See November 6.

December 18 — Saturday
1 p.m. **Millennium at the Museum Future Feature: Drumming Demonstration.** See November 13.

2 p.m. **Millennium at the Museum Future Feature: Adinkra Symbols Demonstration.** Learn about the history and significance of African Adinkra symbols.

December 26 — Sunday
11 a.m. – 4 p.m. **Peaceable Kingdom.** Enjoy the wonders of a new season and participate in hands-on activities and musical performances that highlight winter in Chicago and the Museum's exhibits.

December 27 — Monday
11 a.m. – 4 p.m. **Peaceable Kingdom.** See December 26.

December 28 — Tuesday
11 a.m. – 4 p.m. **Peaceable Kingdom.** See December 26.

December 29 — Wednesday
11 a.m. – 4 p.m. **Peaceable Kingdom.** See December 26.

December 30 — Thursday
11 a.m. – 4 p.m. **Peaceable Kingdom.** See December 26.

December 31 — Friday
11 a.m. – 4 p.m. **Millennium Programming: Celebrating New Beginnings.** Welcome in the new millennium with musical performances and hands-on activities that highlight indigenous cultures around the world. You can also meet the Museum's version of the Y2K bug!

Resource Centers
Explore topics in more depth through a variety of resources, including computer programs, books, activity boxes and much more at the Africa Resource Center and the Daniel F. & Ada L. Rice Wildlife Research Station. Open daily from 10 a.m. to 4:30 p.m.

Pawnee Earth Lodge
Visit a traditional home of the Pawnee Indians and learn about their life on the Great Plains. Open from 10 a.m. to 4:30 p.m. on weekends and at 1 p.m. during weekdays. Check the informational directories or the sign in front of the lodge for program times.

Ruatepupuke: The Maori Meeting House
Discover the world of the Maori people of New Zealand at the treasured and sacred Maori Meeting House. Open daily from 9 a.m. to 5 p.m.

McDonald's Fossil Preparation Laboratory
Watch Museum preparators work on Sue, the largest and most complete *T. rex* ever found. Open daily from 9 a.m. to 5 p.m.

Please Excuse Our Renovations

We are on the move! As you plan a visit to the Museum, please note that the Webber Resource Center, the Webber Gallery and the Place for Wonder are currently closed for renovations and will reopen Memorial Day weekend. The North American ethnographic collection (artifacts from the Native American cultures of the South, Southwest, Plains and Great Lakes regions) will also be unavailable from the end of November 1999 until Memorial Day weekend. In addition, the North American archaeology collections, including the Hopewell materials, will be unavailable to the public until further notice, and the Reptiles Hall will be closed from the end of February until Memorial Day weekend.


JOHN WEINSTEIN /2938B3C

Left: From November 25 – 28, The Field Museum will be hosting a Thanksgiving Festival that uses various activities and the exhibits to explore the wonders of America's 300-year-old harvest celebration.

Please note that programs are subject to change. Check the informational directories located throughout the Museum for daily program listings.

Thousands Flock to Museum to Welcome the 14th Dalai Lama

DIANE ALEXANDER WHITE /GN83999 1C

About 4,000 people turned up at The Field Museum on Aug. 28, 1999, to hear His Holiness the 14th Dalai Lama of Tibet discuss ethics for the new millennium. Organized by The Field Museum and The Tibetan Alliance of Chicago, the event included a morning presentation in Stanley Field Hall and an afternoon round-table discussion in James Simpson Theatre with a number of journalists and scholars, including Pulitzer Prize winner Garry Wills. During his morning appearance, the Dalai Lama offered advice on finding the path to happiness, peace and a successful life, as well as some insight into the political and cultural struggle that is taking place in Tibet. At the conclusion of his remarks, he consecrated a sacred Tibetan religious painting, or thangka, from The Field Museum's collections.

DIANE ALEXANDER WHITE /GN83999 5C

DIANE ALEXANDER WHITE /GN83999 6C

Upper Left: Thousands gather outside the Museum to catch a glimpse of the spiritual leader of Tibet.

Above: The 14th Dalai Lama greets visitors after the lecture.

Right: During the morning presentation, actress Goldie Hawn orchestrated a traditional Tibetan welcoming ceremony in honor of the Dalai Lama.

Far Right: His appearance on August 28 marks the second time the 14th Dalai Lama has visited The Field Museum this decade.

DIANE ALEXANDER WHITE /GN83999 15C

Former Photographer from Bogotá Receives Museum's Conservation Award

Robert Vosper

Twenty-six miles from the sun-drenched beaches of Colombia's Caribbean coast, the ground suddenly surges upward to form the 19,000-foot-high snow-capped peaks of the Sierra Nevada de Santa Marta, the world's highest coastal mountain. Because of the abrupt change in altitude, the mountain is cloaked in every conceivable environment, from arctic-like tundra to humid rain forests. As a result, it is home to a wealth of animals and plants, many of which are found nowhere else on Earth.

Today, much of that biodiversity has been severely degraded, a casualty of a political and social conflict that has been raging on the mountain's slopes for nearly 50 years. Because the conflict among the parties involved — which include the government, indigenous groups, peasants and drug farmers —has often turned violent, most environmentalists have written off the mountain as a lost cause.

However, Juan Mayr, a 46-year-old photographer and environmentalist from Bogotá, has spent the past 20 years trying to save this region and to bring the warring factions together in the name of conservation. On Sept. 15, 1999, the Museum's Founders' Council presented Mayr, who is now Colombia's environmental minister, with the Parker/Gentry Award for conservation, given each year to an individual who has made a significant impact in preserving the world's rich natural heritage.

According to Mayr, who was introduced to the Sierra Nevada in the 1970s while studying the region's indigenous communities, the environmental problems began in 1950 when thousands of peasants immigrated to the mountain to escape a civil war that was raging in the countryside. To make room for their cattle and crops, the settlers began felling the forests, forcing the indigenous populations to higher, less fertile ground. In the 1970s, the level of deforestation intensified when the settlers abandoned their coffee fields to grow marijuana and later coca. The economic boom that followed not only enticed more peasants to the region, but also government officials bent on eradicating the illegal contraband. The peasants rebelled against the sudden intrusion, the government sent in troops and the area slipped into anarchy. Throughout the conflict, the environment continued to degrade.

Realizing that social unrest was the major obstacle to implementing any meaningful conservation strategy, Mayr began searching for something that would bring the groups to the negotiation table. That something, Mayr discovered, was the 36 rivers that flow from the mountain's peaks.

"We found that water is the key element in bringing all the different parties together," Mayr explained at the award presentation. "It creates confidence among the different groups because people understand that water is a great need and that everyone shares this need."

Using water as his rallying cry, Mayr created the Fundacion Pro-Sierra Nevada de Santa Marta in 1986 to study the region's environmental and social problems, as well as to flood the different communities with information about the Sierra Nevada's ecology and the health of its rivers.

His plan worked. Finally acknowledging their mutual dependence on the mountain's environment, the disparate groups recently joined forces to develop a conservation plan for the mountain; they even began to address the human- and land-rights issues of the indigenous people.

Although the parties are now working together to conserve what is left of the mountain's biodiversity, Mayr admits it may take 10 to 20 years to see the positive effects of their efforts.

"This is just the first step," says Mayr. "It is not a project but a process."

Mayr's "process" recently caught the attention of Colombian President Andrés Pastrana. In 1998, Pastrana asked Mayr to join his administration as the minister of the environment, a position Mayr gladly accepted in hopes of introducing his conservation philosophy to the national stage. Drawing on his experience in the Sierra Nevada, he once again is forging an environmental plan based on bringing people together and reducing violence.

"If society doesn't have respect for human life, it will have no respect for other life systems," Mayr said. "But we will need all your support so that my country, one of the richest countries in biodiversity in the world, can have a future." ITF

Below: Juan Mayr (left) with Cary Malkin, chairman of The Founders' Council.

DANIEL ELLIOT /CZ6428

From the Photo Archives

Thousands of people gathered on a wharf in Seattle on May 30, 1899, to watch 25 of the nation's leading scientists and a team of surgeons, doctors, photographers and artists board a luxury steamship bound for a two-month voyage up the Alaskan coast to the Seward Peninsula. Billed as the last of the great Victorian-era oceanic expeditions, the voyage was actually little more than a research reconnaissance mission and hunting vacation for the "who's who" of science.

The man behind this extravagance was multimillionaire Edward H. Harriman, owner of the Illinois Central and the Union Pacific railroads. Ironically, the idea for this trip developed quite innocently at The Field Museum.

In the spring of 1899, Harriman ran into his friend Daniel Elliot, a zoologist at the Museum, and began telling him about his plan to take his family on an African safari. Elliot thought it was a great idea, but suggested that if Harriman really wanted to go hunting he should head for Alaska's Kodiak Island, home to a recently discovered population of large brown bears. Harriman, who loved a new challenge, canceled his safari, commissioned a steamship to take him to the island and invited Elliot and some of his colleagues along for the ride. Among those invited were conservationist George Grinnell, naturalists John Muir and John Burroughs, painter and ornithologist Louis Agassiz Fuertes and photographer Edward Curtis.

Although they had little time to conduct any meaningful research during the 9,000-mile round-trip cruise, the scientists did collect a number of biological specimens, including 600 species new to science (mostly marine animals and plants). They also found a 15-mile-long fiord and glacier that were not on any maps. For his part, Elliot collected hundreds of faunal specimens for the Museum, as well as a few ethnographic objects, including two totem poles he removed from an abandoned Inuit village (above).

After the expedition, the scientific team spent two years publishing an 11-volume set on their discoveries and observations. However, Elliot, who died in 1915, didn't contribute to this project. Instead, he focused his efforts on publishing several monographs on the mammals of North America and the West Indies. In 1906, he left The Field Museum for the American Museum in New York, where he published a comprehensive study on primates.

Meanwhile, Harriman, who managed to bag a female bear and her cub on Kodiak Island, returned to the business of building his railroad empire. Although he didn't regret financing the expedition, Harriman admitted to a reporter years later that he found his guests annoying at times.

"Scientists have a way of reducing everything to an exact point and would probably manage a railroad from such an exact basis," he said. "Only it would take them a century to go from Chicago to St. Louis." ITF

From the Field Archives

November 1932

The geology department placed on exhibit the most complete fossilized remains of a *Pronothrotherium typicum*, an extinct species of ground sloth that roamed the South American landscape more than 12 million years ago. The fossilized mammal, which was about the same size as a grizzly bear, was unearthed by Field Museum paleontologists while conducting research in Bolivia and Argentina in 1926.

Field Museum zoologists returned to Chicago after spending two years in China collecting faunal specimens. Among the 5,000 animals they brought back was a takin (above), a goat-like antelope that lives in the forests of the Himalayas.

Among the hundreds of unusual items the Museum received from the public in November 1932 were a Chinese ice chest; a sugar-cane branch; 20 fragments of mica; four armadillos; nine bats; a large American bison; a hairy-tailed mole; a northern pike; and an adult diamondback rattlesnake.

Zoologist Wilfred Osgood described 19 previously unknown species of mammals collected by Museum curators on an expedition to East Asia and Indochina. Among the new species Osgood identified were a small, black-and-white monkey and a tropical deer.

December 1932

The University of Chicago donated its collection of more than 51,000 botanical specimens, including the original plants, or type specimens, that scientists used to describe a number of new species. It also contained specimens collected by some of the first botanists to explore the southwestern United States, as well as many rare collections made in the eastern hemisphere.

The Museum received an extremely rare fossilized skull of a horned gopher that lived in what is now Nebraska some 7 million years ago. The gopher, which was about the same size as a groundhog, was hardier than modern gophers and had two conical horns on its head that it used to maintain a grip on the ground when burrowing.

The Yerkes Observatory in Williams Bay, Wisc., donated pieces of an iron meteorite unearthed near a 500-foot-wide, 18-foot-deep crater in Odessa, Texas. Scientists believe the meteorite tore into the Texas landscape about 50,000 years ago.

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I certify that all information furnished here is true and complete.
/s/ Robert Vosper, Editor of *In the Field*

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Field Museum Tours at a Glance

[illegible] Tanzania [illegible] to the [illegible] and Kenya. [illegible] 7244 for an [illegible] availability.

Islands of Diversity: Indonesia and the Philippines

April 2 – April 19, 2000
Duration: 18 days
Guest Leader: A team of experts
Price: Starts at $7,990, not including airfare from Los Angeles of $1,490

Circumnavigation of Crete

March 29 – April 8, 2000
Duration: 11 days
Museum Leaders: Archaeologist David Reese and anthropologist Catherine Sease
Price: Starts at $3,995, not including airfare of $899 from New York

British Columbia and Southeast Alaska

May 18 – March 27, 2000
Duration: 10 days
Museum Leader: TBA
Price: Starts at $2,340, not including airfare of $750 from Chicago

DAVE BLANTON

Join Field Museum zoologist David Willard on a safari to Botswana and Zimbabwe in October 2000. Highlights of the tour will include boat rides in the pristine Okavango Delta, game drives in Hwange National Park and an expedition to Victoria Falls.

TRAVEL DYNAMICS INC

Circumnavigate the island of Crete in March aboard a 46-passenger, private yacht with Museum archaeologist David Reese and anthropologist Catherine Sease. During visits to sites like Knossos (above), you will learn about the rise and fall of the Minoan civilization.

Fire & Ice: Japan, the Kuril Islands and Kamchatka

May 21 – June 1, 2000
Duration: 12 days
Guest Leader: Explorer and oceanographer Don Walsh
Price: Starts at $5,490, not including airfare

Archaeology and Landscapes of China

May 23 – June 10, 2000
Duration: 19 days
Museum Leader: Archaeologist Deborah Bakken
Price: $5,695, including airfare from Chicago

Pacific Northwest Submarine Safari

Four departures: June 30, July 3, July 5 and July 7
Duration: 5 days
Guest Leader: Marine biologist Joe Valencic
Price: $3,890, not including airfare

Galápagos Island Adventure

July 19 – July 29, 2000
Duration: 11 days
Museum Leader: TBA
Price: Approximately $3,900, including airfare from Chicago

Archaeological Treasures of Peru

August 25 – September 5, 2000
Duration: 12 days
Museum Leader: Anthropologist Jonathan Haas
Price: TBA

TODD NIELSEN

In May, travel with Field Museum archaeologist Deborah Bakken to the archaeological sites of Beijing, Xi'an and Dazu. Along the way, you will visit two of China's most beautiful landscapes — the famous Three Gorges of the Yangtze River and the karst mountains (above) along the Li River in Guilin.

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Please Note: Dates, prices and itineraries are subject to change. Prices are per person, double occupancy.