

THE Pteranodon

Highlights from the
Sternberg Museum of Natural History

No. 29

Summer 2004

Managing the Discovery Room requires diverse, unusual skills

Thea Haugen, Education Assistant at the Sternberg Museum, knows the best way to remove an unshed scale from a snake's eye.

She also knows where to buy supplies for the education programs, how to set up attractive animal habitats, how to raise countless animals and plants, how to set up an educational display, how to put together educational materials for visitors in the Discovery Room, who to call for animal rehabilitation, and many more of the little tasks that add up to keeping the Discovery Room and the museum's educational programs functioning.

"Thea is the backbone of the Discovery Room, and she does important work in education," said Cameron Liggett, Museum Educator. "We literally could not function without her."

From a visitor's point of view, Haugen keeps the "discovery" in the Discovery Room, making sure the room is as ready for its hundredth visitor of the day as it was for the first one. However, she does much more behind the scenes to help with the overall education mission of the museum.

For example, Haugen schedules and supervises the staff who serve as



Thea Haugen completes hanging butterfly gardens with two students. The gardens are made of plants whose flowers are enticing to butterflies.

facilitators, working with the public. She also supervises behind-the-scenes workers who create new materials and provide routine aspects of maintaining and repairing hands-on materials, cleaning and disinfecting support materials, and caring for exhibit and program animals.

Animals and nature have always been a central part of Haugen's life. She moved to Kansas over thirty years ago and worked in horticulture, being employed in many area greenhouses. Then, about fifteen years ago, she opened her own, selling plants wholesale to other greenhouses and retail outlets.

Haugen began volunteering at the museum before it opened in its new facility and was hired just after opening to help oversee the museum's Discovery Room.

"Thea's job is not something you can just ask anyone to do," explained Liggett. "There are so many tasks that require special knowledge or skills that it is almost impossible to find them all in one person. However, we were extremely fortunate to find Thea."

Haugen may find herself playing doctor to the scaly and furry residents of the Discovery Room. Or, she might develop hands-on

material or new animal displays to place in the room for the public.

She provides programs to every school group visiting the museum, often bringing out a live animal or two. She sets up educational booths at public shows, and helps to maintain the collection of educational materials used in programs and checked out to teachers.

Haugen is a Master Gardener, a program organized by the State Extension Service, and she presently is training to be certified with the Emergency Animal Rescue Service. Those volunteers respond to

Continued on page 2



Education Assistant Thea Haugen shares a moment of discovery with a student as she holds a Madagascar hissing cockroach, *Gromphadorhina portentosa*.

Popularity of Discovery Room consistently high

widespread disasters, such as earthquakes, tornadoes, or terrorist attacks, and are trained to rescue animals such as pets and livestock.

“Just as people sometimes need to be rescued after a natural disaster or something, so to do the animals. We go through the same rescue, first aid, rope rescue, CPR, and first response training, but we also have to know about animal care,” Haugen said. She hopes to be finished with her training before the end of the summer.

Currently, Haugen’s position is being funded by a grant from the Institute of

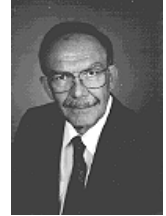
Museum and Library Services. However, that General Operating Support Grant will run out in September of this year. After that, other funding sources to cover the position, and therefore the heart of the museum’s popular Discovery Room, will need to be found.

“If the Discovery Room is popular, and it is, it is because of Thea’s vision and hard work. Without her, the place would not be the same,” Liggett said. “She is just too perfect for this position.”



Haugen checks inside the mouth of a common kingsnake, *Lampropeltis getula*, looking for parasitic flukes.

Choate’s Notes




Dr. J. R. Choate
Director

This column highlights a member of my staff with whom many of you are familiar. That person is Gregory A. Liggett (see his photograph on page 6).

Greg was raised in Ohio, and his first experience working in a museum was as an exhibits technician at the Cincinnati Museum of Natural History. He came to FHSU to attend college, and he earned the BS and MS degrees in geology. I hired him as my administrative assistant in the Sternberg Museum of Natural History in 1993, and he assumed the responsibilities of assistant director in 1998.

Greg has been an indispensable member of the Sternberg management team. He was responsible for the museum’s marketing efforts, he kept the museum’s budgetary records, he was the museum’s computer guru, he served as a liaison with the public, and he worked with me on essentially all administrative tasks in the museum. Additionally, he obtained or helped obtain more than \$1 million in grants and contracts for the museum and the university, he provided outstanding service to his profession, his university, and his community, he published 10 scholarly papers and 83 geological maps in various scientific media, and he made about 20 presentations at scientific, municipal, and public meetings. In short, he performed at an extraordinarily high level as a representative of the Sternberg Museum and FHSU.

Greg’s administrative service to the museum is coming to an end, and he will be sorely missed. I hope all of you will join me in wishing him much success in his future ventures.



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Left. A recent visitor uses a diorama to discover the diversity of ancient life as portrayed in the exhibition “The Burgess Shale: Evolution’s Big Bang.” The Burgess Shale fauna, an assemblage of animals that lived in the ocean 505 million years ago (during the Cambrian Period), includes representatives of nearly every extant phylum—including Chordata, which later came to include all vertebrate life. The Burgess Shale, which is the rock layer that contains these fossils, is exposed in the face of a high mountain in Canada. “The Burgess Shale: Evolution’s Big Bang” will be displayed through October 3, 2004.

New for 2004!

Sternberg stay-overs

Here’s your opportunity to camp-out in the Cretaceous *and* support the Sternberg Museum’s Discovery Room.

McDonald’s of Hays, WaKeeney, and Russell—longtime major supporters of the Discovery Room—are sponsoring two overnight events this August, aimed at early elementary students and their parents. McDonald’s is providing support for the events so that all registration fees will go directly to the Sternberg Museum’s Discovery Room.

The first overnight stay-over starts Friday, August 13, at 7:30 PM and concludes at 9:00 AM on Saturday, August 14. Boys entering kindergarten through grade three may participate, and must be accompanied by an adult male.

The stay-over for girls entering kindergarten through grade three will begin at 7:30 PM on Friday, August 20, and end at 9:00 AM of Saturday, August 21.

Both stay-overs include a nighttime snack and breakfast courtesy of McDonald’s of Hays, WaKeeney and Russell. Each stay-over will be limited to 200 children and adults total.

See the insert on summer programs for details about how to register for the stay-overs or to provide additional support for the Discovery Room!



Museum Events

Continuing

Owls of South Africa: Scientific Illustrations by Claude Gibney Finch-Davies, through Aug. 15

The Burgess Shale: Evolution’s Big Bang, through Oct. 3

Journey to South Africa: An Exhibit Experience, closing date to be announced

Museum Memories: A Centennial Exhibition, closing date to be announced

June

Summer Classes – see insert

8 Workshop: Using Rocks and Fossils to Reconstruct the Past; *Science Educators of grades 5-8*; 9:30 AM–3:30 PM, museum classroom; \$10 registration required, contact Cami Liggett, Educator 785-628-5502

9-10 Workshop: Spider Science; *Science Educators of all levels*; 6:30 PM Wed. – noon Thurs., museum classroom & FHSU prairie; Grant-funded, registration required, contact Cami Liggett, Educator 785-628-5502

11 Workshop: Using Rocks and Fossils to Reconstruct the Past; *Science Educators of grades K-4*; 9:30 AM – 3:30 PM, museum classroom; \$10 registration required, contact Cami Liggett, Educator 785-628-5502

20 Sternberg Volunteers field trip to Castle Rock; *Sternberg Volunteers ONLY*; depart museum 2:00 PM and

return 6:00 PM; additional information to be announced to volunteers

July

Summer Classes – see insert

10 Volunteers Meeting; *Sternberg Volunteers ONLY*; 10:00 AM to 11:30 AM, museum classroom

13-17 Kids’ Corral Booth at Ellis County Fair; *General Public*; open evenings in the Gold Building



August

Summer Classes – see insert

13-14 Camp-In (boys only); *Dads & Sons entering Kindergarten – grade 3*; 7:30 PM Fri. – 9:00 AM Sat.; further information, see story this page

14 Volunteers Meeting; *Sternberg Volunteers ONLY*; 10:00 AM to 11:30 AM, museum classroom

20-21 Camp-In (girls only); *Moms & Daughters entering Kindergarten – grade 3*; 7:30 PM Fri. – 9:00 AM Sat.; further information, see story this page

24 AugustFest; *free admission for FHSU students, faculty, and staff with ID* from 5:00 – 7:00 PM

27 “Prairie Purples” Exhibition Opens; *General Public (Hays Arts Council Fall Gallery Walk)*; 6:00 PM – 7:00 PM; continues through Nov. 14

Sternberg Museum's mammal collections:

The following story is by Don and Glennis Kaufman, both Adjunct Curators of Mammalogy at the Sternberg Museum. Don Kaufman is Professor of Biology at Kansas State University (KSU), and Glennis Kaufman is Research Assistant Professor of Biology at KSU.

Having grown up on a farm near Lucas in northeastern Russell County, Don majored in biology when he transferred to Fort Hays State University as a sophomore. His scientific interest in mammals and especially small mammals began when Don, as a senior, took mammalogy from Dr. Eugene D. Fleharty in the fall of 1964.

With Gene Fleharty as his mentor, Don stayed at Fort Hays to work on an ecological study of mammals, the habitat selection by small mammals in north-central Kansas, as the focus of his MS thesis.

Don was often accompanied by Glennis (Schroeder), also from Lucas, in setting and checking small mammal traps.

Following completion of Don's MS degree in 1967, we married and headed to Athens, Georgia, where Don pursued a PhD degree at the University of Georgia (UGA).

Because of our long-time interests in ecology of small mammals and personal experience in native grassland ecosystems in north-central Kansas, we always had hoped to return to Kansas or the central Great Plains to pursue ecological field studies. However, given the limited number of faculty positions available in the region, we never really expected that



Abundance of the deer mouse, *Peromyscus maniculatus*, increases following prairie fire.



Smoke billows as a prairie fire (seen as a bright outline to the hill's silhouette) moves across the ground at the Konza Prairie Biological Station. Prairie fire affects the abundance of small mammals, and can be an effective tool in wildlife management and conservation.

we would be able to return to the area permanently.

Following research and faculty positions at a number of universities, Don was offered a faculty position at Kansas State University in 1980, which included the expectation of developing a research program focused on mammals in tallgrass prairie and also of participating in the development of the research potential of the Konza Prairie Biological Station.

Our association with Kansas State also gave Glennis the opportunity to finish both her BS and PhD degrees.

Our primary research effort at Kansas State has been a long-term study of small mammals in tallgrass prairie habitats, which we initiated at the Konza Prairie Biological Station in autumn 1981. This ongoing project, for which we just finished the 23rd year of sampling, has yielded unique insights into the effects of weather, prairie fires, bison grazing, and topographic variation on small mammals. More recently, we have added a long-term study designed to assess

how fire might affect small mammals.

Results from our long-term study have shown significant effects of spring prairie fires on small mammals in ungrazed prairie. In the case of deer mice, the effect is a positive one in which abundance of deer mice increases following the fire; this effect

Distributional data were gathered from museum specimens.

lasts into the second growing season. This effect is quite strong, and it is consistent with observations that show deer mice to be common in grazed pastures and in crop fields in much of the state of Kansas.

In contrast to the deer mouse's response, western harvest mice, prairie voles, southern bog lemmings, and Elliot's short-tailed shrews are reduced to zero or near-zero levels shortly after the fire, most of which seems to be in response to post-burning habitat conditions and not due to mortality caused by the fire. Recovery occurs by the end of the second growing

helping understand Kansas' biodiversity

season, but differences in time to recovery do occur among species.

Our results not only provide insight into the effects of fire and grazers on small mammals before settlement, but also suggest that fire and grazers can be used to achieve goals of wildlife management and conservation. However, these results also demonstrate that a prairie fire, or its absence, do not have the same impact on all species of wildlife.

Our analyses of year-to-year changes in abundance over the first 20 years of study also suggests that changes in weather patterns likely will cause changes in the small mammal community in native tallgrass prairie, as well as other prairie types in Kansas. For example, we found autumn abundance of short-tailed shrews to be lower in dry than in wet years, autumn abundance of prairie voles to be

Research collections are necessary to test computer models of species ranges.

low in years with low plant productivity as compared to that in years with high plant productivity, and autumn abundance of cotton rats to be lower following cold winters than it is following warm winters. We also found that white-footed mice, which are associated strongly with woodlands, increase at the expense of grassland rodents with the invasion of trees into native prairie.

Taken together, these results raise concerns about the effect on native mammals and other animals of future changes in environmental conditions in Kansas and elsewhere in the central Great Plains. This is especially true when one considers changes in vegetation expected from shifts in weather conditions associated with an expected global warming and from changes brought about by changes in agriculture and other land uses.

Given changes in land use and native vegetation associated with human activities, we know that distributional patterns of individual species of mammals

have changed since settlement. Because distributional ranges and land use patterns have changed and continue to do so in the central Great Plains, we are interested in understanding past distributional patterns and subsequently to use this information, in concert with land use changes, to predict future shifts in the distribution and abundance of mammals.

To initiate research efforts, we have worked collaboratively with J. R. Choate at the Sternberg Museum and N. A. Slade and R. M. Timm at Museum of Natural History, University of Kansas, to create a database of distributional records. Because this database was to be developed primarily from museum records, we felt that service as adjunct curators of mammals at the Sternberg Museum would benefit us as well as the Museum.

For the Kansas GAP Project, Glennis — as the state coordinator — utilized distributional data and patterns of habitat association to create computer models from which to estimate distribution patterns of native mammals. Distributional data were gathered from museum specimens, including those in the Sternberg Museum, published studies, and observations recorded by professional biologists. Information also was gathered from unpublished information on observational records archived in the Sternberg Museum.

Subsequently, we have used distributional information to initiate development of an electronic atlas for Kansas mammals in collaboration with Choate, Slade, and Timm. Our goal was to develop an atlas based on museum records and other available information that could

be readily updated using new museum records and information gathered from visual surveys by professional biologists. Use of an electronic atlas also would enable users to assess distributional shifts up to the present.

Computer models are essential in preserving and managing biodiversity.

The present patterns of distribution for individual species, coupled with data on habitat associations and predicted vegetation changes, will allow estimation of future changes in mammalian distributional ranges. Distributional ranges



The grazing of bison, *Bison bison*, is among the parameters that affect the abundance of small mammals.

for many mammals are known to have changed, some considerably, over the last 100 years.

However, ongoing surveys with data archived in museum collections are necessary to test predictions of future changes. For the future, we need to maintain up-to-date research collections such as those in the Sternberg Museum to support ongoing surveys of mammals and to test computer models in order for us to conserve the natural biodiversity of Kansas.

Museum reorganizes

Newsletter Publisher Dr. Jerry R. Choate, Director of the Sternberg Museum, addresses historical and current issues regarding the museum.

The purpose of this article is to reassure you that all is well at the Sternberg Museum. You undoubtedly heard about the recent administrative reorganization of the museum, and some of you may be concerned about what it means with respect to the museum's future. Let me explain.

When the Sternberg Museum reopened in its new facility in 1999, I prepared a business plan for the museum based on two assumptions: 1) that the museum would receive most of its funding in the form of admissions revenue rather than rely almost exclusively on allocations received from Fort Hays State University, and 2) that the museum would be visited by "X" number of persons per year. To get an estimate of "X," I checked with other museums that are similar to the Sternberg. The most similar museum I could find was the Museum of the Rockies in Bozeman, Montana. The director of that museum informed me that

Celebrating our newest Museum enthusiast



Office Manager Amy Klein and her baby daughter Abbey Danae Klein share a lighthearted moment with volunteer Rose Storm. Abbey Danae Klein was born on Wednesday, March 31 at 9:15 PM to Amy and Dusty Klein.

its annual visitation was about 100,000 persons (I later learned that the figure he gave was the best year ever for that museum).

An annual visitation of 100,000 seemed within reach during the first few months after the Sternberg Museum reopened in its new facility, when persons from all over Kansas visited Hays to see what the new Sternberg Museum was all about. However, we did not achieve this goal during our first full year of operations. We attracted nearly 150,000 visitors the next year, when we hosted the blockbuster exhibition "A T. rex Named Sue," but the number of visitors declined the following year and the museum lost money on another dinosaur exhibition, "Jurassic Park." Then came 9-11 and the recession, which brought about a worldwide decline in tourism and dropped the number of visitors to the Sternberg to about half of what I had budgeted for.

It was apparent in December of 2003 that the museum was in financial trouble and that immediate action was needed. I visited with FHSU President Hammond and reluctantly presented a proposal for reduction in staff. He reviewed my reorganization proposal and made numerous helpful suggestions. I subsequently prepared a new business plan to see us through the tough times.

The reorganization unfortunately necessitated the laying off of three exceptional members of the museum staff. I personally hired those persons, and I watched them develop into valued members of the Sternberg Museum family. It was painful, to say the least, to let them go and to spread their varied responsibilities among the remaining staff. I particularly regretted losing Greg Liggett, a uniquely talented museum professional who had worked tirelessly as my assistant director of



Assistant Director Greg Liggett

Encourage your friends and neighbors to visit the Sternberg Museum this summer and see the outstanding exhibits that currently are on display.

the museum for the past several years. I have more to say about Greg (pictured above) in my "Choate's Notes" column.

With these changes in staffing, the museum will survive. And, when citizens begin to feel the effects of the end of the recession, the museum will thrive. In the meantime, please encourage your friends and neighbors to visit the Sternberg Museum this summer and see the outstanding exhibits that currently are on display.

One volunteer's African experience

Sharon Richards, a long-time volunteer, is playing an active role in the on-going production of the exhibition Journey to South Africa: An Exhibit Experience. She has taken on a variety of tasks as part of the exhibits team.

A few months before museum director Jerry Choate and his merry band of adventurers trekked to South Africa on the museum's 2003 Eco-Tour, the exhibits department began to plan and build an exhibit about their experiences. During the building phase, I assisted Scott Moses, our Exhibits Technician, as he set up walls and laid out the base for a diorama.

Since we were going to construct a model of part of an African thatched hut in a corner of the exhibit, I was asked to use my math skills to figure a radius of curvature. We eventually had to use trial-and-error to get the correct fit because of problems even math couldn't solve.

When group members brought their digital photo disks back from the trip, I reviewed nearly a thousand pictures. Then Exhibits Director Greg Walters and I used my notes to choose the pictures to be printed and displayed on the colorful travelogue panels he designed.

Next, I reviewed and made notes on a five-hour video taken on the tour. Many of the scenes were delightful — I laughed at the giraffe walking down the highway with

cars zooming past, and giggled at the antics of a baby giraffe being harassed by oopecker birds.

Greg and I developed a detailed editing chart which was used by staff and students in FHSU's Communications Studies Department to produce the half-hour video that is now in the exhibit.

Another fun task has been building and embellishing the Land Rover panel. Mitch Sommers, museum volunteer, painted marauding baboons ransacking the luggage, and Scott did the detailing and

body work on the vehicle. I applied pieces of tee shirts, jeans, and socks to give the appearance of clothing falling out of suitcases. Kids love putting their faces in the cut-outs in the Land Rover's windows to have their pictures taken.

The South Africa exhibit is an ongoing project, and more details will be added. Every day brings new challenges and experiences. I am excited and privileged to be a volunteer at the Sternberg Museum, and to work on such interesting projects with so many talented people.



Sharon Richards (far right) takes a break from exhibit set-up to talk about the process with a group of visitors in front of the Hansen Gallery.

Sternberg Museum Associates



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*— Charles H. Sternberg
The Life of a Fossil Hunter*

How often in imagination I have
rolled back the years and pictured
central Kansas, now raised two
thousand feet above sea level, as
a group of islands scattered about
in a semi-tropical sea!

