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Golofa aeacus, a large rhinoceros beetle found in Ecuador. page 8

Photo by R. Cave
July 6, 13, 20, 27
Free Thursday Night Admission
4:30-8:00 p.m.

July 6
Pop-In Storytime
“Ocean”
6:30-7:00 p.m.

July 8
Investigate: Second Saturday Science Lab
“Insects”
10:00 a.m.-12:00 p.m.

July 16
Sunday with a Scientist
“Regenerative Medicine”
1:30-4:30 p.m.

August 3
Pop-In Storytime
“Solar Eclipse”
6:30-7:00 p.m.

August 12
Investigate: Second Saturday Science Lab
“Solar Eclipse”
10:00 a.m.-12:00 p.m.

September 7
Pop-In Storytime
“Trees”
6:30-7:00 p.m.

September 9
Investigate: Second Saturday Science Lab
“Sports Technology”
10:00 a.m.-12:00 p.m.
Moving taxidermied polar bears, discovering new dung beetles in the wilds of Ecuador, creating interactive exhibits, and awaiting the arrival of a bronze tortoise – all in day’s work for the curators and staff of the University of Nebraska State Museum (UNSM). As you will see when you read this issue of The Mammoth, it’s been an incredibly exciting and busy spring.

As our fourth floor renovation approaches its official construction kick-off this summer, there’s been a ton of behind-the-scenes work to help clear storage spaces, offices, and research and teaching laboratories. Before summer research season started, faculty and instructors from Anthropology, EAS (Earth and Atmospheric Sciences) and SNR (School of Natural Resources) relocated to their departments. UNSM had storage up on fourth as well. Let’s just say that there isn’t a spare square inch of storage space in the remaining three floors of the museum! Large taxidermied mounts, archeological materials, and fossils used for past temporary exhibits were relocated to Nebraska Hall. The largest items to move were the two polar bears and a rare, cinnamon-pelage black bear. Thanks to Zoology collection manager Thomas Labedz and University of Nebraska moving services, all went smoothly.

In addition to our spring cleaning, our collections were busy growing with the addition of new specimens. In this issue, we highlight Dr. Brett Ratcliff’s travels to Ecuador where he documents the biological diversity (biodiversity) of scarab beetles and relatives. His work is critical to understanding “the little things that run our world” (E.O. Wilson 1986 *Biophilia*). The humble dung beetle may not seem like a big deal, but these beetles are an important component of the cycle of life, ensuring valuable nutrients from carcasses and poop are dragged underground where the leftovers become available to roots and microbes to feast upon. If we didn’t have Nature’s recyclers, we’d be up to our ears in unpleasantries and starved plants.

Brett’s beetles even found their way into our exhibit “Guts and Glory, the Parasite Story”. Like Where’s Waldo, I challenge you to visit and find the connection between his beetles and Dr. Scott Gardner’s research. Our newest temporary exhibit showcases some downright gut-wrenching parasites and a virtual visit of our Harold W. Manter Laboratory of Parasitology. Wander through the microscope room, dissection areas and collections with the touchscreen, made possible thanks to support from Revi Media, and enjoy cameo videos of our students and researchers. Check out the biographies of retired curators Mary Lou Pritchard and John Janovy. As a bonus, you can marvel at the wall of parasite diversity, see a recreation of the blue whale tapeworm, and touch the model of a coyote’s small intestine with its parasite load.

Some of the busiest work this spring was preparing for the dedication of the bronze statues at Ashfall Fossil Beds State Historical Park. The “Battling Rhinos” and the “Ancient Tortoise”, commissioned by the Theodore and Claire Hubbard Foundation, were created by artist Gary Staab. These statues now grace the landscape and bring to life the fossils that lay partially excavated in the Hubbard Rhino Barn. The rhinos arrived last October, but the tortoise kept us in suspense and finally arrived on June 1. Fortunately, the tortoise was in time for the June 17th celebration led by Chancellor Green and Dr. Kirk Johnson, Sant Director of the Smithsonian Institution’s National Museum of Natural History.

With so much going on – I hope you will stop by to see the changes and experience the newest programs at Morrill Hall or journey to Orchard to enjoy the latest additions to Ashfall’s fossil legacy.

— Dr. Susan Weller, Director
University of Nebraska State Museum
I wrote my first column for *The Mammoth* back in May of 2014. In July of 2015, I left the Friends Board to serve a year as District Governor of Rotary. It was a very busy year. I visited 44 Rotary Clubs in the eastern third of Nebraska and southwestern Iowa. It was wonderful to see all the good projects that Rotary does for its communities, nationally and even internationally.

Once my Rotary term ended, I was invited to lunch with Art Zygielbaum, Gerry Dimon, and Dr. John Janovy. Once again, they encouraged me to return to the Museum board. It’s very hard to decline an invitation from a group who gives so much back to their community and the State of Nebraska.

So many good things are happening at the University of Nebraska State Museum:

- Dr. Priscilla Grew retired after a providing great guidance to the Museum. She did an incredible job as museum director and still cares deeply about natural history.

- Susan Weller is our new Museum director. She brings valuable experience to the position and has quickly acclimated.

- Funding to renovate the fourth floor of iconic Morrill Hall was approved and construction will soon begin. Visitors will be able to experience Nebraska and natural history in entirely new ways.

- The staff at the museum is outstanding planning more programs and special events, reaching school children across the region through virtual field trips, plus so much more.

- Your non-profit Friends Board of the State Museum keeps getting better. The Board went through a visioning exercise to help identify what the State Museum should look like in 5 years and how the Friends can help. The next step will be to develop annual goals and objectives.

With strong leadership, excellent staff and volunteers, support from the State and the University of Nebraska, and influential Friends, we are poised to move the museum to a whole new level in the next 5 years.

You play a critical role in our success. On behalf of the Board I want to thank hundreds of you for your generosity in supporting the preservation and study of Nebraska’s natural history.

Sincerely,

— Rod Bates, President
Friends of the State Museum
In April the State Museum honored the tremendous work of our volunteers. This past fiscal year volunteers gave 4,818 hours of time to the Museum. Volunteers assisted with events and programs, in-gallery educational activities, collections care, as well as many offsite community events. Each year, museum staff nominates exceptional volunteers for the award of Volunteer of the Year.

This year’s recipients are:

**Volunteer of the Year, Morrill Hall: Grace Stallworth**

Grace is a student at UNL majoring in Sociology and Psychology. Grace has volunteered for the Culler Middle School CLC club “Being Human”, an outreach program run by curator of informal education Judy Diamond, for the Biology of Human SEPA grant. Grace has been the teaching assistant for this club during the past year. Her ability to integrate all students into the activities, along with a calm, accepting demeanor and deep understanding of science and human nature, has made this club a welcoming experience for kids.

**Volunteer of the Year, Nebraska Hall: Bill Wells**

Dr. Scott Gardner, UNSM Curator of Parasitology, nominated volunteer Bill Wells. Bill has been an invaluable part of the imaging team in the Manter Lab. He has mastered the art and science of taking the specimen from a slide into an amazing image that will be associated with our databases.

**Group Volunteer of the Year, UNL’s iGEM Team**

Enthusiastic about sharing their science, the iGEM team jumped on the chance to be at the museum during our Museum Day Live event in the fall. They presented two Building with Biology activities allowing visitors to learn about DNA and GMO food. iGEM members provided a positive visitor experience by sharing their science in our gallery.

If you are interested in volunteering at the State Museum please contact our Volunteer and Adult Programs Coordinator, Sarah Feit at sfeit2@unl.edu about current opportunities.
At a recent Science Café, willing participants sat on a stool spinning slowly and then faster as they moved their arms out to demonstrate momentum, as graduate students Karl Ahrendsen and Andrew Vikartofsky discussed the physics of ice skating.

Bringing together scientists and interactive discussions, Science Café offers a unique and fun learning experience. Open to those ages 21 and older, monthly topics range from arctic drilling to the science of beer production. Whether in a bar downtown or the museum’s Mueller Planetarium, the program offers an informal atmosphere to discuss the latest in scientific research, surprising finds, and interesting facts.

Designed to be inclusive and participatory, no science background is needed and all questions are welcome. This fall learn about amazing Nebraska archeological finds or how local company Shear Composites is taking your favorite pair of old blue jeans and turning them into sustainable countertops.

Come on a date, in a group, or on your own, and join in the discussion. Ticket prices include a free drink and Raising Canes*.

To see a full list of upcoming programs and to purchase tickets museum.unl.edu/sciencecafe. Ticket sales end 10:00 a.m. day of program.

Science Café is proudly sponsored by Raising Cane’s and Greta’s Gourmet.

—Sarah Feit, Volunteer and Adult Programs Coordinator
University of Nebraska State Museum

*Vegetarian options provided by Greta’s Gourmet

MARK YOUR CALENDAR:

**August 17** – Sustainable Manufacturing with Shear Composites

**September 21** – Nebraska Archaeology with the Nebraska State Historical Society

**November 16** – Design Biological Systems the ‘Lego’ Way, with Rajib Saha, Assistant Professor, Department of Chemical and Bimolecular Engineering, University of Nebraska
The weird, the exotic, the deadly, and even some helpful parasites are on display at Morrill Hall.

“Guts & Glory: A Parasite Story” is a temporary exhibit at the University of Nebraska State Museum - Morrill Hall exploring the hidden world of parasites while showcasing the museum’s Harold W. Manter Laboratory of Parasitology at the University of Nebraska-Lincoln.

Visitors to the exhibit embark on a journey to learn the “why” and “how” research is conducted on the most common mode of life on Earth – parasitism. Tapeworms, heartworms, fleas, flukes, and bot flies, among others are examined in the temporary exhibit open through May 2018.

The temporary exhibit features a life-sized 100-foot-long whale tapeworm model, the largest parasite on Earth. A 25-foot wall of real parasite research specimens highlights the diverse sizes, shapes, and lifestyles of some of the smallest and largest parasites from the museum’s collection.

Visitors can stick their hand into an enlarged model of a coyote intestine to discover the variety of parasites inside, plus see a “slice of life” through an interactive Sand Hills soil cube showing how many parasites co-exist with the rodents, reptiles and insects in this largely diverse, yet incredibly small section of a Nebraska eco-region.

Highlighted in the exhibit is the museum’s Harold W. Manter Laboratory of Parasitology collection and its scientists. The collection represents 10,000 species with specimens collected from every continent and the world’s oceans. The parasite collection is one of the world’s largest and is second in size only to the Smithsonian Institution in the western hemisphere. The lab provides opportunity for University of Nebraska (UNL) scientists and students, and visiting scholars to study parasites to understand emerging diseases, evolutionary relationships, and the health of our ecosystems.

“It has been great to see how UNL faculty research can be made into a fun, informative exhibit,” said museum director Dr. Susan Weller. “Although, you likely will leave the exhibit feeling both fascinated and a bit uneasy, you’ll be glad someone is finding the parasites before they find us!”

— Mandy Haase-Thomas, Chief Communications Officer University of Nebraska State Museum
With a grant received in late 2016 from the Committee for Exploration of the National Geographic Society, an entomology expedition was conducted to Ecuador in January 2017 in furtherance of our new project to conduct a biotic survey and inventory of all of the species in the scarab subfamily Dynastinae (commonly referred to as rhinoceros beetles, although most are small and lack horns). Our purpose was to observe and collect beetles in the field and to authoritatively identify and database the holdings of scarabs in the principal research collections in Quito. My companions were Dr. Ron Cave from the University of Florida (my co-author of several books on the dynastines of Central America and the West Indies) and my former Ecuadorian M.S. student, Aura Paucar, who is our in-country collaborator on the project and who lives in southern Ecuador. This research project will discover and document the species-level diversity of dynastine scarab beetles, their spatial and temporal distributions, and habitat preferences, and it will make this information available for studies in biodiversity, ecology, conservation, and applied agriculture.

The family Scarabaeidae has about 35,000 species, and Dynastinae is the most charismatic subfamily consisting of about 1,400 species. Most are found in the Neotropics. Adults are small (4 mm) to huge (160 mm). Males often possess extravagant horns which have given rise to names such as rhinoceros, atlas, or hercules beetles. Adults of most are nocturnal and attracted to lights and feed on rotting fruit, sap, and plant roots. Some are pollinators of palms and aroids. Larvae are saprophagous (feeding on decaying organic matter) or phytophagous (feeding on plants) and live in the soil or decaying logs where they are important in nutrient cycling. The immature stages and natural history for most species remain unknown. Larvae take from 1-3 years to develop, and adults live for several weeks.

Ecuador, like many countries in the tropics, is biotically megadiverse and is at risk from deforestation, environmental homogenization, pollution, invasive species, and urban sprawl, all brought on by expanding human populations. This research will promote discovery and reveal new knowledge about a group of beetles important in ecosystem ecology and agriculture. The project's principal objectives are to coordinate with Ecuadorian scientists, students, collections managers, and parks officials to explore, discover, and document the biodiversity of dynastine scarab beetles in Ecuador.
The goals are: (1) discover and describe new species, (2) establish habitat associations and distributions in space and time for all species, (3) authoritatively identify, curate, and augment research collections, and (4) disseminate research results in print and electronically to a worldwide community of researchers, students, natural resource managers, government entities, amateur naturalists, and the public.

Ecuador contains 42 genera (46% of the New World dynastine genera) and is one of 25 global Biodiversity Hotspots where exceptional concentrations of biodiversity are undergoing rapid loss of habitat. The 25 hotspots comprise only 1.4% of the land surface of the Earth, but they contain the sole remaining habitats of 44% of the Earth's vascular plant species and 35% of its vertebrate species, and, by extension, sizeable numbers of insects as well (Myers et al. 2000). The study area is a complex region where Andean and Amazonian biomes converge. The insect fauna of this area is exceptionally rich because of the influence of vastly varied topography and microclimates. In no other part of the world is the insect fauna of high mountains (above 2000 m) as different from that of the contiguous Amazonian lowlands as in western South America. The broken topography has produced the region's own unique species resulting in some of the highest levels of diversity and endemism on Earth (Mittermeier et al. 1999). Our rational use of natural resources depends on accurate ecological knowledge, but the major deterrent to ecological studies is the lack of taxonomic data that is fundamental for all subsequent studies. In order to arrive at a sound view of ecology in the tropics, we must first identify and catalog the fauna. Helping us in this endeavor is the US National Collection of scarabs (250,000 specimens) that we transferred from the Smithsonian Institution to the Team Scarab lab at the University of Nebraska several years ago for off-site enhancement.

Documenting life on Earth is a primary responsibility of taxonomists, and taxonomic monographs are cornerstones of comparative biology. The users of these data are scientists and students studying their fauna; ecologists needing identifications and information on biology and distribution; museum professionals responsible for organizing research collections; biogeographers needing distributional data; the agro-industry for information on invasive species and pests; park and reserve managers needing to know the faunal composition of their areas of responsibility for establishing management plans, educational programs, or research opportunities; and government entities needing baseline data for conservation planning. Ed Wilson (2004) observed that descriptive taxonomy is our pioneering exploration of life on Earth, and that among its cascade of derivative functions it lays the foundation for the phylogenetic tree of life, provides a requisite database for ecology and conservation science, and makes accessible the vast and still largely unused benefits offered by biodiversity to humanity. We are continuing to build that foundation.

—Brett Ratcliffe
Curator, Division of Entomology
University of Nebraska State Museum

References
MUELLER PLANETARIUM
AT MORRILL HALL | UNIVERSITY OF NEBRASKA STATE MUSEUM

MAY 30 – AUGUST 27

**MAY 30 – AUGUST 27**

**EARTH, MOON & SUN**
11am | TUES–SAT
2pm | SUN
30 minute show
Recommended for ages 7-12

**ECLIPSES and PHASES OF THE MOON**
12pm | TUES–SAT
3pm | SUN
30 minute show
Recommended for ages 9+

**Big Red Sky Tour**
Explore the Night Skies over Nebraska
SAT | 2pm
35 minute show
Recommended for ages 7+

TICKETS AVAILABLE AT THE MUSEUM FRONT DESK | SCHEDULE SUBJECT TO CHANGE
GO TO WWW.SPACELASER.COM FOR MORE INFORMATION
*CHILDREN AGES THREE AND UNDER ARE NOT PERMITTED INTO THE PLANETARIUM
Giant salamanders in Nebraska?

UNSM paleontologists have recovered vertebrae as well as fragments of skulls and jaws from ancient giant salamanders that are 15-18 million years old. Until recently, we have not had an opportunity to compare these elements directly with those of a recent skeleton.

In January, emeritus curator of zoology Trish Freeman acquired a deceased Japanese giant salamander from the Henry Doorly Zoo. These animals weigh more than 50 pounds, can grow up to 5 feet in length, and live in cold, fast moving, gravel-bottomed streams. They are listed as a near threatened species due to pollution and habitat degradation. Their smaller North American cousins, the hellbenders, reach only 2 feet in length. As part of the agreement, the Museum would provide a cast of the skull to the zoo for educational programming.

After many discussions, we decided it would be too difficult to mold the specimen due to the fibrous nature of the bone. As an alternative non-invasive method, we worked with Advanced Medical Imaging of Lincoln, Nebraska to CT scan the specimen. Several computer programs will manipulate the CT data and create a 3D object which can be printed on a 3D printer.

In the early 2000s, the Museum worked with the engineering department at the University of Nebraska-Omaha to produce a cast of the “Innocent Assassins” specimen which is on display in Morrill Hall using similar methods. As technology advances and 3D printers become more economical, these technologies provide alternatives to the traditional molding process that helps decrease the risk of damage to our research specimens.

—Shane Tucker, Highway Salvage Paleontologist University of Nebraska State Museum
Sant Director of the Smithsonian Institution’s National Museum of Natural History (left) meets Dr. Mike Voorhies during the special sculpture dedication event June 17 at Ashfall Fossil Beds State Historical Park. Photo courtesy Mike Zeleny
The University of Nebraska State Museum dedicated new sculptures at Ashfall Fossil Beds State Historical Park on June 17.

Set in the natural landscape of Ashfall, the “Battling Rhinos” bronze sculpture features two ancient rhinos locked in an eternal struggle. A safe distance away, the second bronze, “Ancient Tortoise,” watches the battle. The bronze replicas, designed by renowned artist and Nebraska native Gary Staab, represent two species found in the ancient watering hole that was at the Ashfall site.

“There is evidence that the fossil barrel-bodied rhinos at Ashfall engaged in the same behavior as modern rhinos. The bulls spar with each other, and occasionally hurt one another with their horn,” said Rick Otto, superintendent at Ashfall. “During Ashfall times, giant tortoises were common animals and would have been a mainstay on the landscape, inhabiting the same area as the barrel-bodied rhinos, three-toed horses and llama-like camels.”

The sculpture dedication honored donors and featured remarks by Kirk Johnson, Sant Director of the Smithsonian National Museum of Natural History.

“You’ve got this incredibly sweet mix of great scientists, great park managers, great philanthropists, great artists,” Johnson said. “And we’re really a long way away from any big population center, but this is a national treasure here in the northeast corner of Nebraska.”

The sculptures were a gift from the Theodore F. and Claire M. Hubbard Family Foundation. The Hubbard family is a supporter of many programs at the University of Nebraska State Museum and previously funded a 17,500-square-foot, climate-controlled barn that allows Ashfall visitors to watch scientists unearth fossils.

“These statues bring to life the fossils that were buried in ash for millions of years,” said Dr. Susan Weller, director of the University of Nebraska State Museum. “They help us to imagine how these animals lived, which scientists determined from studying how the fossils are positioned in the Hubbard Rhino Barn.”

Ashfall Fossil Beds State Historical Park is a joint project of the University of Nebraska State Museum and the Nebraska Game and Parks Commission.

— David Fitzgibbon, University Communication
Dr. Loren Toohey’s family will attest that his two main passions in life, besides being fully devoted to his wife and four daughters, were flying airplanes and paleontology.

Well before adulthood, Toohey was sleuthing for fossils and affecting the field of paleontology. Alongside his school friend Guy Johnson, the two found themselves exploring the land and what laid beneath. Little did they know what would prevail after making a nationally important find in Nebraska: Hemingford Quarries in Nebraska’s Box Butte County.

In 1936 as high school students, Toohey and Johnson were invited to help further explore their discovery -- home to tens of thousands of fossils, including species of ancient camels, rhinos, horses and other mammals. Their work with the Museum continued through 1941 as field workers collecting in and around the Hemingford and Bridgeport Quarries. The next year, Toohey married his beautiful wife Maxine and reported for military service.

Toohey’s career as a pilot began shortly after joining the Civilian Pilot Training Program at the University of Nebraska in 1942. His training led him to serve as an Air Force Pilot during WWII. Toohey’s talents found him in the position of training pilots who then served tours in Europe and the Pacific. Toohey went on to serve in the Air Force Reserves and attained the rank of Lieutenant Colonel. Before the war ended, Toohey was struck with tragedy.
when his paleontology partner Johnson was killed in a raid over Yawata, Japan. The passing of his fellow fossil collector deeply affected Toohey. Years later, the death of his mentor and longtime friend, Morris Skinner, would also profoundly touch him.

After the war, Toohey found his way back to the University of Nebraska where he finished his Bachelor of Science degree majoring in Geology. Following graduation, Toohey was named Assistant Preparator at the Museum and Senior Field Man. In these positions, he was head of the Museum crew salvaging fossils from the Medicine Creek Dam area (southeast Frontier County).

After earning his graduate degree from the University of Nebraska in 1950, Toohey went on to Princeton University earning his doctoral degree in geology and paleontology. His dissertation included describing a Museum specimen collected by Frank Crabill and Eugene Vanderpool in 1932 from the Badlands of Nebraska. The specimen is a skull of *Nimravus brachyops* – a cat-like animal with an elongated tooth piercing through the upper arm bone of another *Nimravus*. Toohey’s description was published in a bulletin of the American Museum of Natural History citing, “the piercing may be due to the weight of the overlying sediments,” meaning the tooth was pushed through the bone over time. Toohey also provided a second consideration that the arm bone was accidentally pierced during combat. Toohey’s second speculation has led to a more conclusive probability that the two were in battle, as recent fossil finds and continued research show these mammals as having a quarrelsome behavior.

Toohey’s scientific career continued at the American Museum of Natural History in New York City and finally as a geologist with Exxon. He was a long-time member of many scientific societies including the Society of Vertebrate Paleontology, the Geological Society of America, the American Association of Petroleum Geologists, the West Texas Geological Society and the Society of Independent Professional Earth Scientists.

After a thorough career living out his love of paleontology, Toohey and his wife settled in Midland, Texas. His interest in paleontology continued as he traveled the Midwest sleuthing for fossils across the Great Plains with a favorite spot in Western Nebraska – contributing his discoveries to the University of Nebraska State Museum. Toohey was a Research Associate and major supporter of the State Museum, Ashfall Fossil Beds, and the University of Nebraska through his time, talent, and treasure, helping to support scholarship funds. He and Maxine were Lifetime Members of the Friends of the University of Nebraska State Museum.

In 2013, the then-museum director, Dr. Priscilla Grew called Toohey to congratulate him on his 92nd birthday. Toohey was living in San Antonio at the time with his beloved wife. During the conversation, Toohey noted he wished he could come back and collect fossils one more time in Box Butte County—where he started fieldwork for the Museum back in 1936 as a high school student in Hemingford.

*Dr. Loren Toohey’s good works will be remembered. The Museum thanks Dr. Loren Toohey and his family for the support they have provided in enhancing science stewardship and helping to promote discovery in natural science.*

— Mandy Haase-Thomas, Chief Communications Officer
University of Nebraska State Museum

Dr. Loren Toohey’s interest in paleontology never ceased. In retirement he continued traveling the Midwest in search of fossils.

Photo courtesy Loreen Schnakenberg
My nickname is Bob. I arrived in Lincoln, a tenderfoot from Maryland, in late summer of 1962 and have been here most of the time since then toughening up those feet.

I worked from 1975 through 2003 for the University of Nebraska’s Conservation and Survey Division as a research geologist mostly doing field work and geologic mapping of major parts of Nebraska and helping with Survey test drilling projects mostly related to groundwater quantity and quality. After retiring I volunteered to do other things to help out the university including serving as curator of invertebrate paleontology for our State Museum.

Shortly after my arrival in Nebraska I began to enlarge my experiences on the Great Plains. This continued up to today and includes travel and study in all of the Great Plains states and Canadian provinces. Since 1962 I have come to love the Great Plains and to learn much about that natural region that I have passed on to others through my writings, talks to students and other members of the public as well as field trips I led for people to places in the Great Plains continuing to today.

My experiences and those of my wife, Anne, led us to write two books in 2003 for the bicentennial celebration of the Lewis and Clark Expedition at the suggestion of our friend Gary Moulton. These are Lewis and Clark and the Geology of the Great Plains and Lewis and Clark and the Geology of Nebraska and Parts of Adjacent States. The books attracted the attention of many groups and led to us being invited to give talks on the subject to many people and groups in Nebraska and other states including the American Association of State Geologists Annual Meeting, the Annual Meeting of the Society of Independent Petroleum Earth Scientists, and groups of geologists in Wichita and Oklahoma City.

In 2014 my good friend and former boss, Richard (Rick) Edwards, Director of the University of Nebraska’s Center for Great Plains Studies asked me to consider writing a small book about the geology of the Great Plains as part of a series of books exploring many aspects of this marvelous place. I thought his request over and told Rick that I would give it a try. The series is being published by the University of Nebraska Press, the first completed book of which is Great Plains Indians written by my colleague David Wishart.

I wrote up an outline of my book and planned trips with Anne to places in the northern and southern extremes of the Great Plains that we either had not visited before or needed to visit again to make further observations to use in the book. These trips led us to parts of southern Alberta and Saskatchewan in Canada and to the Hill Country and Pecos Valley in Texas. The end result was production with the help of Anne and of many readers and editors of drafts of my book, Great Plains Geology, published in April of 2017.

The book includes an introduction, chapters on what defines the Great Plains, how the region developed geologically through time and became what we see and observe today, and descriptions of the geology, archaeology and ecology of 57 sites from Alberta and Saskatchewan to southern Texas. I also include three appendices on geologic subdivisions of the Great Plains, major geologic and other studies since 1669 that influenced current thinking, and cautions for travelers visiting the Great Plains (you can never know enough about these). The book finishes off with a glossary of definitions and a list of important references.

In the chapter on geologic development of the Great Plains I begin by answering frequently asked questions about the Great Plains. These include: Why does the Great Plains tilt downward toward the east? Why do the Black Hills stick up in the middle of comparatively flat lands? Why is the High Plains Regional Aquifer thickest and most widespread in Nebraska and thinner to the north and to the south? Where does the sand in the Nebraska Sandhills come from? And why are there volcanoes on the Great Plains in northeastern New Mexico and southeastern Colorado and not in other places?

If you do not know much about the geology and archeology of the Great Plains you might take a look at the book.

— Robert F. Diffendal, Jr., Curator of Invertebrate Paleontology
University of Nebraska State Museum

GREAT PLAINS GEOLOGY: MY PERSONAL JOURNEY
We are excited and can hardly wait for the ‘dog days’ of August. Not because we love heat and dog day cicadas, but because renovation of the fourth floor will be fully underway. We expect some noise and the occasional slow elevator as construction folks move materials around the building, however, most of the work will be done after museum visiting hours. That way, we can remain open so our members and other visitors can enjoy our museum exhibits, planetarium shows and programs.

We will begin sharing regular project updates with members soon. You’ll be able to preview some of the exhibit designs and some ‘action photos’ of the reconstruction work. We are in the middle of our exhibit design process. It takes a lot of work to choose the stories to represent Nebraska’s natural world. The exhibit content team has been working over ten months on the task, and we still have eight more to go before the final label wording is approved and we begin exhibit construction. We are so pleased that colleagues from many outside partners and University of Nebraska (UNL) colleges and departments have helped us by attending work sessions, allowing us to interview them, and providing us with videos and photographs for the fourth floor exhibit galleries. Just to give you an idea of the depth and breadth of our collaborations, here’s the list so far:
Department of Anthropology – UNO & UNL, Earth and Atmospheric Sciences, Entomology, UNL Extension, Nebraska Game and Parks, Nebraska Historical Society, Platte River Basin Time Lapse Project, and the School of Natural Resources.

Thank you for your support – through your membership, donations and volunteerism, you make all things possible. If you have given to Cherish Nebraska, thank you. If you wish to make a donation or pledge of support, your contributions will have an immediate impact on the future of your State Museum.

— Dr. Susan Weller, Director
University of Nebraska State Museum


After being closed to the public for more than 50 years, plans are underway to transform the fourth level of the historic Morrill Hall into state-of-the-art exhibits showcasing our great state of Nebraska. These exhibits, many of which will feature interactive, hands-on technology, will show the museum’s latest research and highlight amazing animals from Nebraska’s past. These exhibits will Cherish Nebraska – but we need your help to make it happen.

University of Nebraska Foundation

Exhibit your love of this museum and this state by making a donation at nufoundation.org/cherishnebraska or by contacting Connie Pejsar at connie.pejsar@nufoundation.org or 402-458-1190.
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Tammy Thompson-Bendig
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Misty and Cessna Brelte
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Theodore Brownie
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Haimgen Chen and Wei Huang
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Rick Shibata
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Torey Gandara
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Codah and Nikki Gatewood
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Christopher St. Pierre
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Annette Gloystein
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Leslie Gordon and John Meinsinger
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Mal Granot and Mestor Conen
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Benjamin and Halie Kopas
Denes and Angela Korgas
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Foster and Anne Kurburski
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Rotem and Moshe Lapidot
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Caris Mann
Natalie and Stephen Markham
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Paul and Carrie Marshall
Andrew and Erica Martens
Mary Martig
Wally and Amanda Mason
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Ian and Maggie McLean
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Jason and Heather Mitchell
William and Jessica Moller
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Terri and Cathy Moore
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Michael and Laura Moravec
Jason and Renea Morehead
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Roseann Morris
Mary Burke Morrow
Ronald and Virginia Morse
Troy and Megan Morton
Lowell and Lowell Morris
Kenneth and Mary Moy
Robert Moyer and Rachel Liehkus
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Rob-Ray and Sheryl Murray
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James and Patricia Neu
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Danette Novotny
Teto O’Bannon & Brant Martens
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Sherlene and Donald Ohnoutka
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Jeffrey Palenik and Quyen Tran
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Frankie Petersen
Ann Peterson and Judy Peterson
Jerry and Mary Ann Petr
Rick and Stacie Petter
Jed and Melissa Plettner
Caleb and Suzanne Plettner
Ruan Pohlman
Nic and Polly Pote
Shane and Brandi Powers
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Neal and Deb Ratzlaff
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Word and Cheryl Reesman
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Frederick and Margaret Rickers
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Brancon and Andrea Riley
Gerald Riske and Arlene Singer
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Marshall and Rebecca Rogers
Kyle and Amanda Rohrig
Clara and Susan Rosefeld
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Matt and Amanda Sanford
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Ethen and Brenda Schmid
Patrick and Albertha Schmider
David and Teresa Schmidt
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John Schneiderman
Nicole Schroeder and Jeff Moahs
Ian Schroeder
Megan and Joel Schulz
Brenda Schumacher & Mark Paulsen
Joseph and Sarah Scott
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April Segura
Phil and Mary Bet Seng
Perry and Janeanne Severson
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Joshua and Iris Simon
Cynthia Simpson
Brad and Janelle Sjue
Aaron and Andrew Skaw
Mark Slecha and Michelle Shuttu
Rachel Smith and Stacie Schultz
Chery and Rosemary Smidt
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Jodi Sammers & Remington Holmes
Neil and Sarah Sorensen
John and Karen Sousek
Theron Stackley & Christy Aggers
Thomas and Denese Stainaker
Enrieto and Susan Steinmyer
Kirsten Stephan and Rafael Flores
Sara Stephenson & Jenise DeGrow
Thomas and Jaime Stiles
Laura and Laura Stock
Spencer and Carissa Stock
Darrin and Megan stall
Larry and Michael Stromer
Douglas and Sylvia Stutzman
Mauricio Suarez & Edith VanBente
Reece and Sarah Sukovaty
Jack and Elisabeth Sundermeier
James Swinehart
Emily Tege and Jordan Kuhl
Harold and Liz Kuhl
Lorenz and Susan Taylor
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Harley and Tracie Upton
Jerry and Linda Urban
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Ben and Sarah Van Horn
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and David Nole
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Randy and Margaret Waybright
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Tadd and Annie Wegner
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Chuck and Donna Wilcox
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William and Barbara Wolto
Nate and Adelaide Wolf
George Wolf
Eric Wolford and Jessica Janssen
Len and Tony Van Barger
Russell and Judith Workman
Kyle and Angela Wyle
Yao Yao and Bilyan He
Ken and Heather Yates
Seanna and Stephanie Yeager
Margo and Richard Young
Doug Young and Nancy Nelsen
Seth and Lauren Youree
Michael and Ella Zelich
Mike and Amy Zelyen
Shari Zinnecker
Janice Znanencack & Sarah Alhachami
Mary Zardel and Jamie Krusl
Brian and Becky Zylstra
PROJECT PROVIDES ECLIPSE GLASSES

Curator Judy Diamond’s NIH Science Education Outreach grant is providing Eclipse glasses for every 6th grader in Lincoln Public Schools.

The custom glasses feature images from the project’s new comic book about measles and vaccination, called, “Carnival of Contagion.” The comic is being published by the University of Nebraska Press and will be available in October 2017.