

Contents

President's Message	1
General Meeting Programs	1
Purpose of HGMS	3
HGMS Officers	3
The January 2006 InterGem Show and Mineral Info	6
This Old Hammer	9
Tailgate/Swap Event	10
Be a Hero to Kids – Give an Earth Science Talk at School	10
In Memoriam	10
Paleo Book Sales	11
January General Meeting Program Summary	11
My First Field Trip with HGMS	12
HGMS President's Response	14
Hexagonal Fracturing in South Texas Petrified Wood	15
HGMS Board Meeting	19
General Meeting Minutes	22
In Our Library	23
Day Light Section	24
Lapidary Section	24
Mineral Section	24
AFMS President's Message	25
Be Safe—Be Well	26
SCFMS President's Message	27
Tips & Hints	28
Tips for Contour Polishing Petrified Wood	29
World Record Meteorite	29
Fulgurites—the Essence of Lightning	30
The Lake Peigneur Disaster	32
ShowTime 2006	34
Calendars	35

Permission to use material originating in this newsletter is given freely, providing credit is given to the author and the source. Articles without a byline are considered to have been written by the editor.

*Editor: Phyllis B. George
22407 Park Point Drive
Katy, TX 77450-5852
Phone: (281) 395-3087*

*Copy is due for the April issue by
Wednesday, March 8, 2006.*

*E-mail the Editor and Webmaster at
pgeorge4@houston.rr.com*

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). Contact Beverly Mace (281) 347-3646 for additional information. 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 Internet address is <http://www.hgms.org>.

President's Message continued from page 1

I hope you guys are making progress towards getting your lives back together again. I know this kind of thing can be totally devastating. I personally feel for you all because of my intimate knowledge of the Mississippi Gulf Coast. I lived in Biloxi for a while when I was working offshore and have several friends in the area.

The Houston Gem and Mineral Society lost their show this last year. It happened to be on the weekend that Rita decided to come ashore. As you may recall, it was originally forecast to come ashore south of Houston, then the forecasts gradually shifted the track eastward until we were no longer on the bad side. Nevertheless, Houston was a mess with people trying to get out of town, and we had to cancel the show. This was a huge loss for us, but not as big as yours.

Despite this (or maybe because of this scare), we want to help as much as possible. Our city came through to help Katrina victims from New Orleans, and we want to do the same for our fellow rockhounds. We had three pieces of equipment donated to us that we decided to allocate to you. However, the equipment was large and bulky (for instance, a large flat lap and an 18" saw), so we felt it would cost more to get it there than it was worth. Therefore, we sold the items at our Christmas auction with the prior understanding (via consensus vote at the auction) that all proceeds from the sale of these items be donated to the HCGMS.

The three items sold for a total of \$675, and we are pleased to present you with a check for that amount. I am mailing it immediately to the HCGMS, care of Billy Wood.

We hope that you can put these funds to good use and that they can go a long way towards getting your club back up and running. Please don't hesitate to contact me if you should need anything at all. We're here to help.

Regards,
Scott Singleton
HGMS President

From: W G Waggener [mailto:wgwaggenerii@bellsouth.net]
Sent: Sunday, January 08, 2006 9:26 PM
To: Phyllis George
Subject: Fwd: Re: Harrison County Gem and Mineral Society situation

Hi Phyllis, I am pleased to forward the following communication from the SFMS acting State Director John Wright. Thank you and your club so much for your generosity.

Best wishes for the new year, Bill

Date: Sun, 08 Jan 2006 21:00:34 -0600
From: Billie Wright <osjw@datasync.com>
To: W G Waggener <wgwaggenerii@bellsouth.net>
Subject: Re: Harrison County Gem and Mineral Society situation
Good evening Bill,

Yes I have personal knowledge of the Harrison County Gem & Mineral Societies losses as I am a member and also "acting" Mississippi State Director. (I also belong to the Mississippi Gulf Coast Gem & Mineral Society - the two clubs are only 20 miles apart).

A lot of members of all three clubs here on the Mississippi Gulf Coast lost their personal lapidary equipment plus so very much more. The three clubs have a joint workshop, and most of the equipment and supplies for this workshop was owned by the Harrison County Gem & Mineral Soc. The MS Gulf Coast G & M Soc. owned a cabbing machine and faceting machine that was used by the joint workshop. The faceting machine is safe at my house, and another member has the cabbing machine, but it needs quite a bit of maintenance work (she had four feet of flood water in her house). The Mobile G & M Soc. donated \$100.00 to HC G&M Soc. and MSGC G&M Soc. MSGC G&M Soc. plans to use their money for the cabbing machine. I don't think the Pearl River Rock Club owns any equipment; I believe the equipment they provide for the joint workshop is individually owned by their members.

I did at one time have a complete listing of the losses but let someone else have it. Billy Woods (his address will be in the attached letter) compiled the list from club records and information on personal losses from members. Ken Reed of the DeLand Gem & Mineral Club also has a copy of the same list. Below is a copy of the State Director's letter that I sent to the other clubs in Mississippi.

If you need more detailed information, please let me know and I will be happy to assist in any way that I can.

John Wright

JOHN M. WRIGHT

Acting State Director, SFMS

3304 Nottingham Road

Ocean Springs, MS 39564

osjw@datasync.com

January 5, 2006

MS State Director File Copy

(Copy sent to each club in Mississippi)

The Harrison County Gem & Mineral Society lost all of their equipment and supplies during Hurricane Katrina. The facility where they held their meetings and workshops was severely damaged, and at present they do not know if or when repairs might be accomplished. Most of their members had severe damage to their homes, and some suffered total loss of their homes and all personal possessions. Many also lost their jobs or businesses. Quite a few of the members are living in temporary quarters provided by FEMA, with family members or friends, and some have relocated to other parts of the country. They had to cancel their annual show scheduled for April, a main source of revenue, as there presently are no facilities available for the show or accommodations for dealers who would be attending their show.

The good news is that they have regrouped and started meeting again in temporary accommodations. A new slate of officers has been installed for this year and they are

looking forward to rebuilding better than ever, but they are going to need help. All the SFMS State Directors have been asked to contact the clubs or societies in their state and ask them to assist the Harrison County Gem & Mineral Society in their recovery. Our goal is to have each club or society in SFMS donate at least \$100.00. Mississippians are noted for their generosity, and I feel sure that you will do everything in your power to help our state be 100% in this fund drive.

All funds should be sent to the Harrison County Gem & Mineral Society in care of Billy E. Woods, President, 616 Wright Avenue, Long Beach, MS 39560.

I know that some of you have already made a contribution and I would like to thank you for your generosity. For those of you that have not been aware of this fund drive, I would like to thank you in advance for your consideration.

Sincerely, John M. Wright

March Program Information continued from page 1

Member's questions will be answered as to how the funds we donate to the University of Houston are used and about the Metal Arts classes Professor Val Link teaches.

March 28: Consider visiting your local middle school and giving a talk on Earth Science to a class. Do it for your own kid's class or grandkid's class, and you will be a hero. The kids will love it, and the teachers are begging for it. To top it off, you can give the teacher an HGMS fossil, mineral, or rock collection along with full documentation. Come hear and see Neal Immega doing the standard 4th grade Rock Cycle talk and he'll tell you all about it.

The January 2006 InterGem Show and Mineral Info

by Art Smith

Member of the Houston Gem & Mineral Society

Although this show is not the best place to find mineral specimens, there are enough other things like carving, crystals, and beads to give me hope of finding something of interest. At this time the show is just a week or ten days before the various shows that open in Tucson, Arizona, so the dealer attendance is less than at the other three shows it holds here during the year. Local dealers and dealers further east have no problem stopping here on their way to Tucson, but for dealers to the west, it can be too much of a struggle to come here and then go back to Tucson. The attendance on Saturday morning was good but not great and seemed less than usual, particularly in the wholesale area, but you cannot judge the over all attendance by what you see in three hours. There was a Gun Show in the opposite side of the complex, and the signs for parking were messed up. They pointed to the close area for the Gun Show and the far area for the Gem and Jewelry Show. So the lobby was a mass of people going in opposite directions. Maybe they felt the exercise would do us good.

Beads were still everywhere, but sales did not seem as brisk as during past shows. There are several new beads labeled as jaspers and jades that had some nice colors and markings. Most were done in a variety of shapes and sizes, but for most types it

was difficult to find them in 6, 8, or 10 mm round beads. Some looked natural, but others looked as though they may have been color enhanced, particularly with green coloring.

The jade beads are always intriguing, but when they have a prefix in front of them like most of these did, I am generally a bit cautious about them being genuine jadeite or nephrite. They generally cannot be differentiated visibly. As far as these two mineral species go, jadeite is still considered a mineral, but nephrite is generally considered to be the mineral actinolite. I am sure though that the term *nephrite* will continue to be used by gemologists and jewelers.

Also remember that most of these beads are made in China, and historically in China just about any material can traditionally be called jade. I would use caution buying anything that is not definitely sold as jadeite or nephrite unless it is cheap and the color and pattern are pleasing to you. Then if you sell it, use the prefix that was attached to it when you bought it, such as Burmese jade, blue jade, temple jade, Peking jade or blue jade.

However, if you can easily scratch it around the bead hole with a knife, it is probably serpentine, dyed talc, limestone, or some other rock or mineral, and it may be best to sell it as that. The thing about jade is that it is tough. It is not as hard as the quartz varieties, but it is much tougher for breaking or shattering. Why? Genuine jadeite or nephrite (actinolite) generally is composed of sub-parallel interlocking laths that may be seen easily or are microscopic or even submicroscopic. Quartz is composed of the atoms of silicon and oxygen, and it is only the bond of these elements holding things together. Jade has the elemental bonding also, but in addition it has the interlocking crystal laths.

Several dealers had carvings but mostly lower end things in serpentine or limestone. They are reasonably priced, but nothing was being shown that I wanted for my collection or for resale. I have noticed that the better carvings in recent years even carry the carver's mark or initials, but there was nothing that good offered for sale at this show.

In recent years I have noticed an increase of finished cut stone jewelry offered for sale. I have never priced any to know if it is a bargain, good buy, or a rip-off. There seemed to be few cut stone dealers in the wholesale area. From past experience I would caution you to know what you are doing and buying. Some of these dealers sell very cheap cut gemstones, but when you examine them closely with a loupe, they are not necessarily a good buy. Why buy a \$50 peridot in an odd size or shape that is full of inclusions and imperfections to put into a custom made \$600 gold setting? To me it is like having a painting and its frame costs and is worth much more than the painting.

Tim and Holly Smith (Nature's Reflection) was there as usual. They have been club members for many years. They had their usual assortment of quality mineral specimens, decorator pieces, jewelry, carvings, and other rock or mineral curiosities. The best time to buy from them is during the Clear Lake Show in February after they have returned from Tucson. However, they do have a large stock and are always pulling out good new things for their booth.

The only other dealer with significant mineral specimens that we saw was Wali (Five Lions). He was sharing a booth this time but had just come back from Pakistan with an array of gem rough and good minerals, particularly colored tourmalines (elbaite) from Afghanistan and aquamarine and topaz crystals from the mountains of the Northern and Northwestern Provinces of Pakistan. Most of the gem pegmatite minerals from Afghanistan come from the continuation of these mountains in the southern part of the northeast corner of the country near Pech, Nuristan, and Papruk. The lapis lazuli and other minerals come from Badakhshan which is even farther to the north in the northeast corner.

From this area he had a nice golden titanite (sphene), some transparent brown zoisite crystals, a blue non-gemmy corundum (sapphire) in matrix, pink spinel fragments, and several small parcels of unidentified somewhat gemmy crystal fragments. Most I could not readily identify, but one bag had some forms that indicated the crystals are prismatic, greenish, and transparent. It is probably diopside. He had a small bag of gemmy titanite fragments mixed with orange fragments that may be garnet, but there were no faces to confirm their possible identity. I will try and have a couple of the unknowns analyzed to see what they are though there was nothing in these bags that would appeal to the crystal collector unless more complete crystals are recovered. If our polarizing microscope were active and we had some index of refraction liquids, they might be easily identified.

The tourmalines he had from the Mawee mine in Laghman Province were exquisite. They consisted of sea-green terminated crystals with a pale pink bottom and are very gemmy. The terminations are not all flat with most containing numerous terminal faces. The crystals are one to four inches long and about a half inch across. Some are single crystals, but others are in groups of two or more. Naturally the prices matched the quality and were in the three to five thousand dollar range. Just getting there to see them made the effort worthwhile. For the gem cutters, he had a lot of gem rough of this material. Although he has no control of what happens to the material after he sells it, Wali makes a good effort to preserve the terminated crystals that are of specimen value, and I am happy about that. He had other minerals also from the same regions of northern Pakistan and northeastern Afghanistan both as specimens and as rough, but what I have described are what caught my eye.

All in all, the International Show was a nice way to spend the morning. I usually spend more time there, but Betty Jean had been sick the day before, and I did not want to overtax her. We saw some interesting things, talked to some interesting people, and got our exercise all in one trip.

There are two books in our library on the Afghanistan and Pakistan gemstones if you are interested in additional information. They are:

Bowersox, G. W. and B. E. Chamberlin 1995 *Gemstones of Afghanistan*. Geoscience Press, Tucson, AZ

Lapis International 2004 *Pakistan: Minerals, Mountains, and Majesty*. English Extra Lapis number 24, East Hampton, CT.

This Old Hammer

by Terrell William Proctor, J.D. © 2006

16 January 2006 12:50 A.M.

Member of the Houston Gem & Mineral Society

*Dedicated to my fellow rockhounds
who have had pleasant finds*

I had come a couple thousand miles,
seeking to find some dinosaur bones.
Hoping to find something, to bring smiles,
knowing this meant moving, a lot of stones.
Climbing and digging, going about my toil,
suddenly it was there, on top of the soil.

I had thought I was on virgin ground,
on buttes and ravines, quite remote.
Yet here was an old hammer, I had found,
this tool, someone else once did tote.
So, I was not the first, to this place,
another had been to this very space.

Before me now, lay this long lost hammer,
Etched in rust, but it spoke to me aloud.
“What am I doing here?” it did stammer,
“Long ago we stood, with bone so proud?”
“Held by another like you, who came before.
another venturer, out to explore”.

“You are not the first to find this place,
we were here before you, long ago;
“Looking around, there’s no other trace,
After you, there will be others, also.
“So now, pick me up, and take me home,
Then sit you down, and write a tome.”

As I write, I can but now wonder,
who carried this hammer, was it mislaid?
or was it dropped, in some strange blunder?
seeking more fossils, had the owner strayed?
Every rockhound carries, this trusty tool,
No one would throw it away, except a fool.

Holding this archaic tool of the past,
I know it is rusted and beyond repair.
I can but wonder, who held it last,
who learned it was missing, in despair.
No, I was not the first, to that place,
but old hammer, you’ll now rest in my bookcase.



In Memoriam

by Tom Wright

John Hammett, 76, passed away January 1, 2006, in Sierra Vista, Arizona.

John was president of HGMS in 1979 and was very instrumental in designing and installing the kitchen facilities currently in use at the clubhouse.

After retiring at the rank of Major from the military, he worked as head Purchasing Agent for Fort Bend County for several years.

Upon retiring from this position, he and his wife Ruth sold their residence in Houston and headed out in their mobile home to tour the United States for several years.

They settled in Sierra Vista, Arizona, approximately 80 miles southeast of Tucson near the Fort Huachuca military base.

He is survived by his wife Ruth who currently is staying with her son, John Ramsey, in Lake Jackson, Texas

For club members who would like to contact Ruth to offer their condolences, she can be reached at 979-292-0505.

Tailgate/Swap Event

by Matt Dillon

The club will host a swap/tailgate event at the clubhouse in the parking lot on Sunday March 5, 2006, from 10:00 a.m. to 4:00 p.m. Members of other clubs are invited to join us in selling, trading, and buying, or just to come by and tell whoppers about the big rocks you found. Space is limited, and we recommend that you come early if you want to set up a tailgate. For additional information, please call Matt Dillon at 713-682-8043, or send your e-mail questions to dillon8043@sbcglobal.net.

Be a Hero to Kids – Give an Earth Science Talk at School

by Neal Immega

Consider visiting your local middle school and giving a talk on Earth Science to a class. Do it for your own kid's class or grandkid's class, and you will be a hero. The kids will love it, and the teachers are begging for it. To top it off, you can give the teacher an HGMS fossil, mineral, or rock collection along with full documentation.

The Houston Gem and Mineral Society has been in the business of encouraging Earth Science Education for years by providing speakers for schools and supporting them with collections.

You have walked past the collections area many times and maybe even looked inside some of the boxes. Lots of the club members put these materials together in collections for YOU to give away when YOU give a talk. I know, you are going to say that you don't know nothing about teaching no Earth Science, but you are wrong. The 4th grade TEKS/TAKS test covers the Rock Cycle (short summary: hard rocks get broken up into grains at the surface; those grains get buried and eventually become hard rocks again). Want a script? There is a script in every collection box. Want a big display set? I have a rolling suitcase with everything you need. Want someone to walk you through it? I will be doing the standard 4th grade Rock Cycle talk for the General Meeting on March 28.

Paleo Book Sales

by Neal Immega

As you probably know, the HGMS Paleo Section is in the semi-pro league when it comes to paleontology societies because it publishes peer-reviewed fossil books of the highest quality and inexpensively sells those books to all. In the last two years, I have shipped 288 items with a gross value of about \$4,200. This money goes back into the Section's bank account to pay for printing the next great opus. Fortunately for our storage space, we have been "printing" our books on CD which allows for lots of editing and improvement as the author goes along. I have revised the Petrified Wood CD 13 times over the last two years. The CD books are also the most profitable because we do not make many in advance of orders. In 2005, we advertised in MAPS, Houston Geological Society, and *Avocational Paleontology* but did not get a single order that indicated the customer saw our ad. If you have a suggestion on how to market these books, please talk to me.

Paleo Books	Number Sold:
Echinoids:	33 copies
Brachiopods:	24 copies
Ammonites:	53 copies
Gastropods:	37 copies
Bivalves:	44 copies
Petrified Wood:	88 copies
Geological Map:	9 copies

January General Meeting Program Summary

by Matt Dillon

1st Vice President

The January General Meeting program was provided by me, and was a general discussion on how to investigate field trip possibilities. The purpose of this discussion was to promote the sharing of collecting sites and encourage others to look around and help those of us who are already offering field trip opportunities.

My First Field Trip with HGMS

by John Culberson

U.S. Congressman, Texas, District 7

Member of the Houston Gem & Mineral Society

The October 30, 2005 HGMS field trip was my first fossil hunting expedition down the Brazos River and my first field trip as a member of the HGMS. I learned long ago as a collector that sharing the thrill and excitement of another collector's discovery is almost as much fun as finding it yourself, and I always learn more about ancient landscapes and animals by exploring it with friends who share my passion for understanding the history of the Earth. In fact, the shared experience of being with a friend who makes a great find has always produced the most memorable and exciting moments for me in this hobby.

This trip was especially wonderful. Spectacular weather, a calm smooth river, a faint, cool breeze, and Neal Immega's boundless enthusiasm, good humor, and vast knowledge of what we were seeing made this one of the great days of my life. It was a team effort all day long, everyone shared what we learned and found, and we all found fossils. Pleistocene and Ice Age Texas became very real for me, and it was easy to envision the rising and falling of a much larger ancient Brazos River as massive glaciers far to the north shrank and expanded. My mind's eye could see the ancient landscape filled with the huge animals of which we found fragments, and I could visualize the fear and courage of humans on foot armed only with spears and rocks and arrows who faced these beasts. However, I also remember that these first Americans were so successful as hunters that they ate all the large land animals in the blink of an eye geologically, including all the horses. Only sheer volume of numbers saved the bison.

As the day drew to a close, I had found a fair number and variety of fossils and had a great time with my fellow club members. It had already been a very good day as we headed for home. My boat was the next to the last one to pull up on the last gravel bar of the day, and there were so many boats beached by the time we arrived that we had to pull into a narrow spot between two others. Dozens of club members were already finding fossils and bringing them to Neal who was happily and excitedly identifying each one and describing in vivid Technicolor detail the size and living habits of each vanished animal.

We stepped out of our canoe. I walked about ten feet and spotted a curved piece of what appeared to be fossilized wood almost directly in front of the bow of another beached canoe. By now I was largely ignoring the vast quantities of fossilized wood everywhere, but I knew wood normally would not have smooth curves. Many others had walked right over this spot ahead of me, so I did not expect much when I picked it up and turned it over—but it had teeth. That was a happy surprise.

Now I am a real rookie at this fascinating hobby, and I never hunted fossils on the Brazos River before, so I thought that if I found a jaw bone, they must be fairly common. Neal had quite a crowd around him, so I waited my turn and just handed the jaw into the circle and gave it to him without comment. He lit up immediately, as did the



Three views of a Pleistocene wolf jawbone--1.8 million years old. Closely resembles *Canis Armbrusteri* fossils found in Maryland.



crowd. It was a great moment, and I am thrilled to be able to add this small find to the litany of interesting fossils that HGMS field trips have uncovered over the years.

Neal and David Wolf have identified it as a wolf, and placed its age at about 1.8 million years old. I have also shown it to Dr. Robert J. Emry, the curator of the Smithsonian's Pleistocene fossil mammal collection, who agrees that it is a Pleistocene wolf. Dr. Emry says it is too small to be a dire wolf, and that a rib I found nearby on the same gravel bar also came from a wolf. (Perhaps the same animal?) We checked the fossil wolf jaw drawers for comparisons and decided that the jaw I found most closely resembles *Canis Armbruster* fossils found in Maryland. Dr. Emry also pointed out that my specimen was a very old wolf because one of the front teeth had dropped out in life and bone growth had closed the socket. It is interesting that the animal was able to survive into old age, and I have to wonder if its family members helped protect it and feed it.

The trip and the jawbone have given me a first-hand example for my colleagues in Congress when I remind them why we need to stop the Senate bill that is trying to outlaw mineral and fossil collecting by amateurs on federally owned lands. I am glad to report to HGMS members that House Resources Committee Chairman Richard Pombo has reassured me that this bill will never get out of his committee and that he appreciates the fact that it has been amateurs who have made most of the discoveries of new species and specimens. Without amateurs, the scientific world would not have gems like Sue, described by Chicago's Field Museum as "the largest, most complete and best preserved *Tyrannosaurus Rex* fossil yet discovered."

Chairman Pombo tells me that someone always files this same bill every session, and it never passes. As long as I am in Congress, I intend to keep it on my radar screen and to do everything I can to be sure it does not become law and shut down the good work of thoughtful careful amateur collectors.

HGMS President's Response

by Scott Singleton

John: Thank you for your article. We certainly appreciate your contribution and your desire to participate in our activities. We are honored that someone of your stature sees fit to spend your valuable time having fun with our club members on our outdoor activities. It is our mission as an educational public-service organization to disseminate knowledge and experience in the earth science field to the general public. That's the main reason we have our educational classes, instructional and fun field trips, and our annual show. We depend on positive feedback from those in the community to assure us that our efforts are appreciated.

I'm happy to hear that you do not support legislation restricting the ability of hobbyists to collect fossils. Yes, there are those who abuse the privileges we all enjoy. None of us appreciates or supports such flagrant disregard for the next person trying to collect. But throwing the baby out with the bathwater is not the solution either. The ALAA blankets us all with admonitions to write our congressmen when these ridicu-

lous bills get submitted (it seems) each year. I realize that rockhounds do not command the respect of the AARP or NRA, but this is becoming a never-ending battle to keep public lands open for *reasonable* use (while, of course, at the same time preventing waste or destruction of those same lands). Thank you for your support in those efforts.

We also really appreciated your donation of the U.S. flag to our show auction in 2004. Our treasurer was the high bidder for that flag, and we presented it to him at our General Meeting immediately following the show. He and the rest of us were very impressed and grateful for your generosity.

Regards,
Scott Singleton, HGMS President

Hexagonal Fracturing in South Texas Petrified Wood

by Scott Singleton

Member of the Houston Gem & Mineral Society

Karnes County, Live Oak County, and surrounding areas are popular petrified wood hunting grounds because the late Eocene to Oligocene sediments have undergone extensive primary and secondary mineralization producing wonderfully colored and patterned specimens. In fact, this same mineralization is responsible for the leaching and subsequent concentration of uranium at the unconformity between the uppermost Jackson Group (Eocene) and the Oligocene Catahoula Formation. Because of the importance of uranium mining, the geology of this area has received considerable attention in the literature. Alan Cherepon of the Austin Gem & Mineral Society has written a great summary of this from a collector's point of view (Cherepon, 1996).

Some of the petrified wood specimens from this area are truly outstanding. These specimens have superb patterning and wonderful color contrasts (Figures 1 and 2). Because of these attributes, this specific type of fossil replacement makes truly wonderful cutting material and is highly desired among lapidaries.

Although it may not be visible in the reduced figures in this article, the specimens in both Figures 1 and 2 show clear indication of palm vascular bundles (i.e. "straw") in the center portions of the specimens. This clearly identifies them as *Palmoxylon*. In Figure 1, the hexagonal patterning is only present in the outer portions of the specimen, but in Figure 2 the hexagonal patterning is present throughout the entire piece.

In both specimens, the vascular bundles should be present throughout the trunk of the palm. The reason you cannot see them in the outer portion of either specimen is because extreme silicification in this area has wiped out all of the original plant cell structures, leaving only the secondary mineralization in the hexagonal fractures.



Figure 1: Cut and uncut specimens of hexagonally fractured petrified wood from the George West area in Live Oak County. (Specimen is from the Johnny French Collection).



Figure 2: Cut and polished top of a hexagonally fractured specimen of petrified wood from the Choke Canyon area in Live Oak / McMullen counties. (Specimen is from the Robert Herring Collection).

This can be easily observed by viewing a cut section of this material with a hand lens. Look closely at the polygonal patterning and note how it interacts with the features we know to be fossil cell structures (in this case palm vascular bundles). You will see fairly easily that the polygonal patterning sometimes intersects with cell structures. When this happens, the cell structure is cleanly split into two parts, and each part is located in adjacent polygons (Figure 3). This cannot be the result of original growth, but instead must be the result of subsequent mineralization after the plant was fossilized.

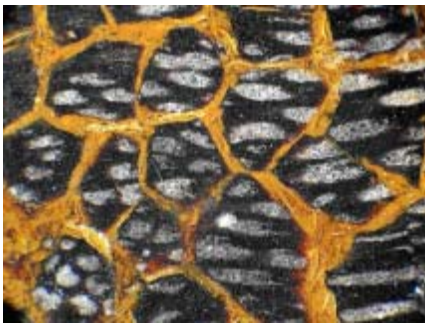


Figure 3: Microscope image of Palmoxylon vascular bundles and hexagonal fractures. Several vascular bundles are cleanly split by the hexagonal fracturing. Magnification is about 20x.



Figure 4: Microscope image of a hexagonally fractured specimen that shows the hexagonal pattern distorting and eventually collapsing in the upper half into a mass of orange agate. Magnification is about 6x.

In actual fact, what has happened is that the previously fossilized specimen was sub-

