the SAM NOBLE OKLAHOMA MUSEUM *of* NATURAL HISTORY

Tracks

Summer 2009 Newsletter, Volume 21, Number 1

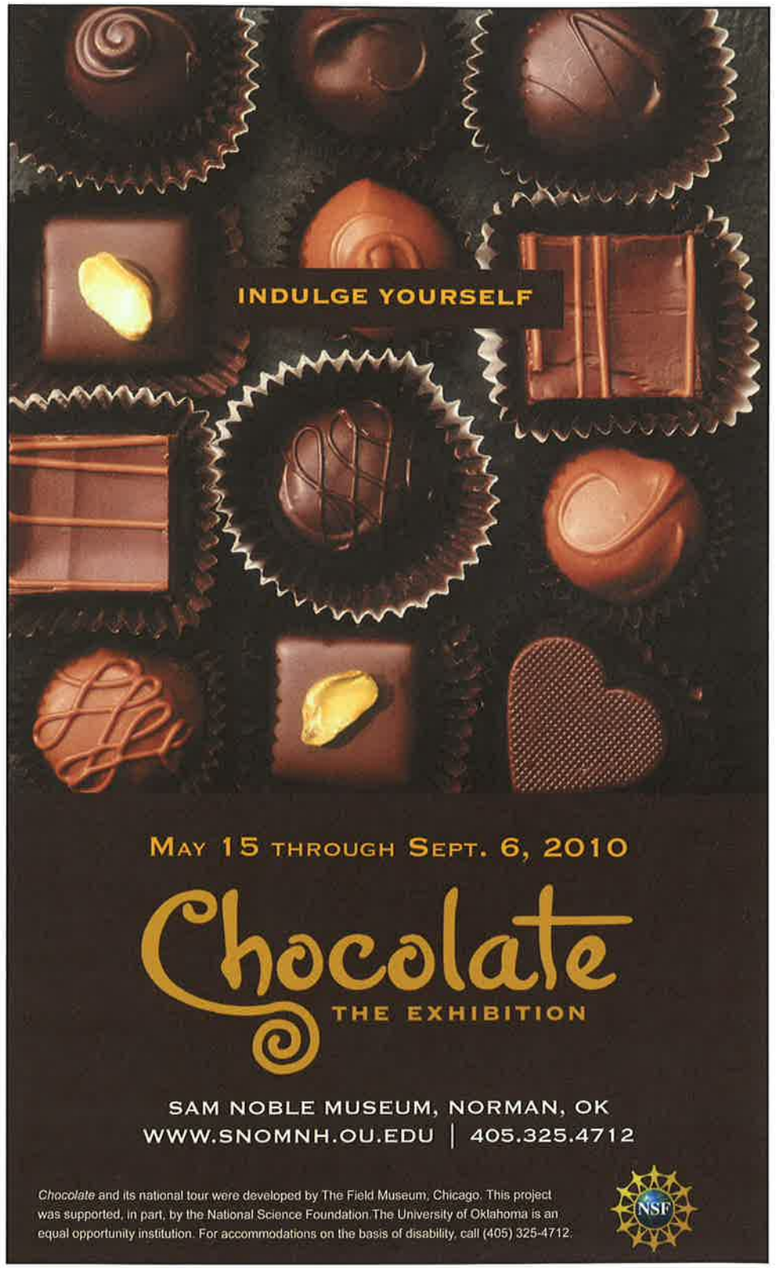
DRAWING THE MOTMOT
A conversation with naturalist/artist Debby Kaspari

BIRDS, BATS AND WIND FARMS
A museum research associate investigates some of the unintended consequences of wind turbines

DOG BONES AND PREHISTORIC PEOPLE
How one Ph.D. candidate is studying canine bones to learn about the prehistoric people of Oklahoma

THE UNIVERSITY OF OKLAHOMA

INFORMATION



MUSEUM INFORMATION

Address: 2401 Chautauqua Ave,
Norman, OK 73072-7029
Telephone: (405) 325-4712
E-mail: snomnh@ou.edu
Web site: www.snomnh.ou.edu

OUR MISSION

The Sam Noble Oklahoma Museum of Natural History at the University of Oklahoma inspires minds to understand the natural and cultural world through collection-based discovery, interpretation and education.

We do this by:

- Collecting and maintaining specimens, cultural objects and associated data, including linguistic and ethnographic, for current and future research
- Conducting and disseminating research to increase knowledge
- Teaching university students to develop critical-thinking skills
- Educating the public through programs and exhibitions to increase scientific literacy
- Conducting K-12 school programs to enrich classroom experiences.

OUR VISION

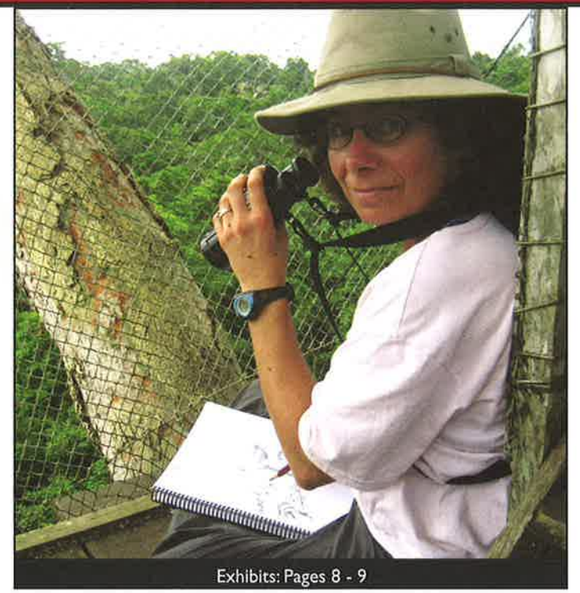
As one of the finest museums, we are at the heart of our community, collectively working to inspire understanding, appreciation and stewardship of the earth and its peoples.

Tracks
Editor-in-Chief: Michael A. Mares
Managing Editor: Linda Coldwell
Layout: Krysten Marshall

This publication is printed on paper containing 30% postconsumer recycled fiber.
PLEASE RECYCLE

CONTENTS

MUSEUM EVENTS AND HIGHLIGHTS


Exhibits: Pages 8 - 9

Museum: Page 3


Research: Pages 4 - 5


Collections: Page 6


Education: Page 7

FEATURES & DEPARTMENTS

MUSEUM WELCOMES NEW FACES, PROGRAMS

Dear Friends,

May 1, 2009, the museum celebrated nine years since the building first opened to the public. This year has seen an extraordinary amount of activity on all fronts. We are working hard to maintain and improve the physical plant – painting, fixing, patching, cleaning and generally upgrading the entire museum. Some changes are subtle, others more obvious, but the goal is to make the facility friendly and attractive to visitors so that you will experience Oklahoma's fascinating story across time in a uniquely lovely setting. There are many new things to see, and new people to meet on your next visit to the museum.

New Staff – This spring, the SNOMNH welcomed Holly Hughes as our new head of education and Emily Reynolds as our new volunteer coordinator. Neither Holly nor Emily are native Oklahomans, so we welcome both of them to the museum and to our state. We expect great things from them as they meet and work with our staff, members, volunteers and visitors.

New Programs –The education department has been hard at work on our *ExplorOlogy* program, funded by the Whitten-Newman Foundation. *ExplorOlogy*'s Summer Explorers and Oklahoma Science Adventure was joined by Paleo Expedition this summer. Ten enthusiastic high school students were selected to participate in the process of fossil exploration, working on an active paleontological dig in Utah. Participants spent their time at the museum and at a remote field site in the Utah desert with highly experienced educators and paleontologists – needless to say, the experience of a lifetime!

New Exhibits –Since January, the museum has hosted two temporary exhibits and opened a new permanent gallery. *Touch the Sky: Prairie Photographs by Jim Brandenburg* was a spectacular view of prairie habitats in their natural state. *One Hundred Summers: A Kiowa Calendar Record* was an important exhibit highlighting 100 years of Kiowa history. The Noble Corporation and Noble Energy Orientation Gallery opened April 1 and completed our first floor exhibits. This gallery provides an overview on the museums collections, activities and research, and gives the visitor a good understanding of what exactly goes on in a major natural history museum.

New Friends – As of press time, 253 new memberships have been purchased this year. We've also welcomed students from schools that had never before visited the museum on a field trip. These schools were able to afford the trip through the museum's Fossil Fuel Fund, which provides financial assistance for travel costs. Finally, the seventh annual Oklahoma Native American Youth Language Fair hosted more than 800 participants in this colorful and vital celebration of Native American languages.

New Advocates – In April, the SNOMNH was proud to welcome six new members to our Board of Visitors. These outstanding Oklahomans are from diverse backgrounds and careers, but all are wonderful ambassadors of the museum and among the museum's strongest supporters.

New Additions – Our curators and research and collections staff are always adding new discoveries and specimens to our substantial collections. We received a collection of George Sutton bird paintings, as well as hundreds of vertebrates providing new records from across Oklahoma, new fossils of all types, and have added to our video recordings of Native American languages. Collections and research are booming at the museum.

As excited as we are about all of the things that are new at the SNOMNH, we are committed to the quality and importance of our existing programs, exhibits and events. We are beginning to plan new permanent exhibits, working to develop new special exhibitions that showcase our collections, and preparing to host major blockbuster exhibits over the next three years. Your museum will continue to be an exciting, entertaining and extraordinary place to visit and we are proud to be a major contributor to the quality of life in Oklahoma.

M. Mares

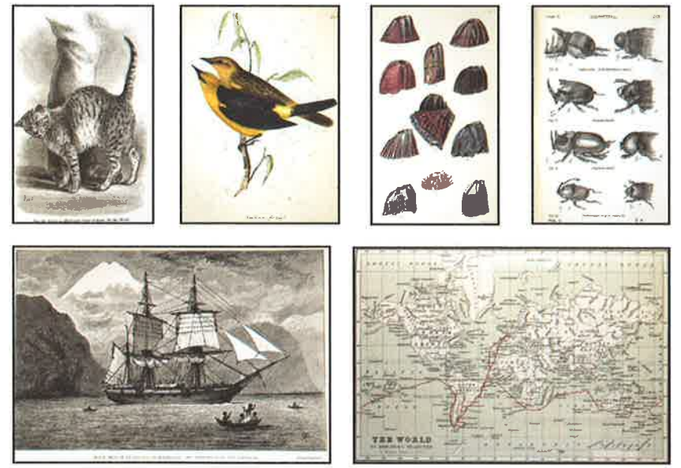
Michael A. Mares, Ph.D.
Director

EXHIBIT SHEDS LIGHT ON DARWIN'S LIFE AND WORK

Charles Darwin is widely recognized and celebrated as the founder of the theory of evolution by natural selection. His ideas have impacted every branch of the life sciences, as well as geology, paleontology and cosmology. But there is much more to Darwin's work than this one idea.

A special exhibition opening Oct. 10 features a complete set of first-editions of Darwin's written works, and sheds light on the man, not only as an evolutionary theorist, but also as a global traveler, a geologist, botanist and thinker.

Darwin at the Museum also features maps and illustrations, hand-written manuscripts and letters by Darwin, and specimens from museum collections relating both to Darwin's studies and to the research of current museum scientists. When Darwin published his famous *On the Origin of Species* in 1859, he had already published a number of highly respected works featuring his scientific inquiries. From the structure of coral reefs to the expression of emotion in animals, Darwin's insatiable appetite for scientific knowledge led him to delve into a wide variety of research subjects.



Featured above are just a few of the images from Darwin's books that will be shown in a digital slideshow in the *Darwin at the Museum* exhibition.

Darwin at the Museum offers a unique opportunity for the public to view all of Darwin's first editions in one place. The University of Oklahoma Libraries is one of only a handful of institutions in the world that can boast a complete set.

"A lot of people don't realize that originally, Darwin was best known for his work in geology and theology," said Laurie Vitt, curator of reptiles at the museum and co-developer for the exhibition. "There are so many sides of Darwin that people probably are not aware of. One of our goals is to show the comprehensive basis on which he did his work. It's stunning."

Kerry Magruder, curator of OU's History of Science Collections and co-developer of the exhibition, agrees. "People may come in with a flat picture of who Darwin was," he said, "but viewing all of the books is a great way to see a different side of Darwin. He is known for his work *On the Origin of Species*, but most people don't realize that he wrote a book on emotional expression, a book on earthworms, a book on barnacles. People react to the breadth and beauty of his work."

Magruder points out the wide difference between how modern audiences view Darwin and how he was perceived by people during his lifetime.

"*The Voyage of the Beagle* was an adventure story," he said. "In the 19th century, Darwin was seen as a scientist-adventurer. He was a very romantic figure. I hope people will leave the exhibit with a new idea of Darwin as an adventurer, not the stodgy figure they see in portraits of him as an old man."

The element of adventure to Darwin's life and work is emphasized through a large map that shows the path of his five-year voyage around the world: from England to South America, through the Pacific islands to southern Australia, and around the Cape of Good Hope in South Africa.

The exhibit will include a large model of the Beagle itself and a video presentation featuring the beautiful illustrations of animals Darwin encountered on his travels. Alongside these will be specimens from the museum's collections of some of these same animals.

"Overall, we want visitors to begin to understand that there are many sides to Darwin," Magruder said. "There is so much more to Darwin than meets the eye, and that's what people understand when you get all the books together in one place. He was somebody it's really worthwhile to get to know. I rank him with Galileo as one of the great scientific writers whose works had this extraordinary capacity to connect with people. Through his writing, he got people to think about a lot of different things, and we hope people will leave this exhibition thinking that they want to become reacquainted with Darwin… that they want to take their knowledge of him a little deeper."

Darwin at the Museum is a collaborative effort between the museum and the University of Oklahoma Libraries, History of Science Collections. It will be on view through Jan. 18, 2010.

The exhibit is part of a campus-wide year-long celebration commemorating the 200th anniversary of Charles Darwin's birth. Throughout the year the museum is hosting lectures, family days and a seminar series, all focusing on the work and legacy of Charles Darwin.

RESEARCH

RESEARCHER PROBES BIRD, BAT DEATHS ON WIND FARMS

In a state where the wind is specifically mentioned in its state song, it should be no surprise that wind power is one of the fastest growing areas of economic development. Any traveler driving on western I-40 or across the high plains of the Oklahoma panhandle will see the evidence: "wind farms" made up of hundreds of 300-foot-tall wind turbines stirring the air with their enormous blades. Wind is a fully renewable, inexpensive source of energy here on the Great Plains, and the benefits to our planet of harnessing this energy source are evident. But there are other ways in which these giant turbines can impact the environment, and one researcher at the SNOMNH is wrapping up a three-year study to learn more.

Elizabeth Mosteller Burba is a research associate at the museum and a doctoral student in the zoology department at the University of Oklahoma. Since July 2006, Burba has been collecting data on bird and bat fatalities associated with one of Oklahoma's wind farms. This work is being conducted through a contract to curator Gary D. Schnell and done in conjunction with research associate Joseph A. Grzybowski and consultant Paul Kerlinger.

Early wind farms built in California utilized turbines built close to the ground, with small blades turning very quickly. This design proved to be deadly to birds, and thousands were killed every year. Subsequent design changes were made, and the current generation of wind turbines use larger blades, which move much more slowly at a height of 300 feet or more. Scientists doing studies of bird mortality from the new turbines found that far fewer birds were being killed. But as more turbines were built at locations across the country, researchers noticed something new: dead bats.

This hoary bat is one of the many killed by a wind turbine that Burba discovered during her rounds at the wind farm. *Photo: Elizabeth Mosteller Burba*

Nationally, the majority of bats killed by wind turbines are of two species: the hoary bat, which accounts for about 42 percent of the kills; and the red bat, accounting for another 22 percent. Both of these are migratory, tree-roosting species, and scientists still have not determined the exact reason why these bats in particular, and not others, should have such a high fatality rate. Hypotheses abound, some better supported than others. One hypothesis is that the bats mistake the tall turbines for trees and fly into the blades, seeking a roosting place. Another is that the safety lighting on the towers attracts insects, which in turn draws in the bats. Still another posits that a shift in air pressure, created by the sweeping blades, can cause bats that fly too close to die in mid air from the sudden expansion of their lungs.

Statistical studies are now being conducted at wind farms across the United States to provide data for scientists trying to determine the reasons for the bat fatalities. Most of these studies are funded by the wind companies themselves. The three-year study Burba has been conducting was funded by Horizon Wind Energy.

"Finding the reason for bat fatalities is of high importance to both wind-energy companies and biologists," Burba said. "We don't know exactly why this is happening, and it's hard to prevent something when you don't know the cause. Once we know the cause, then we can start looking at prevention strategies."

Twenty-three times a year, she journeys out to Blue Canyon wind farm in western Oklahoma and walks concentric circles across the rough terrain around the base of 50 turbines, searching for the bodies of birds and bats that have been killed by an impact with the enormous turning blades. Starting at about 15 meters out from the base, Burba makes four concentric circles around each turbine, each circle 15 meters from the last.

The job is no walk in the park. In the 25 minutes it takes to search a single turbine, Burba hikes about one kilometer. That doesn't sound too bad… until you consider that over the course of two days, Burba will search 50 turbines, for a total of 50 kilometers of hiking, or about 30 miles. In addition, the landscape is rocky, hilly, and – at certain times of the year – covered in vegetation up to three feet high. To say nothing of the tarantulas, rattlesnakes and hidden animal burrows waiting to trip up the unwary biologist.

Finding a tiny bat or bird carcass in these conditions is challenging. The proverbial "needle in a haystack" comes to mind. Besides, Burba isn't the only one looking for them. Predators are also seeking out the dead animals as a source of a cheap, easy meal. Against these odds, a certain rate of failure is a given, so Burba must find a way to estimate and correct for that margin of error. This is accomplished in a couple of ways.

Twice a year she conducts a "searcher-efficiency" test. An accomplice goes into the field ahead of her and places a certain number of tagged carcasses. After Burba's routine search, she counts up the number of these carcasses she found and can use the percentage to help her figure a likely number of bird or bat carcasses she is missing. To factor in the number of carcasses likely removed by predators, she will plant carcasses on the site and monitor them over time to get an estimate on what percentage are taken by predators and how long the carcasses are on the ground before they are discovered.

Sometimes field biology is as much math as science. Back at the museum, Burba feeds all of this data into a complex statistical analysis that allows her to come up with an estimate of the probable number of birds or bats that are actually killed based on the number she has found, her estimated search efficiency and the number of carcasses likely removed by predators.

After assembling three years of data, Burba estimates that – as at other sites across the United States – the number of birds killed by impacts with Oklahoma wind turbines is fairly low. Even during migration seasons, the number of bird fatalities are not high enough to be of concern from a conservation standpoint. As at many other wind-turbine sites, mortality has been higher for bats than for birds.

A 300-foot wind turbine looms on the horizon as the sun sets on wind farm. *Photo: Elizabeth Mosteller Burba*

"The species affected are not endangered," Burba explained. "They are widespread and have healthy populations otherwise. Yet, it is important to document mortality factors for bats at a variety of sites so that, eventually, it will be possible to evaluate whether there are cumulative effects on bat populations. Because almost all U.S. bats are exclusively insectivorous, they play an important role in ecosystem function by helping control insect populations like mosquitoes and agricultural pests."

As of 2009, Oklahoma ranks 11th nationally in wind energy production. At present, only one-half of 1 percent of the nation's energy production is generated by wind. But the U.S. Department of Energy has an initiative for 20 percent of our energy to be wind-generated by the year 2030.

The concern from an environmental standpoint is that the growth in the wind-energy industry is much more rapid than the scientific understanding of its impact. The scientists' goal is to discover reasons for the bat fatalities in time for the issues to be addressed in the next generation of wind farms. Once the causes are known, changes can be made to the design or placement of the turbines that can prevent the impact on bat populations.

Statistical analysis of the data that Burba's study has supplied, combined with that of other wind turbine studies in other states across the country, can reveal patterns that may help scientists nail down the reasons for the problem. Certain patterns have already emerged: Oklahoma's bat fatality rate is moderate. In some western states, the rate is much lower, and in a few eastern states, the rate is higher. Though these bats pass through Oklahoma in both the spring and fall, mortality is much higher in the fall. Why? The patterns emerge, but the reasons are still a puzzle for scientists to figure out. With help from Burba and studies like hers across the country, the puzzle can hopefully be solved, and the next generation of turbines will be safer for bats.

DOG BONES REVEAL HOW PREHISTORIC OKLAHOMANS LIVED

When people think about archaeology, most think about human artifacts: the implements made by prehistoric people – their tools, artwork, houses and ornaments. But one Ph.D. candidate at the SNOMNH is looking, not at artifacts, but at animal bones from some prehistoric sites for clues to the lifestyles of a group of people who lived in Oklahoma around 3,000 years ago.

Luther Leith has been identifying thousands of animal bones and bone fragments collected from sites in southeastern Oklahoma in the 1930s and '40s by teams of Works Progress Administration workers. Many of these bones have never been studied, and some were still in the original paper in which they were wrapped more than 50 years ago. The bones were collected from sites representing the Fourche Maline culture, a group of people who lived 3,500-to-1,000 years ago.

Leith used comparative bone collections at the museum and the Oklahoma Archeological Survey to help him analyze and identify 7,666 bones and bone fragments. He identified 34 types of animals: 20 mammals, seven birds, four reptiles and three fish. The most common were deer, beaver, raccoons, turtles and turkeys, but there were also elk, eagles, bears and mountain lions.

"Most were likely used for food," Leith explained. "This is a typical spread of things being eaten or used for tools, but some were probably ceremonial." Mountain lions, for example, are known to have had significant cultural meaning among North American prehistoric people. The single eagle bone Leith identified was probably also ceremonial in nature.

Now that the bones have been identified, Leith will begin to organize and study them according to their date. The sites he is studying cover a wide time period: from the late Archaic period, about 3,000 years ago, to the time of the Spiro people, around 1,000 years ago. He will then be able to get an idea of whether the diet of the Fourche Maline changed over time. He also will begin scanning the archaeology collection for seeds found at sites from this time period. That will give clues to the culture's farming practices.

"In archaeological studies of sites in southwestern Oklahoma to date, there's not a clear idea of how diverse their diet was," Leith explained. "There is a lot of room for research on Fourche Maline. People don't pay as much attention to it as to Spiro. If you look at the everyday materials, you can see a lot of continuity from the Late Archaic to the Fourche Maline to Spiro," Leith continued. "If the Fourche Maline is the base that Spiro grew out of, it's important to learn how Spiro came out of it, rather than appearing out of the blue."

Among the bones that Leith is studying, there is one species that is receiving separate, individual attention. Dogs were the first animal in North America to be domesticated, accompanying their paleo-indian owners into the continent more than 14,000 years ago. Leith has been working with Kent Beuhler at the Oklahoma Archeological Survey to study dog bones found at several Fourche Maline sites in southeastern Oklahoma. Close to 50 individuals have been identified.

Domestic dogs in different regions bore different physical aspects. The dogs of the Fourche Maline were relatively small: about the size of a Sheltie and weighing around 45 pounds. Dogs of the Great Plains were significantly larger, and on the northern plains, domestic dogs were almost indistinguishable from wolves. Domestic dogs were also used differently by different prehistoric peoples. Plains peoples used their dogs as pack animals, camp cleaners and mobile meat storage. These larger-bodied dogs were used to drag travois, to eat up the camp garbage and offal, and when times got tough, could be slaughtered and eaten. This was not the practice among the Fourche Maline, however.

Ph.D. candidate Luther Leith displays the dog bones he is using to unlock clues to how prehistoric Oklahomans lived. *Photo: Krysten Marshall*

Leith can tell that the dogs in his study were not being butchered for food by the absence of cut-marks on the bone where the meat would have been carved away. Also, in some cases it is clear that the dogs were intentionally buried – found fully articulated and undisturbed by scavengers. Though none of the animals in Leith's study were associated with human burials, there are documented cases of dogs being buried along with their human companions at some of the Fourche Maline sites excavated by the WPA. It seems that, to the Fourche Maline people, dogs served mainly as pets and companions, and likely as camp alarm systems and garbage disposal, as well.

Leith and Buehler are working with Diane Warren, a professor in the OU Anthropology department, to use their findings to learn more about the relationship between domestic dogs and their prehistoric humans.

MUSEUM WELCOMES NEW EDUCATION DIRECTOR

The museum is pleased to welcome Holly Hughes as the new head of education. Hughes joined the staff in March and is in charge of all the museum's formal and informal educational experiences for children and adults.

Hughes holds a bachelor's degree in anthropology and a master's degree in history with a concentration in museum studies, both from the University of Missouri, St. Louis. She comes to the SNOMNH from the South Florida Science Museum in West Palm Beach, where she served as vice president of education and programming, overseeing exhibit and educational programming for the museum as well as the associated aquarium and planetarium.

At the SNOMNH, Hughes is in charge of all strategic planning for the museum's educational programs, including public programming for children, families and adults; classes for public and private school groups; public lecture series; informal education programs; and Discovery Room programming.

"This museum has an excellent reputation in the museum field," Hughes said. "It has excellent research and collections, innovative educational programming, great exhibits and is really working well with the community. This museum is in a perfect position to take the next step working nationally and internationally to grow programs."

She gives the example of a project she initiated when she worked at the St. Louis Science Center in 2005. After spending a summer in Nairobi, Kenya, working with street kids, Hughes returned to set up the Globe Garden, a community garden program that connected St. Louis youth with the children she had worked with in Kenya, who were also growing community gardens. She challenged the kids to seek scientific answers to the problem of world hunger. They communicated via the Internet, comparing data and sharing experiences.

"I love working with kids," Hughes said. "It is wonderful how interested kids are in science when they are solving real problems using the tools that science provides."

Hughes is studying program evaluations and asking questions of visitors and program participants to learn more about the museum's community. "The most important thing in museum education is to be inclusive and responsive to the community and its needs," she said. "People are curious, and we want to foster that. We want to develop programs that allow people to learn and feel comfortable in the museum setting."

Photo: Linda Coldwell

MUSEUM WELCOMES NEW VOLUNTEER COORDINATOR

Photo: Krysten Marshall

The SNOMNH has named Emily Reynolds, formerly with the William J. Clinton Presidential Library and Museum in Little Rock, Ark., as the new volunteer coordinator.

Reynolds, a Kansas native, received her bachelor's degree from the University of Kansas, with a double major in history and anthropology, and her master's degree in museum and artifact studies from Durham University in England. At the Clinton Library, Reynolds served as part of a team that was working to inventory the more than 80,000 objects in the collection.

At the SNOMNH, Reynolds is in charge of managing all volunteer functions at the museum, including the recruitment, training and scheduling of more than 170 active volunteers in areas across the museum.

"Volunteers are an integral part of a museum and have the ability to serve as links between the museum and its community," Reynolds said. "The volunteers at the Sam Noble Museum come from a wide variety of backgrounds. They are skilled, intelligent people, who are proud of the museum and take great ownership of it, which is wonderful. I hope to continue to expand the diversity of the museum's volunteer base and to help to develop even greater opportunities for our volunteers to serve our community."

DRAWING THE MOTMOT: A CONVERSATION WITH DEBBY KASPARI

Nature artist Debby Kaspari has the direct gaze of an artist, and the still, quiet demeanor of someone accustomed to sitting in the woods in perfect silence for hours at a time. Despite her calm aspect, you sense Kaspari's enthusiasm about her experiences as a field artist. Visitors will feel it as well when they experience her exhibition *Drawing the Motmot: An Artist's View of Tropical Nature*, opening at the museum Oct. 10.

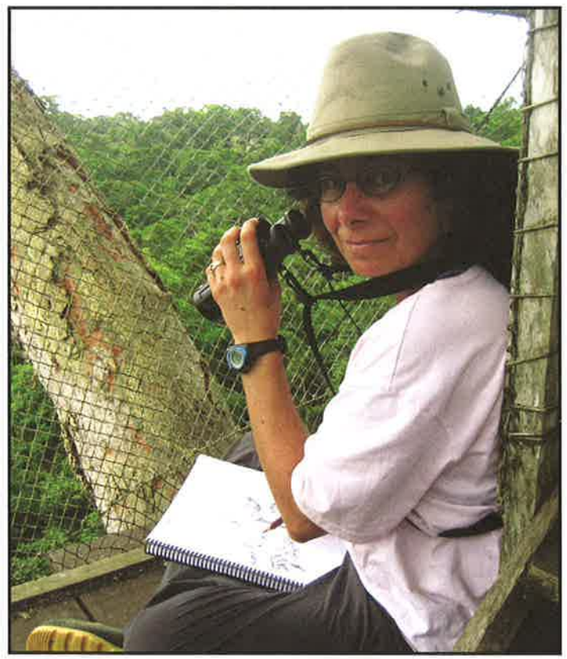
A professional nature artist, Kaspari has made several drawings and paintings for the museum over the years – many readers will remember her mural-sized illustrations of an elasmosaur and a Miocene camel for *Collecting Oklahoma* in 2007. This new exhibition has been several years in the making, and will pull together artwork from rainforest expeditions across Central and South America.

Kaspari first began drawing and painting the rainforest in Trinidad in the late 1980s. Later she traveled to Costa Rica where she met her future husband, ant biologist Mike Kaspari, a professor of zoology at the University of Oklahoma. Since then she has had many opportunities to add to the body of rainforest work showcased in *Drawing the Motmot*. Four years ago she made a proposal to the museum for the exhibit that was taking shape in her mind: an exhibit that would give visitors the same sense of peace, beauty and wonder she herself experienced in the field.

"I wanted this to be more than just an art exhibit," Kaspari explained. "I wanted to share the environment as I see and feel it. I wanted to bring a visitor into the rainforest and give them the chance to connect with it the way I do, through artwork and media."

With that in mind, and armed with a tiny portable art studio and a tripod contraption that allows her to capture video as she creates art in the field, Kaspari began compiling the various elements that will create *Drawing the Motmot*. A high-tech audio recorder the size of a cell phone allowed her to capture rainforest sounds, from monkeys to motmots (a colorful tropical bird). Photographs, including a life-sized blowup of the buttressed trunk of a kapok tree, round out the rainforest experience for the visitor. The entire process has been documented on Kaspari's blog, "Drawing the Motmot" at http://drawingthemotmot.wordpress.com.

Last winter, a grant from the Don and Virginia Eckelberry Endowment allowed her to make a trip up the Amazon River to work at a research station deep in the rainforest of Peru. The accommodations were a little rough – all the food and water had to be carried in, and the crew pumped water from the river for bathing. The station is equipped with a canopy walkway that links 14 trees through a system of platforms and rope bridges that allowed her to draw high above the forest floor. From there she could sketch toucans, tamarins, cotingas and bromeliads in the tops of the tallest trees in the forest. The view – and the vertiginous swaying of the trees and platforms – is not for the faint of heart, but for Kaspari it was heaven on earth.



Artist and naturalist Debby Kaspari observes nature and sketches from a platform high in the canopy of the rainforest. *Photo provided by Debby Kaspari*

"I just wanted to be up there all the time," she said. "Having access to that walkway opened my eyes to how vast that rainforest is. Though it looks like an unbroken world, like a whole universe apart, I was never out of earshot of the sound of chainsaws. It makes you appreciate how rare it is to experience something where you don't see the hand of man."

Making art in the rainforest is not without its challenges. The weather is first among these. "They call it the rainforest for a reason," Kaspari said. "You bring lots of plastic bags to keep everything dry, and you keep an eye on the sky. It can go from nothing to complete downpour in no time."

Creepy-crawlies are another occupational hazard. She once came close to sitting on a coral snake, and following the Peru trip, Kaspari had an opportunity to enjoy the "educational experience" of harboring a couple of botfly larvae. Kaspari is sanguine about these little inconveniences, however. "It's not something I want to do all the time, but it was an interesting experience," she says. True to her scientific roots, her blog featured microscope views of the larvae after extraction.

Besides wilderness perils like snakes, stinging insects or getting lost, one of the greatest dangers in the rainforest is from falling debris. Spider monkeys enjoy breaking off twigs or fruit and hurling them down on intruders. More terrifying by far, though, is the danger of falling limbs. In heavy rains, bromeliad-laden limbs can become water sodden and snap unexpectedly, taking with them everything in their path.

Visitors to the exhibition will be able to hear a serendipitous recording Kaspari captured of a giant branch as it crashed to the forest floor. It sounds like a train wreck. "My hair stood on end when I heard it," Kaspari remembers.

Most of the time, however, her experiences were of a much more peaceful and quiet nature. Kaspari spent hours in one place, holding almost perfectly still, sketching. Her stillness allowed her to experience some of the wildlife of the forest up close. In the canopy, whole flocks of birds would forage around her while she drew. A howler monkey looking for a quiet place to sleep climbed up to her perch and took a nap nearby, aware but unperturbed by her presence. And one time in Panama a trio of tropical weasels called tayras missed her presence entirely and walked right over her feet as she sat with her sketch pad.

Audio and video recordings of the rainforest will help bring the experience to life for visitors. "When visitors walk through *Drawing the Motmot*, they'll not only hear birds and animals as I heard them, but through the sketches and paintings they'll see the same things, too," Kaspari said. "I see much more of the world when I draw it. There's a wonderfully personal connection that opens up when drawing from nature, and I always come away with a better understanding than if I were simply looking. I hope people will enjoy seeing the rainforest this way, and be inspired to try it for themselves."

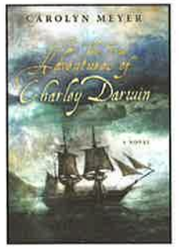
Artwork © Debby Kaspari

COMING SOON: EXPLORE WITH DARWIN FAMILY DAY

1 to 4 p.m.
Saturday, Oct. 24

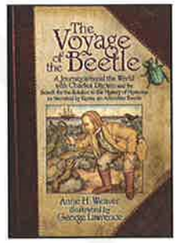
Join us for an exciting adventure as we celebrate the discoveries of Charles Darwin. Children's book authors Carolyn Meyer and Anne Weaver, both authors of books about Darwin and his travels, will be reading selections from their books and signing books. Visit the *Darwin at the Museum* exhibit, featuring first editions of all of Darwin's books and some of his letters.

Then take a journey of your own as you explore the museum, and imagine what it might be like to discover new places. Complete your adventure with a fun Darwin-inspired craft to take home! Activities are free with paid museum admission.



The True Adventures of Charley Darwin, **by Carolyn Meyer**

Forget for a moment your picture of the great scientist, Charles Darwin, with his long white beard, pondering his theory of how species changed. Imagine what he must have been like as a young boy, hating school where he was forced to study Latin. Then imagine what he must have been like a few years later when he volunteered to sail around the world on the Beagle on a two-year journey that turned into five. Follow his life-threatening and breathtaking adventures in this new book.



The Voyage of the Beetle, **by Anne Weaver**

Why are there so many different kinds, or species, of living things on earth, each uniquely fitted to its environment? For Charles Darwin, this question represented the "mystery of mysteries." Darwin first began to formulate an answer during a youthful voyage around the world on the H.M.S. Beagle from 1831 to 1835.

In a clever twist, this engaging account reveals that Darwin had help from an unlikely source: a beetle named Rosie.

SPECIAL GUEST LECTURERS:

Janet Browne
History of Science, Harvard University
6 to 9 p.m., Thursday, Nov. 5,

Janet Browne specializes in reassessing Charles Darwin's work, first as associate editor of the early volumes of *The Correspondence of Charles Darwin*, and more recently as author of a major biographical study that integrated Darwin's science with his life and times. This lecture is part of the History of Science Colloquium Series and is free and open to the public.

Robert Trivers
Professor of Anthropology and
Biological Sciences, Rutgers University
7 p.m. Thursday, Nov. 12

Trivers is perhaps the most significant evolutionary theorist in the world alive today. He has spent his career investigating the theoretical basis of social behavior in organisms. His theories have been hugely influential in a number of fields. This free public lecture is co-sponsored by the University of Oklahoma Zoology department and the SNOMNH.

IN DISCUSSION WITH DARWIN: Classroom Seminars on Evolution

These small-group seminars focus on a variety of topics related to evolution. Participants pre-register and are provided with selected readings that will be the foundation for the evening's discussion. The seminars are intended for interested adults and are limited to 25 participants. No prior knowledge of the discussion topic is necessary. Participants register for each seminar separately. Cost per seminar: Members $10; Non-members $15. To register, call the museum's education department at (405) 325-4712.

7 p.m. Tuesday, Oct. 27
Cecil Lewis, OU Anthropology
"Race and Genetics in Health"

7 p.m. Tuesday, Nov. 3,
Ingo Schlupp, OU Zoology
"The Origin of Sexual Selection"

7 p.m. Tuesday, Nov. 17
Ola Fincke, OU Zoology
"Beyond Darwin: How Evo-Devo Research Offers Confirmation of Darwin's View of Complexity"

A DIFFERENT SIDE OF DARWIN

Charles Darwin was born in England 200 years ago. Although he became one of the most famous scientists ever known, he was not the best student in school. He enjoyed taking nature walks more than his studies. As a child and young man, he made collections of things he found on his walks: seashells, rocks, minerals and insects.

Later, when he was a university student, Charles collected many different kinds of beetles and studied their biology. He became known as a talented and knowledgeable naturalist – someone who studies nature.

Charles loved to read about far-away places and about explorers who traveled across oceans to find new plants and animals. After he finished his university studies, he had a great opportunity to go on his own voyage of discovery. He was asked to go on a scientific expedition to South America.

In 1831, Charles set sail on the H.M.S. Beagle, a 90-foot-long wooden ship carrying 73 people. He was 22 years old and this was his first real journey. Charles was gone for five years, sailing around the world and stopping to collect new kinds of plants and animals everywhere he went. He kept a detailed journal of all his discoveries.

Back in England, he married and had a large family. He continued to study his collections and wrote many famous books about his discoveries.

What Do You Collect?

You can be a naturalist like Charles Darwin by exploring nature in your own backyard. Here is a fun way to organize what you find into a collection box.

Make your own collection!

What do you collect? Rocks? Fossils? Seashells? Stamps? Coins? Here's a neat way to sort and store your treasure.

1. Find a small box. You can use a shoebox or one you purchased from a craft store.

2. Decorate the outside of your box if you wish. You can use stickers, or crayons and paper, or you can glue some of your collection items to the outside of your box.

3. To keep your items separate, you can use the bottom of an egg carton, small gift boxes, empty medicine vials, or you can make dividers for your box by using strips of poster board and making a grid.

4. Place one item from your collection in each new section of your box.

5. To be like a scientist, keep information about where and when you collected each item. Use small pieces of paper to make identification labels, and place the label with each item.

6. Scientists also keep a journal. Use a notebook to make notes about your collection items. Things to include in your journal are when and where you found each object, what it looks like, what you think about it, and a sketch of the object.

Why Museums Collect

Museums preserve the past and the present for you and for future generations.

The Sam Noble Museum is a natural history museum, and it has all kinds of objects. There are fish, insects, birds, mammals, reptiles and amphibians in the life science collections. There are paintings, baskets, blankets, vases and masks in the ethnology collection. Ethnology is the study of living cultures. The archaeology collection houses pottery, animal bone and stone tools, and beads – things left behind from cultures of the past. Those great big dinosaur and mammoth bones, along with fossils of many smaller animals, and fossil plants are found in the paleontology collections.

MUSEUM ETHNOLOGY DIVISION RECEIVES GIFTS OF ART

The museum's ethnology collection recently received two significant gifts of artwork. The first is a collection of paintings and sculptures collected by James K. and Nancy DeVore. The gift included 16 paintings by the renowned artist and naturalist George Miksch Sutton.

Also included are two sculptures by Henry Pratt and early works by Ruthe Blalock Jones and Bill Rabbit, all of which will be incorporated into the museum's growing collection of Native American art.

"Early work from prominent artists is always difficult to obtain," said Dan Swan, curator of ethnology, "and of course we are always very pleased to be able to acquire such a significant addition to our collection of Dr. Sutton's works. All the works are in wonderful condition. They represent an important addition to our holdings."

The second gift was a collection of Southwest pottery donated by Mike Hoffman, an anthropologist and professor emeritus at the University of Arkansas. Hoffman

has made previous donations of important ethnographic objects to the collection as well as contributions to the museum's social sciences library. The recent gift includes several late 19th and early 20th century ceramics from Santa Clara, St. Ildefonso and Acoma pueblos. There is also a collection of "tourist ware" – pieces made specifically for the tourist trade in the 1920s – from Santa Clara Pueblo. These are souvenir items, primarily miniatures of traditional style water jars, and one in the rather unexpected shape of a Victorian boot.

"These pieces reflect the Native American artists' interpretation of what tourists were interested in buying at the time," explained Swan. "It shows how traditional art forms can get morphed into cottage industries to produce touristic wares. This material is rarely collected and we are pleased to be able to add it to the collection. Several of these and many other pieces will be featured in an special exhibition this spring."

The exhibition, *Stories in Fiber and Clay: Southwestern Baskets and Ceramics* is scheduled to open in February 2010, and will feature a wide assortment of ceramics and baskets from the museum's permanent collections.

SPECIMENS NAMED AS NEW SPECIES

Three new species of Permian-age vertebrates have been named based on specimens in the museum's vertebrate paleontology collection. All three specimens were found in the Richards Spur area near Fort Sill, where ancient caves and fissures long filled with silt have yielded many significant finds of animals that lived in Oklahoma millions of years before the dinosaurs.

The specimens were donated to the museum's collection by amateur paleontologists: two by Tony Morris and the third by Mark McKenzie. The specimens were borrowed by Robert Reisz, a paleontologist from the University of Toronto, who – with colleagues – published papers naming the specimens as new species.

Pasawioops mayi was an amphibian with a flat, bony skull, named for the Comanche word for frog, "*pasawi'oo.*" The specific name is in honor of Bill May, an avocational paleontologist who has worked for many years as a volunteer and educator for the museum's vertebrate paleontology department. *Nannaroter mckinziei* was a tiny "microsaur" with a wedge-shaped head and an up-turned snout that facilitated burrowing. *Cacops morrisi* is another armored amphibian with a broad flat skull that Reisz says "may have been one of the top terrestrial predators of its time."

The Fort Sill site was described by Reisz as "the most productive Paleozoic continental fossil locality in the world." It continues to provide a rich area of research and discovery for paleontologists around the world.

CURATOR RECOGNIZED FOR CONTRIBUTION TO CONSERVATION

This spring, Gary D. Schnell, SNOMNH curator of birds and University of Oklahoma professor of zoology, received the George Miksch Sutton Award in Conservation Research. The award recognized his outstanding contribution to conservation biology. The award was made for a publication Schnell co-authored that recently appeared in *The Southwestern Naturalist.*

The article focused on the results of ecological studies completed by Schnell, his colleagues and students that supports a need for greater conservation efforts with respect to the tawny deermouse. The tawny deermouse (*Peromyscus perfulvus*) is a small rodent that has a limited distribution in west-central Mexico.

Other authors of the paper who also were recognized in the award include former OU graduate students Michael L. Kennedy of the University of Memphis, Troy L. Best of Auburn University, and Robert D. Owen, who now lives in Paraguay, as well as former undergraduate student Brooke D. N. Estevez, who analyzed data on this animal as part of her Honors thesis in the OU Department of Zoology.

MUSEUM APPOINTS BOARD OF VISITORS MEMBERS

The SNOMNH inducted six new members to its Board of Visitors this spring. New board members, appointed by OU President David L. Boren, include Charles Hollingsworth, senior vice president of Arvest Bank of Norman; John R. Hargrave, president of East Central University, Ada; Enoch Kelly Haney, principal chief of the Seminole Nation of Oklahoma, Seminole; Lars Noble, landman for Devon Energy and grandson of oilman Sam Noble, for whom the museum's building was named, Oklahoma City; Eric Wallis Sherburn, M.D., Tulsa neurosurgeon with the Oklahoma Spine and Brain Institute; and Carolyn Taylor, former Oklahoma legislator and associate professor of history and political science at Rogers State University, Claremore.

These new members will serve a two-year term as part of a 15-person body. The museum's board of visitors serve as ambassadors for the museum to their communities; serve as advisers and consultants to the museum's director, Michael A. Mares; and assist in fund raising and community engagement for the museum.

"As the state of Oklahoma's official museum of natural history, we feel that it is vital that our board be made up of leaders in communities across the state," said Mares.

Board members currently serving include Craig Abbott, Oklahoma City dermatologist; Rod Davis (chair), retired CPA, Norman; Cal Hobson, former legislator from Ada and executive director of the Oklahoma College of Continuing Education at the University of Oklahoma; Mary Marks Jenkins, former executive director of the Oklahoma City Public Schools Foundation; Lou Kerr, president and chair of the Kerr Foundation, Oklahoma City; Jim McAuley, CEO and chairman of the board of First American Bank, Norman; Lucy Smith, former superintendent of McAlester public schools; and Reggie Whitten, attorney and co-founder of the Whitten-Newman Foundation, Edmond.

NATIVE AMERICAN LANGUAGES CURATOR RECEIVES AWARD

Native American Languages curator Mary Linn has been selected as the DaVinci Institute Fellow for 2009. The fellowship is awarded each year to higher education faculty in Oklahoma who have made an innovative and significant contribution to their academic discipline. Each fellowship includes a $1,000 grant.

Linn has been with the museum since 2002. As associate curator, she oversees the Native American Languages division, which consists of a growing number of audio and video recordings, manuscripts, books, teaching curriculum, lesson plans and materials. The unique archive of materials and activities sponsored by the division is designed to assist Native American communities and teachers in the preservation, instruction and revitalization of their languages.

NATIVE AMERICAN LANGUAGES PROGRAM HOSTS VIDEO WORKSHOP

The museum's Native American Languages program received a three-year grant from the National Science Foundation to document and digitize Oklahoma's endangered languages. As part of the project, Native American Languages curator Mary Linn is conducting a series of video production workshops for Native American youth and educators. This summer, four groups of students participated in the program, taught by Kristin Dowell, visual anthropologist and assistant professor in the University of Oklahoma anthropology department; and museum AV technician Michael McCarty to produce short videos on a variety of subjects. Two groups of Sac and Fox students, one Chickasaw, and one group of students from Edmond and Norman schools participated in the workshop. A similar program was taught for native language teachers at the Oklahoma Native Language Association annual conference Oct. 8-9.

SPECIES NAMED FOR MUSEUM PREPARATOR

In the June issue of the *Journal of Vertebrate Paleontology*, a paper by Jonathan Wagner and Tom Lehman names a new genus and species of dinosaur in honor of Kyle Davies, fossil preparator for the museum's vertebrate paleontology department. *Angulomastacator daviesi* was a duck-billed dinosaur from the Late Cretaceous period discovered in the Aguja Formation in west Texas. The new dinosaur is classified as a lambeosaurine. Wagner and Lehman named the new species after Davies in honor of his having been the first to postulate the existence of a lambeosaurine in the Aguja formation, back in 1983.

NANCY COLEMAN NAMED VOLUNTEER OF THE YEAR

The museum congratulates Nancy Coleman, who was selected as this year's Volunteer of the Year. Coleman, who has donated more than 2,100 volunteer hours to the museum, was recognized at the annual Volunteer Appreciation Banquet held in April. She has served as a docent in the Hall of Natural Wonders, a school group greeter and education assistant for the education department, and for a host of special exhibitions and events, including the Oklahoma Native American Youth Language Fair.

SAM NOBLE
OKLAHOMA MUSEUM
OF NATURAL HISTORY
THE UNIVERSITY OF OKLAHOMA
2401 Chautauqua Ave.
Norman, OK 73072-7029

Nonprofit
Organization
U.S. Postage
PAID
Norman, OK
Permit No. 88

ADDRESS SERVICE REQUESTED