

KAS BULLETIN

JAMES TAYLOR.....PRESIDENT
MIKE EVERHART.....PRESIDENT ELECT
PAST PRES.....LARRY SKELTON
TRANSACTIONS ED.S'.....J ABER/ D SAUNDERS
Vol 29 N 1

SECRETARY.....PIETER BERENDSEN
TREASURER.....BRENDA OPPERT
KJAS DIRECTOR.....AMY STRONG
WEB MASTER.....SAM LEUNG
March, 2004

136th ANNUAL MEETING IS JUST AROUND THE CORNER

The Kansas Academy of Science will conduct its 136th annual meeting during a joint meeting with the Missouri Academy of Science on April 16-17, 2004 in Kansas City, Missouri on the campuses of Rockhurst College and the University of Missouri-Kansas City. As has been the custom, the Annual KAS Paleontology Symposium (5th Annual) will be conducted during the KAS Annual meeting. This promises to be a well-attended meeting. As of February 25, KAS had 42 abstracts submitted and more than 80 persons registered to attend.

On Friday afternoon (the 16th) at 1:30 p.m., a guided tour of the Linda Hall Library of Science, Engineering and Technology will be held for KAS/MAS members. Please contact Mary Haskins at 816-501-4006 as reservations for this tour are required. Deb Burns, Urban Wildlife Biologist with the Missouri Department of Conservation, will speak about bat ecology and echo-location immediately following the tours. Guest lecturer for the Friday night banquet will be John Cody, prominent artist and naturalist from western Kansas. Over thirty of his paintings will be displayed at the Greenlease Gallery, Rockhurst University.

Saturday symposia will include the 5th Annual Paleontology Symposium, GIS Remote Sensing, and a session dedicated to Methods in Science Education. Papers are invited in all three symposium sessions.

Meeting participants are encouraged to visit the website prior to the meeting. See the KAS Website at www.washburn.edu/kas for detailed info, local facilities, map and driving directions.

NOTES FROM THE PRESIDENT-

As your new KAS president I have an embarrassing confession to make. Prior to this past fall, I had never attended a KAS Fall Fieldtrip. They always sounded worthwhile but I never seemed to find the time. Now that I have retired from teaching I took the time. The fieldtrip this past September was to the Z-Bar Ranch and the Tall Grass Prairie Park outside Emporia. Thanks to the organizers, the park rangers allowed us to visit parts of the park that are off-limits to the public. I saw scenery so beautiful that it reminded me of scenes that one would expect to see on a calendar. The trip would have been worth it for the scenery alone but I also learned a lot. Our trip leaders included a

botanist, an ornithologist, geologists, an ethnobiologist and an authority on the impact of bison on the prairie.

This field trip was so impressive that from now on I will make time for them. This year's fall fieldtrip has tentatively been scheduled for September 18 and will be to Cheyenne County.

The number of people who attended this past field trip was disappointing. Some of the reason for this was that the Academy was not as prompt as we could have been at getting information out to everyone. As president, I will do my best to get the details of the trip out early enough so each of you can have a chance at having the kind of wonderful experience that I had.

I hope to meet as many of you as possible at the annual meeting April 16-17 in Kansas City. James Taylor, President

AND FROM THE SECRETARY—

I would like to take this opportunity to share some information about Kansas Academy of Science (KAS) membership. I want to thank everyone for their cooperation and understanding. I know that now and then questions arise about dues and membership status, but they generally are always resolved by contacting me.

It has been my policy to keep sending the Transactions for a year to long standing members who may have overlooked paying their dues. We bill them the next year and include the previous year, and it is easy to see that at times questions about membership status arise. Last year we send out dues notices in late November and as of January 30, 2004 we have a total paid-up membership of 192 out of 257 members. Last year at about the same time we had 146 paid-up members, but we also did send dues notices out later last year.

I certainly appreciate the prompt paying of the dues, because it not only saves time for me, but it also saves money for the KAS by not having to spend postage.

The membership breakdown in the various categories is as follows: Regular-148, Sustaining-25, Family-13, Student-17, Life-15, Emeritus (non-paying)-27, Emeritus (paying maintenance dues)-12. The KAS Council members do have serious concerns about the number of members. Over the last years we slowly lost some members. This is despite efforts to increase our membership, especially by trying to enhance our visibility across the state. In this

regard, I would like to solicit the help of the membership in identifying and enlisting new members. In a related note the KAS is continually looking for members who are willing to participate in the affairs of the KAS. Most tasks do not take a lot of time, and help to spread the load.

I have one more item of interest to report on and that is regarding the question on the dues forms whether you would like to be on the Listserve. Of the 257 members in the database, I have 88 responses to that question during the last two years. Of these 37 members do not want to be on the Listserve, and 51 do want to be on it. Regardless of whether you want to be on it or not, it would be nice to have a larger number of members express their preference. It does help the council plan for the future. Any members wanting to express their preference who have not done so in the past can always e-mail me or let me know when dues notices are sent out. My e-mail address is: pieterb@kgs.ku.edu

As you know our annual meeting will be in Kansas City and be a joint meeting with the Missouri Academy of Science. The Academy encourages students to present papers at this meeting. The meeting is an excellent forum for students to learn to organize their thoughts and present papers on research they are or have been working on. To encourage this activity the KAS offers cash rewards for the best oral and poster presentations. Originally, a substantial part of the money for these awards was obtained by Father Dehner from Benedictine College in Atchison, through a generous annual gift by a local industry in that city. The awards are still named after Father Eugene Dehner, even though the source of the money for these awards has since vanished. On the annual dues forms we solicit money for the Dehner Fund as well as for the Endowment Fund. Your contributions, no matter how small, are very important to keep this function going and the Council is very appreciative of your help. If anyone in the organization has any thoughts or ideas how to get a major donor to help support this activity, we surely would like to hear from you. The total amount of money awarded to students at the annual meeting is generally on the order of \$750 to \$1200. This year we have received \$310 in contributions and a thank you to those who contributed is in order. The Endowment Fund received \$215 in contributions. It is our hope to be able to build the Endowment Fund up to such a level as to be able to finance student awards from this source.

I know I have been a little long-winded, but I thought some of these things would be of interest to the membership. Thank you again for your support.
Pieter Berendsen, secretary

Science Is Everywhere

By: Amy Strong, KJAS Coordinator

It is no secret to a science educator why science is important and that we are involved with science literally every second of our lives. However, this is not true for a large percentage of people. In fact, it always surprises me when teaching a university level biology class that most people don't even see themselves as a living part of science. I recently was introduced to a fascinating program that is available over the web (www.tryscience.org) that can help to change these perceptions starting at an early age. The *Science is Everywhere* program site (which is very user friendly) is made possible by the American Association for the Advancement of Science (AAAS), the National Science Foundation and the Partnership for Science Literacy. This site focuses on getting kids started with inquiry science as soon as they can read and move the mouse.

The main focus of the site is to introduce young children to science; however, adults will definitely want to share. There are four main science areas to explore. The "Curious" section introduces users to current science topics in the news then asks them questions about what they have read. In addition, they are prompted to investigate further with links to various science centers' web pages. The "Experiment" section has a featured experiment and a large selection of other experiments relating to all areas of science, including social science and medicine and health science. The "Adventure" section allows users to do just that; go on an adventure. Kids can explore engineering while becoming a Star Trek character or check out some biology while competing in the Ultimate Extreme Challenge race. Finally, the "Field Trip" section enables a search of science centers around the world and a view of live Web Cams from places such as the Static Generator at Discovery World and the Dino Dig at the Fort Worth Museum of Science and History. (Users will need some downloads like macromedia, which is free, to view some sites.)

In addition to the great activity pages, there are pages for parents and teachers. The "Parents" page shares with parents, grandparents and young people why science is important and how children will be more successful, contributing members of our society if they have a good science education. The site does a great job of describing to parents how they can begin to play an active part in their child's science education. One of the ways it accomplishes this is to give tips on what a good school science program looks like and by providing ten questions to ask their local school administration about the science program at their school. The "Teacher" page gives tips to any adult mentor who is using the site with a child.

Users of all ages will find this site fun to explore. Those of you with young children can play an active role in introducing them to science at an earlier age by using www.tryscience.org.

Hunting sharks teeth in Kansas

– A note on new faunas

Mike Everhart - Adjunct Curator of Paleontology
Sternberg Museum of Natural History, Fort Hays State
University, Hays, KS

The Smoky Hill Chalk Member of the Niobrara Chalk in western Kansas is well known for its abundance of marine fossils from the Late Cretaceous. Many collectors and local residents also know that it is a great place to hunt sharks teeth, especially those of the Ginsu shark, *Cretoxyrhina mantelli*, the Crow shark, *Squalicorax falcatus*, and the shell crushing sharks, *Ptychodus* sp. Recently, however, a number of new sites in central Kansas, from the Lower Permian through the early part of the Late Cretaceous, have produced large numbers of sharks teeth and the remains of other marine creatures.

In May, 2002, I discovered what must be one of the largest known examples of *Cretoxyrhina mantelli* in the chalk of southwestern Gove County. The shark had probably been nearly complete when it died and sank to the bottom 85 million years ago. Unfortunately, the tail had eroded out and been destroyed years ago. As it was, we recovered the skull and 14 feet of vertebrae. I believe that it must have been about 20-22 feet long when alive, much the same size as the giant Great White shark depicted in the movie, "Jaws."

While on the way home from a meeting in Manhattan in August, 2002, my wife and I stopped at a road cut north of Herington on US 77 to collect some shells from the Permian Chase Group. Not more than a minute or so after stepping out of the car, I found pieces of two large paleo-shark dorsal fin spines that were lying on the surface. We revisited the site the next day and recovered the rest of the pieces and some calcified cartilage from what we believe is the first specimen of *Ctenacanthus amblyxiphias* Cope collected in Kansas.

In October, 2002, we began working with a "fish tooth conglomerate" from the Blue Hill Member (Middle Turonian) of the Carlile Shale in Jewell County, Kansas. While the matrix was composed mostly of thousands of tiny teleost teeth (mostly *Enchodus*), over a period of several months it also produced a number of shark species that had never been reported from Kansas (among them, *Lonchidion* sp., *Chiloscyllium greeni*, *Ischyryhiza mira* and *Rhinobatos incertus*). Many of the shark teeth were so small (1 mm or less) that they had to be picked and sorted using a microscope. Imagine 500 plus *Rhinobatos* teeth (a guitarfish) in a volume about the size of an aspirin! After *Rhinobatos*, the teeth of *Scapanorhynchus raphiodon* and *Squalicorax falcatus* were the most common shark teeth collected. The study generated an abstract/poster for the 2003 SVP meeting (Everhart, Everhart, Manning and Hattin, 2003) and will result in a paper for publication.

After working on several *Ptychodus* (Smoky Hill Chalk) papers for the 2003 meeting of the Kansas Academy of Science, we started looking at the Kiowa Shale in McPherson County in June. Other than the Cheyenne Sandstone, the Kiowa is the oldest Cretaceous formation (Albian) in Kansas. It was deposited at a time when the Western Interior Sea was advancing from the south and

had not yet covered the entire state. Unlike the deeper, blue water ocean in which the Smoky Hill Chalk was deposited, the Kiowa was laid down as a mixture of near shore mud and sand in a higher energy environment. Working in an active shale quarry, we were able to collect a much older shark fauna along with the scattered remains of fish, turtles, crocodiles, and plesiosaurs. Again, many of the teeth were quite small, though not as small as those from the Lovewell fauna. Most of the teeth and other remains were literally picked up from the rapidly weathering surface of pyritized sandstone. Again, several "new to Kansas" species were discovered, including the hybodont *Polyacrodus* sp., a primitive sawfish, *Onchopristis dunklei*, and the eagle ray, *Pseudohypolophus mcnultyi*, with *Leptostyrax* and *Carcharias* being the most common lamniform sharks.

In August, a visitor (Keith Ewell) to the Sternberg Museum asked for assistance in identifying Permian age shark teeth that he had collected near Manhattan, Kansas. After I made contact with Keith, a visit was arranged to evaluate the site and the specimens. We then assisted him in collections made at three sites in Geary County that produced more than two hundred teeth of *Cladodus* sp., *Petalodus* sp., *Acrodus* sp., and *Chomodus* sp., dorsal spines of *Ctenacanthus*, *Physonemus* and *Hybodus*, and calcified cartilage. The most productive site was in the Neva Limestone (Council Grove Group, Lower Permian). While the species of sharks identified were not necessarily new to Kansas, the number of teeth, their large size and excellent condition was certainly unexpected. The teeth of *Cladodus* sp. teeth are the most common and, in size, rival the largest of the *Cretoxyrhina* teeth we have collected from the Smoky Hill Chalk.

Then in November, Keith discovered a rich accumulation of sharks teeth, fish remains and reptile bones (coniasaur) in the basal Lincoln Limestone Member (Upper Cenomanian) of the Greenhorn Limestone in Russell County. Again, the teeth were small (more picking with a microscope) but the numbers were large, with *Carcharias amonensis* and *Squalicorax falcatus* being the most common species found, along with several species of *Ptychodus*. One of the rarest finds found so far is a single tooth of the sawfish, *Onchopristis dunklei*.

About 8 miles away, a layer of poorly cemented sand in the Upper Dakota Sandstone (Middle Cenomanian) produced numerous *Carcharias* teeth, along with a large *Cretodus semiplicatus* tooth, several *Squalicorax* sp. teeth, rostral denticles of *Onchopristis*, and two teeth of a pycnodont (cf. *Coelodus* sp.) Very few vertebrate remains (outside of the crocodile, *Dakotasuchus*) have ever been reported from the Dakota Sandstone in Kansas.

The discovery of these very productive localities indicates that the Mesozoic (and Permian) shark faunas of Kansas appear to be quite similar to those described from Texas, New Mexico, Nebraska, South Dakota, and elsewhere in the Midwest.

Elections – The Academy has three openings for office: vice-president and two council members. The vice-president is expected to move into the position of president-elect; then president in subsequent years. Council members serve three year which are staggered so that there is continuity within the Council. The Council and the officers provide administration and leadership for the Academy. If you are interested running for an office or in serving on the council in 2005, please contact past-president Larry Skelton at lskelton@kgs.ku.edu or phone (316) 943-2343.

The 2004 election will be held at the annual meeting. Additional nominations will be accepted from the floor. The present candidates are:

For Vice-President:

Greg Liggett. Greg has served the past eleven years as a member of the administration of the Fort Hays State University Sternberg Museum of Natural History. During that time, he helped oversee the planning, construction, grand opening and daily operation of the Sternberg in its new facility. That position has provided him with extensive experience in management of complex organizations and projects as well as insights into marketing and promotion. He holds degrees in civil engineering from Cincinnati State Technical College and in geology from Fort Hays State University and is currently a licensed professional geologist in Kansas. Greg has authored reports, journal papers, one book and other works, mostly concerning the paleontology of Kansas, for both professional and lay audiences. He currently is pursuing several research projects in paleontology.

For Council membership:

Steve Palubicki. Steve is a Professor at Newman University in Wichita where he has taught in the areas of physiology, nutrition and pathophysiology for 29 years. A Minnesota native, he earned a B.S. in biology at St. Mary's College in Winona, Minnesota, the M.S. (animal science) and Ph.D. (animal physiology) at the University of Minnesota. Steve's areas of interest are aging, diabetes, Alzheimer's, risk assessment, science literacy and genealogy. He has been married for 35 years and is a recent grandfather.

Surendra Singh: Surendra is Professor of Biology at Newman University in Wichita. He earned the Ph.D. degree in biology from the University of New Mexico and his research interests include: science teaching strategies, college/industry alliances improving science education, breeding of endangered species in captivity, morphological adaptations in plants inhabiting sand dunes and deforestation in the Himalaya Mountain Ranges in Nepal. He has worked extensively in developing and implementing several allied health programs at Newman University. Surendra has been a KAS member for almost 34 years.