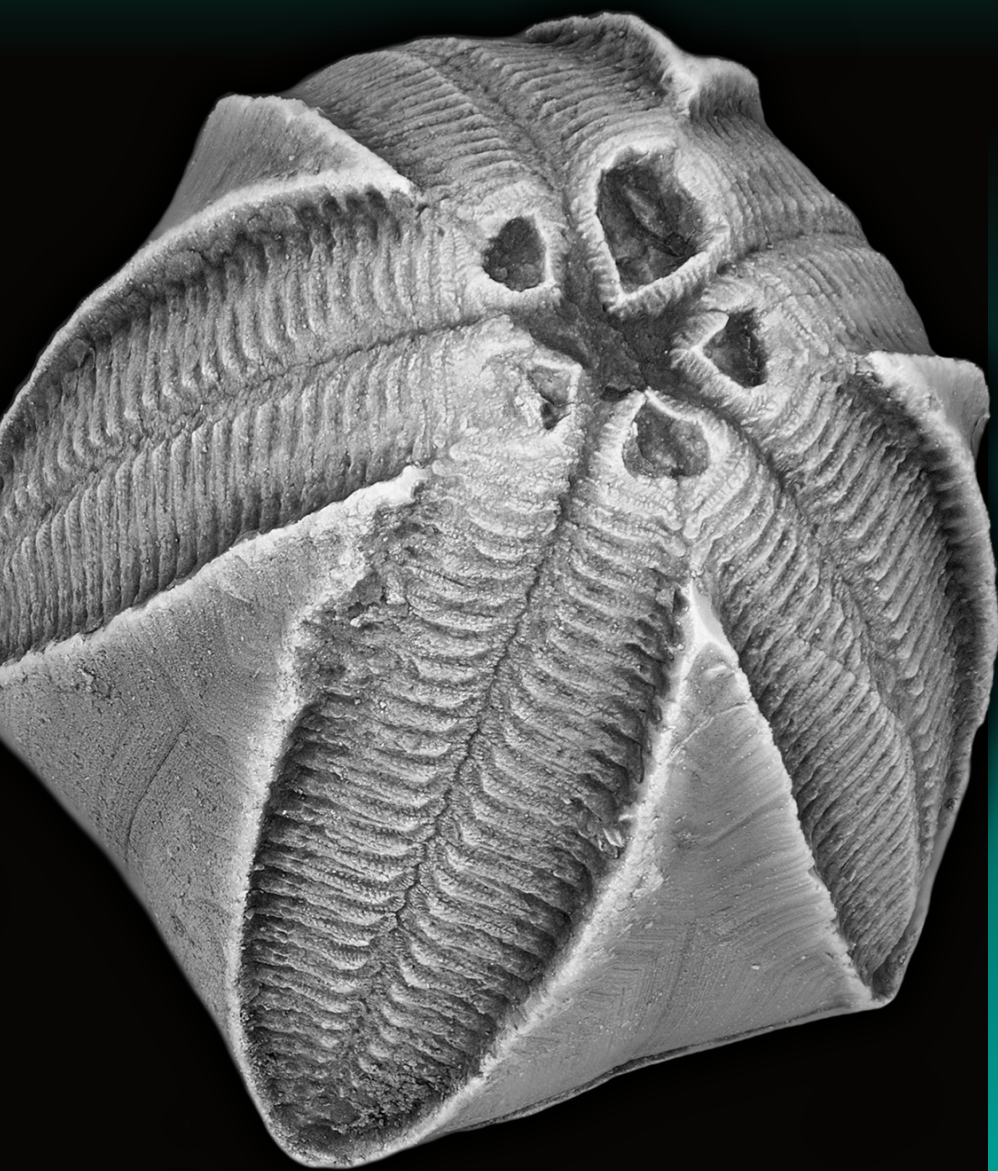


# T Tracks



Sam Noble Museum

Summer 2014 Newsletter Vol. 26, No. 2



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National Medal,  
Accreditation

2014 Volunteer of the Year

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What's in a Name?

*Hungry Planet:  
What the World Eats*

*Formed in Stone:  
The Natural Beauty of Fossils*



## TRACKS, SPRING 2014: VOLUME 26 NO. 1

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### OUR MISSION

The Sam Noble Museum at the University of Oklahoma inspires minds to understand the world through collection-based research, interpretation and education.

### 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

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**Oklahoma  
Gazette**

# From the Director

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It has been an extraordinary spring and summer for your museum. I am pleased to share the news that the Sam Noble Museum was awarded a 2014 National Medal by the Institute of Museum and Library Services. The National Medal is the nation's highest honor conferred on museums and libraries for services to their community. IMLS honored only five museums (of 17,500) and five libraries nationwide with the medal this year.

I attended an awards ceremony at the White House on May 8 with Ernesto Vargas, community member, and Lars Noble, chair of our Board of Visitors. First Lady Michelle Obama presented the medals. Our medal is on display at the Information Desk in the lobby. I am so proud that the museum was selected for this national honor and that we are the first museum in Oklahoma to be recognized by the national museum community. We share

this award with the people of Oklahoma who made this museum and its programs possible and who support us with their membership, attendance and participation.

I am also happy to report that the American Alliance of Museums in Washington, D.C., has awarded the Sam Noble Museum reaccreditation for the fourth consecutive time. The self-assessment process involved a lot of staff time to prepare last fall, and I greatly appreciate the time and effort by our outstanding staff members. Accreditation, which examines all aspects of museum operation, from exhibits to research to collection care to planning, is the official recognition by our peers that we are meeting the highest standards of museum operation.

Overall, the visiting committee found the Sam Noble Museum to be an outstanding museum, thanks to a visitor-focused infrastructure and commitment to the community, strong leadership, an excellent building, outstanding staff and excellent research by curators. The Sam Noble continues to meet the National Standards and Best Practices for U.S. Museums.

We have some staff changes to report. Edie Marsh-Matthews, curator of ichthyology, has moved to the OU Department of Biology and Provost's Office, and Mary Linn, curator of Native American languages, will be leaving soon to become the curator of cultural and linguistic revitalization at the Smithsonian Institution in Washington, D. C. Both were outstanding curators and we wish them well in their new adventures.

This spring we said goodbye to two very dedicated board members – Reggie Whitten and Charles Hollingsworth. Each served the maximum consecutive terms allowed in the by-laws, and we hope they might return after the required time off the board. Reggie and Charles have been important advocates and ambassadors, and I am very appreciative of their support. We welcomed two new board members in April – Becky Franklin and Zane Z. Woods. You will be able to read more about them in the fall Tracks.

I hope you will make the museum part of your activities this summer. Enjoy the summer.

A handwritten signature in dark ink, reading "M. Mares". The signature is fluid and cursive, with the first name "M." and the last name "Mares" clearly distinguishable.

Michael A. Mares, Ph.D.  
Director





*Above: Community member Ernesto Vargas and museum director Michael Mares receive National Medal from First Lady Michelle Obama*

# Museum Receives National Medal

BY JEN TREGARTHEN, PUBLIC RELATIONS

In a White House ceremony in May, the Sam Noble Museum was awarded the nation's highest honor conferred on museums and libraries for service to the community. The Institute for Museum and Library Services honored only five museums and five libraries nationwide with the 2014 National Medal for Museum and Library Service.

"The work that you do in the summers and throughout the year is filling a crucial role in our country as we strive to give our young people a world-class education," said First Lady Michelle Obama.

Medalists were chosen because of their significant and exceptional contributions to their communities from nationwide nominations of institutions that demonstrate innovative approaches to public service, exceeding the expected levels of community outreach.

"This prestigious national award confirms that our museum is one of the most important university-based natural history museums in our nation and indeed, in the world," said OU President David L. Boren. "As Oklahomans, we are privileged to have it in our state."

The Sam Noble Museum was founded in 1899 by the Territorial Legislature of the future state of Oklahoma and located on the OU campus. In 1987, the museum was designated as the state's natural history museum and in May 2000, opened its doors to a new 198,000-square-foot facility, welcoming 2.1 million visitors since that time.

"The Sam Noble Museum is proud to be selected for this national honor. We share this award with the people of Oklahoma who made this museum and its programs possible and who continue to support us in every way," said Michael Mares, museum director.

"We are very proud to announce Sam Noble Oklahoma Museum of Natural History as a 2014 National Medal winner," said Susan Hildreth, director of the Institute of Museum and Library Services. "This year's National Medal honorees illustrate the many ways museums and libraries can excite lifelong learning and civic engagement."

Hildreth noted that museums and libraries serve as civic gathering places, bringing together individuals in pursuit of educational resources, community connections, skills development and multifaceted lifelong learning.

On June 1, the Sam Noble Museum hosted a free Historic Block Party and National Medal Celebration featuring live music from Oklahoma artists.

The block party was sponsored by New Dominion LLC, Taylor Hanson, Arvest Bank, BancFirst, First Fidelity Bank, Republic Bank & Trust and Valliance Bank.

# Museum Awarded Accreditation

BY LAURA WILCOX, PUBLIC RELATIONS

Museums, among other things, are society's collective memory. According to a study from Indiana University, museums are considered a more reliable source of historical information than books, teachers or even personal accounts by relatives. Museums also employ more than 400,000 people while contributing \$21 billion to the U.S. economy each year. Despite these impressive figures, the American Alliance of Museums reveals that more than two-thirds of museums reported economic distress at their institutions in 2012.

The United States has more than 17,500 museums, and a shrinking percentage of those receive federal funding. Considering that 37 percent of museums did not charge admission in 2012, this places enormous pressure on museum staff to obtain external funding for things like facility maintenance, research, collection care, exhibits and public programs.

In an effort to help museums build credibility and establish rapport, the American Alliance of Museums offers accreditation for those institutions that have proven their commitment to excellence and high professional standards of operation. Only 8 percent of natural history museums are accredited. Accreditation can be key in the successful continued development of an institution.

"Accreditation assures people that their museum is among the finest in the nation," said Ford W. Bell, president of AAM. "As a result, the citizens can take considerable pride in their homegrown institution for its commitment to excellence and for the value it brings to the community."

Museums must undergo a reaccreditation review every 10 years, and in 2014 the Sam Noble Museum was again awarded accreditation for the fourth consecutive time. Like any professional certification, accreditation offers a wide variety of benefits, including greater credibility. This establishes accountability with financial institutions and allows stakeholders to see that the museum's obligation to the public trust is fulfilled.

According to the Accreditation Visiting Committee Report, a major strength of the museum is the visionary leadership. Committee members noted how the Sam Noble Museum surpassed what many university museums are able to achieve.

Accreditation also provides museums with a clear sense of purpose and leverage in local and state legislatures. Additionally, this improves relationships among museums, which can result in greater loans for research and an increase in traveling exhibits. Though many museums apply for accreditation through AAM each year, not all are accepted, making this a significant achievement.

"This means the museum continues to meet the National Standards and Best Practices for U.S. Museums," explained museum director Michael Mares.

As one of just 1,005 accredited museums in the nation, the Sam Noble Museum is proud to claim many great achievements in professionalism. The certificate of accreditation, framed and matted just beside Redbud Café, is on display for all Oklahomans to see, so they can continue to have confidence in the nationally recognized quality of their museum.

# 2014 Volunteer of the Year

BY LAURA WILCOX, PUBLIC RELATIONS

Every spring, organizations nationwide take a week to celebrate their most valuable assets — volunteers. The Sam Noble Museum recognized the hard work of its volunteers as part of Volunteer Appreciation Week in April, sponsored by Arvest Bank.

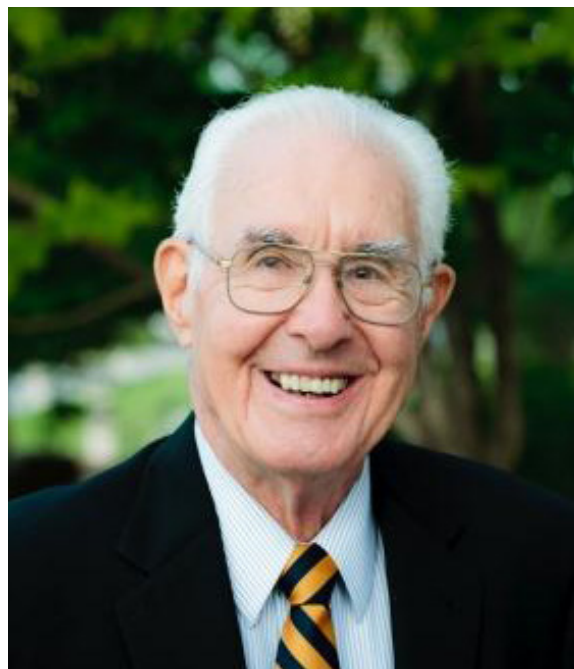
This year, the museum announced Don Batchelor as the recipient of the 2014 Tom Siegenthaler Volunteer of the Year Award. Batchelor's interest in single cell organisms led him to volunteer in the Hall of Ancient Life 14 years ago.

"I could spend an hour extolling the satisfaction I get at the museum," Batchelor said. "I appreciate the opportunity to use 70 years of experience in the field."

The recipient of this award exemplifies what it means to be a Sam Noble Museum volunteer. Nominations from staff and volunteers were submitted to the Volunteer of the Year Committee, which is composed of previous Volunteer of the Year Award winners.

"We have 205 active volunteers working in collections, offices and in the public," said Genevieve Wagner, volunteer coordinator. "It is important to acknowledge the members of our volunteer community, as each one of them makes a difference to the museum. The Volunteer of the Year Award is part of that acknowledgment."

Museum director Michael Mares agreed, stating that volunteers are responsible for setting and maintaining a remarkable standard of excellence in every department of the museum.



*Above: Don Batchelor, 2014 Volunteer of the Year*

"The Sam Noble Museum would not be able to offer our public anywhere near the quality or quantity of programs that our volunteers make possible," Mares said. "They are a most important part of the museum experience, influencing collections, exhibits, public programs, research and every other area of museum activity."

Just as volunteers impact the museum, these positions often personally affect the volunteers as well. According to Batchelor, volunteering at the museum is the perfect way to cap his global professional and military career. He considers his role as docent to be an integral part of providing guests with long-term exposure to natural history education, which he hopes future generations will use to better their world.

For more information about volunteering at the museum, visit [www.SamNobleMuseum.org](http://www.SamNobleMuseum.org) or call (405) 325-1652.



# In the Footsteps of Dinosaurs

BY TAYLOR HANSON, BOARD OF VISITORS MEMBER

Over the last two years it has been one of my greatest privileges to be a part of the Board of Visitors for the Sam Noble Museum. As I have served, I've been inspired by the amazing staff, great programs and world-class science that is going on daily at the museum—and in Oklahoma.

One of the most exciting programs offered through the museum is the ExplorOlogy® program, which engages promising students from schools across Oklahoma to get a chance to work hands-on in the field with experts in many different scientific disciplines. This program, founded through the support and dedication of my good friend Reggie Whitten, has gone on to garner national praise and serve hundreds of amazing young Oklahomans, opening the door for future discovery in science. As Whitten passes the torch to the team at Sam Noble Museum, we've set out on a mission to engage long sustainable support for this awesome program.

ExplorOlogy® allows young people to not only learn about the power of science but also to experience real scientific discovery in action, while seeing the natural beauty of our great state. One of the locations that has been the grounds for discovery in the paleontological and archeological fields is the rugged terrain of the high desert plains of Black Mesa, at the highest point in the state and the furthest corner of the panhandle.

## Planning the Trip

In late June I was thrilled to have the chance to make a quick trip to see one of the current paleontological dig sites, which is being excavated on the Whitten-Newman Foundation's property under the shadows of Black Mesa. Joining me for the short adventure was friend and fellow board member Zane Woods, professional photographer for Oklahoma Thunder Richard Rowe, and family friend Steve Wileman (also our pilot and OU alumnus).

## Getting to the Location and Transition to the Black Mesa Landscape

Our small party converged in Tulsa at a small private airport and loaded up for a short two-hour flight up to the panhandle. After a beautiful flight, we landed at the sparse strip just outside of Boise City, Oklahoma, and we were greeted by Native Explorers executive director Jeff Hargrave. We were thrilled to meet our on-site tour guide, and we loaded up our gear for the mesa. Within a few minutes the state's highest point came into view, with rugged rock peaking out of the dusty terrain.

## Quarry I

Fifteen minutes into our drive, we came across the first link to the area's heritage in paleontology, located just off of winding desert road. Quarry I, the site where paleontologists first discovered fossils from the late Jurassic period back in the early 1930s. This site produced a diverse collection of fossils. We made our first dino-tourism stop with a quick pose by the site marker, a large concrete statue of a fossil as tall as a full-grown man that was placed there by museum personnel decades ago.

## Getting to Homestead Quarry

A few minutes further into the desert landscape, we reached the Homestead Cabin, perched just below Black Mesa, which gets its name from the layer of black volcanic basalt rock. We see that the dig site for the team was at the Homestead Quarry.

As we arrived at the quarry, I could not help but hear the soundtrack of my own *Jurassic Park* theme song playing in the background as our little troupe made our introductions to the research team. All around us nature was larger than life, with towering sand and stone silhouettes right out of a western film.

Heading up the dig at the Homestead Quarry was lead on-site





*Top:*  
*Paleo Expedition*  
*team works on dig site*

*Bottom:*  
*BOV member Taylor*  
*Hanson works to un-*  
*cover a fossil*



*Top:*  
*Research*  
*team poses at*  
*Homestead*  
*Quarry*

*Middle:*  
*Arrowhead*

*Bottom:*  
*BOV members*  
*Woods and Hanson*  
*pose with concrete*  
*fossil statue*



*Top:*  
*Woods work-*  
*ing at dig site*

*Middle:*  
*Tri-state*  
*marker*

*Bottom:*  
*Research team*  
*brush and pick*  
*at earth to reveal*  
*fossils*

Editor's Note: ExplorOlogy® is a joint effort by the Sam Noble Museum and the Whitten-Newman Foundation to introduce young people in Oklahoma to science. For more information, visit [www.SamNobleMuseum.org/ExplorOlogy](http://www.SamNobleMuseum.org/ExplorOlogy).



...continued

paleontologist Anne Weil of OSU-CHS, who greeted us with a lively smile under a large-brimmed hat to shield her from the relentless sun. The Homestead Quarry was first opened by Weil and an ExplorOlogy® team of students, who put the first pick and shovel to the earth only two years ago. Unlike many sites, the Homestead Quarry showed signs of promise within the first day, and since then it has gone on to produce many fossils.

Stepping onto the site with Weil and her team, I was enthralled. Scattered across approximately 215 square feet of gridded earth was a mix of paleontologists, geologists and students who all chiseled away unearthing ancient history right below our feet.

Since its inception, there have been many fossils discovered at the quarry, all of which are from the late Jurassic period around 150 million years ago. They are preserved in the Morrison Formation, which has its easternmost outcropping in Oklahoma, but the formation is vast and crops out in many other states (Wyoming, Colorado, Montana, North Dakota, South Dakota, New Mexico, Arizona and Utah).

The fossils found in the Homestead Quarry so far include a sauropod dinosaur that they believe is an *Apatosaurus*, an allosaurid theropod dinosaur, a crocodilian and two different genera of turtles.

After our introduction to the site we were anxious to get to work and be of some service. At the front edge of the quarry was a cluster of earth, which had recently been coated with thick layers of plaster carefully molded around it to protect the fossil during transportation before being examined at the museum. Now that the team had a couple of extra willing strong backs, Zane and I set out to perform the task of carefully flipping the nearly 300-pound cluster of earth that was half in plaster, in order to finish the preparatory process of chiseling away the remaining sediment for transport. We set out to perform this simple task with smiles on our face and a not-so-small streak of nervousness—knowing that in a matter of minutes we could be responsible for destroying millions of years of time-protected fossil and a fair bit of labor by our hosts. Thankfully with close instruction and a healthy heave, two science tourists were able to perform the task successfully (and greatly relieved to have done so).

Over the period of the afternoon we took on whatever tasks we could. We joined the team in the detailed and dusty

job of excavating one inch at a time the excess soil and clay, each clinging to the bottom of the fossils' earthen clusters, and I enjoyed every scuffed knuckle and dust-coated wipe of my brow. All around me I saw a team of passionate people putting their years of dedicated study and practice into action, carefully unearthing a new part of history. To be among them, brush and pick in hand as a total novice getting the chance to share in that discovery, was absolutely incredible.

## At the Mercy of the Desert / Walking in the Footsteps of Dinosaurs

Working outdoors in a barren terrain, you are at the mercy of the unpredictable mood of Mother Nature. A heavy cloud was beginning to move in, and within half an hour of the weather shift we had to quickly break down the equipment on site and seek shelter before the storm was on top of us.

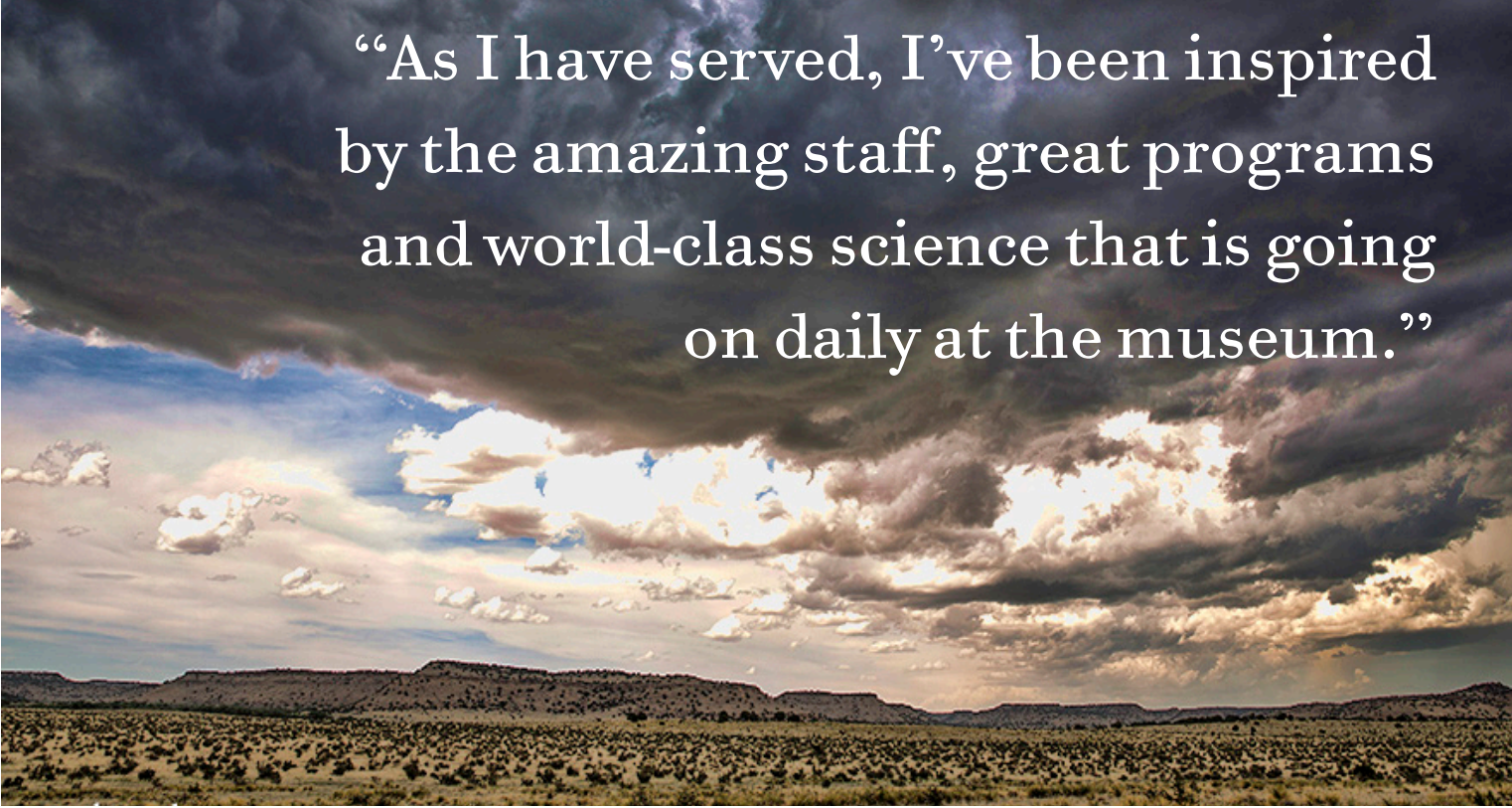
With the rain halting real progress, our “Black Mesa First Timers Club” set out to take in some of the other hot spots of geographic and scientific significance. A few miles away we drove to the tri-state marker, the point where the westernmost point of Oklahoma meets the eastern corner of New Mexico and the southeastern flank of Colorado. Not far away was the site of another local landmark, a collection of fossilized dinosaur footprints. The rain took a momentary pause, and we stumbled down toward what looked like a dried creek bed. As we emerged on the site which was unmarked by any man-made structure, we all saw the archetype of the dinosaur footprints imagined from childhood. The dinosaur, believed to be a bipedal ornithomimid, a short-stepping broad animal with blunt toes, left a clearly marked-out path the length of more than a dozen elephant-sized steps stamped into the earth made permanent by time and now transformed into rock. Each of us stood in awe of this unbelievable site; we were walking in the footsteps of dinosaurs.

## Experiencing the Natural Beauty

After the storm cleared, we had a window of time while the sun was still out to scale the mesa. Zane, Jeff and I took it upon ourselves foolishly to take the shortest distance nearly straight up the face of the mountain. With more pauses than we would like to admit, we reached the top and soaked in the grandeur of the open landscape reaching out a hundred miles.

As night came on, we could not miss yet another incredible natural attraction in this barren country: the open, dark night sky unencumbered by light from any direction. Standing in absolute darkness we were in awe of the simple natural beauty above; it felt like the Milky Way was within our grasp.





“As I have served, I’ve been inspired  
by the amazing staff, great programs  
and world-class science that is going  
on daily at the museum.”

*Photo courtesy of Richard Rowe*

## Discovering Ancient Carvings and Oklahoma’s Beauty

In the morning, we woke extra early to see the discoveries underway at the other end of the basin, led by Leland Bement of the Oklahoma Archeological Society and his team. Sitting just above the low water of the Cimarron River, a 100-foot rock face created a shelter with a patch of lush green trees. Tucked at the bottom of the long walls were multiple caves once at ground level and now nearly three-quarters covered by thousands of years of soil movement due to the river.

Leland’s archeological team believes there was a mix of Native Americans living here, as far back as 2,000 years. Inside the first cave dwelling where the team was focusing their energy, we could see clearly defined carved rock edges buried just below the surface and now partly excavated. Rock, rounded on one side, is believed to have been used to grind grain against a flat rock surface like a pestle and mortar. There were also numerous small arrowheads.

The most fascinating attribute of the site is the unmistakable concentration of ancient petroglyph carvings in the rock face. Moving down the rock, it’s as if you are staring at a time line of human existence in this area, from the ancient basketmakers 3,000 years ago, forward to possible Comanche, Kiowa and Cheyenne people. There are even markings of Spanish explorers from the 1500s when the first European exploration of North America occurred.

## Recap

What is apparent to me after experiencing such extraordinary landscapes and rich history, guided by brilliant passionate minds, is the vital and inexhaustible scientific resources that are available to anyone who chooses to work and learn firsthand in this magnificent environment we share. For any young person interested in science or adventure, the experience that awaits you through the ExplorOlogy® program is unmatched in my experience and is without question a platform to inspire discovery and purpose into adulthood, not only in scientific fields but in any field requiring conviction and fortitude.

The human aspect of being on-site during this excavation brings immense value to anyone, especially young students who will become passionate about science after being in the field and being part of discovery. After a long afternoon under the sun, cut short by a heavy rainstorm, we sat on the open porch and shared stories, discussed the historic significance of local discoveries and then I took in an afternoon’s expert tutorial on the diverse plant and animal history around us. Just sitting with this group of people of diverse age, gender and ethnicity all gathered together in a remote location, on the porch of the homestead cabin, I was struck by the question of what future scientists might think if they were to uncover the fossilized remains of our group frozen in time. I think what our descendants would find would be a rare collection of people, sharing food and shelter and resources in a barren landscape. A tribe for a day, and that would be worth discovering.



*Above: Adult Invertebrate Fossil Field Trip participant searches for invertebrate fossils in Oklahoma*

# Museums: Institutes of Education

BY LAURA WILCOX, PUBLIC RELATIONS

**L**ockers clanging shut, musty books cracking open, the burnt smell of a well-used eraser – for many of us, education is synonymous with school. But education is not limited to a 25-square-foot room and four poster-covered walls. The Sam Noble Museum is dedicated to a different type of learning, an altogether experiential school of thought.

Current occupational trends suggest science is anything but obsolete. According to the Bureau of Labor Statistics, life, physical and social science occupations are projected to add 190,800 new jobs between 2010 and 2020 as they grow by 15.5 percent.

Those 190,800 future scientists are today's students, and their education is paramount for tomorrow's industry and society. So often, knowledge is confused with the ability to recite information at will, a regurgitation of facts and figures. But true knowledge is not something to be learned – it's something to be experienced.

Whether or not they become future scientists, all students deserve an education rich in science and discovery. That's why the Sam Noble Museum offers a variety of educational programming designed to engage and challenge students as they unlock the past, observe

the present and consider the future through natural and cultural history.

Unlike other extracurricular educational programs, the Sam Noble Museum's curriculum is developed by trained educators to complement the statewide plan. In this way, students are given supplemental learning opportunities that build upon the groundwork laid by classroom educators.

"We provide out-of-school opportunities for students to engage in science and explore the world that they can't access in their schools," said Jes Cole, head of education. "We are really fortunate to be a complement and supplement for Oklahoma schools' science education."

By showing Oklahoma youth how captivating natural history can be, the museum has molded statewide science education. In the past year, 1,245 participants enrolled in public education programming through the museum, which also has impacted 219,380 students through field trips to the museum in the past decade.

The museum's success in education is due in part to a strict standard of excellence. With a staff consisting exclusively of degree-holding educators, the museum





*Above: A young painter enjoys a watercolor lesson during Art in Flight: A Family Watercolor Workshop*

*Below: Summer Explorer participants discover local amphibians through the Pond Explorers program*



*...continued*

is able to go beyond the Oklahoma Science Standards and surpass educational requirements.

While the Oklahoma Science Standards are designed with a 10-month school year in mind, the museum's curriculum covers the calendar year. One of the most successful educational programs is Summer Explorers, a series of 31 mini-camps and workshops for students ages 4-14.

Unlike many camps geared toward a specific skill, such as athletics or theater, Summer Explorers allows students to pursue a subject they're passionate about – from baby animals to pond scum, world cultures to paleontology. It's an invitation to explore the world within the safety of museum gallery walls.

"There aren't many summer camps that have the same security that watches over priceless artifacts in the same area as my priceless kiddo," said Amy Davenport, parent of a former Summer Explorer. "Whenever we drop Zoey off to class, we know she is in great hands."

Although the majority of educational programming is designed for young students, the museum fosters continued education through adult-only and family programs. Curiosity is never outgrown, which is why the museum caters to continued education all year long.

"Everyone is a lifelong learner, and everyone's always wanting to learn more," Cole said. "We try to offer what other educational institutions cannot, and that's how we design our adult programming."

In addition to inspiring new interests, adult education also addresses everyday needs with specialized scientific knowledge. From preserving family heirlooms to fossil hunting in the fall, participants can learn for both purpose and pleasure.

For all ages and in all seasons, the museum's educational programming is ultimately shaping the landscape of Oklahoma education – for the better. Join the legacy and see why thousands choose to discover their passion for science at the Sam Noble Museum. For more information about specific courses and workshops, visit the museum website at [www.SamNobleMuseum.org](http://www.SamNobleMuseum.org).



# Real Heroes Save – Not Slay - Dragons

BY LAURA WILCOX, PUBLIC RELATIONS

You will not find one perched beside Daenerys Targaryen or on the roof at Hogwarts School of Witchcraft and Wizardry. Prince Charming does not slay one, and Hiccup the Viking will not teach you how to train one. Yet the Sailfin dragon is more than just literature and legend. The Sailfin dragon is real—and in danger.

The Sailfin lizard, commonly known as the Sailfin dragon, is one of the most secretive species on the planet and also one of the hottest commodities in illegal pet trading. But thanks to 30 years of research, the endangerment of this magnificent species may soon have clear directions.

Thirty years ago Rafe Brown, a tenured biology professor at the University of Kansas, spearheaded a research initiative in the Philippines in collaboration with Andres Lira of the Philippine National Museum and the Biodiversity Management Bureau. This initiative sought to locate and survey the Sailfin dragons, which were only recently discovered at the time. In doing so, Brown hoped to gain insights about this elusive species for both educational and conservation purposes.

Roughly 10 years ago, Cameron Siler joined the research team in answering two key questions: where is genetic diversity distributed for the Sailfin dragon, and how can this knowledge be applied to the illegal pet trade? Siler, who is the current herpetology curator at the Sam Noble Museum, said Brown's research is a perfect illustration of museums in action.

"It's really cool how we have an example of an applied approach to what we do in a natural history museum," Siler said. "We stockpile the world's biodiversity, yet a lot of people don't know why we do it or what it gets used for."



*Above: A Sailfin dragon, photographed by Scott Corning*

To answer the two primary research questions, herpetologists conducted 40,000-50,000 biological surveys across 7,100 islands in the Philippines. In a typical biological survey, researchers conduct surveys in rainforests to document all species present at a site. Then, they collect vouchered specimens and tissue samples that represent each species in global natural history collections. Genetic samples are used to develop a DNA database that allows herpetologists to construct phylogenies, or family trees, that illustrate relationships between species.

These relationships, in turn, allow herpetologists and ecologists to locate preferred habits of any given species while tracking the population. This component of research is particularly crucial for any species, like the Sailfin dragon, that is declared vulnerable by the International Union for Conservation and Nature. Before removing captive animals for the lucrative pet trading market, conservationists must first ensure that a safe habitat exists in the wild.

While Siler and his fellow researchers hoped to discover that very type of protected environment for the Sailfin dragon, they stumbled upon a far more terrifying reality. Although the Sailfin lizards are indeed a vulnerable species, less than 10 percent of their suitable habitat in the Philippines is currently being protected. Even worse, every specimen

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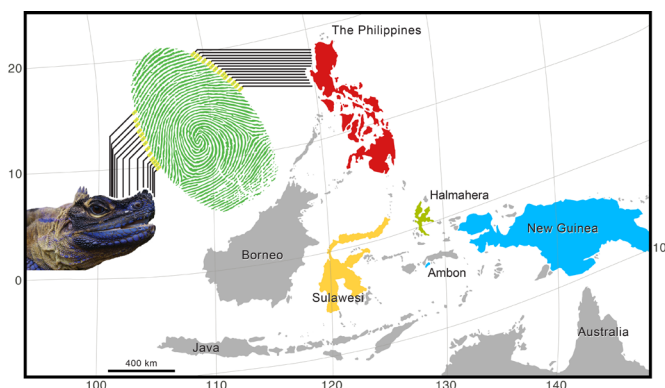
surveyed at one of the major Filipino pet markets came from one peninsula in northeastern Philippines, where only 0.8 percent of the land is currently protected from development.

According to Siler, these findings are horrifying but promising. If illegal pet trade specimens are being collected from one isolated region, enforcement of local conservation laws should be more controllable. In turn, conservationists also may more easily persuade local governments to increase legislation geared at biodiversity preservation.

“Knowing this, there actually can be more of a directed conservation effort in this region,” Siler said. “That’s an exciting result of combining DNA studies with vouchered biodiversity collections in natural history museums.”

While herpetologists are slowly beginning to understand these majestic, private creatures, a great deal of research remains. Siler, Brown and their collaborative team plan to continue their work in July 2014, thanks to a RAPID grant from the National Science Foundation. This expedited grant will allow the team to continue collecting biological surveys in the wake of Typhoon Haiyan, which devastated much of the Philippines in 2013. These findings will provide scientists with key insights on how Sailfin dragon populations respond to natural disasters.

The more herpetologists understand about this rare species, the more local governments can implement effective conservation regulation. Siler’s astonishing findings were published in the *Journal of Biological Conservation*, but his work is not over yet. Although the story of the Sailfin dragon is not yet concluded, researchers are looking forward to a new chapter – a chapter of knowledge, a chapter of change.



Above: All specimens from local pet markets stemmed from just one peninsula

## Two Is Better Than One



Top left: Spiro pottery illustration Top right: State Rep. Emily Virgin views Spiro illustration with curator Janet Braun Above: Collection manager Susie Fishman-Armstrong and registrar Elsbeth Dowd with Rep. Virgin and award

The vast majority of specimens and artifacts in museums are left in collections, while only 3 to 5 percent are extensively showcased. This leaves many artifacts and specimens in need of preservation, which is often extensive and expensive. In 2013, the Oklahoma Cultural Heritage Trust established the Top Ten Most Endangered Artifacts Campaign, funded by the Institute for Museum and Library Services. This campaign strives to generate publicity for preservation. For museums, the competition sheds light on the pressing and often unseen issue of conservation.

Last year, the Sam Noble Museum was recognized for a swatch of lace from the Spiro Mounds – one of the oldest known textiles from Oklahoma. This year, the museum received recognition for another artifact related to Spiro Mounds: an illustration of an engraved pottery vessel from that site. In addition to being accepted into the program, the winning institutions were each presented with a Cultural Heritage Stewardship Award signed by Gov. Mary Fallin, Sen. John Sparks and Rep. Emily Virgin.



# What's in a Name?

BY MICHAEL MARES, DIRECTOR

Some years ago, I traveled to Sweden for a museum conference, which was held in Uppsala. Like so many things in Europe, Uppsala University is very old, having been founded in 1477. When science was undergoing its revolutions in the Middle Ages and in the 18th century and later ages, Uppsala faculty were among the best in the world, including such luminaries as physicist Anders Celsius (who created the Celsius temperature scale) and physicist Anders Angstrom (the unit of measurement was named for him). Eight people associated with Uppsala University have been awarded Nobel Prizes.

Another faculty luminary at the university was Carl von Linné, who came to be better known as Carl Linnaeus. Linnaeus invented binomial nomenclature (the science of attaching names to species with each species having a unique name composed of two parts, the first a genus name and the second the species name) in 1758, with the publication of the 10th edition of his *Systema Naturae*. It was he who called our species *Homo sapiens*, and it



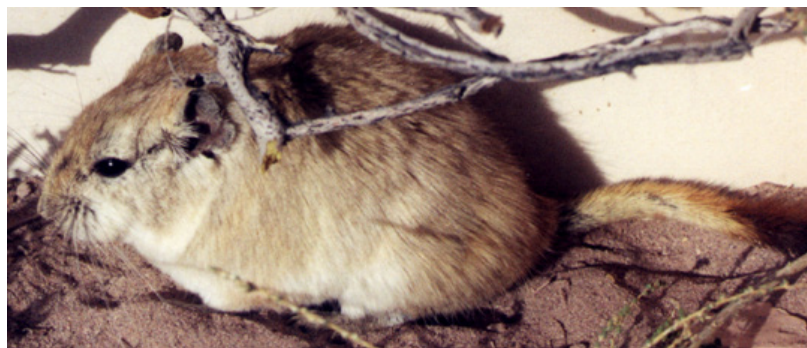
Above: Michael Mares beside a statue of Carl Linnaeus

was Linnaeus who was selected in 1959 as the lectotype or name-bearing type specimen of our human species. Unlike most type specimens, however, Linnaeus is not a museum specimen, though his body rests across the street from the Uppsala Museum and the lecture hall where he taught.

Although Linnaeus knew nothing of evolution (Darwin's ideas would come a century later), many of the organisms that he placed in the same family or genus were apparently related (later, we would learn it was because of genetic relatedness). Linnaeus had made a great contribution to biology with his system of binomial nomenclature.

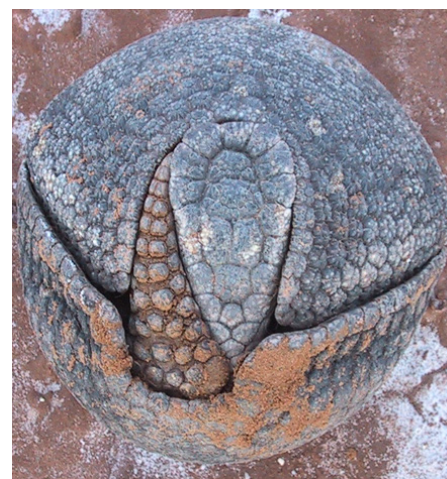
Part of the science that I do is taxonomy, which is the naming of organisms. Since my museum job includes exploring for new mammals, I sometimes get to name species that are totally new to science. People often ask, how do you decide on a name for a species (or for a genus, the next higher category)?

Species may be named for a multitude of reasons, but one never names a new species for oneself. The name may honor a major researcher or may describe aspects of the biology of the species. An example of the former would be a new genus and species we described in 1978, *Andalgalomys olrogi*. I traveled to Argentina in 1970 to do my doctoral research on desert mammals and lived in a tiny desert town called Andalgalá in Catamarca Province. The little mouse that I discovered there was so different from known rodents that it was not just a new species, it was also a new genus, which we named for the town. The specific name was given in honor of my friend, the great ornithologist and sometimes mammalogist Claes Olrog.



Above: *Pipanacoctomys aureus*





Above: *Tolypeutes matacus*

In reviewing mammal names of Argentine species, I find a number of interesting binomials. There is a small mouse opossum (these are opossums not much larger than domestic mice) known as *Micoureus constantiae*. It occurs in the land of the Guaraní Indians and their word for opossum is *micouré*. The species name was given in honor of the woman who funded the expedition, whose first name was Constance.

There is a sloth in Argentina called *Bradypus variegatus*. Sloths are very slow movers (hence the use of “sloth” to describe them). *Bradys* is Greek for slow; *pus* (pous) is Greek for foot, hence, the slow-footed animal. Sloths come in all sorts of color shades; that is, they are variable, hence *variegatus*.

*Tolypeutes matacus* is one of the more bizarre animals in Argentina – an armadillo that can roll itself into a perfect ball. In fact, *tolupe* is Greek for a rolled up ball, and since it occurs in the land of the Mataco Indians, its species name honors that tribe.

In 2002, my colleagues and I discovered another new genus and species of rodent. This one, too, was quite bizarre. It lives in salt flats that are almost devoid of vegetation and eats only saltbushes that have salt concentrations in their leaves that are four times saltier than seawater. It is related to a group of rodents that have molar teeth with cusps in the shape of a figure 8 (the octodontids). We discovered it in an isolated valley known as the Bolsón de Pipanaco, and it is a lovely golden tan in color. We named it *Pipanacoctomys aureus* (*aureus* means golden).

Taxonomists are always challenged to find memorable names for genera and species that they discover and describe. Perhaps my favorite names among Argentine mammals were

two that were given by the greatest mammal taxonomist who ever lived, Michael Rogers Oldfield Thomas, curator at the British Museum in the late 1800s and early 1900s. Thomas named many of the mammals of the world. His 2,000th type specimen was placed in the genus *Eligmodontia* (which describes the teeth of these animals as having many curves in their molars). He named this lovely and special little gerbil mouse *Eligmodontia marica* in honor of his wife, Mary. As he wrote, “And in appreciation of one important element in this pleasure, the sympathetic and ever-ready help of my wife, I have given this attractive little animal the above specific name.” When Thomas’ beloved wife died, he found he could not continue. He took his own life shortly thereafter, ending what was a remarkable career in taxonomy. Almost 90 years after Thomas named this species, our own work on Argentine rodents using genetics, morphology and other modern techniques showed that *Eligmodontia marica* was not a distinct species after all, but part of a larger more variable species, *Eligmodontia typus*. Thus does science self-correct.

I will close with another lovely binomial given by Thomas to an Argentine rodent that lives in bamboo forests in southernmost Argentina along the base of the Andes. This very long-tailed climbing mouse is called *Irenomys tarsalis*. *Tarsalis* refers to the large, flat foot of the arboreal rodent. The genus name is more interesting, however. Thomas named the species just as World War I (the war to end all wars) finally came to a close in 1918 after more than 8 million people had died and more than 20 million had been injured. Thomas named the new genus after Eirene, the Greek goddess of peace. He offered *Irenomys* “as a memento that its recognition coincided with the arrival of a glorious peace.” It is known as the “peace mouse.”

# Hungry Planet: What the World Eats

BY DOUG HILL, NORMAN TRANSCRIPT

Gain a global perspective on the food and the environment through spectacular photos from *Hungry Planet: What the World Eats*, based on the award-winning book by Peter Menzel and Faith D'Alusio.

The *Hungry Planet* exhibit at Sam Noble Museum features 40 color photographs that depict everything from American drive-through fast food restaurants to open-air kitchens in Mali. It documents the sharp contrasts and universal aspects of this essential human pursuit. The exhibition provides a thought-provoking analysis of worldwide food consumption in a way that is entertaining and accessible to all ages.

Peter Menzel has photographed around the world since the 1970s. His work has been featured in world-renowned publications such as *TIME*, *Forbes*, *Life* and *National Geographic*, as well as for panels of United

Nations leaders. Menzel's wife, Faith D'Alusio, wrote and edited the duo's award-winning book, which features iconic images of each family that are paired with stories of the way people procure their food.

*Hungry Planet: What the World Eats* received the Award of Excellence from the Picture of the Year Foundation in 2005 and the Book of the Year Award for the Harry Chapin World Hunger Media Foundation and the James Beard Foundation, as well as Best Writings on Food for the James Beard Foundation in 2006.

The exhibition will be on view through Aug. 31 at the Sam Noble Museum. The *Hungry Planet* book that complements the exhibition is available at the museum store, Excavations.

Sponsored by Love's Travel Stops and Country Stores.



*Below: Aymes family of Ecuador, photo by Peter Menzel*





# Formed in Stone

BY LAURA WILCOX, PUBLIC RELATIONS

Though some may prefer Victorian loveseats and porcelain teapots, invertebrate paleontologists deal in a different variety of antiques – fossils, to be exact. Though these specimens may predate colonial dinnerware by hundreds of millions of years, they are often equally as spectacular and critical in understanding life of the past.

The invertebrate paleontology collection at the Sam Noble Museum contains around 1 million specimens from across the globe, many of which hail from Oklahoma. These fossils are used in scientific research, helping paleontologists reconstruct the prehistoric past. Now, some of these specimens are on display to dazzle museum visitors.

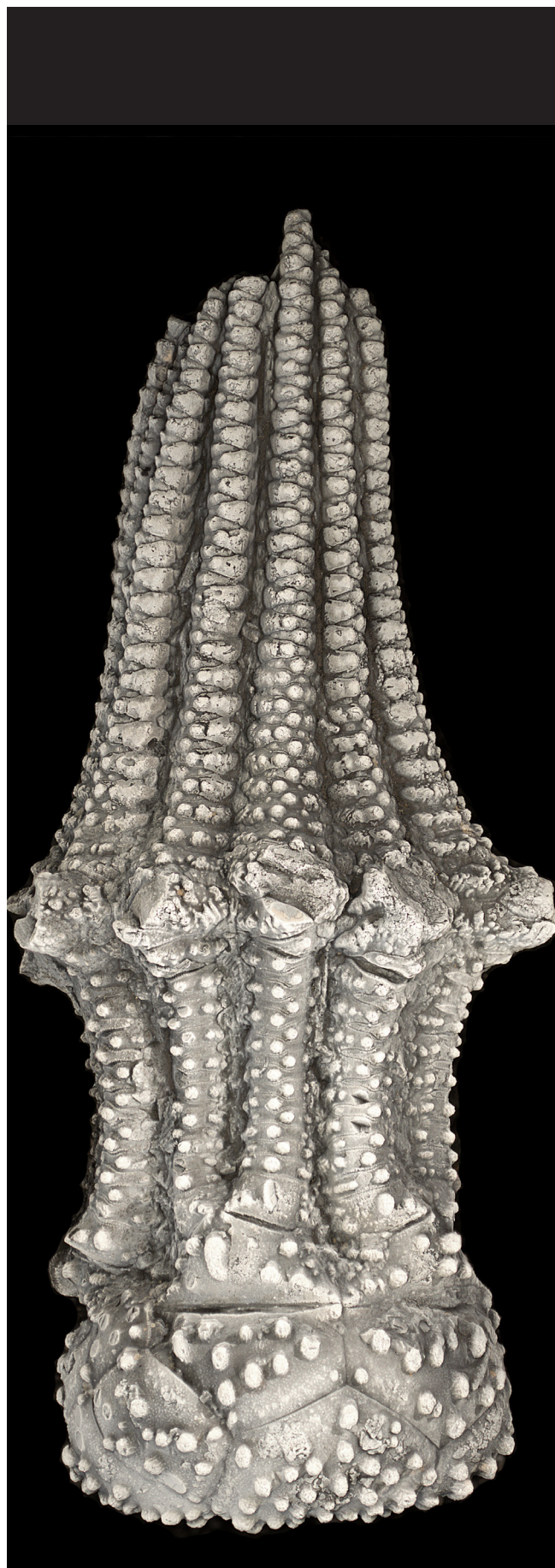
*Formed in Stone: The Natural Beauty of Fossils* features up-close photography of 12 of the collection's most exquisite fossil specimens. This exhibit showcases the natural beauty of the past, highlighting intricate details often indistinguishable to the naked eye. Fossils are magnified up to 60 times, so that a 1-inch specimen will be more than 4 feet wide.

"The fossils have a natural beauty that can be appreciated by the public, regardless of their level of interest in the biology and evolution of extinct animals," said Steve Westrop, invertebrate paleontology curator. "We hope that the images will spark curiosity, and that visitors will be inspired to learn more from this exhibit, the permanent exhibits at the museum and our website."

Fossils range from 80 to 455 million years old, and all of the photographs on display feature animals with skeletons formed of calcium carbonate.

"We share information from invertebrate paleontology constantly through our website and the permanent exhibits," Westrop said. "There is a considerable public interest in paleontology that goes beyond dinosaurs. This is another way we continue our engagement with the public."

Sponsored by Love's Travel Stops and Country Stores.



*Above: Crinoid (Agalocrinus oklahomensis),  
c. Steve Westrop*





## Sam Noble Museum

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