The BACKBENDER'S GAZETTE

The Newsletter of the Houston Gem & Mineral Society Houston, TX

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President's Message

for August, 2008
by Terrell William "Terry" Proctor
2008 HGMS President

This city has such wonderful weather year round, but it is now that time of year where we come close to having to say that with tongue in cheek. Actually yesterday, Saturday July 11, three folks from the Proctor Museum of Natural Science and I took a day trip to McFadden Beach to see what fossils, shells, and other things we could find of interest. The temperature hit 97 or 98 degrees, and we hear about the humidity in our part of Texas. It was a pleasant day, there was a light breeze blowing, and yes it was warm, but not that unpleasant. Former Sen. Graham said we are a nation of whiners, and you know, in many ways he is right.

You and I have the right to just take off and go look for minerals, fossils, shells, artifacts, or just go shoot photos almost any time we want. Yes, gasoline is high here, but some years back a client from England told me that when he returned there for a visit, gasoline cost $10.00 a gallon. Yes we have unsolved murders and crime that seems to run rampant, but our streets teem with police, and we don't have to fear turning in perpetrators—or the police. We don't have to worry that someone will appear at our

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Great Schedule of Upcoming General Membership Programs

by Terry Proctor

July 22, 2008: Since our speaker for this month cannot be present due to health reasons, 2008 HGMS President Terry Proctor will present the program: "'The Bone Wars' and Great Paleontologists past and present."

August 26, 2008: **Patrick J. Lewis, PhD** of Sam Houston State University, will speak on his dig in South Africa. He has just returned from his explorations and promises to give an exciting program on the cave in which he dug and the prehistoric finds he made there.

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Purpose of HGMS

The objectives of this Society are to promote the advancement of the knowledge and practice of the arts and sciences associated with the collecting of rocks, minerals, fossils, artifacts, and their identification and classification; the general lapidary art; the collecting and identification of gemstones; the designing and execution of jewelry or metalcraft; and to provide the opportunity to obtain, exchange, and exhibit specimens and rough or finished materials.

Membership dues are $30 for an adult membership, $40 for a couple, $50 for a family (including all children aged 5-18), and $8 for a youth membership (ages 5-18). Advertising rates: $70 for 2 months, ¼ page; $150 for 6 months, ¼ page.

MEMBER: American Federation of Mineralogical Societies & South Central Federation of Mineral Societies.

All meetings are held at the Clubhouse located at 10805 Brooklet near the intersection of Highway 59 (Southwest Freeway) and Sam Houston Parkway (Beltway 8). See the calendar inside the back page for when the different Sections meet. The General Meeting is the fourth Tuesday of each month at 7:30. The HGMS Web site address is **http://www.hgms.org**.

President's Message *continued from page 1*

home and hack our family to death as were millions of folks in Darfur, Sudan, because we are in the wrong ethnic group or we are active politically, nor are we herded into refugee camps as those unfortunate people have experienced in the past few years.

Yes, some of our homes have lost value, but as Sam Walton, who lost millions on his Wal-mart stock several years back during a market downturn said, "It's just on paper." Unless you were one of those people who financed a home in the past few years and claimed to be making an income that you really weren't, and you took out an unrealistically low-interest rate loan—one with an interest rate that could increase later and now has increased dramatically—then you are still making the same loan payment each month as before. And as long as you don't try to sell your home right now, what does it matter, except you may pay less taxes. In short, are we looking at a glass that is half empty, when in fact our glass is way more than half full?

Folks, we need to consider how fortunate we are to live in a country where we can freely belong to a group like Houston Gem & Mineral Society and decide for ourselves whether we want to participate in a given trip or spend a day in the Club shop. We can decide whether we want to spend time putting together educational kits for schools with annual help from a Conoco grant that purchases the specimens, and we can decide whether to donate our manpower and womanpower to put them together and get them out to the schools. We can meet freely at any of our numerous Section meetings and at the General Membership meeting to learn, have fun, welcome new members, and to help neophytes learn about Earth Science the same way many of us did with HGMS members giving us their assistance. Yes, you are welcome to gripe about our organization when there is a genuine issue that the Board of Directors needs to address. **(Don't bother to thank or praise the many, many folks who donate their time to make your club strong. They aren't doing it for praise but for the satisfaction of being a good member and helping other folks).**

Something few people in HGMS know is that in addition to the untold time some members put in each year, far and above the call of duty, we have had several members pay out of their pockets hundreds and even thousands of dollars to make improvements to the Clubhouse and other expenses to keep the Club running. I have learned that I should not mention these folks by name because they don't want any acknowledgement. I wish I could because they deserve it, but I will honor their wish to remain anonymous. Just know that when you complain about dues going up a little, even though you know why just from looking at the increase in expenses, there are a number of folks in this Club who have paid dearly to keep HGMS solvent and operating for the benefit of us all. **Thank you, Anonymous Donors, for the time and money you have donated for the benefit of all of us at HGMS.**

The Show Committee and subcommittees are working long and hard to put on the best NATIONAL and REGIONAL SHOW this fall ever. One new thing is that we plan on having an HGMS Mug with our logo on it. We are ordering enough so that whatever is left after the Show can be available to the Club in the future. We hope you

will want to purchase one. The price will be $15.00 or less, tax included.

One thing more. In the June BBG on page 31, there is an article from John Wright, AFMS Conservation & Legislation Chair, regarding the American Land Rights Association and their Web site—http://www.landrights.org. If you wish to have public lands on which you can dig minerals and fossils in the future, I strongly suggest you contact and join this organization, which has the support of the AFMS. We need parks, and we need conservation in this nation, but we do not need legislation that bars every citizen from digging anything on any public land. Legislation is pending that would do just that, and it comes up at almost every session of Congress. Sir Edmund Burke, 1729-1791, is attributed with saying "T**he only thing necessary for evil to triumph is for good men to do nothing**" (and that includes good women).

General Meeting Programs *continued from page 1*

September 23, 2008: **NASA** will present a program on extra-terrestrial material.

October 28, 2008: **open** at present, but a program will be scheduled. The Nominating Committee will present their list of nominees for the 2009 officers, and additional nominations will be accepted from the floor.

November 25. 2008: **open** at present. The Election of 2009 Officers will be held. If there is a contested election, ballots will have been mailed out in advance of the meeting.

December 13, 2008 will be our Christmas/Holiday Season Party at the clubhouse. Meat will be furnished, and HGMS members will bring sides, salads, and desserts.

A Short Essay on Gold

by Art Smith
artsmithite@msn.com
Member of the Houston Gem & Mineral Society

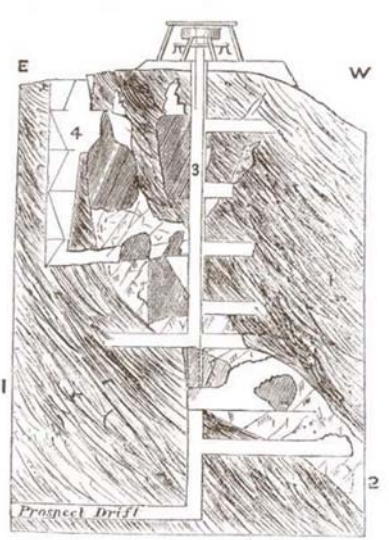
Gold is almost indestructible, and because of its value it has been recycled through the centuries. It is estimated that 85% of all the gold found is still in use. Decorative gold objects found in Bulgaria date back to the Stone Age—about 4000 B.C.—and it is believed to be the first metal worked by prehistoric man.

Gold is extremely malleable and ductile. A one-ounce nugget can be beaten into a translucent sheet five-millionths of an inch thick and stretched out into a five-micrometer thick wire (one-tenth the diameter of a human hair) that is 50 miles long.

In the 7th century B.C., dentists in Italy used gold wire to attach fake teeth, but gold for fillings was not used until the 16th century. The Incan empire had the largest collection of gold every amassed when the Spanish landed in Peru in 1532. The conquista-

dores stole most of it. *Teocuitlatl* is the Aztec word for gold, and it means "excrement of the Gods."

In 1799 the first significant gold was found in the United States. It was a 17-pound lump found by Conrad Reed on the Reed farm in North Carolina. It was used as a doorstop until a jeweler bought it for $3.50. If it were pure gold, it would be worth almost $900,000 today. The first United States gold mine was opened on the Reed Farm. The discovery of gold in North Carolina probably was



—AURIFEROUS GOLD REEF, NEAR BALLARAT, WITH METHOD OF WORKING.
1, Granitic rock. 2, Quartz reef. 3, Shaft. 4, Shallow workings with ladders.

Gold Mine at Ballarat, Australia, 1800s: *A Treastise on Metalliferous Minerals and Mining*, D. C. Davies, 1881. London, Crosby Lockwood and Company

Mining Gold In Brazil in the late 1800s: *L'OR A MINAS GERAES BRESIL*, M. P. Ferrand 1894, Ouro Preto, Imprensa Official do Estado de Minas Geraes.

the main cause of the unfair removal of the Cherokee Indians to Oklahoma.

The California Gold Rush was in 1849, followed shortly by rushes to Australia and British Columbia, Canada. The Colorado Gold Rush was in 1859. Leadville, Colorado boomed in 1879 for silver, but when silver prices fell, significant gold was produced. The Klondike Gold Rush in the Yukon Territory of Canada was in 1899. The last U.S. gold rush was to Goldfield, Nevada in 1910. There were many minor rushes in between. The most recent rush was to the Amazon rainforest in Brazil in the 1990s.

The Homestake mine at Lead in the Black Hills of South Dakota was mined for over a hundred years be-

fore closing in 2001. Gold was mostly mined from PreCambrian metamorphic schists to depths below 8000 feet. The Witwatersrand area near Johannesburg, South Africa is a complex of gold mines that has been the world's largest producer of gold. The gold is mined from what they call "reefs." However these are actually a coarse sedimentary conglomerate that has been metamorphosed, and the gold may have been deposited by ancient rivers. So as you can see, gold can occur in all types of rocks.

Beautiful crystallized gold is still being mined from the quartz veins in California, but it is mined for its specimen value and not its lower bullion value. Rich veins of visible gold are now rare. Specimens showing a lot of visible gold in quartz are called "high grade" or "jewelry rock" by the miners, and they tried to sneak as much of it as possible out of the mine in their pockets, lunch buckets, mouths, hats, and any way possible. Some even had it thrown on the waste dumps to retrieve later. The National Mine in Nevada was famous for high grade stealing by the miners. In a few cases, it is estimated that more gold was stolen than produced by the mine.

Today's gold mining companies are not looking for the small rich quartz veins because generally they are not adaptable to modern mining methods. Instead they are looking for large tonnages of ore with a low but consistent amount of gold that can be worked with equipment that will remove a large tonnage of rock each day. The gold may be completely invisible and occur in micron-size pieces disseminated through the rock. Unless there are rich stringers, high grading is not a problem. The Carlin Trend in Nevada is an area of such deposits that are being mined successfully now.

The United States has the largest gold hoard in the world, but if ornamental gold in the threads of Indian saris was counted, India with 20 percent of the world's decorative gold would have the most.

An estimated 10 billion tons of gold are dissolved in the earth's oceans, but there is no economical way to get it out. However the amount of gold that the Near spacecraft measured in the asteroid Eros in 1999 is more than has ever been mined on earth. We cannot get that gold either.

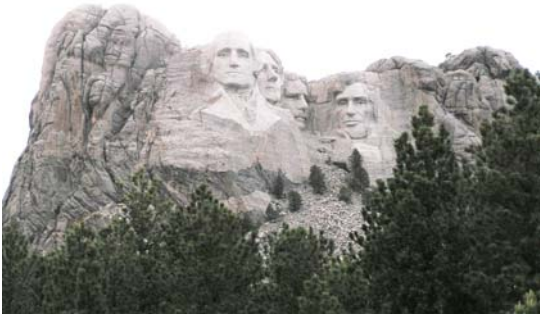
Reference:

Temescu, L.A. 2007. 20 things you didn't know about gold. *Discover* 2007(December):80

Dragon photo from Gold! HMNS Press Kit
Houston Museum of Natural Science
Crystallized gold on matrix

Vist to the Black Hills Institute
Home of Stan and HMNS's Wyrex

by Phyllis George
Member of the Houston Gem & Mineral Society



My daughter Diane and her husband Quinn Giza took me with them on a one-week driving trip from Texas to Mount Rushmore in early June. It was a wonderful trip with fantastic views of the four presidents carved on the face of Mount Rushmore, the magnificent Crazy Horse carving located 17 miles southwest of Mount Rushmore, Custer State Park with its massive boulders, a trip through the desolate, majestic Badlands, and capped off with a night at a casino on an Indian reservation and the best hotel rooms of the trip for $53 a night!

Every day of our trip brought new experiences and wonderful sights. One of our most memorable side trips was our visit to the Black Hills Institute of Geological Research (BHIGR) in Hill City, South Dakota. Many areas in South Dakota are fertile with dinosaur bones and lots of other fossils and rocks guaranteed to quicken the hearts of paleontologists and geologists—and the hearts of just plain rockhounds. BHIGR is internationally known for its collecting, preparing, and mounting of paleontological specimens. Over the years they have perfected techniques to produce scientifically accurate and detailed cast replicas of every fossil part as well as of fully mounted skulls and skeletons. Museums all over the world, including the Smithsonian Institute and the Houston Museum of Natural History (HMNS), display complete dinosaurs and other fossils that BHI staff have excavated, prepared, and mounted—and cast.

Not the least of these is Stan, the Tyrannosaurus rex discovered in 1987 and excavated in 1992. His complete fossil skeleton is currently on display at the BHIGR. (See left) Houston Gem & Mineral Society show-goers are familiar with the large cast of Stan's skull that—due to the courtesy of the HMNS—has graced the entrance of our show in years past.

We arrived in the morning as the Institute was just opening, and I mentioned that I was from The Houston Gem & Mineral Society. That drew a blank. Then I mentioned that a number of our members are docents at the HMNS. They immediately offered to give us a tour of their workrooms where they are preparing a number of dinosaurs and other fossils for the HMNS. Sam Farrar, our tour guide, even told me I could take photos of anything I liked. So I did. I only wish I'd had a recorder along to capture everything he told us.

Sam first led us to the work being done on the complete T-rex they've named Wyrex. It is being prepared for the HMNS who purchased it to display in their new building to be built behind their existing museum. The first thing I saw is the arm (on right). Note the small bone left of the first finger. It's the first third metacarpal that has ever been found with a skeleton.

Much of BHIGR's work currently is focused on preparing the Wyrex. One glassed-in room is filled with boxes of small pieces belonging to the Wyrex skull that will be put together like a jigsaw puzzle. See left.

Shown below is a mounted Gorgosaurus body. Note the badly injured forelegs that have healed. Healed bone frequently is very large, bumpy, and unsightly.

The BBG has printed one or two articles about the just discovered Dracorex Hogwartsia skull described by Robert Bakker. The bumps and horns on its head reminded him of a dragon described in the Harry Potter book series, and that inspired its name. Guess what—it was prepared and mounted at the BHIGR. On the next page is our guide Sam

Farrar holding two cast replicas of it. On the left is the original color of the cast, and the one on the right is painted for display. Sam is standing in the doorway in the photo below.

When a new fossil dinosaur is found, the parts are excavated and then carefully protected in a fiberglass/ plaster coat before transportation to the preparation rooms. Once there, the plaster coating is carefully removed by using an air abrasive tool that blasts a baking soda mixture. (See right--this was being done outdoors.)

The unsheathed fossil is taken to a glassed-in area where the matrix still encasing the fossil is carefully removed (below). Among other things, the tools used include a saw, hammer, chisel, and a brush.

When found, skulls and skeletons frequently have been crushed (see below) by pressure from the many feet of rock and soil that have been pressing down on them for millions of years. Once the fossil is freed from the matrix, the BHIGR staff "inflates" the skull by putting the parts back into their original orientation.

After the fossil is completely cleaned and prepared, a cast is made of it. The casts are then trimmed and painted to

look exactly like the original fossil. Chris Hannah (right) is trimming a cast skull.

On the left is a very unusual item. Its T-rex owner had his tail bitten off at the 20th vertebra. The bone from which it was bitten off healed! The piece consists of two-and-a-quarter vertebrae held in their original in-life orientation by matrix. The Institute plans to keep the fossil just as it is without removing the matrix between the vertebrae.

After our very informative tour, Sam took us back into the museum portion of the buildings. Many impressive displays are there including fossils of various land and marine animals (of course!) and fish, petrified wood, and many minerals. Above left is

Continued on page 12

a display of polished petrified wood cross sections. To its right is a very unique and rare display of a dinosaur egg nest. An opened egg shows the dinosaur fetus inside.

At the bottom of the previous page is another very impressive display, one of fossil fish—the armor-plated (left-to-right) xiphactinus, titanichthys, and dunkleosteus. A number of ammonites are displayed below.

We felt quite honored to receive such special treatment from the BHIGR staff, and I'll be very interested in seeing all the recently commissioned work when it's finished and on display at the Houston Museum of Natural Science.

Resource:

The Black Hills Institute of Geological Research, Inc. Web site: http://www.bhigr.com/

Faceting Section Seminar

by Kathy Konkel

On Sunday, July 13, the Faceting Section held a seminar to teach faceting techniques to beginners and advanced participants. Fourteen HGMS members were actually cutting stones (with four first-timers--shown in photo below), and almost as many non-cutting members also attended.

Demonstrations were held on how to transfer stones from dop to dop using wax, and problem-solving techniques were discussed. A demonstration was given on how to polish the table of a stone mounted in a ring without removing the stone from the setting.

Two stones were finished with a cabbed crown and faceted pavilion. Everyone seemed to have a good time and were anxious to find out when the next seminar will be held.

Shop Hints & Tips

from sources as noted via Gem Cutters News 6/2008

via News & Views 12/1998: Freshen pyrite and marcasite by soaking them overnight in a solution of oxalic acid. Use two ounces of dry acid to a quart of water.

Plain steel blades or blades that have had the diamonds worn off can be used to saw softer materials such as malachite, turquoise, azurite and others.

To remove stain from quartz and agate, try this: dissolve 2 teaspoon potassium permanganate in a pint of water. Strain the mixture through cheesecloth. Let the specimen soak in the solution overnight. The purple color that forms on the specimen will be removed by the cleaning solution.

Fellow HGMS Life Members.

by Terry Proctor

The other day I was thinking about the increase in expenses for everything today and how fortunate that some years back I had paid a one-time fee to become a Life Member of Houston Gem & Mineral Society. Then I reflected upon the fact that I was still receiving the benefits of membership although I no longer had to pay dues. I compared what I had paid with the low annual dues I would have paid if I had not become a Life Member of HGMS.

It dawned on me that maybe, voluntarily, I ought to show my appreciation by sending in some additional payment although I didn't have to do so. So I did. Maybe some of the other Life Members who some years back paid a rather low sum to be "dues free" for the rest of our lives also might consider a voluntary additional payment to HGMS. Membership dues in HGMS have not increased in about eight years, while HGMS expenses certainly have. The cost of our Life Membership fee was also low, and it probably will have to be increased. The BBG costs HGMS about $15.00 per year to print and mail to each of us, even though we Life Members pay nothing further in dues.

So just think about it. No one is going to ask you to pay anything else. Life Members will still get the same benefits whether we pay anything else voluntarily or not. Your Life Membership dues were paid, and that is all you have to pay. However, some of us might think about a voluntary payment just because we belong to a great organization which still has expenses, even though we are not required to pay dues.

SCFMS President's Message

The Prez Sez
by Chuck Shuler
SCFMS President
from SCFMS Newsletter 5-6/2008

It's summertime again, and field trips will become the order of the day. Just a few reminders, always leave your area cleaner than when you started, stay on your side of fence (this is probably the most violated action in rock hounding), and wear all your protective clothing needed at the time of your excursion. This is a true story that happened just weeks ago.

We were at a very productive road cut when one of our party turned over her first rock only to expose two snakes. It was awhile before she turned over any more rocks. Moral—summer season is also snake season, so be very careful when climbing or picking up any fossil or mineral.

From what I am reading from the AFMS, many of the open lands have become inaccessible, so check before you make a long trip for nothing.

September is fast approaching. Be sure you get your reservations in at Houston for the AFMS/SCFMS annual meeting. I am looking forward to seeing all the competition cases. 1 hope we will have a good representation from the SCFMS.

Neogene Sharks Teeth from Along the Texas Gulf Coast

by Albert J. Robb III and George Wolf Sr.
HGMS Paleo Section Members

Introduction

The beaches, sand flats, and tributary stream channels throughout the Texas Gulf Coast are known to produce a variety of Neogene sharks teeth for the dedicated fossil collecting enthusiast. Although not nearly as common as those recovered from the more famous locations along coastal Maryland, the Carolinas, and Florida, similar—and on occasion, equally impressive—Neogene age sharks teeth have been found along the Texas Gulf Coast (Figure 1). This paper briefly describes, illustrates, and discusses the more commonly recognized types of Neogene age sharks teeth from along the Texas Gulf Coast. It is not intended to provide a comprehensive systematic description and discussion of these faunae, nor is it intended to deal with any nomenclatural debates that may be ongoing regarding the taxa discussed.

Figure 1. Neogene sharks teeth from Texas Gulf Coast beaches. Teeth are from *Carcharodon carcharias, Galeocerdo cuvier* and *Galeocerdo contortus*, clockwise from left (largest tooth measures 3.9 cm; photo by David Wolf)

The Texas Gulf Coast is underlain by a sequence of stacked Cenozoic sedimentary wedges deposited along a prograding (offlap) continental margin. These clastic wedges are composed of sandy coastal plain and marginal marine deposits which thicken and grade basinward into finer-grained silt and clay marine shelf and slope deposits (Galloway, 1985, 1989). The Neogene portion of this sequence consists of the sands, silts, and clays of the Oakville Sandstone and Fleming Formation (mid to late Miocene), the Goliad Sand (?Miocene/Pliocene), Willis Sand (?Pliocene/Pleistocene), Lissie Formation and Beaumont Clay (Pleistocene), and some undivided Quaternary deposits/alluvium (BEG, 1992). However, the herein reported Neogene sharks teeth recovered from along the Texas Gulf Coast have not been found in-situ from these formations but rather as "float" along the beaches and dredge spoils from High Island south to Port Aransas, and in the gravel lags along the bayous from Houston to the Gulf coast.

Neogene sharks teeth have only been locally common at the historically productive collecting locations along the Texas Gulf Coast, and their abundance has always been directly affected by storm events and by periodic dredging. They are often found in association with modern and fossil (Cretaceous and mostly Cenozoic) invertebrates, as well as with disarticulated mostly Pleistocene vertebrate fossils including horse, turtle, mastodon, and mammoth. They constitute a typical mixed coastal plain re-

worked assemblage from numerous geologic ages and paleoenvironments. Therefore, the precise geologic provenance, or origin, of these sharks teeth cannot be determined with any certainty. Despite this, the recognized shark taxa have previously reported Neogene stratigraphic ranges (Capetta, 1987; Purdy et al., 2001) from which to presume their origin.

Fossil Sharks Teeth

The Neogene sharks teeth recovered from along the Texas Gulf Coast range in color from tan-brown to jet black, and are mostly black in color, especially when wet. Occasionally, modern sharks teeth, which are generally smaller and bone white in color, are also recovered from along Texas Gulf Coast beaches. The fossil teeth are often well worn, which can sometimes diminish key distinguishing characteristics, and make their identification difficult. Robert Purdy (1984) of the U.S. National Museum of Natural History (Smithsonian Institution) created a very useful key to identifying the more common Neogene sharks teeth based on simple physical characteristics; the 2006 updated version of this key can be easily accessed on the Internet at **http://paleobiology.si.edu/pdfs/sharktoothkey.pdf.** Figure 2 depicts the most common types of Neogene sharks teeth from along the Texas Gulf Coast.

Based upon the authors' lifelong collections, approximately 98+% of Neogene sharks teeth recovered from the Texas Gulf Coast belong to the Order Carcharhiniformes and Family Carcharhinidae, including the requiem sharks *Carcharhinus*, *Negaprion*, *Rhizoprionodon*, and *Galeocerdo*. Other less abundant teeth include those of Hammerhead Sharks, genus *Sphyrna* (Order Carcharhiniformes, Family Sphyrnidae), and the mackerel sharks (Order Lamniformes), including the Santiger Shark *Carcharias* (Family Odontaspididae), Great White Sharks *Carcharodon* and Mega-toothed Sharks *Carcharocles* (both Family Lamnidae). This composition, however, is strongly biased by the method of surface collecting of teeth visible to the naked eye, and would likely change to include numerous taxa with smaller more microscopic teeth that are currently not recognized if a more holistic sampling method could be utilized.

The most commonly recovered fossil sharks teeth from along the Texas Gulf Coast come from the genus *Carcharhinus*, of which most teeth closely resemble those from at least four species including the Bronze Whaler (*C. brachyurus*; Fig. 2A), Bull Shark (*C. leucas*; Fig. 2B), Hardnose Shark (*C. macloti*; Fig. 2C), and the Dusky Shark (*C. obscurus*; Fig. 2D). The identification of shark teeth from the genus *Carcharhinus* is sometimes very difficult due to extensive heterodonty (tooth types differ between upper and lower jaws and/or within a single jaw file) and to a lesser extent sexual dimorphism. Identification of isolated *Carcharhinus* teeth often requires the study of detailed comparative tooth descriptions such as those presented by Garrick (1982, 1985) and Compagno (1988), as well as comparison with complete dental sets. As a result, most collectors prefer to assign all of these teeth to *Carcharhinus* sp. for simplicity. Other fossil carcharhinid sharks teeth commonly recovered are from a Lemon Shark resembling *Negaprion brevirostris* (Fig. 2E; considered synonymous with *N. eurybathrodon* by Purdy et al., 2001:156) and those which resemble the Sharpnose Shark *Rhizoprionodon terraenovae* (Fig. 2F). Carcharhinid teeth are all generally small

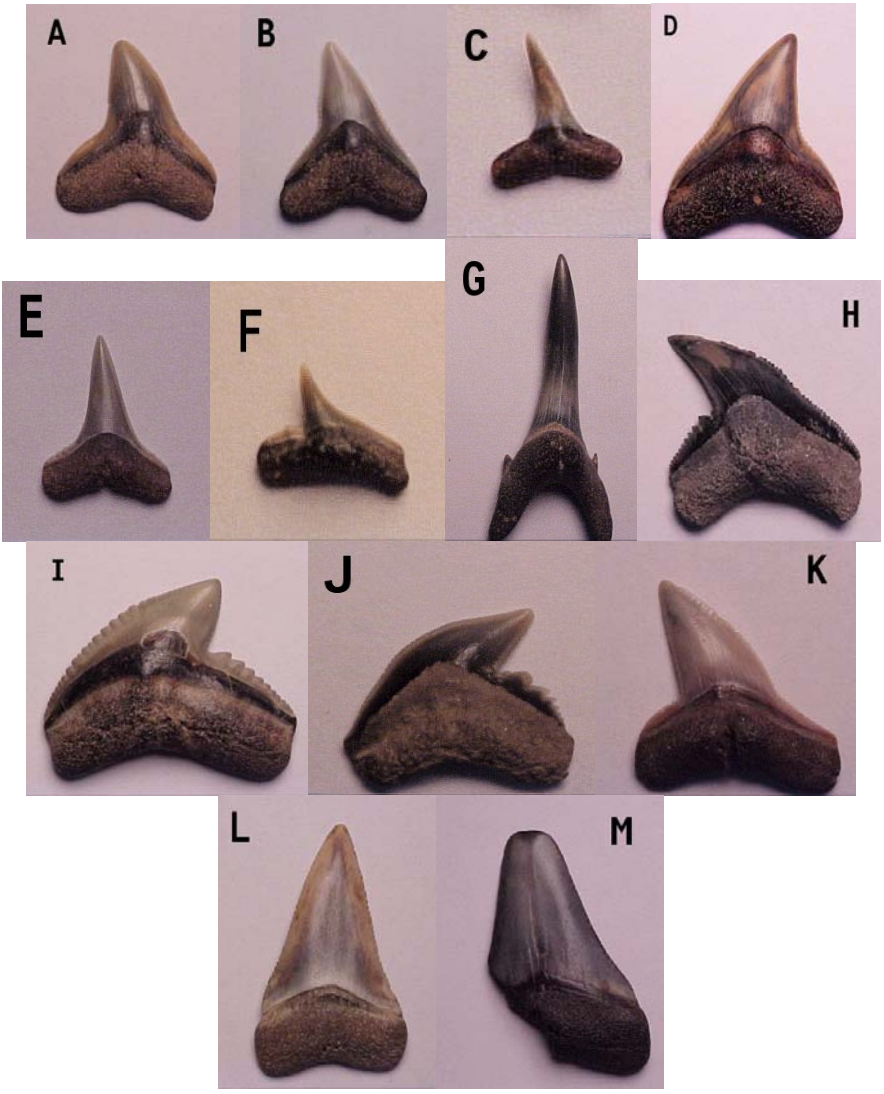


Figure 2. Neogene sharks teeth from the Texas Gulf Coast. A) *Carcharhinus brachyurus*, upper anterolateral tooth (2.5 cm maximum dimension); B) *C. leucas*, upper anterolateral tooth (2.2 cm); C) *C. macloti*, lower lateral tooth (0.9 cm); D) *C. obscurus*, upper anterior tooth (2.4 cm); E) *Negaprion brevirostris*, upper lateral tooth (1.5 cm); F) *Rhizoprionodon terraenovae*, tooth (0.7 cm); G) *Carcharias taurus*, lower anterior tooth (3.0 cm); H) *Galeocerdo contortus*, lateral tooth (1.8 cm); I) *Galeocerdo cuvier*, lateral tooth (3.2 cm); J) *Galeocerdo* cf. *G. aduncus*, lateral tooth (1.0 cm); K) *Sphyrna zygaena*, upper anterolateral tooth (1.5 cm); L) *Carcharodon carcharias*, upper anterior tooth (3.9 cm); M) *Carcharocles megalodon*, tooth (4.7 cm). All views from lingual perspective. (photos by David Wolf; figure by Michelle Robb)

(usually no greater than 0.75 inches, with some being very small), may have broad or slender cusps, in which the upper teeth are almost always serrated (except in *Negaprion* and *Rhizoprionodon*), and the lower teeth may or may not have serrations depending upon the species and dental position.

Teeth of Odontaspids (Sandtiger Sharks) are the next most common type of Neogene sharks teeth recovered. These have been tentatively assigned to the widespread species *Carcharias taurus* (Fig. 2G). Capetta (1987:86-91) notes the difficulties in identification of isolated fossil Odontaspid shark teeth without stratigraphic context. These teeth are normally one inch in length or less, have a relatively slender and smooth (no serrations or lingual striations) central cusp, and have much smaller or diminutive lateral cusplets.

The next most common type of fossil sharks teeth recovered are those from the Tiger Shark *Galeocerdo*. Teeth from at least two, and possibly three, species of *Galeocerdo* have been recovered from the Texas Gulf Coast Neogene. These teeth are from the extinct form *Galeocerdo contortus* (Fig. 2H) and from a shark with teeth almost indistinguishable from the modern species *Galeocerdo cuvier* (Fig. 2I). In addition, some smaller fossil Tiger Shark teeth match the description of *Galeocerdo aduncas* (Fig. 2J). However, Purdy et al. (2001: 145-146) believe that *Galeocerdo aduncus*, which has only been used by vertebrate paleontologists to describe certain late Neogene teeth, is not a valid species and may rather be a juvenile variety of *G. cuvier*. *Galeocerdo* teeth can range up to 1.25 inches in maximum dimension, have an inclined arcuate main cusp with fine serrations, and tapering coarsely serrated cusps on the distal crown shoulder of the tooth. The teeth of *G. contortus* uniquely exhibit a distinctive lingual bend on the inclined main cusp, have robust root protuberances, and are generally smaller (approximately 0.75 inches in maximum dimension) than the other *Galeocerdo* teeth.

Also recognized from along the Texas Gulf Coast are teeth from a Hammerhead Shark (Family Sphyrnidae) that resembles *Sphyrna zygaena* (Fig. 2K; considered synonymous with *S. laevissimus* by Purdy et al., 2001:158-159). These teeth are generally small (usually 0.75 inches or less), have slender cusps that are smooth or faintly serrated in larger examples of both upper and lower teeth, but are distinguished from most other Carcharhiniform teeth by the presence of a deep distal notch in the tooth crown between the cusp and distal crown shoulder and a deep or well-defined transverse groove in the root.

Fossil teeth of the larger mackerel sharks (Family Lamnidae) are rare along the Texas Gulf Coast, with those of the Great White Shark (*Carcharodon carcharias*; Fig. 2L) seeming to be the most common. Even rarer are teeth of the Mega-toothed Shark, *Carcharocles megalodon* (Fig. 2M; historically called *Carcharodon megalodon*). Teeth of *C. carcharias* are broad, coarsely serrated, and can reach approximately 1.5 to 2 inches in length. Teeth of *C. megalodon* are more finely serrated than *C. carcharias*, more broad and robust overall, with a distinctive enamel-root marginal apron (sometimes called a bourlette). Teeth of this shark can be over 6 inches in length; however, the largest specimen from Texas known to the authors approaches 5 inches, and most are 3.5 inches or less in maximum length.

Notably absent from the Texas Gulf Coast are the teeth of two extinct species with cosmopolitan distributions during the Neogene: the lamnoid *Isurus hastalis* and the carcharhinoid *Hemipristis serra*. The teeth of these sharks from the Miocene of Maryland are illustrated in Figure 3.

Discussion

Figure 3. Two common fossil sharks teeth from the Miocene Calvert Group at Plum Point, Calvert County, Maryland. A) *Isurus hastalis*, lingual view of upper lateral tooth (2.7 cm maximum dimension); B) *Hemipristis serra*, lingual view of upper lateral tooth (2.6 cm). (photos by David Wolf; figure by Michelle Robb)

During the Neogene, the geographic makeup of the earth (landforms and oceans) was gradually changing into what we have today, and the faunas and floras were progressively beginning to look indistinguishable from those in the present. This is especially true for shark faunae worldwide. Although certain sharks (such as *Carcharocles megalodon*) were not yet extinct at the beginning of the Neogene, many of the modern species were present by the late Neogene. Purdy (1996) postulated a contemporaneous allopatric distribution (mostly exclusive habitat distribution based upon prey preference and competition) for *C. megalodon* and *Carcharodon carcharias* during the middle Miocene to Pliocene, which may in part explain the described specimen distribution observed from the Texas Gulf Coast. While some of the Neogene sharks teeth recovered from along the Texas Gulf Coast belong to extinct forms (such as *Galeocerdo contortus* and *Carcharocles megalodon*), most of the teeth recovered are from species that are almost indistinguishable from the modern taxa (e.g., *Carcharhinus spp.*, *Negaprion brevirostris*, *Carcharias taurus*, *Galeocerdo cuvier*, *Sphyrna zygaena*, and *Carcharodon carcharias*).

Despite the study of a significantly large sample (approximately 2500 teeth), at least two globally common Neogene sharks have not been recognized to be present in the Texas Neogene. The significance of their absence has not yet been determined. Based on fossil faunas, the extinct lamnoid *Isurus hastalis* (Fig. 3A), considered by some paleontologists to be the ancestor of the modern Great White Shark (Casier, 1960; Muizon and DeVries, 1985; Nyberg et. al., 2006), is known to have populated the Neogene seas alongside *Carcharocles megalodon*. It has also been postulated that *I. hastalis* may have been in competition with *Carcharodon carcharias* for prey (Purdy, 1996), and its absence in the Texas Neogene may in part be related to this fact, or possibly to the population density of its key prey such as pinnipeds in the ancient Texas ecosystems. The absence of the teeth of the extinct carcharhinoid *Hemipristis*

serra (Fig. 3B) could also have an important paleoecologic significance as it is generally a very common element in Neogene shark faunas globally, with few exceptions. One such exception is the Miocene of Belgium, in which the absence of these teeth is considered to be the result of paleoenvironmental factors (i.e., in the Belgian case due to near-shore estuarine cold water environments not favorable to this taxon; Purdy et al., 2001:192). It is also possible that these taxa are part of the Texas Neogene faunas but have not yet been recognized. However, there is not sufficient data at this time to draw any defensible conclusions on these issues.

Conclusion

The vast majority of the Neogene sharks teeth described from along the Texas Gulf Coast belong to the Order Carcharhiniformes (Family Carcharhinidae), and include the requiem sharks *Carcharhinus spp.*, *Negaprion brevirostris*, *Rhizoprionodon terraenovae*, and *Galeocerdo spp*. Other less abundant teeth are from *Carcharias taurus*, *Sphyrna zygaena*, *Carcharodon carcharias*, and *Carcharocles megalodon*. As none of the described teeth were collected in-situ, their precise stratigraphic context cannot be determined, but their origin can be presumed from their previously reported Neogene stratigraphic ranges. Therefore, no analysis concerning stratigraphic distribution, faunal composition, or paleoecology of the described sharks teeth as an assemblage is possible.

The authors thank Neal Immega, Scott Singleton, and Bruce Welton for their very helpful review and comments to improve this article. David Wolf photographed the specimens, and Michelle Robb formatted the photos into Figures 2 and 3.

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Faceting Section

by Pat Hildbold
Faceting Section Chair

For the months of August and September, we will use our regular monthly meetings to continue faceting our show stones. We can also continue discussing our ideas for displaying the stones to their best advantage in the case.

I also ask that any novices come to these monthly meetings where several people can assist them.

We'd appreciate members bringing their own machines to the meetings as we have more people needing machines than the club has available.

Late-Breaking Club News

Are you getting e-mails about HGMS activities? If not, contact n_immega@swbell.net and let him know that you want to be on the list.

2008 National Gem and Mineral Show

by Scott Singleton
HGMS Show Chairman

By now everybody in the club should be intimately aware that this September the HGMS is hosting the national gem and mineral show. This happens to one lucky club every year, and this year it's our turn. A rotating annual show is made necessary because the national organization of gem societies (AFMS, or American Federation of Mineral Societies) exists to serve its constituent members and so does not have a home club. The same is true for the five regional organizations (in our area this is the SCFMS, or South Central Federation of Mineral Societies).

Actually, in the long and distinguished history of our proud organization, we have held the national show twice before; this will be our third time. We first held it in 1982 at the Astrohall. Bill Cox was the Show Chairman, and Yvonne Dobson was the Assistant Show Chairman as well as club President. Both of these people are still club members. Bill broke all the rules for that show, from moving it to the Astrohall for just one year to inviting tons of dealers (109) to make up for a huge increase in expenses ($60,000 total). This was quite a risk, and it was the first time the club dared to be so bold. As it turned out, under the capable leadership of Bill and Yvonne, the show was a resounding success. Attendance was 10,278, and profit was $26,000. Bill went on to become AFMS President.

Our second national show was in 1994 under the experienced leadership of Ron Carman. This show was also moved to the Astrohall. Many of the people who participated in that show are still around, and we are counting on them to help out with this show. Oh, by the way, Ron is still around as well. In fact, he also went on to become AFMS President. This year he is helping us out as the Competition Chairman.

So, now we come to our third opportunity to impress the rest of the country. They will be here, and in large numbers, to see how we run a show. Let's put on a good one for the ol' Gipper. And we can start by all having some fun while we prepare. Please consider volunteering your time during the show and participating in our preshow events (listed below).

Annual Labeling Party: Saturday, August 23, 10 a.m. to 1 p.m., at the clubhouse. This is where we all put in an hour or two labeling our wonderfully-designed tri-fold fliers (which take the place of our usual postcard this year), help the School Collections Committee put together the Show School Sets, and then get treated to a wonderful lunch hosted by the Show Hospitality Committee. Please show up to help out your fellow club members.

Pre-Show Kick-Off Dinner and Auction: Saturday, September 6, 5 to 9 p.m., at the clubhouse. This is our big pre-Show event. The Show Hospitality Committee will serve dinner beginning at 6 pm. We want to start early so the auction can "kick off" about 7 p.m. As always, you can help this year's Kick-Off Dinner be successful by bringing desserts and items for the auction. Don't have a garage sale, donate some

rocks! Your duplicates and leaverites are someone else's new treasures. Please feel free to drop off donations in advance at the clubhouse office in the box marked "2008 Show Auction."

Load Up: Wednesday, September 24, 5 p.m. to 6:30 p.m. at the clubhouse. On the Wednesday night before the show, we load up the U-Haul and volunteer vehicles with items to be transported to the Humble Civic Center. Many hands make for light work.

Setup Day: Thursday, September 25, 8 a.m. to 12 p.m., at the Humble Civic Center. We will need volunteers beginning at about 8 a.m. to unload the U-Haul truck and cases. Members of each Section must be prepared to set up their own booths. We will also need to drape about half of the dealer tables. The dealers start arriving at 11 a.m. to begin their own set-up, but work on the Section booths will continue.

Volunteer and Dealer Appreciation Dinner: Thursday, September 25, 6:30 to 8:30 p.m. at the Humble Civic Center. We host this dinner every year to show our appreciation to all of our volunteers and dealers. Following dinner, lifelong mineral collector David Wilbur (now associated with the HMNS) will give our presentation for the evening. Many of you heard him recently at the General Meeting where he gave a very entertaining presentation on some of his experiences and showed some fantastic mineral slides.

Please join us for all these events and help us make this show one that the entire country will be talking about for some time.

AFMS/SCFMS Show Activities

by Shiara Trumble

For those of you who are new to our club, one of the benefits of belonging is to be first to know what's happening at our annual show in September. This year, we have the special honor of hosting not only local guests to our show, but we're also hosting the AFMS and SCFMS annual conventions. Although not an official part of our show, the Texas Faceters' Guild Annual Symposium is being held nearby as an adjunct to our show.

The Federation conventions bring us both competitive and non-competitive exhibits from across America that add beauty and educational content to our show.

There will also be fun and educational displays from:

- The Rollin' Rock Club (a group of traveling rockhounds who meet at each show in the SCFMS)
- The ALAA (The American Lands Access Association, a 501(c)(4) organization, whose purpose is promoting and ensuring the right of the amateur hobby collecting, recreational prospecting and mining, and the use of public and private lands for educational and recreational purposes; and to carry the voice of all amateur collectors and hobbyists to our elected officials, government regulators, and public land managers.)
- The AFMS Endowment Fund (established so that the Federation would have avail-

able funds for special projects.)

- AFMS Junior Activities (this committee provides many guided activities to clubs' youth leaders in 15 areas that lead to badge awards: Rocks & Minerals; Earth Resources; Fossils; Lapidary Arts; Collecting; Showmanship; Communication; Field Trips; Leadership; Earth Processes; Earth in Space; Gold Panning and Prospecting; Gemstone Lore & Legend; Stone Age Tools and Art; Rocking on the Computer.)
- AFMS Conservation Committee (keeps us abreast of all conservation and legislation issues at a national level.)
- Texas Faceters' Guild will be displaying a large collection of replicas of world-famous diamonds. The replicas were cut by TFG members.

Be sure to stop by these displays and learn more about each of the organizations and their activities.

Additional Show Activities:

If you are interested in writing articles, poetry, cartooning, etc. for the newsletters, **Breakfast with the Editors** is the place where members' writing efforts are rewarded. It's being held at the Humble City Café on Saturday morning, September 27 at 8:00 a.m. Join us for a wonderful breakfast buffet and see your fellow rockhounds rewarded for their writing efforts. Start writing. Who knows—you could be a winner!

The Awards Banquet is a barbecue this year, and will be held Saturday night, September 27 at 7:00 p.m. in the Humble Convention Center's Hospitality Room. Scholarships, All-American Education awards, Program Competition awards, Competitive Case awards, and Endowment Fund drawing winners will be announced, and AFMS officers will be installed. CW Smokehouse and Catering will be cooking the barbecue in our parking lot, so come to the banquet and have some of that barbecue you'll be whiffing all day!

In addition to our club's silent auction held at the Information Booth throughout the show, there will be a **silent auction to benefit the South Central Federation's Endowment Fund**. This fund, similar to the AFMS Endowment Fund, supports various special projects and activities as voted on at the annual SCFMS meeting. Visit their table at the front of the HCC on the west side to see all the goodies they are offering for auction.

There will be a **live auction to benefit the American Federation's Scholarship Fund**, held in the Scout Room at the HCC on Friday, September 27 at 2:00 p.m. The auction will include items to satisfy many different audiences, so plan to be there at 2:00 to bid on some beautiful articles and support our Scholarship awards program.

The AFMS Endowment Fund representative for the SCFMS, Joyce Speed, will also be taking contributions for the AFMS Endowment Fund at the show. For each $5 gift, Joyce will issue a ticket for the **Endowment Fund Drawing** for lovely donated items. The items may be viewed at the AFMS Web site: http://www.amfed.org/endow2008.htm

Field Trips:

On Friday, September 26 there will be a guided field trip to Whiskey Bridge to collect

mid-Eocene invertebrate fossils. This begins at 8:00 a.m. at the HCC parking lot. Those signing up will be given further instructions. You can access a description of this field trip on our Web site: www.hgms.org, click on "2008 Show Registration" and scroll down to "Whiskey Bridge Locality Description."

On Sunday, September 28 at 10:30 a.m., we have a trip planned to the Houston Museum of Natural Science to see the world-renown gem and mineral collections and to view a special exhibit. The cost is usually around $10 for the special exhibit, and is always a good value. More information will be placed on our Web site as it becomes available. Afterwards, those who wish may take a guided tour of the HGMS clubhouse where light refreshments will be available. If you prefer, you may return directly to HCC rather than going to the clubhouse.

There will also be a tour of the clubhouse leaving directly from the HCC at 1:00 p.m. on Sunday. This tour does not go to HMNS and is for those who want to see the clubhouse but prefer a shorter trip.

All club members are invited to participate in all the above activities and to visit all the special federation displays. It's a great way to get to know rockhounds from all over the U.S., learn something, and have fun, too! You can sign up for events and field trips by visiting our Web site at www.hgms.org and clicking on "2008 Show Registration" and then on the Advance Registration Form. Print the form and fill out the bottom part letting us know which meetings and field trips you plan to attend.

Signing up for these events early will be a big help for us in planning meals for the events and determining the number of guides needed for field trips. Send your registration forms to me at the address shown on the form. If you have any questions or want to volunteer your time to help with any of the events, please call me at 281-463-7954 or e-mail me at Shiara.trumble@sbcglobal.net.

2008 Show Volunteers

by Mary Ann Mitscherling

Our 2008 September Show is host to the AFMS/SCFMS. That means we need to fill at least twenty-four additional volunteer slots this year. To give everyone a chance to participate, we will begin calling every HGMS member who has not yet volunteered for at least one position. Already some have volunteered for multiple slots. These members have discovered that supporting the club and its purpose through volunteering for the Show can be a lot of fun. Meeting old and new friends who have similar interests in the Show environment is rewarding with pleasant memories. Access to the Hospitality suite is open to all who volunteer. Stand (or sit) your volunteer shift, enjoy socializing in the Hospitality suite, and enjoy the Show. We have positions of two and a half hours to three hours that we have every year in the Information Booth, in Security, Dino Dig, the Youth Area, the Swap Area, in Hospitality, in the Ticket Booth, as a Ticket Taker, in School Daze, and in Scouts. Consider volunteering for some of the special positions that support our hosting of the SFMS/SCFMS. These range from requiring only forty-five minutes of smiling and signing in members for a breakfast to up to three or more hours leading a caravan from the HCC to the HMNS,

then to the HGMS clubhouse, and back to HCC.

The Volunteer Committee has increased to four this year. Cheryl Lucas and I are joined by Jeanne Barna and Dallas Higgs. The annual Show provides most of HGMS's financial support. Members make the Show the success we all want it to be. Call or e-mail me if you have a question about any of the positions that are available. Sign up early to get your pick of positions.

Help HGMS Be Hospitable

by Michele Marsel

The 55th Annual HGMS Show is coming up fast. Your Hospitality Committee is gearing up and getting ready. In addition to providing food and drink for our vendors and HGMS volunteers, this year the Hospitality Committee will also be providing beverage service for AFMS meetings. Boy, could we use your help!

This year we will provide beverage service for the 8 a.m. AFMS meeting on Thursday (yes, Setup Day), and we will have coffee, cold water, and limited sodas available beginning at 9 a.m. for our own volunteers and vendors. Thursday evening we will provide our traditional Volunteer Appreciation Dinner.

We would like to be able to offer lunch delivery to our vendors who are manning booths solo, as well as to HGMS volunteers with no back up, like Gem Identification. We can only do this if some of YOU volunteer to work just one shift each for hospitality. Starting at 10 a.m. on Friday, Saturday, and Sunday, we need runners to take lunch orders, prepare the orders, and then deliver them. Three volunteers simply cannot prepare the food, keep the drink coolers filled, deliver meals, **and** serve the vendors and volunteers coming in for lunch—all at the same time.

We also need volunteers to set up beverages for AFMS meetings and to ensure the return of all items to Hospitality. Are you going to attend one or more AFMS meetings? Then please consider serving as a beverage steward for that meeting.

Daily lunch menus and serving hours will be posted in the September BBG, so stayed tuned, and volunteer early and often.

Susan Lenz Update

June 11, 2008
by Norm Lenz

HGMS Friends,

Susan has continued to improve since my last update. She had one seizure while at the movie theater two weeks ago. It slowed her popcorn eating for about a half hour, but otherwise caused little disruption to her movie-going experience. We are happy with her current assortment of medications and have made few changes since my last update.

Susan has been complaining of pain in her right knee since her "awakening" in April

when she began communicating again. An MRI showed that some meniscus damage and arthritis are responsible for the pain. Only part of the damage could be repaired. She had day surgery yesterday, and we are hoping for enough improvement that she can tolerate therapy and learn to walk again with a walker.

Positives:

- My mother is recovered from her bacterial meningitis that I mentioned in my last update.
- I am completely healed from my hernia repair surgery and am helping with Susan's transfers again.
- Susan, Tanya, Heather, and I had a great trip to Indiana last month for the wedding of Susan's niece who was our flower girl nineteen years ago. We also celebrated an early Mother's Day and enjoyed a few Morel mushrooms that were in season at the time.
- Susan is sleeping normally again for the first time in two years.
- Her long term memory is great, and her short term memory is good and seems to be improving.
- Her voice is strong again, and her verbal communication is somewhat slow but sufficient to visit with us and her family.
- She was taking an interest in my laptop and wanting to search the Internet. I bought one for her to use, but it is taking awhile for her to re-learn her skills. Her e-mail address is susan.j.lenz@gmail.com.
- Her level of fatigue is much less than before. She often stays awake until bedtime—she had the most trouble staying awake that long before.
- Her knee is doing fine since her surgery yesterday. She has taken only one pain pill. Knee surgery probably seems easy to someone who has experienced brain surgery.

Negatives:

- Susan is easily distracted and diverted from her original intent while using her new laptop. It takes a VERY long time for her to compose a new e-mail or to reply to an e-mail. Feel free to send e-mail to her, but don't be disappointed if you don't get a reply—you should feel honored if you do. Copy me if you like.
- She cannot stand up or walk without significant help from us.
- Tremors continue to be a problem.

- There is some new twitching in her left leg that we don't understand. It doesn't cause her any discomfort or seem to be related to seizures or tremors. We will ask her doctors at her next appointment.

Photos on previous page, in no particular order:

- Susan with the bride, Kayla, who was our flower girl 19 years ago
- Susan in our neighbor's ATV (Mule). She had such a good time riding around with us to look for Hill Country dewberries that we placed an order for a similar ATV. Ours is a Polaris Ranger crew cab in Delta green. We expect it to be ready for delivery this weekend or next.

Thanks for your support—past and present. Norman

Lapidary Section

June 16, 2008
by Stephen Wilkerson, Lapidary Chair

Show: The Show committee is still looking for volunteers for the ticket booth, information booth, wherever you can help. Please contact a Show Committee member and sign up.

Shop: Tom Wright asks everyone to be sure to shut down and take care of the equipment when they finish using it, and especially to remember to cover the rolling mill and to clean and oil the large flat lap. The flat lap wheel is cast iron and will begin to rust within minutes if not oiled after use.

New business: Tom Wright has been given the molding forms for our Quixotic Badge, and he wanted to know how many badges the Section might need. It was concluded that 10 new badges would be enough. Tom said he will need 23-gauge silver sheet to make the new badges.

Mary Ann Mitscherling offered to put together a silver order and asks that anyone wanting to order silver wire, sheet, or bezel strip to please contact her. By the time the Backbender's Gazette is out, an e-mail should have been sent out to the club.

Margaret Hardman-Muye notified us that the order for the old template designs has been sent and should be here by August. The new template design samples should arrive in about two weeks, and the full order will take an additional 4–5 weeks to arrive, so they will be here in time for the show.

Guests: New club member Bernard Rich arrived in time for the program and enjoyed working on a piece of sapphire.

Program: We had five spool polishing units for the program; two wooden spool polishing units belonging to the club and three personal units belonging to Karen Burns, Margaret Hardman-Muye, and Stephen Wilkerson. Margaret's spool squealed at first, but Tom was able to fix it. I brought several dopped sapphires to work on and three polished stones to show how the finished piece looks. Wayne Barnett brought a list of

questions. I didn't know all the answers, but I answered as many as I could.

Spool polishers originally were carved from hardwood, rock maple being the favorite. New spools are made from resin. The spool has six indentations, and each dip is charged with diamond paste starting with 325 grit and progressing to 50000 grit. The diamond grit becomes imbedded in the surface of the spool when squeezed between the stone and the spool surface. The spools were primarily designed for working on corundum. On larger modern equipment, wheels for the higher grit diamond are backed by stiff foam padding. When corundum is pressed against the wheel, the foam pad allows the diamonds to give and slide around the stone surface, barely abrading the surface. The spool has a hard surface, and the diamonds cannot back away from the stone. Only a light touch is needed to hold the stone against the spool. Press too hard, and the spool stops turning. Occasionally add a drop of light lubricating oil on your stone. Work the freshly oiled stone across the surface of the spool to lubricate and cool the diamonds. Progress down the spool using each dip. Thoroughly clean your stone before progressing to the next dip. When finished, you will have a beautifully polished stone.

The spool polisher is also used for opals. Because the spool turns more slowly than bigger equipment, you have greater control over how much surface is ground away thus reducing the risk of cutting through the fire. A second advantage to slower turning is that there is much less heat buildup which can destroy the fire in a fine opal.

I don't know how long a spool will last, but as long as the wood or resin doesn't crack and you can avoid cross contamination, you should be able to pass it on to your grandchildren. Of course the motor will need to be replaced, but the spool should last a lifetime.

The spool can be used to polish any stone. But any material softer than an 8 hardness will polish faster and be just as shiny when worked on bigger equipment. The spool is also very good for working on material that has an uneven hardness and is prone to undercutting. Karen Burns brought a jade drop she has been working on. The solid grinding surface will almost eliminate the undercutting that appears when using padded wheels.

I have polished several sapphires and a ruby, but I have also worked pieces of rose quartz, agate, and emerald while watching television. The motor runs very quietly. If anyone came by the demonstration booth at last year's show, they probably saw me working on a large piece of emerald. If you ask my wife nicely, she may show you the pendant I made for her with the stone.

The program for the October meeting will be making a bead necklace and earrings and will be given by Karen Burns. Supplies will cost $3. I am still working on programs for the other meetings. If you want to do a program, please contact me and we can get a meeting lined up for you.

HGMS General Meeting (Excerpts)

June 24, 2008
by Nancy Fischer
2008 HGMS Secretary

The meeting was called to order at 7:30 by Terry Proctor, President.

The minutes of the May General Meeting were approved as published in the May BBG. Karen Burns moved to accept the minutes; James Wark seconded the motion. The minutes were approved unanimously.

Terry Proctor said that Rodney Linehan, Club Treasurer, had reported that according to projections for 2009, dues would have to triple to cover expenses. Dues cover about 1/3 of the Club's costs, with classes and the Show the other 2/3. Dues will probably have to increase (they will not triple), and the Club will have to find other sources of revenue. The Board will consider the analysis and present recommendations to the Club.

HGMS Treasurer Rodney Linehan was not present at this meeting. However, Rodney spent a great deal of time and effort in reviewing eight years of financial reports and records for the Dues Analysis Committee consisting of Rodney, Karen Burns, and Terry. Rodney's analysis shows that dues only pay about one-third of the expense of operating the Club, and income from classes and the Show cover the other two-thirds of the annual expense. If club dues are expected to cover our present expenses, dues would have to double or triple. Terry said that HGMS members wouldn't go along with tripling dues, but that the membership should understand that a dues increase for 2009 is going to be necessary. Rodney will be at the July Board meeting, and the Board will consider ways to keep HGMS in the black.

Announcements and Introductions

Noe Benitez, a law student intern in Terry's office, joined HGMS at this meeting. He is originally from the Valley, and he went to Valley College in Kingsville. His wife is a band director.

Charlie Fredregill is offering a wire wrap class beginning July 13. It will run for three consecutive Sundays. The fee is $90 and includes materials.

Bob Swinney announced that the inaugural meeting of the Huntsville Gem and Mineral Society will take place next week. Terry Proctor advised Mr. Swinney that he should make his club aware that there is now pending and has been for some years attempts by some in Congress to limit or terminate rights to collect some fossils and minerals from public lands. Terry discussed that the AFMS and MAPS both encouraged members of clubs to join and support the American Land Access Association (ALAA), which is the lobbying arm of AFMS. ALAA is trying to protect collecting rights on Public Lands.

Phyllis George told the group that there was an ALAA article and an ALAA member-

ship application in July's BBG, which was just published. Scott Singleton said the ALAA will have a booth at the Show. According to John Cooper, the Gold Prospector's Association of America has a similar lobbying arm to keep Public Lands public lands

Committee and Section Reports

Paleo: The Section has established a $1000 scholarship and is actively looking for applicants. This scholarship is in addition to the scholarship that HGMS provides annually.

Show Committee: Scott Singleton reported that members of the Committee just finished manning a booth at the Intergem Show. These shows and others help expose the public to the Club. He said that we have a following at home school conventions, and people stop by the booth talking about the great time they've had at the Show and that they look forward to attending the next one. Members who volunteered at the show were Karen Burns, Michelle Marcel, Nancy Fischer, Mike Reves, Maryann Luther, Elsa Kapitan-White, Lexy Bieniek, Rick Rexroad, Dallas Higgs, and Scott himself. Scott also mentioned that Karen Burns volunteers at HMNS in behalf of the Club.

There was a great party for the Show Committee at Scott's house last Saturday. People got together for a pot-luck dinner and very good conversation. The sudden rain did not dampen the fun of the fabulous door prize give-aways. Everyone leaves with at least one fabulous item.

Scott reminded the group that this year is the AFMS/SCFMS show. National and regional delegates will be attending the show. There are still many opportunities for Club Members to volunteer their help with the show. There are those planning the Show and there are shift opportunities at the Show itself. Last year over 8000 people attended the Show.

BBG: Phyllis George said she had just received the July BBG in the mail. The consensus at the meeting was that the gold cover was very attractive. Beverly Mace said that perhaps she could use that color for the new roster since it seemed to have such wide appeal…

Old and New Business

Terry established a Physical Facilities Committee this year to continue work started last year by former President, Matt Dillion. This committee will analyze whether HGMS needs additional physical facilities, and if so, whether to acquire adjacent facilities, nearby facilities, or to consider selling the present location and obtaining a larger facility elsewhere. The Committee is scheduled to discuss this before the next General Meeting and to make recommendations for the HGMS Board's consideration. If the Board determines that action is needed, then the matter will be presented to the HGMS membership for a vote later in the year. There was some discussion that some members had expressed a satisfaction with various facilities at present and others who thought additional facilities are needed, such as parking. The Committee consists of John Anderson, Matt Dillon, Charlie Fredregill, Phyllis George, Paul McGarry, Mary Ann Mitscherling; Terry Proctor, and Tom Wright. Margo Bedman has agreed to act

as a consultant.

Terry Proctor noted that the HGMS Code of Conduct was published in the July BBG. He expects the members to read it and vote on it next month. It incorporates the AFMS Code in its preamble. Included as part of the Code of Conduct is the HGMS Policy on Children, also published in the BBG this month. It is a statement that says the Club will not tolerate any kind of abuse of children or of members, nor is it a babysitting service. Any changes to or comments about these documents should be addressed to Terry.

Door Prize: James Wark won the door prize; however no prize was present.

Show and Tell: Terry Proctor brought in a dimetroadon track cast. He bought it, 11 dinosaur track casts and some trackways from Glen Kuban, who is moving out of state. Terry will make them available for the Show, probably as an extension to Paleo's area. He is looking for volunteers to man that booth. The exhibit will be near NASA's moon rock.

Karen Burns showed several chain mail bracelets that she made from jump rings. The jump rings varied in size and material. She made some of the rings, others she bought. She started out with a kit and has been exploring and expanding her repertoire. The bracelets are quite different from each other, and all are beautiful.

Program: Art Smith Presents—Upgrading Your Minerals and Rocks

Art Smith, the Club's ultimate mineral expert, gave a practical and at times "hands-on" presentation about upgrading mineral and crystal specimens. Art is a geologist who has worked in the petroleum industry for over 30 years. He has collected minerals since 1956. There were a variety of specimens, tools, and cleaners on display.

Art said there are many ways to upgrade a mineral. If it is a valuable specimen, it can be sent to some place like Collector's Edge who will make it look good for a price. You also can do it yourself if the specimen is not extremely valuable or historically important.

…He then picked up an amethyst that Rodney Moore had mined from Jacksons Cross Roads in Georgia. It was cheap because it had a big tail of matrix and white stuff coated many of the crystals. Art trimmed the tail with a trimmer and scraped off the white stuff with an X-acto knife. He left some white matrix as a contrast to the color of the amethyst, even though the white quartz crystals on it were damaged. With a little work, the amethyst doubled in value.

Art talked about trimmers. He demonstrated by putting his trimmer in a box with high sides and put a specimen in the trimmer. He turned the handle and the material flew out to the side. The box caught it. The trimmer can leave marks on a specimen, so you must consider where to position the trimmer "teeth" to lessen the damage it may cause.

He then discussed when to use a saw. He said that 15 years ago, people didn't like flat surfaces, but now due to a change in attitude toward specimens, people will saw a crystal to get a base for display.

Art warned that you must be careful with oil on specimens. He had a bright, milky white quartz group from the Idarado mine in the Colorado San Juans that he bought on the side of a road for 75 cents. Originally it had a light coating of brown goethite on it. This was removed with Super Iron-Out from Home Depot or Wal-Mart.

There was a brief discussion of using oxalic acid to clean minerals. Art warned that sunlight will put a yellow coating on a specimen cleaned with oxalic acid. However Simple Green™, a widely available cleaning solution, neutralizes acid and cleans well. He said that for pyrite, Draino™ works well to brighten it. Scrubbing Bubbles™ is another product that is useful for cleaning and brightening galena. He also uses WD-40™ or mineral oil to help hide cracks and damage to minerals, particularly calcite.

Ultrasonic cleaners need to be big enough to hold the specimens and should be able to run for several hours for the removal of clay or other material in cracks. You should make sure that there are no fractures in the specimen and that it's not too fragile before you put it in the ultrasonic. Otherwise you might end up with a disaster.

He reminded the members to be very careful when using acids and to wear safety glasses when breaking rocks. There is always some danger in cleaning. It can easily be overdone. You must know what you are cleaning. Books in the Club's Library tell how to clean each mineral. A lot of successful cleaning is gleaned from experience. Particularly important is knowing what not to do.

HGMS Board Meeting Minutes

July 1, 2008

by Nancy Fischer, HGMS Secretar

X	President	Terry Proctor	X	Faceting Rep.	Phyllis George
	1St Vice President		X	Lapidary Rep.	Karen Burns
X	2nd Vice President	Beverly Mace	X	Mineral Rep.	Denise Bicknell
X	Treasurer	Rodney Linehan		Paleontology Rep.	Rick Rexroad
X	Secretary	Nancy Fischer	X	Day Light Rep.	Tom Wright
X	Past President	Matt Dillon			

The meeting was called to order at 7:35 p.m. by Terry Proctor, President.

A quorum was present.

The June **2008 Board of Directors Minutes** were distributed via e-mail. Tom Wright moved, seconded by Karen Burns, that the June, 2008 minutes be accepted as distributed. The vote was unanimous.

Treasurer's Report: Rodney Linehan announced the amount in the Club checking account. He said there was an unexpected increase of about 33% in the cost of renting the Humble Civic Center for the Show. In addition, the Civic Center is requiring that half of the fee be paid now along with a $250 refundable damage deposit. The remainder of the fee is due 30 days before the Show. Last year there was no damage deposit,

and payment of the rental fee was due at the Show.

Terry Proctor has been talking to the Manager at the Civic Center about the increase and will continue to try to reduce the fee. Our fees to dealers and our ticket prices have already been set, and there is no way for us to recoup the increase this year. Also, we use the hall every year and attract people from all over the area, not just from Humble.

Karen Burns said that she looked at the Stafford Center facilities because it was suggested to her as an alternate venue, but that location is much smaller than the Humble Civic Center.

Committee and Section Reports:

- **Faceting**: Phyllis George said that the Section will hold an auction of faceting rough, both natural and synthetic, at their meeting on July 9. Wayne Barnett will be the auctioneer. All are invited.

  A faceting seminar will be held on July 13 from noon to 5 p.m. There are a limited number of club-owned faceting machines available for use, and they should be reserved through Wayne Barnett. A $10 fee will be charged, and that goes to the General Fund.

- **Lapidary**: According to Phyllis, the group used spool polishers at their last meeting. It was a hands-on exercise. Spool polishers are especially good for working with opals—one is less likely to grind through the layers containing fire. Tom Wright added that they are good for jade as well.

Old and New Business:

1. Terry Proctor was concerned that there was an unnecessarily long time between publishing information about an item to be voted on in the BBG and the vote itself. For instance, the HGMS Code of Conduct was published at the end of June, and the vote won't take place until the end of August. He wanted to make sure there were 30 days between the publication and the vote, since that is what he remembered as being in the bylaws. Tom Wright will check the bylaws to find the actual requirements.
2. Bill Rogers will be the Education Director. He has accepted the restrictions that he must serve six months before he can get a fee reduction for classes. Tom Wright has met with him. Phyllis George brought up the fact that he needs to have a publicly accessible e-mail address in order to function properly in job.
3. The order for the parking lot Stop Blocks has been placed.
4. Terry Proctor advised that we have a standard form for scholarship requests. The Paleo Section has one available on the HGMS Web site.
   Tom Wright spoke with Val Link. The University of Houston will no longer offer metal arts. The department will be gone. The group decided to work on guidelines for next year. The Scholarship could go to any number of local colleges or universities in several disciplines. Geology is one.
5. Terry Proctor needs to get a copy of the Club's 501c3 acceptance from the IRS in order to qualify for the Kroger card program. Rodney Linehan will look into this.

6. Terry Proctor is trying to obtain a speaker for the July 22 General Meeting. He had two cancellations this summer, both due to personal and extraordinary events. He is trying to contact Jim Gedeon to do a program on artifacts at the suggestion of HGMS member Fernando Llorente.

   Dr. Patrick J. Lewis will talk about his dig this summer at the August 26 General Meeting. NASA will present a program September 23.

7. Rodney Linehan presented an analysis and projection of expected revenues and expenditures for 2008. In 2007 we spent about $35,000. We did not give a scholarship. This year he anticipates expenses to be in the $41,000 range. Not only do we have the unexpected increase in hall rental for the show, in January 2009 the rate for electricity will go up at least 40%.

   Rodney assumed that about half of the revenues will come from dues, and the other half will come from the Show. The challenge is to find other sources of revenue. There are about 400 paying memberships of various kinds, yielding about $11,000. There is a small amount of income that derives from auctions, classes, shop fees, etc. He showed that almost doubling the dues would yield about $20,000.

   Tom Wright said there are other expenses such as money to the AFMS for each member as well as insurance costs per member. Also, the "kids" pay no shop fees.

   No decision was made pending further discussion.

   Nancy Fischer said that the rate structure for Show dealers has changed, adding some revenue and that adult ticket prices are raised $1.00. Terry Proctor mentioned that there are no more 2-for-1 coupons.

   Terry Proctor talked about applying for grants from oil companies, most of whom have funds for civic activities. Several members over the years have applied for and received grants, but there has not been a concerted effort. He will write a short article for the BBG to remind members to ask their companies about their programs.

8. Terry Proctor said he appointed three additional people to the Facilities Review Committee: Mary Ann Mitscherling, Charlie Fredregill, and Paul McGarry. He suggested setting up a Building Fund whether we go forward or not, so when the time comes, there will be money available. Phyllis George moved to establish the Building Fund separate from the General Fund to be used only with the Board's approval for expansion, major repair, or renovation to the physical facilities. This fund is to be invested reasonably. Karen Burns seconded the motion. It passed unanimously. The money will come from donations and other activities.
9. The Club received a request for membership and permission to use the Club's shop equipment from a severely vision impaired person. Any action on this request has been tabled pending investigation and discussion. Matt Dillon will contact the Austin Club to learn their reasons for denying membership to that person.
10. Tom Wright suggested changing the by-laws to do away with the position of First Vice President whose duties are to arrange for General Meeting Programs. Terry Proctor thought the position was still necessary in the future and offered to assist

anyone willing to undertake it.

The meeting was adjourned at 9:25 p.m.

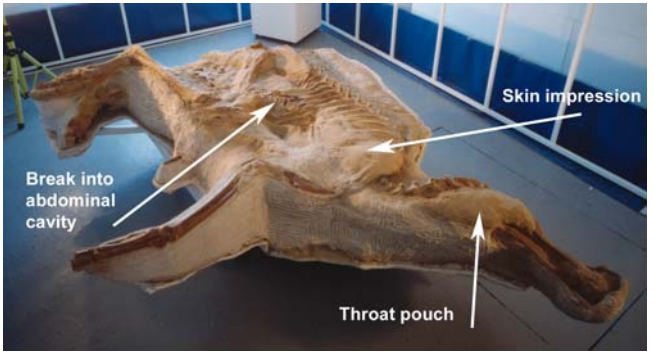
Mummy Talk—Dino Walk

by Neal Immega, Ph.D., Paleontologist and HMNS Master Docent
This article was originally published in the May–June issue of The Dashing Diplodocus*, the newsletter of the HMNS Volunteer Guild©, Houston Museum of Natural Science 2008.*
Submitted to the BBG by Fred Brueckner

We are getting a year-long exhibit, starting this fall, of dinosaur mummies, including Leonardo. I know what you are thinking: "Leonardo was a Re naissance artist/ inventor/genius who lived 500 years ago, and when he was not doodling designs in his notebook for mysterious inventions, he was painting masterpieces like *The Last Supper*." Well, you need to broaden your viewpoint a lot before ***Dinosaur Mummy CSI: Cretaceous Science Investigation*** arrives in September.

Mummy. The Egyptians made mummies out of people and animals by drying them out, wrapping them in bandages, and storing them in very dry places for 5,000 years. *They had it so easy.* Creating a dinosaur mummy is a lot more trouble. First, the critter has to die in a dry climate (with no predators around to mess it up); then it must get buried rapidly to preserve the outline of its desiccated tissues and skin and to mineralize its bones with silica (from volcanic ash).

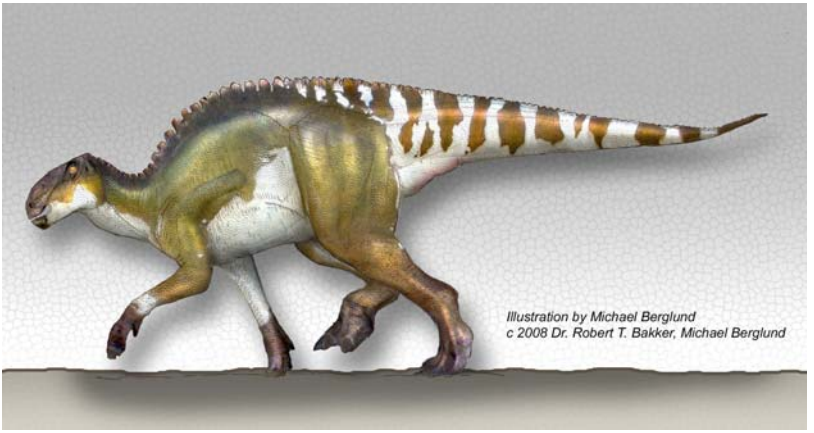
Finally, (77 or so million years later) the earth around it must erode just barely enough to expose its bones to the eyes of people who know what a treasure it is.



This "Leonardo" is a ***Brachylophosaurus***, a short-crested hadrosaur. Leo is a very unusual find in that the bones are nearly all in the connected position, not scattered about. (Wow!) The fossil was jacketed in one piece, flipped over onto an iron frame with wheels, and then prepared. In the photo above, you see the bottom side. The other side is still jacketed.

Skin and throat: Much of the skin left an impression in the sediment, and you will be able to see that the skin pattern is different on various parts of the body. The neck area is distended as if the throat was filled with sediment. It might indicate that these critters had a crop like a chicken.

Gut: The Judith River Institute in Montana uses a lot of volunteer labor in the field and preparation processes. (Volunteers pay about $200/day.) One volunteer had a lucky



accident and chipped out a piece, which exposed the abdominal cavity, where they observed a stripe of coal. Coal is nothing more than carbonized plant fragments. He exposed the gut! For the first time ever, we know exactly what hadrosaurs ate. Leo's last meal was primarily conifers with some ferns and magnolia leaves.

The problem is that we do not know if that is what he regularly ate or if this unusual meal killed him; no animals alive today can subsist on this diet. Conifers contain some pretty unpleasant chemicals. If hadrosaurs had developed specialized enzymes to handle toxic conifer needles, they would have had a dedicated food supply that few others could use.

Fossilized scales, about the size of a dime, show clearly on Leonardo's forearm.
Photos by Grant Delin

X-rays: Leonardo discoverer and Director of the Judith River Institute Nate Murphy is very protective of the pristine appearance of this mummy, but he also wants to know what is inside. For the past month, Leo has been at NASA getting CT-scanned. They have a very large industrial machine with a much more penetrating radiation source than you would ever find over at the Med Center. Dr. Bakker says that they think that they see a wide, shallow wound in the side. They do not know if it was the cause of death. See, CSI is everywhere.

There's more: We also are getting mummified Triceratops skin and a skeleton of a juvenile hadrosaur called "Peanut" for this special exhibit. We are going to see an *Ichthyosaur* with gut contents and babies that probably was preserved in black marine shale in a low oxygen marine environment (just like the *Ichthyosaur* in our Paleo Hall). Of course, you never know exactly what is going to be in the exhibit until the doors open. I can hardly wait!

A Safety Note on Situational Awareness.

by Owen Martin
SCFMS Safety Coordinator
from SCFMS Newsletter 5–6/2008

What is situational awareness? In a nutshell it means paying attention to the environment around you, whether that be in rush-hour traffic in Houston, hiking on a remote ridge in Wyoming, or somewhere in between.

Thankfully I try to do a field trip at least once a month, so I've made some interesting observations that can be told.

On a recent field trip our group stopped at a road cut. One of our members, loupe to eye and specimen in hand, wandered out onto the road right in front of oncoming traffic.

Luckily the driver of that F-250 was paying attention, and he slowed down with plenty of room to spare. The driver only had a look of mild consternation on his face, but it definitely qualified as a "near-miss."

At a more recent field trip, we were allowed onto some private property to search for Permian fossils early in the morning. Luckily we heard them coming, so when a couple of Longhorn steers came wandering into the outcrop, we were mindful to stay well clear of them. They passed by without taking much notice of us—luckily. Those things ARE NOT SMALL!!!

On another trip last year my daughter went running through the brush with just shorts and a T-shirt on. Unfortunately she ran right through a patch of poison ivy, getting large irritations on her face and about half of one quadriceps. Granted that she is not very tall at 10-years old, but from a situational standpoint, she should have been wearing long sleeves and long pants in that area.

Finally, on the way back from a fun trip, a couple of us stopped at a nice graded limestone road-cut, so off we went ahunting. I went up the hillside and wandered laterally finding some neat gastropods, heart urchins, and some small dog calcite crystals. Since the sun was rapidly setting I decided to head back down the hill pretty quickly. What I didn't realize is that I had moved over a steeper section of the cut as I moved laterally, and I was no longer in a safe place to move back down the slope. Luckily the light stayed with me long enough for me to retrace my steps and come down from the outcrop safely.

The above are all examples of where improved situational awareness would have helped mitigate the risks of our activities. Be aware of your surroundings, or beware of the consequences, and

STAY SAFE!

ShowTime 2008

August 9-10	Baton Rouge, LA	Baton Rouge Gem & Mineral Society Fraternal Order of Police Bat. R. Lodge #1 10777 Greenwell Springs Rd. Paul Broussard 225-687-3864 paul_broussard@msn.com
August 16-17	Bossier City, LA	Ark-La-Tex Gem & Mineral Society Bossier City Civic Center 620 Benton Road; cwsejohns@bellsouth.net C.W. Johns 318-687-4929
August 23-24	Jasper, TX	Pine Country Gem & Mineral Society VFW Hall, FM 2799 and FM 1747 Lonnie Stalsby; rducote@cmaacess.com
August 30-31	Arlington, TX	Arlington Gem & Mineral Society Arlington Convention Center
September 20-21	Richardson, TX	Pleasant Oaks Gem & Mineral Club EMGI at Brookhaven College; 3939 Valley View Ln; Don Shurtz 972-509-2821 don.shurtz@gmail.com; www.pogmc.org
September 26-28	Humble, TX (Houston)	Houston Gem & Mineral Society hosting the 2008 AFMS and SCFMS Shows Humble Civic Center, 8233 Will Clayton Pkwy. 5 miles east of Bush Intercontinental Airport 1 mile east of Hwy. 59; www.hgms.org Scott Singleton, fossilwood@comcast.net
September 27-28	Denison, TX	Texoma Rockhounds Denison Senior Center
October 9-11	Mount Ida, AK	World Champ. Quartz Crystals Digging Contest; Mount Ida Area Chamber of Commerce Montgomery County Fairgrounds, Fairgrounds Rd.; Maureen Walther, (870) 867-2723 www.mountidachamber.com director@mountidachamber.com
October 11-12	Temple, TX	Tri-City Gem & Mineral Society Mayborn Civic Center
October 17-19	Victoria, TX	Victoria Gem & Minerla Society Victoria Community Center
October 24-26	Austin, TX	Austin Gem & Mineral Society Palmer Events Center

2008 AUGUST 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2 10–12 Youth Section 10–5 Shop Open
3	4	5 7:30 Board Meeting	6	7	8	9 10–5 Shop Open
10	11 1:00 p.m. Day Light Section	12 7:30 Show Committee	13 7:30 Faceting Section	14	15	16 10–5 Shop Open 10–12 Youth Section 1:30 Beading Group
17	18 7:30 Lapidary Section	19 7:30 Paleo Section	20	21	22	23 10–5 Shop Open 10-1 Show Flyer Labeling Party/ Lunch
24 / 31	25	26 7:30 General Meeting	27	28	29	30 10–5 Shop Open

2008 September 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 7:30 Board Meeting	3 7:30 Mineral Section ?	4	5	6 10–12 Youth Section 10–5 Shop Open 5-9 Preshow Dinner/Auction
7	8 1:00 Day Light Section	9 7:30 Show Committee	10 7:30 Faceting Section	11	12	13 10–5 Shop Open
14	15 7:30 Lapidary Section	16 7:30 Paleo Section	17 7:30 Mineral Section	18	19	20 10–5 Shop Open 10–12 Youth Section 1:30 Beading Group
21	22	23 7:30 General Meeting	24 5-6:30 Loadup for show	25 Show Set up Dealer/Vol. Dinner 6:30	26 HGMS Show Kids Day	27 8:00 Breakfast with Editors HGMS Show 7:00 Awards Banquet
28 Show Tour of HMNS & HGMS	29	30				

The BACKBENDER'S GAZETTE

The Newsletter of the Houston Gem & Mineral Society

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AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

AFMS TROPHY PUBLICATION

AFMS
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2004 - 3rd (Large)
2007 - 1st (Large)

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