MUSEUM INFORMATION
Address: 2401 Chautauqua Ave.
Norman, OK, 73072-7039
Telephone: (405) 325-4712
E-mail: mnmnh@ou.edu
Web site: www.samnoble.org

OUR MISSION
The Sam Noble Oklahoma Museum of Natural History imparts to students 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 exhibits to increase scientific literacy.
• Conducting K-12 school programs to enrich classroom experiences.

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

Tracks
Managing editor: Ellen J. Censky
Editor / layout: Linda Coldwell

This publication is printed on paper containing 100% postconsumer recycled fiber. PLEASE RECYCLE.

FEATURES & DEPARTMENTS
Lester From the Director ........................................... 2
Donors .......................................................... 3
Exploring Major Gift Will
Fund New Education Initiative
Philanthropist MaryJane Noble Dies at 81
Biology .......................................................... 4
Location, Location, Location
Ethnology ....................................................... 5
Fancy Dress: A Look at Two Native American Traditions
Archaeology .................................................... 6
Poles, Paws, Tool: Three Lives of an Ancient Plant
Paleoentology .................................................. 7
A One-of-a-Kind Critoid
Kid Tracks ...................................................... 11
Digging Up fossils
Fossil in Matrix Cookies
Paleo CSI: An Oklahoma Fossil Mystery

Art of Science ..................................................... 8
The Making of a Masterpiece: Painting With Debby Kaspari
Paleontology .................................................... 9
The Lost Camels of Oklahoma
Upcoming Events ............................................... 10
Muse-A-Palooza Guests Will Preview New Gallery
Treasures of Native American Art: Selections from the Brown Collection
Tales From a Changing Planet: A Special Scientific Presentation
What On Earth? D.O. Day
Exploding a Science Exploration Extravaganza

News .............................................................. 12
El Reno Dig Yields Mammoth Bones
Museum Genesis Awards
Visit Receives Recognition
Museum Named to National Council
Wyckoff to Participate in First Americans Conference
Barnum Site Subject of New Exhibit
Construction Begins in Paleozoic Gallery

Membership ..................................................... 13
Alison Maines, Museum Development Officer
Thank You to Director's and Curator's Circle Members
A Special Offer for Members

The University of Oklahoma is an equal opportunity institution. This publication is issued by the Sam Noble Oklahoma Museum of Natural History, University of Oklahoma. It is printed at no cost to the taxpayers of the state of Oklahoma. 07/07.
A CENTURY OF COLLECTING

On a pedestal under a plexiglass vitrine at the Sam Noble Oklahoma Museum of Natural History lies a dead squirrel. Stuffed with cotton, stretched out on its belly, a paper tag on a string attached to its leg, it looks like any dead squirrel you might find in a scientific collection in any natural history museum anywhere in the world. But a close look at the tag on its leg reveals what is unique about this squirrel. In a cramped, old-fashioned handwriting, the date on the tag reads 1901. This squirrel is 106 years old.

The squirrel has a story to tell—a story of mysterious survival. Collected at the dawn of the 20th century, the squirrel was cataloged in the collections of the infant Territorial Museum, housed in University Hall on the windwept, treeless grounds of the University of the Territory of Oklahoma. Two years later, this stony building would burn to the ground, taking with it the entire holdings of the museum—except for this squirrel. Somehow, this mundane stuffed specimen of a common rodent survived the blaze. Nobody knows why. Perhaps it was in use in a classroom or laboratory in another building. Whatever the reason, it is the sole remaining specimen from the museum's original collections.

Like the squirrel, every specimen tells a story—maybe even multiple stories on many levels. For some, it is a story of life on earth at a particular time and place. To that may be added the story of its discovery and collection, the story of the person who found it, and the history of the specimen itself. Together, all of the museum's specimens and objects provide us with the stories of our past—good and bad. They are the tracks in the ancient swamp, the voices of the Indian Territory and the ghosts of the Dust Bowl.

On the occasion of the state's 100-year celebration, it is a good time to reflect on the past. This issue of Tracks provides some of the stories from our past on which to reflect. The collections in the Sam Noble Oklahoma Museum of Natural History provide us with the materials to understand the rest of the stories. They also provide us with the materials to guide us to make good decisions for our future. Your support helps us to preserve these priceless collections. Thank you.

Mary Jane Noble, prominent Oklahoma philanthropist and civic leader, died Oct. 26 at the age of 81. Noble served as a member of the Samuel Roberts Noble Foundation board of trustees, the University of Oklahoma Board of Regents, and numerous other civic and charitable organizations. She was an enthusiastic advocate for education, and a major benefactor of the University of Oklahoma and the museum.

The Noble Foundation, in conjunction with the Samedan Oil Company and Noble Corporation, together donated $10 million to complete the museum's capital campaign in 1999, for which the new building was subsequently named in honor of Samuel Russel Noble, Mary Jane Noble's late husband. The Noble Foundation has funded special exhibitions and special projects at the museum. Mary Jane Noble's granddaughter, Jessie Noble-Nance, currently serves on the museum's Board of Visitors.

Mary Jane Noble was born in 1925 in Marshall, Ark. She met Sam Noble while attending OU, where she received her bachelor of science degree in business administration in 1946. She married Noble the same year. Later the couple established a home in Ardmore, where she lived until her death.

Noble's service to the community gained her many honors and awards during her lifetime. She was inducted into the Oklahoma Hall of Fame and received an honorary doctorate from the OU. These honors can only begin to represent the leadership, spirit and generosity of this remarkable woman.

"Mary Jane Noble was a strong-willed and inspirational woman," said Elies Censky, museum director. "We will always be grateful for the leadership that she and her family provided in ending this museum a reality."
LOCATION, LOCATION, LOCATION

FANCY DRESS: A LOOK AT TWO NATIVE AMERICAN TRADITIONS

Cheyenne War Bonnet: Icon or Stereotype?

The dramatic Cheyenne feathered war bonnet is a beautiful example of a Plains Indian tradition that is so well known as to be an icon— even a stereotype— of Native American culture in the American psyche.

The warbonnet has been used as an emblem of “Indianness” for generations. But the war bonnet is a distinctly Plains Indian tradition and is not, in fact, universal among all Native American people.

The Plains Indian tradition is closely associated with the hunting of bison and antelope. With the introduction of the horse, the Plains people were able to become equestrian nomads, following the herds and living off the resources provided by the Great Plains.

The warbonnet, like the city, was a common element to this culture, but probably meant different things to different people.

The difficult thing about a stereotype is that at the core of it is a kernel of truth,” said Dan Swain, curator of ethnology. “The bonnet was a symbol of prestige and honor. We tend to focus on meanings and usages from the military conflict era of the 19th century— the bonnet as symbol of a warrior— but it goes back much further than that. We find evidence of these types of bonnets with upright feathers going back into unknown and American Indian rock art dating to between 450 and 600 CE.

It doesn’t seem that everyone wore them,” Swain continued, “so the wearer must have been someone of some social status, and that status may have been military, but may also have been a hunting honor or a sign of spiritual status. Typically, the bonnets were worn by men, but there are ledger drawings depicting women wearing them as well.”

Today, the war bonnet continues to be a revered symbol among many Plains tribes. They honor tribal ancestors and tradition, and continue to function as symbols of authority and respect.

Ossage Wedding Coat: The Evolution of Tradition

Like the Cheyenne war bonnet, the coat is an example of ceremonial and social dress. But unlike the war bonnet, which came to represent, in popular culture, a time of war and conflict, the Ossage wedding coat represents a blending of Native American and European cultural objects into something new and unique.

During the main push of European colonization of North America, colonial powers frequently sent representatives into Native American lands to meet and deal with the tribal powers. A number of symbolic goods were often bestowed upon Native leaders as part of these meetings, often including top hats and military coats. The coats were distributed among many different tribes, but for the Ossage, they came to take on a special significance.

Among the Ossage these came to be known as “chefs coats.” They were a symbol of prestige and became part of the dowry price for Ossage weddings. The coats were embellished with trade goods, including brooches and ribbons, and the top hats adorned with colored plumes. The bride was dressed in the adorned coat, complete with top hat, for the marriage ceremony.

Over time, there were Ossage brides who wore the “chefs coats” to adorn them, and so the Ossage people began buying and making coats to fill the bill. Sometimes they were military coats, but other dark wool overcoats were pressed into service as well, and ranged from band uniform jackets to coats specially made for the purpose.

After World War II, the tradition of the Ossage wedding coat began to wane. In recent years, however, the coat has seen a resurgence. The wearing of the coat has remerged as part of a giveaway ceremony performed among the members of the Illehska, a special society, at an annual ceremony that takes place at the Ossage June dances.

Since the return of the wedding coats in the 20th century, new coats are now being made among the Ossage tribal members. These coats now bear traditional Ossage ribbon work, rather than military-style trim, but the basic shape and style of the dark wool coat remains the same.
Palm, Fossil, Tool: Three Lives of an Ancient Plant

Every object tells a story. For some, like the museum's ancient 5,000 million-year-old spear point buried in a bone skull, the story is fairly evident. But for others, a viewer must delve a little deeper to unearth the true meaning and history of the object. The piece of fossilized palm wood displayed in "Collecting Oklahoma" is one of this latter group.

Compared to some of the splatter objects on display, this reddish chunk of rock may seem unremarkable. But its history is actually a long and layered one that began more than 40 million years ago. At that time, this unassuming bit of rock was a living, growing palm tree. Trees such as this one grew in Colorado and New Mexico as well as possibly in Oklahoma from as far back as the late Cenozoic Period to the end of the Eocene Epoch, around 38 million years ago. This one likely grew in the area between Oklahoma and the Rocky Mountains.

The palm tree died and was fossilized by the usual process of permineralization. In the location the tree fell, the water was rich in silica dioxide, a fine and very hard material that is the principle component of glass and quartz. A series of events that spanned some 20 million years beginning in the early Paleocene, the mighty Rocky Mountains arose—lifted up through the enormous pressures exerted on the Earth's crust by the movement of the tec-tonic plates. The uplift caused changes in the water runoff, and quantities of water rushed down from the mountains peaks as new rivers, tossing loads of debris along with it into the plains of New Mexico and Colorado, and even far as western Oklahoma. Among this debris were many fragments of fossilized palm. They lay jumbled among the gravel, quartzite and flint along riverbanks in the western part of the state, waiting for the next chapter of their story to begin.

Some 4,000 years ago, groups of hunters and gatherers foraged along these rivers for materials with which to make stone tools. Pickings along this area were not ideal. The flint and quartzite commonly washed out of the Ogallalla formation was hard, grainy and difficult to work, but there was plenty of it, and the enterprising craftmen among these people had found ways to fashion points from it, despite its difficulty. In 1880, the toolmaker who discovered the compact fossilized palmwood, this new stone was a wonderful new resource. Though not as durable as the granitic quartzite so common to the area, the palmwood was much easier to work. The fossil palmwood has a higher silica content than the quartzite, making it a finer, less grainy stone. Also, unlike other fossil- ized woods, palm wood did not have rings, but was made up of a bundle of fibers that allowed it, when fossilized, to be fractured and shaped in any direction. This was an improvement over the quartzite, which was prone to flake off at the wrong angle, spoiling a tool and undoing hours of painstaking work.

For some 2,000 years, the hunter-gatherer people of western Oklahoma and the Texas panhandle gathered and worked the fossil palmwood to make their tools whenever they could, seemingly typical to have achieved a maximum height of around 3 inches long. These worked tools are rarely found, and no complete points exist in the museum's collection.

Sometime around 2,000 years ago, the fossil palm tools ceased to be made. Don Wyckoff, curator of archaeology, says the reason is unknown, but around 2,500 to 1,500 years ago, the bow and arrow became the weapon of choice, and toolmakers switched to using flint to make the smaller arrow points. Palmwood arrow points are very rare. Perhaps the palm was not a good material for fashioning smaller points. Perhaps the people of western Oklahoma gained access to areas where alluvial flint—a fine stone for toolmaking found in the Texas panhandle—could be more readily obtained, or traded for with neighbors. Whatever the reason, fossil palmwood was the way of the eight-track tape—replaced by newer technology.

A One-of-a-Kind Crinoid

One of the stand-out displays in "Collecting Oklahoma" is the amazing 10-foot stem of a 300 million year old crinoid found in Tulsa. It is a record-setting specimen. No other crinoid stem of this type found before or since has come close to equalling its length. In fact, it towers over its brethren, which seem typically to have achieved a maximum height of around 3 feet. What could be the reason for this individual's amazing growth?

In 2000, Dr. William I. Ausich, from Ohio State University, published a paper on this specimen in Oklahoma Geology News in which he suggested that different species of crinoids may have grown to different heights in order to avoid competing for the plankton on which they fed. Since the top and bottom of this particular specimen were not preserved, it's impossible for scientists to say for sure to what species the museum's mega-crinoid belonged. Steve Westrop, curator of invertebrate paleontology, estimates that there could have been hundreds, even thousands of crinoid species.

"Crinoids first appeared more than half a billion years ago and are still around today," Westrop explained. "That's plenty of time for them to develop into many species. We probably underestimated the number because it is relatively unusual to find complete crinoids. Usually they are found in bits and pieces."

Crinoids were made up of literally thousands of pieces. Despite their appearance, they were animals, not plants. They are members of the phylum Echinodermata, or "spiny skin," a group that also includes the modern sea anemone, starfish, and —the crinoid's closest living relative—the feather star, an animal that looks nearly identical to the crinoid but lacks a stem and the "hold tight" structure that anchored crinoids to the sea bed. This long stem was made up of a stack of calcite rings held together by muscle tissue that allowed it to bend in the current, and possibly even to flex itself. Though the crinoid is considered to have an exoskeleton, its stem was actually covered with a thin layer of soft tissue. At the top of the stem sat the crinoid's body: a cup shaped encircled by a ring of feathery arms that caught plankton and funneled it down to the animal's mouth at the center. The entire cup, as well as the arms and all their tiny appendages, was covered with a shell of tiny plates. When the crinoid died and the soft tissue disintegrated, the hard plates and rings that made up its skeleton broke apart, littering the sea floor with calcite pieces. In some places, crinoids were so plentiful that their fossilized skeletons have crushed together over millennia to become whole limestone formations.

It seems likely that there were other super-sized crinoids like this one, feeding on the plankton in the oceans over Oklahoma, but until more are discovered, we cannot be sure. For now Debbie Kaspar's beautiful life-size mural illustrates this animal in all its willowy and mysterious possibility—anchored to the floor of the ancient ocean along a forest of towering, feathery crinoids.

A Fantastic Find

In the 1970s, amateur rockhound Charles Cousins recognized the shape of an intact crinoid stem along an embankment where road crews were working on 31st Street in Tulsa. He went out to investigate, and was astonished to discover that the piece he had seen was part of an amaz- ingly long column of crinoid segments, broken apart, but still in a line, that went on foot after foot. With extreme care, Cousins numbered and collected the many parts and kept them in his home as conversation pieces for nearly 30 years.

His daughter laughs today about the crinoid stem that Cousins kept for a time lined up and making along the base- boards under the sofa in the family living room.

On Cousins's death, the family agreed that the crinoid stem that had been in their family for so long should be donated to the SNMH where it could be protected and studied by scien- tists around the world. It was only then that they came to understand the true rarity of their father's find.
THE MAKING OF A MONSTER: PAINTING WITH DEBBY KASPARI

As a natural history artist, Debbie Kaspari draws and paints a variety of animals, from birds to rhinos. Sometimes she paints from life, sometimes from preserved specimens in museum collections, and sometimes from photographs. But where does an artist begin when faced with the daunting task of recreating an enormous monster that no longer exists? Kaspari, who painted the mural featured in "Collecting Oklahoma," sheds some light on the process of creating the life-sized Elasmotherium for the exhibit.

The first step in the process, Kaspari explains, is to tackle the basic design question of how to fit a 30-foot animal into a 20-foot wall space. To begin with, she built a small model of Elasmotherium's ponderous body and long neck with duct tape and wire so she could try out a variety of poses.

She also sculpted a small model of the head, based on drawings of a tachisodon skull, an animal similar to the Elasmotherium in body shape and size. She sketched from photographs of the models taken from various angles, working with museum fossil preparator Kyle Davies to get the details of anatomy just right. Finally, the working sketch was scanned into Kaspari’s computer, where she could begin to experiment with color and patterns on the animal's skin.

"I didn’t want to just do a gray animal," Kaspari said. "There are so many possibilities for color. So I worked from living animals with a similar lifestyle. I started out looking at dolphins. There are some with a beautiful pattern on their sides. They look like they’re going very fast—very spotty looking. I also looked at the octopus and penguins. The final coloring is a mixture that was inspired by the magnificient penguin, the octopus and a couple of dolphins."

At last, several weeks into the design process, the drawings were finalized and it was time to begin creating the murals, which were painted at ½ scale. The finished painting, measuring 15 feet long and more than 6 feet tall, was photographed and enlarged to full size—some 30 feet in length—for display in the exhibit.

Working with two large housepainting brushes, Kaspari began with an underpainting, or grisaille, in shades of brown. With a wet brush, she applied paint in broad strokes, then used a dry brush to move it around and achieve the right tones of light and dark. Afterward, the colors and details were layered over the grisaille.

Kaspari had never worked on a painting of this size before, and the work required a different range of movement than the smaller works she was accustomed to. "I loved working at that size," Kaspari says. "There's something liberating about the bigger space. The conditions are right. The effects of light are right. The sky looks right."

"I love doing paleo-reconstructions," she said. "I like using my imagination to conjure up something that is gone and will never live again. To me, it’s like fairy tales. These were fabulous creatures—but these were real."

---

THE LOST CAMELS OF OKLAHOMA

Camels in Oklahoma? It’s a question that is asked often as visitors view the long camel leg bones in display in "Collecting Oklahoma." Yes, one of the lost chapters in Oklahoma’s ancient history is the reign of the camel. These long-legged mammals first evolved in North America during the late Pleistocene Epoch, some 30 million years ago. Later, camels migrated to Asia and into South America, where they continued to thrive until the present day as modern dromedaries, llamas, alpacas and vicunas. But they disappeared from Oklahoma and other parts of North America at the end of the Pleistocene Epoch, around 10,000 years ago.

Oklahoma’s fossil camel record does not begin until the late Miocene: around 7 to 8 million years ago. There are camels that were likely native to Oklahoma during the early Miocene, but there is no record of them because no rocks of that age exist in the state. Stegodontia is one of these—a small, grass-eating camel from the early Miocene period whose fossils have been found in the Dakotas, Nebraska and Wyoming. Visitors can view examples of this small, light-colored camel in the Hall of Ancient Life.

By the late Miocene, there were at least three groups of camels native to the Sooner state. During this time, Oklahoma’s landscape was similar to that of the African savannah: open grasslands marked by copses of trees and fringed by forest. Megacamelus, the animal seen in "Collecting Oklahoma," was much like the modern camels we see today, though larger. Standing 12 to 14 feet tall, Megacamelus was one of the larger camels of Oklahoma, but not the biggest. Oklahoma was also home to Stegodontia, an even larger “graffle-type” camel, with very long legs and a long neck, built for browsing on leaves of trees. There was also a third type, the smaller Hemocamelus, that had long thin legs.

As the open grasslands of the Great Plains enlarged during the Pleistocene, some of the large browsing animals became extinct and more grass-eaters took their place. In Oklahoma, around 6 million years ago, the high-browsing Stegodontia disappeared, and a new genus of camel can be found in the fossil record. Arenocamelus was more closely related to modern llamas than dromedaries, but was much closer in size to today’s camels. Megacamelus and Hemocamelus continued into this period as well.

During the Pleistocene Epoch, the climate in Oklahoma and surrounding areas underwent a change and became very dry. The conditions changed from a savannah-like environment to something closer to the high steppe—drier and cooler than before. Much of the diversity of species seen in previous eras disappeared.

"I would venture to guess that arid adaptation goes back a long way in camel history," said vertebrate paleontologist curator Richard Cifelli. "The most diagnostic bones in camels are the toe bones. Unlike those of cows, the camel’s toe is spherical, making them well adapted to walking in sand."

In Oklahoma, a common Pleistocene camel was Mesohippus, a llama-like form related to the living species of South America. Camelo was the last camel known from Oklahoma. It disappeared at the end of the Pleistocene. What happened to Oklahoma’s camels’ Opinions differ. The end of the Pleistocene Epoch saw the disappearance of not only the camels but of almost all North America’s large animals, or megafauna, including the mammoths, sabertooth cats, the giant brown bears, and many other species. The beginning of the Holocene Epoch, which continues today, saw a land dramatically devoid of the vast diversity that had characterized the epochs that preceded it. Some scientists favor a climatic change explanation. Others argue that the appearance of humans on the scene in North America at around the same time points to human overkill as the main reason. Or it could be a combination of these factors. Whatever the reason, when the camels and other large animals disappeared from North America, they changed the pattern of diversity for the entire continent. In comparison to communities such as the African savannahs, North America’s grasslands after the Pleistocene show an “unaltered fauna”—a notable lack of diversity. Bison dominated the scene, along with a handful of deer species, elk, moose and antelope. There were few of the ecological “partnerships” seen today among animals in high-diversity areas like Africa. Whatever happened in the Pleistocene, whether human- or climate-caused, left its mark even today. So the next time you visit "Collecting Oklahoma," imagine an Oklahoma filled with camels and elephants, tigers, giant sloths and wild homes of many sizes and shapes.

African grasslands as an example of the period in which the camels and other large animals roamed.
MUSE-A-PALOOZA GUESTS WILL PREVIEW NEW GALLERY

Construction has begun on the new Paleozoic gallery that will open in the Hall of Ancient Life late next spring. Construction is also the theme of this year's Muse-a-Palooza fundraiser, set for April.

Guests at this evening of food and fun will be treated to a hard-hat preview of the new gallery under construction, with an opportunity to meet some of the designers, craftsmen and artists from Chase Studiowho will be building the exhibits before their eyes.

"This is just too good an opportunity to miss," said museum director Ellen Censky.

Native American Masterworks Selections from the Fred and Enid Brown Collection

Opening in the spring, this exhibition from the museum's extensive Fred and Enid Brown collection will feature 150 works of art and ethnographic objects spanning more than a century of Native American history. The Brown Collection is a significant historical collection, including 235 works ranging from paintings and sculpture to textiles and pottery. Both traditional and contemporary works from many tribes are represented. A must-see for any lover of Native American fine art.

Watch the museum's Web site for exhibition dates.

Polar Palooza: A Multi-Sensory Scientific Presentation

Polar Palooza: Stories From a Changing Planet is a traveling science program funded by the National Space Foundation and NASA. The program will visit the museum on April 22 with a public performance that includes in-person presentations by leading polar researchers and Arctic residents. This lively multimedia event will be augmented by High Definition video created on location at the Poles, plus art installations from paleo expeditions. Polar Palooza scientists will also make presentations for school groups and conduct workshops for teachers at the museum during their visit. Watch the museum's Web site for more information and program times.

What On Earth! I.D. Day Expands to a Science Exploration Extravaganza

The museum has expanded its popular "What On Earth! I.D. Day" to include demonstrations and family-friendly activities focusing on science in all its many forms. Set for Sunday, Feb. 24, from 1 to 5 p.m., the new expanded event will be called "What on Earth! Science Exploration and I.D. Day," and will include activity booths from a number of the museum's partner scientific institutions, including the University of Oklahoma Biological Survey, the Weather Center, and others.

Visitors will be encouraged to bring their natural history items to be identified by museum and other scientists. Admission to the event will be free.

DIGGING UP FOSSILS

Paleontologists don't just take the fossils from the ground when they find them. Fossils are usually very fragile and need to be handled with care. So scientists take out a big chunk of rock and fossil together to be prepared in the laboratory.

To do this, they first dig out the rock and dirt all around the fossil (1). Next they lay plaster and build a fabric all over the fossil in the rock that surrounds it, called the "matrix." The plaster hardens into what they call a "field jacket." (2). Then the jacket, with the matrix and fossil in it, is brought back to the museum. In the museum's laboratory, the jacket is cut open and the matrix is slowly and carefully removed from the fossil (3). Removing the matrix can take a few weeks or months. It's a slow process, but it's worth it.

FOSSIL IN MATRIX COOKIES

2 cups sugar
1 cup milk
1/4 cup unsweetened cocoa powder
1/2 cup butter (1 stick)
1 teaspoon vanilla extract
1/2 cup peanut butter
3 cups of rolled oats (not instant)

"Fossils" these could be:
Gummi worms, raisins, nuts, or use your imagination. (Just be sure your fossils are edible!)

1. Line two cookie sheets with wax paper.
2. In a medium saucepan, stir together sugar, milk, cocoa, butter, vanilla, and peanut butter. Bring to a low boil over medium heat, then boil for about 2 minutes while stirring.
3. Remove pan from heat and stir in oats until completely combined.
4. Use a spoon to drop clumps of batter onto the lined cookie sheet.
5. Let the cookies sit out at room temperature (don't refrigerate) for 1-2 hours, until they just start to set up. You can carefully lift the cookie off the tray and peel off the wax paper from the back. The underside of the cookie should be a little sticky.
6. Choose two cookies that are about the same size, and then place the other cookie on top to make a sandwich. Gently press the edges of the cookies together. Let your cookie continue to set up for another 2-3 hours, or until the top is not shiny anymore.
7. Eat your cookies! You may choose to use a tool to remove the cookie matrix from your fossil. Good tools include forks (used like a pick), butter knives, pickle forks, tooth picks, and nut picks. Don't forget to eat the matrix as you remove it! And then eat your fossil!
8. For even more fun, try wrapping your matrix cookie in a field jacket! Tintillas, egg roll wrappers, or fruit leather make a great substitute for plastic and burlap!
El Reno Dig Yields Mammoth Bones

In June, the Archaeology and Paleontology teams joined forces with Oklahoma State University soil scientist Brian Carron on a massive dig operation near El Reno, Okla. The dig was a return to a site excavated in the 1940s by J. Willis Scovill, where some assorted Pleistocene mammals and a stone flake were found.

In hopes of learning more about the ecology of the area during full glacial times, and possibly uncovering more human artifacts, Wyckoff’s archaeological team excavated four large pits—some more than 20 feet deep—to reach some ancient pond deposits estimated at more than 20,000 years old. More than 40 volunteers from the Oklahoma Anthropological Society assisted in the dig, some coming from as far away as Arkansas, north Texas, Ponca City and Tulsad to take part.

The team discovered unexpec ted changes in soil showing evidence of dramatic erosion and re-filling of parts of the pond during its relatively brief 100-year existence. This means major changes in the landscape during a relatively short period of time and could point to dramatic climate changes. No definitely human artifacts were uncovered, but a number of bones of horse, bison, peccary, pocket gopher and land turtles were found.

Several large bones of a mammoth also were found in a soil layer above the pond deposits. Paleontology team members collected these bones and brought them back to the museum to be prepared.

Wyckoff Invited to Participate in First Americans Conference

Don Wyckoff, curator of archaeology, has been invited to participate in a special working conference established by the Center for the Study of the First Americans, the Texas Archeological Research Laboratory in the Southeastern Paleosamerican Survey and the Smithsonian Institution. The purpose of the conference is to gather together archaeologists and other scientists interested in the First Americans. Many of the invited participants have what they consider to be evidence of human occupation in North America prior to 13,500 years ago, and others provide an alternative perspective.

The conference will review and evaluate the nature of the evidence for pre-Clovis occupation of the Americas, hopefully come to some kind of resolution as to the validity of sites, and identify the issues important to future research.

Construction Begins in Paleozoic Gallery

In September, crews began building walls in the north portion of the museum’s Hall of Ancient Life in preparation for exhibit construction to get under way for the new Paleozoic gallery. The new exhibits will cover more than 500,000 million years of Earth’s history and will include displays on plate tectonics, early life in Earth’s ancient oceans, the Burgess Shale and a walk-through Pennsylvania coal swamp forest diorama.

Wyckoff has been nation ally known for his work on the Burmah site in northwestern Oklahoma, where he discovered 116,000-year-old, three-family dogs which would indicate a much earlier human occupation of North America than scientists had previously believed. Wyckoff published a monograph on the Burmah site in the museum’s “Occasional Papers” in 2003.

Thank You!

Each fall, we recognize the members of our Curators’ Circle and Director’s Circle for their generous support of the museum.

Director’s Circle

Craig and Maria Abbott
Mike and Whitney Alvis
Mervin and Elanor Barnes
Chet and Maureen Byrum
Rod and Janene Davis
Jesse Tread
Dolores Gammill
Lauren Gish
Patrick and Melanie Hall
Jeff Hargrave
Cal and Elaine Hobson
Sandy Kinsey
Ken and Sharon Lease
Susanne Lunford
Richard Mallinson
Jay Mitchell
Jesse and Chris Nance
Robert Newman
Mary June Noble (decedent)
Bill and Barbara Paul
Bill and Donna Reid
Les and Paul Risser
Rachelle Whitten
Reggie Whitten

Curators’ Circle

Henry and Iris Beigman
James and Teresa Day
John Dyer and Lynne Orting
Mark Goodman
Beth Harris (decedent)
Sarah Jarrow Marie
Jan Meadows
Dallas Pryor
Gene and Jeanine Rainbolt
Lee Sargent
Ben and Bobbie White
Earl Ziegler

Dino Banks for the Holidays

Who can resist the lovely face of the baby dinosaur on the museum’s famous DinoBank? We’re once again offering members a limited-time opportunity to take one home for free. These limited-edition banks make perfect gifts for a special child or grandchild for the holidays. From Friday, 1 through Dec. 24, bring this coupon to the museum to receive one free dinosaur bank.

Start your child’s “next egg” now!