National Fossil Day Open House

Traditionally, National Fossil Day is the Wednesday of Earth Science week, which would have been October 14. We decided to celebrate it on Saturday, October 10 and had a great turn out! Families with kids of all ages got to pan for minerals, take a tour of Lee Rex’s new digs, have their faces painted, and excavate their very own mini dinosaur skull. Other activities included making a fossil postcard, prep lab tours and, of course, having rocks and fossils identified at our Fossil Road Show.

I would like to thank the following volunteers, staff and sponsors who helped to make this event possible. Steve Pfaff, Dwaine Wagoner, Liane Herring, Don Stagg, Lynne Swank, Rosa Goolsby, Bob Maxwell, Anne Carlsen, Jeanneta Baugh, Becky Rothenberg, Mary Anne Budenski, Kim Holloway, Dominique Maestas, Arnold Woods, Deanna Schaff, JP Cavigelli, Russell Hawley, the Casper College Geology Club, Sinclair Oil, and Wharf Resources. THANK YOU!!

By Patti Wood Finkle, Director of Museums
HOLIDAY OPEN HOUSE:
Join us on Saturday, Dec. 12, 2015 from 10 a.m. to 2 p.m. for our annual Holiday Open House! Come hunt for your very own shark teeth, bring in your rocks and fossils for identification, have your face painted, make a cool dinosaur ornament, and have a sweet treat. All jewelry in the store will be 10 percent off, (that’s 20 percent for members!), and the Casper College Geology Club will host a bake sale to raise funds for their activities. Best of all, you can meet Santasaurus and have your picture taken with the jolliest dinosaur of them all!

CONGRATULATIONS!
The Tate Geological Museum staff would like to offer a hearty “thank you” to Steve Pfaff and Dwaine Wagoner for their 10 plus years of dedicated work in the museum’s prep lab. Projects like Dee the Mammoth, Lee Rex, and hundreds of other smaller prep jobs would still be “in the works” if not for the dedication of volunteers like these. Congratulations guys!

GIFT SHOP NEWS:
There have been quite a few changes in the gift shop recently. As some of you may know, Dominique was offered (and accepted) a full-time job. She still volunteers with us one Saturday a month, so if you see her tell her congratulations on the new position!

We recently hired Vivian Coates to take over as our new gift shop assistant manager. Vivian has had museum gift shop experience before and is using that knowledge to shake things up! Be sure to welcome Vivian next time you stop by and see what a great job she is doing.

TATER TRAVELS:
It has been a busy fall so far at the Tate. Even so, we have found time for professional development. In early October, Russell, India Hayford (from the Werner Wildlife Museum) and I went to the Annual Mountain-Plains Museums Association meeting, in Wichita, Kansas. We met new colleagues, networked, and learned new and interesting things about museums.

JP to SVP (Society of Vertebrate Paleontology) just a few weeks later that was held in Dallas this year. JP learned a lot of “what’s new in paleontology,” and got a good start organizing speakers for the 2016 Tate Conference.

SPRING LECTURE SERIES:
Our theme for the lecture series this spring is “Wyoming’s Dinosaurs.” Watch for the dates TBA.

SCIENTIFIC ILLUSTRATION:
Russell Hawley’s “Scientific Illustration” class was a great opportunity for both experienced artists and novices alike. The class covered the basics of anatomy and how to draw, using the museum’s fossils as both inspiration and models. We hope to offer the class again in the spring, so stay tuned for more details!

BIRTHDAY PARTIES AT THE TATE:
Have your next birthday party at the Tate! We provide the room, tour guide and party monitor; you provide the cake, kids and supplies. There is a $25 deposit required for all parties and reservations need to be made at least two weeks in advance. Room rental fee is $25 per hour with a two hour maximum (the $25 deposit goes toward the overall cost). Tate members will receive 50 percent off of their final total, which is due the day of the party. Also, party gift bags are available at the gift shop for an additional fee, depending on what is included. Call the front desk at 307-268-2447 for more details.
This is your opportunity to visit “Dee” the mammoth at the Tate Geological Museum and get a **free cup** of coffee or tea provided by P Hawk Coffee Roasters. They have developed a special blend “Pleistocene Epoch Coffee - *Mammuthus columbi*” which will be available at this event, as well as special varieties of rooibos tea. Come see them at the Tate, enjoy a hot drink, and start your day off with a relaxed social gathering!

**Wednesday, Nov. 18  |  Wednesday, Dec. 9**
**7:30-11:30 a.m.**

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**Coffee**

**Tea, and Dee** at the Tate Geological Museum

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Complete your holiday gift list at the Tate! The gift shop has a sleigh-load of toys, games, books, realistic models, cute stuffed dinosaurs, jewelry, and more sure to be enjoyed by anyone on your list.

Stop by the Tate Gift Shop for some hassle-free holiday shopping. Take advantage of this holiday sale: Receive a 10 percent discount on all long-sleeved t-shirts, hoodies, and vests during the month of November.
This month’s featured fossil is an Eocene soft-shelled turtle skeleton that we have called “Ben’s Big Turtle.” Found north of Casper, it is from the Wasatch Formation and is about 50 million years old. Ben’s Big Turtle consists of most of the skeleton, including the skull. Two years ago in this space, I featured a large skull of a similar turtle, from the same place. Ben Shoup discovered these two turtles while doing a survey for an in-situ uranium mine that is being planned in the area. Ben saw the shell of this one (v3539) and the skull of the previous featured fossil (v3537) and thought they might be part of the same animal.

We applied for permits to collect these from the Bureau of Land Management and began excavations in September 2013. One group of Tate volunteers collected the skull of v3537 and saw that it had associated neck bones below it hinting that more of the turtle was still in the sandstone. This led us to assume that this skull belonged to a separate animal. Meanwhile another group of Tate volunteers started working on Ben’s Big Turtle. It was in a gully in a sandstone outcrop. The shell was visible as were hints of several leg bones. It quickly became evident that this was a good portion of a large turtle and we would not be able to collect it all in one visit. Much sandstone would need to be moved. In the end it took us seven days to collect this big turtle. We brought it into the museum last fall almost a year after our first visit to the site. By the time we got it all jacketed, we realized this turtle included some feet and the skull.

Dwaine Wagoner worked on this specimen all of last winter and expertly exposed it while leaving it in the rock. The skeleton is almost complete. It is missing one foot and some of the shell that was exposed in the sandstone gully. It does include all four legs, articulated feet on three of the four legs, complete skull and neck, as well as its tail. And it is big. We have a cast of a large soft-shelled turtle from the Green River Formation (southwest Wyoming) in our atrium. The shell on that one is 30 inches long. Ben’s Big Turtle measures 35 inches long. The University of Wyoming has one that is a bit bigger from a slightly younger rock unit. It is only the shell (carapace and plastron).

This site has a lot of articulated gar pieces, including some skulls. Along with its large size and completeness, this turtle also has what I am calling its last meal of garfish preserved. Seen in the photo to the right top is a pile of gar scales in a darker rock, which is often seen in coprolites. This is either a coprolite or a part of the turtle’s digestive tract that
This month’s DVD review showcases “When Dinosaurs Roamed America,” which aired on the Discovery Channel in 2001. It’s much like the BBC’s famous “Walking With Dinosaurs” series, featuring state of the art computer animation to show what these animals would have looked like in life as they went about their daily business hunting, fighting, feeding, and migrating. But unlike “Walking with Dinosaurs,” “When Dinosaurs Roamed America” focuses solely on the dinosaurs known from fossils found on the North American continent. Since the first really good dinosaur faunas were found in North America, this country’s dinosaurs came to represent the face of the Mesozoic all over the world. Thus we see old standbys like Stegosaurus and Tyrannosaurus showing up in almost all of the dinosaur documentaries, even ones produced overseas.

These popular species do indeed show up in “When Dinosaurs Roamed America,” but we get a look at some of the strange dinosaurs recently discovered by Jim Kirkland in the Moreno Hills Formation of New Mexico, including Nothronychus and Zuniceratops.

“When Dinosaurs Roamed America” is narrated by John Goodman, whose only qualification for this task is the fact that he played Fred in the live-action adaptation of “The Flintstones.” Perhaps this is why he doesn’t always pronounce the names of these animals correctly, referring to Desmatosuchus as ‘de-MAST-o-sook-us’ and Anatotitan as ‘a-nat-TAT-toe-ti-tan.’ But the visual effects are spectacular, and the sequences showing commentary by actual paleontologists are very informative, so Goodman’s mangling of the Latin names is not a showstopper!

This DVD perfectly strikes the balance between entertainment and education – there is lots and lots of footage of computer-animated dinosaurs, enough to keep household dinosaur fans of any age engrossed. There are also several interviews with the paleontologists who are bringing these animals to light, discussing the process of excavating and studying the fossil bones – older students should find these sequences fascinating. “When Dinosaurs Roamed America” is available as part of the “Essential Dinosaur Pack” DVD set sold at the Tate Geological Museum gift shop.

By Russell J. Hawley, Tate Geological Museum Education Specialist

had a gator in it. Ben’s Big Turtle is now on display. Come in and see it.

Ben’s Big Turtle is probably the best-preserved large soft-shelled turtle from our area. We are hoping to have it studied soon and have it appear in a scientific journal. On the previous page is a photo of the skull as seen from the topside and an accompanying photo with key parts labeled.

This past summer we spent some time at the site of v3537, which we are now calling “Ben’s Other Big Turtle.” We were hoping for a nicely splayed out complete shell and skeleton based on the nice skull and neck bones, but so far, we have found a foot and a random selection of shell pieces. We will work more on this specimen next summer.

Thanks to Ben Shoup of Arcadis for bringing this to our attention and to the volunteers who worked on this turtle and the other fossils in this area: Patricia Clark, Helen Hoff, Dwaine Wagoner, Lynne Swank, Al Fraser, Susan Carson, Beth Shively, Liane Herring, Judith Johnston, Savannah Sawyer, Steve Pfaff, Ali Amzal, Ryan O’Donnell, Georgia Knauss, and Sam Fujita. Thanks also to the David B. Jones Foundation for helping us acquire some of the tools we used on this one, and the BLM for providing us with more tools.

These fossils were collected under BLM permit PA13-WY-214. Thanks to BLM staff Brent Breithaupt, Doug Tingwall and Buck Damon for helping arrange the permits.
In October, biologist Mike Badgett joined “That Other Girl” (aka Eileen Lemm) for an Animal House offering that was in keeping with Halloween: “Beasties That Go Bump in the Night: Nocturnal Animals.” The October Raptor Rap program was “The Great Horned Owl: Nocturnal Bird of Prey.” The public’s fascination with owls never ceases to delight me and we will talk about owls as often as we are asked. Programs for November will include “Why Does a Jackalope Have Deer Antlers?” (Animal House) and “Fastest Animal in the Kingdom: Peregrine Falcon” (Raptor Rap). Check the Werner’s Facebook page for other program updates.

We also had a nice turnout for the Werner’s newest public program, an adult wildlife study group that still has no proper name. In keeping with the group’s desire to share wildlife knowledge with the public, a presentation on “Prairie Dog Towns: Community and Ecology” was offered on Oct. 22 at noon and again at 7 p.m. to accommodate those who work during the day. A similar Animal House program oriented toward families had an excellent reception in September. Did you know that prairie dog language has the most documented “words” of any animal language except that of humans? Or that ferrets, rattlesnakes, and buffalo benefit from healthy prairie dog communities?

Speaking of snakes, have you ever wondered what kind of little garden snake is hiding under the rhubarb leaves in your garden as it waits for denning season to arrive? Come check out one of the newest additions to the Werner book collection, “Harmless Snakes of the West” by Brian Hubbs. Natrona County doesn’t have nearly as many varieties of herps as, say, any county in south Texas, but we do have our share! Next time you want to know about our good old bull snakes, walk right up to “That Girl” or “That Other Girl” and say, “So, what can you tell me about *Pituophis catenifer*?” Don’t ask Viola, “The World’s Finest Work Study Student,” though. She’s more likely to pull both feet off the floor and shriek, “Where???”

Those who share Viola’s distaste for slithering creatures are welcome to settle down in one of the comfortable chairs in the Africa/Arctic Room with our new copy of “American Indian Myths and Legends,” selected and edited by Richard Erdoes and Alfonso Ortiz. This is a favorite source of the mythology shared at Animal House and Raptor Rap. In addition to these new books, we have a plentiful selection of other reading materials whose subjects range from backyard songbirds to cougar attacks. We also have a collection of books and DVDs for children and young people.

The Werner Wildlife Museum is open Monday-Friday from 9 a.m.-5 p.m.
Q: You’ve often said that science fiction writers used to assume that there were dinosaurs on Venus. Can you give specific examples?

– Michael Bylsma, Thermopolis, Wyoming

A: Dinosaurs on Venus!

Part Four (continued from the last three issues)

For his 1951 story “Between Planets,” Heinlein needed a race of native Venerians more imposing and more technically sophisticated than his primitive “little people.” So he gave us Venusian dragons!

Heinlein’s dragons are large, omnivorous reptiles with six legs. The legs are solely for locomotion; to manipulate tools the dragon uses a set of tentacles growing from the base of its neck. A baby dragon hatches with a single pair of eyestalks, but every half century or so a new pair of eyes develops from buds on its neck. Thus you can get a rough idea of how old a dragon is just by counting its eyes. A dragon’s nostrils are simple holes in a pair of plate-like scales located amid the baggy folds of skin under its jaw. The armor plates of the dragon’s chest are fused together, preventing it from expanding its ribcage to breathe – presumably it respires by using a hepatic piston system like earthly crocodiles.

The death knell for Venusian dinosaurs sounded in 1975, with the successful landing of the Soviet series of Venera probes. These revealed a baking desert with temperatures of 480° C, bathed in clouds of poisonous sulphuric acid. No swamps, no ferns, and definitely no dinosaurs. It looked like the Venusian dinosaurs of fiction were destined to become as extinct as their real-life earthly counterparts.

But with the ‘Steampunk’ movement of the 1990’s, Dinosaurs on Venus got their second wind. In particular, Frank Chadwick’s “Space: 1889” portrays a Venus that would be familiar to any science fiction fan of the 19th century, complete with ‘brontosaurs,’ ‘carnosaurs,’ and ‘pterodactyls.’ Chadwick’s Venus also has intelligent, tool using reptiles, which the German colonists have named *Eidechsemenschen* because of their lizard-like appearance. *Eidechsemenschen* are amphibious, and can swim quite well using their broad, webbed hind feet and their long tails. On land, they slither through the mud on their bellies like an otter, but to free their hands for use in manipulating tools, they can also stand upright using the tail as a prop. Male *Eidechsemenschen* have a small nasal horn, used in fighting over mates.

Although fascinating in its own right, Venus has proven to be a disappointment for those interested in the question of extraterrestrial life. Nevertheless, science fiction has provided us with a rich legacy of stories set on the imaginary Venus, stories that can still thrill both adventure fans and fossil fanciers alike. And in our imaginations, we can still roam with dinosaurs in a Venus that never was.
Tate Museum Event Calendar

NOVEMBER

7  Saturday Club – Geocaching/GPS
13  Werner Wildlife Museum Art Show – “Wild Country, Wild Art” opening reception, 3-6 p.m.
18  Coffee, Tea & Dee 7:30-11:30 a.m.
26  Tate and Werner museums closed for Thanksgiving

DECEMBER

9  Coffee, Tea & Dee 7:30-11:30 a.m.
12  Annual Holiday Open House 10 a.m.-2 p.m.
24  Tate and Werner museums close at 1 p.m.
25  Tate and Werner museums closed
31  Tate and Werner museums closed

JANUARY 2016

1  Tate and Werner museums closed
20  Coffee, Tea & Dee 7:30-11:30 a.m.
21  Spring Lecture Series, 7 p.m.

FEBRUARY 2016

17  Coffee, Tea & Dee 7:30-11:30 a.m.
25  Tentative Spring Lecture Series, 7 p.m.

REMINDER! TATE HISTORY PROJECT:

Do you have any old (or even not so old) photos of the museum, digs, volunteers, or events? We are digitizing our printed photos and we would love to add yours to the collection. Email us or stop by with your photos and a staff member (or work-study) can scan them. Any and all relevant photos welcome!