



The **BACKBENDER'S GAZETTE**

*The Newsletter of the
Houston Gem & Mineral Society*

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July 2016



President's Message *by Paul Brandes*

July, 2016; we've completed half the year already, and I look back, wondering where has the time gone? It seems like just yesterday that I was appointed President of HGMS, and what a ride it has been so far. I look forward to the next six months to see where it leads us.



As you may have read in last month's BBG, Nathalie and I celebrated our wedding anniversary on Hawai'i, and what a trip it was. From golden beaches, to erupting volcanoes, to the food, it was fantastic. One of those experiences was to stand on basalt that less than two years ago was molten lava under the surface. The October 2014 flow from Pu'u 'Ō'ō nearly advanced on the town of Pāhoa, but luckily stopped less than one mile from the city limits. Nathalie and I got to walk on these flows, and what a humbling experience to realize that we as humans are so minuscule compared to the awesome power of the planet we live on. Another unforgettable experience was the opportunity to walk on a cooled lava lake that was active in 1960, and to personally visit the active lava lake of the Halema'uma'u Crater and take what I call the "money shot" (you'll have to ask me to see the actual photo; it is breathtaking!) And, just so you know, I did not take any rocks from the island. Annoying the goddess Pele is like annoying Shop Supervisor Neal—and no one wants that!

The last things for this Message are some upcoming events in the next

Continued on page 4

Upcoming Programs *by Sigrid Stewart*

1st Vice President

Neal Immega dug agate and thundereggs in the Deming area back in January; he also acquired many other wonderful finds, and will show them in our July 26 General Meeting program. He has been cutting his finds since his return, and he will be wearing one of his projects for the July meeting. He may supply the door prize as well.

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Every article published in the BBG is edited for grammar and content. No flaming is allowed.

Articles now are due on the 15th day of the month before the date on the BBG issue.

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Copy is due for the August 2016 issue by Friday, July 15, 2016.

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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 \$40 for an adult membership, \$60 for a couple, \$75 for a family (including all children aged 5-18), \$25 for a youth membership (ages 5-18), and \$500 for an adult life membership. 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 which is 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>.

couple of months that should interest you in addition to the regularly scheduled Section meetings throughout July. The first is on Saturday, June 25, when the Mineral Section will host an Introduction to Basic Rock & Mineral Identification. The event will begin at 2:00 p.m. in the main hall of the Clubhouse and will allow attendees to identify basic rocks and minerals provided by the Section, as well as any specimen you bring in from your personal collection to have identified. Last year's workshop was a full house, and I anticipate this year's will be no different. If you plan to come to the workshop, please email Steve Blyskal at steve.blyskal@gmail.com to reserve your spot. The second event is another Trade Show scheduled for Saturday, July 23 in the Clubhouse. For more information, please email Chase Jennings at chase_j_jennings@yahoo.com.

Have a great July, everyone!

New Book on Cretaceous Urchin Identification

Has Eclipsed the 1987 Akers Book

by Neal Immega—Paleontologist, HGMS Paleo Librarian,
and seller of the Akers books.

William Morgan has written *Collector's Guide to Texas Cretaceous Echinoids*, and it is available for preorder from Amazon.com for about \$25 (at about a \$5 discount). I have ordered copies for our library and one for myself.

It had to happen, the Texas Cretaceous Urchin book by Rosemary and Tom Akers (1987) has been eclipsed by Morgan's book because he shows the key points that differentiate the species. For example, this is his figure 259 where he points out the key feature of *Heteraster inflatus* ambulacral pores—two slits alternating with a round pore.

I think this will be a marvelous aid to urchin identification. Morgan also uses real specimens that have been properly cleaned.

Figure 259. Close-up of the frontal ambulacrum of *Heteraster inflatus* showing the alternating two wide-slit pore-pairs followed by one punctate pair.



DESCRIPTION OF TEXAS FOSSIL SPECIES

WHAT WE CAN'T
DO ALONE
WE CAN DO
TOGETHER



Why You Should Have Muscovite Mica in Your Mineral Collection

by Michael Sommers

Member of the Houston Gem & Mineral Society

Muscovite mica is probably not on your radar as a “must-have” mineral for your collection. It is not the typically glamorous mineral, high on the list of sought-after specimens by most collectors. It is relatively abundant and (with several notable exceptions of course) not commonly a well-crystalized species, and due to its softness and perfect basal cleavage, even when it is well-crystallized it can be easily damaged in collection or transport. In regard to its usefulness, most people, at least those who have read practically any introductory geology textbook, will tell you that in times of yore it was utilized as a cheap substitute for window glass in Moscow—hence its name. Maybe a smaller number will be able to recall its use in paints (and cosmetics) as a pearlescent/metallic agent. Its use goes far beyond those applications, including use in electrical insulators, roofing shingles, and extender-fillers in various compounds and plastics. There is one more use for it that I’d like you to know about specifically, which is the reason why you should add it to your mineral collection if you don’t already have it, and that I hope you never actually see it. But first, a short story.

Early on the morning of April 18, 2016—“Tax Day”—the city of Houston and surrounding regions to the north and west were experiencing a large amount of rainfall. Flooding was widespread throughout the area; fortunately for my wife and me, the serious flooding was not in our neighborhood. All that rain was coming in thunderstorms, however, and at 5:53 a.m. my wife, Tracy, and I were awakened to the loudest, sharpest sound of an “explosion” I’ve ever experienced. It was clearly a lightning strike very nearby, if not on, our house. In the very late overnight we had had some “close” strikes, but this sound was nothing like that—close to another order of magnitude.

I have a couple of Uninterruptible Power Supplies (UPS) for my computers and AV equipment, and they started beeping immediately. Their backup battery power had engaged. My home’s alarm panel was beeping a distress signal as well. Groggily, I sat up and tried to ascertain what had happened. Aside from the confusion of being awakened in that manner, some electrical things were working and others were not. I went out to the living room and saw the UPS there was engaged, and the TV attached to it would power on but not show a picture. The faint smell of ozone wafted through the room. The ceiling lights worked, though, as well as the kitchen lights. I made my way toward the garage and the circuit panel, and in the laundry room it sounded like water was filling the washing machine. I checked quickly, and it was dry. I felt the fill hose and it was vibrating, as if water was passing through it—but no water was coming out the drain hose. Confusing! I decided to focus on the electrical for the moment.

Out in the garage, sure enough, there were about five circuit breakers tripped in the panel. I started flipping those to the OFF position and then turning them back ON. Two would not stay “off”—they just flipped immediately back to the middle. I was looking at which ones they were—the microwave oven, and the furnace. About that time, Tracy opened the door into the garage and said to me, “I think I smell something funny, almost like something burning.” I replied it’s probably just the ozone smell that I had encountered; but she said no, she could smell it in the bedroom. I went back inside and checked the bedroom and I, too, thought I smelled something

"funny." Thinking of the circuit breakers, I realized the furnace is in the attic—right above our bed, actually. "I better go check the attic."

I pulled down the ladder-stairway and zipped open the tent covering the opening, and was immediately greeted by the smell of smoke and the yellow-orange glow of flames reflecting off the roof decking. I poked my head and shoulders up and looked around. The furnace, which is a natural gas unit, was roaring flames out the side through the metal grill, and also I could see flames below the unit on the wood floor. "There's a fire!" I managed to choke past the lump in my throat to my wife waiting below. "Get me the fire extinguisher and call 911!"

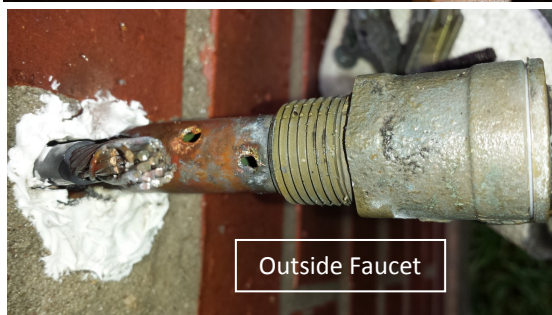
Here's where the story returns to muscovite mica. Fires require three things: heat, oxygen, and fuel. Fighting a fire means depriving the fire of at least one of those three elements. Remove it, and you beat the fire. Dry chemical fire extinguishers, of the kind Tracy was handing to me up the attic stairs, contain powdered chemicals: monoammonium phosphate, ammonium sulfate, magnesium aluminum silicate, and—muscovite mica. The cylinder is pressurized with nitrogen gas. The first three powders are the ones designated specifically to coat the fuel that is burning, separating and sealing the fuel from the oxygen in the air and interrupting the chemical reaction of the oxidation causing the fire. The mica, because of its perfect basal cleavage, is primarily included to prevent those powders from caking together in the extinguisher and to keep them all free flowing. Mica has the added benefit that it is also fireproof and incombustible. The nitrogen gas, which propels the mica and other chemicals out of the cylinder, also displaces oxygen from around the fire.

I received mandatory yearly training in fire safety during my employment as a college instructor at Columbus State in Ohio, including actual practice with a fire extinguisher. With my canister of powdered muscovite in hand and Tracy calling 911, I made my way to the furnace. But I did this only after checking that the smoke did not significantly fill the attic, and that I could see from one side of the attic to the other. Combusting household materials, especially in an enclosed space, can generate extremely toxic gasses capable of instantly disabling a person, and no responsible safety agency recommends attempting to put out a large fire oneself (in fact, they specifically advise against it). But in this case, I could see the fire was limited to the immediate area of the furnace, and I felt no great risk in trying to put it out. I pulled the pin on the handle, aimed at the base of the flames, and pulled the trigger while sweeping side to side. The flames instantly died back. I held the trigger down until the entire canister emptied, making sure I sprayed through the metal grating on the furnace. The extinguisher emptied fairly quickly, just a few seconds worth. This one was a "1A-10BC" rated extinguisher—fairly small. But it did its job, and the fire was out. Then I heard a hissing noise and realized that gas was flowing! The shutoff valve for the furnace was very close by, and I quickly turned that off.

By now you're probably wondering how a lightning strike could cause my furnace to catch fire. Believe me, I was wondering myself. I assumed some valve had been damaged and caused the gas to leak. But at the moment, the air in the attic was filled with smoke and now dry chemical powder dust, which despite all its fire-fighting benefits, is not a benefit to one's lungs or eyes. I wasn't going to look around. I retreated down the stairs to find Tracy still on hold with 911. They could not connect with the fire department, due to all the flood-related calls they were getting! It would be 10 minutes before

we could get through to fire dispatch and another 20 before the engine arrived on scene. I write that with absolutely no intention in any way to disparage our emergency workers; rather just as a reminder to all that during a regional widespread emergency like this flood event, one might be waiting a while for help. I had also emphasized to the fire dispatcher, once I made contact, that I felt the immediate threat was over and I just wanted them to ensure that it was safe and completely extinguished, which the fire responders determined was so.

With the fire threat eliminated and the firemen (and one firewoman) gone, I returned to the sound of running water in the laundry room. It turns out the bib for the outside water outlet is on the exterior wall just outside the laundry room, and it was fountaining water all over! Thankfully, fountaining all over outside. I had to shut off water to the entire house to determine what went wrong there, but that quickly lead to the realization of what may have



happened to the furnace.

The water pipe with the outside spigot has a clamp with an electrical ground wire. It is separate from the ground wire that attaches to the 10-foot-long grounding rod that is buried in the yard, and it disappears into the brick wall so I don't understand the purpose of this ground wire clamped onto the water pipe. But it seems



evident what happened. Lightning electricity had traveled through the ground wire, through the clamp and into the water pipe (or vice-versa), and in the process behaved like an arc welder, removing copper metal from the pipe onto the clamp and leaving a hole (actually, three holes) blasted in the water pipe! A similar process happened in my attic. The flexible metal feed line into the furnace was crossed over the main natural gas iron pipe. This created a similar effect that the pipe and clamp made, where the lightning electricity jumped between the flex line and the supply line and blasted a hole in the flex line, and probably ignited the gas simultaneously. It is undoubtedly better that it caught fire immediately, because if the attic had filled slowly with gas until the AC tried to turn on, or reached the water heater pilot light, I may have not been able to write this.

In the aftermath of our experience, I hope it is obvious that I am strongly suggesting for you reading this to become a muscovite mica collector, in the manner of keeping fire extinguishers in your house! There are also a few other tips I hope you glean from this story:

- 1) Know about your house or where you live. Where are your major appliances? Where and how do you shut off any gas to them, or the whole house? Where and how do you shut off your water? Where and how do you shut off your electricity?
- 2) Check the connections on your house's electrical ground. Ours was loose afterward. It could well have been loosened by the current passing through, but it also could have been loose to begin with. Providing a solid ground connection provides that critical "path of least resistance" for electricity and could mitigate the damage of a lightning strike.
- 3) It is a good idea to double-check your flex lines on any natural gas appliance and to make sure they are not in contact or in close proximity with any other metal objects.

Aside from the initial strike itself, we were incredibly lucky. You never know what craziness Mother Nature will throw at you or when, and clearly, if I had been forced to rely on emergency responders, the damage would have been far greater. I carted that little fire extinguisher between four states over 23 years (checking the green indicator pin every once in a while to see it was still pressurized), never really expecting to use it, but I am glad I had it. I now have a larger, refillable muscovite container that I hope I never have to use, let alone refill. I hope you have one, or will now go get one of your own. I

Wayne Barnett—Part of His Collection Is for Sale

Wayne Barnett was a long-time member who moved away several years ago. He served as the Faceting Section Chair for many years, and provided most of the Faceting Section programs. He recently sent your editor an email. See below:

As you know, life takes various turns. To this end, I have decided that I would like to dispose of most of my collection of books, fossils, and modern shells. There are a few items that I will retain—mostly the echinoids, vertebrates, muricid gastropods, Trilobites, gosport sand fauna, and the Texas Eocene. Sounds like a lot, but the bulk of the collection is in other groups or areas. Some collections are still unsorted. Any books that pertain to the groups I will be keeping will also be retained for future reference.

**If anyone in the club is interested in obtaining some or all of the material being offered, please have them contact me directly.
Email wbarnett@gem-designs.net Phone 832-286-5717**

Gemstone & Faceting Section Photos

June 8, 2016

Photos by Jeanne Barna



Left: Ken Aldridge & Margo Bedman using a spectroscope

Right: Faceting Section watching Randy Carlson demonstrating the uses of different oxides in faceting



Right: Randy Carlson demonstrating chrome oxide- diamond oxide- aluminum oxide



Field Trip to the Miocene Fleming Formation of Jasper County, East Texas

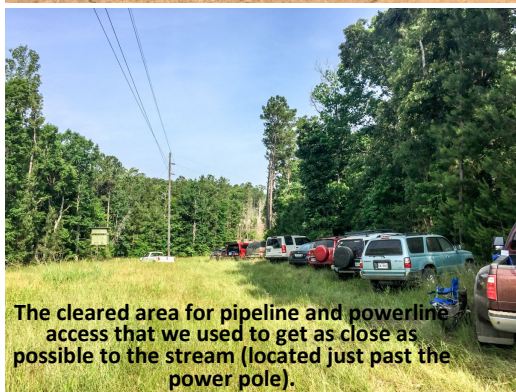
by Scott Singleton

Member of the Houston Gem & Mineral Society

On May 14, 2016, the HGMS held a field trip to familiar hunting grounds in East Texas, just south of Sam Rayburn Reservoir. The field trip was made possible by Joe Liggio, HGMS member and a retired botanist with the State of Texas, who arranged the trip through his friend Keith Stephens, a land use forester with Campbell Global. Keith allowed us access onto timber company land and accompanied us on the trip. The trip was organized on the HGMS side by Mike Dawkins, field trip chair for the Paleo Section.



Left: The Stump Restaurant, our traditional meeting place. Shown in the picture (left to right) are Troy Bell, Owen Martin, Scott Singleton, Joe Liggio, and Tony Ma.



The cleared area for pipeline and powerline access that we used to get as close as possible to the stream (located just past the power pole).

underground pipeline and then walked down to the stream crossing where we began our hunt.

Actually, hunting is too glamorous a term. A more accurate description would be high-grading the stream bed. Petrified wood was everywhere, and the question was, which pieces each person would decide to collect and haul back to their car (which was the tough part, as usual). After an initial period where everyone just hung out along the buried pipeline clearing (where a lot of really

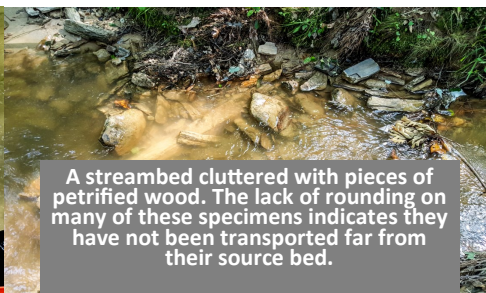
Twenty HGMS members met with our host at 8:30 a.m. at the usual meeting place, The Stump Restaurant a few miles past the Sam Rayburn Reservoir dam. Several of the party had already been making good use of the country breakfast buffet at the restaurant. By 9:15 under rapidly warming skies, Keith led our caravan to the site. However, instead of the usual location at Beef Creek, Keith surprised everyone and led us to a completely new site which was about five miles east of the Stump and then about a mile north on a timber company dirt road. We all parked along a graded clearing made for an



The access point to the stream within the cleared pipeline and powerline corridor.



A stream gravel bar cluttered with large pieces of petrified wood. The long log in the middle is a modern-day fallen log.



A streambed cluttered with pieces of petrified wood. The lack of rounding on many of these specimens indicates they have not been transported far from their source bed.



View along the length of a section of the stream showing petrified wood on the inner gravel bar while the outer bank is a cut bank where erosion is actively taking place, thus possibly exhuming more in-situ petrified wood from the Miocene sediments.



Left: Palm stem found by the author at the point of entry into the stream along the pipeline/powerline corridor. This specimen was at my feet as I was standing in the stream describing the geology of this locality. The hand on the right belongs to our host, Keith Stephens. Terry Proctor is shown in the background.



Above: Palm bulb found by Owen Martin a considerable distance upstream in one of the tributaries. This is one of two large pieces found by Owen.



Above: Our host, Keith Stephens, creating a pile of petrified wood pieces in the middle of the stream. I think in most circles this would be known as doodling....



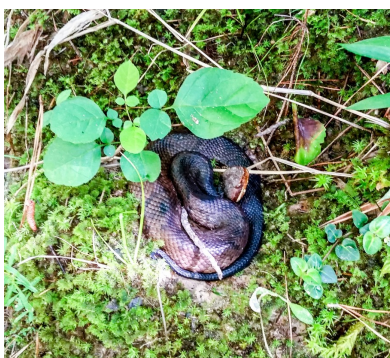
Above: The end of a palm specimen found by Troy Bell that shows a chip knocked off the end, thus revealing a highly silicified specimen. This beautiful translucent yellow matrix with palm "straw" (vascular bundles) will make exceptional cutting material.



Owen Martin getting up close and personal with pieces of petrified wood. Certainly can't let any pieces of palm escape....



A happy Beverly Mace standing in a stream cluttered with petrified wood.



A cottonmouth found and photographed by Mike Dawkins. Fortunately these snakes are not often encountered, but they are present in the East Texas woods and can certainly ruin a field trip if not seen before reaching down to pick up that rock.

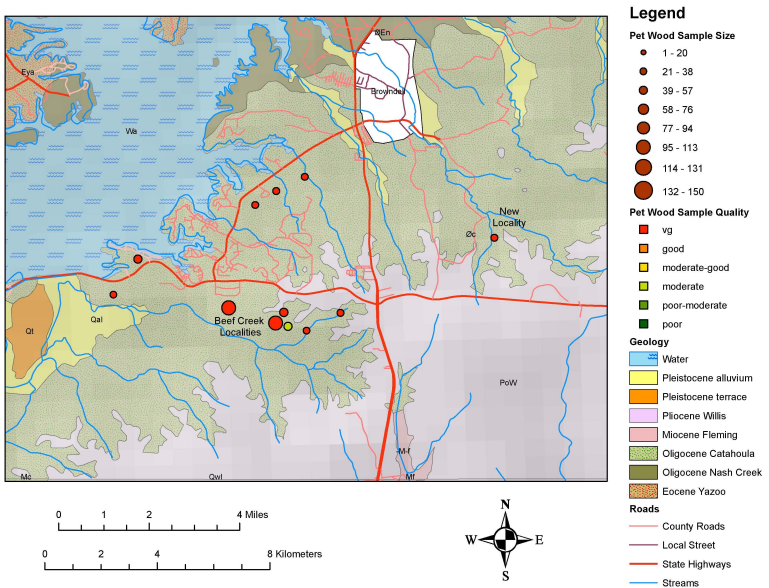
good material was collected, including my palm trunk), people fanned out, going both downstream and upstream.

Over the course of the morning, exhausted groups struggled back to their cars with loads and stories to go along with them. Owen Martin and Troy Bell went way upstream along a tributary, and Owen came down with two large palm stems, including a bulb (see photo). Troy found a large palm trunk that probably wins the prize for the highest silicification, with a translucent yellow matrix color (see photo). Mike Dawkins came away with two large palm pieces, and Ken & Andrea Bruneau collected a large number of smaller pieces.

People drifted away through the morning as they had collected what they wanted or had had enough of the sun and humidity. About eight of us waited until no more were left in the stream, then we headed out around midday, Keith locking the gate behind us. We met at The Stump for a BBQ buffet lunch, meeting a group that had just finished and was leaving. Afterwards we all said our goodbyes to Keith for showing us such a wonderful time at a new spot and limped home, our tailgates hanging much lower than when we left Houston that morning.

Geology of the Field Trip Site

Geologically, this site is identical to our old Beef Creek site (see map). As we drove into the site from St. Rd. 255, we were driving over the sandy loam of the Pliocene Willis Fm (Formation). This formation is typically found on roads as loose sand, but in formation it is a fine-to-coarse fluvial sandstone with iron staining and cementing and results in a resistant “cap” in the topography. It's known to be the source of “sand traps” along dirt roads in



this part of Texas, and it is common to see Southern Yellow Pine forests where the Willis is exposed because of the well-drained loose sand which



Above—View upstream showing a waterfall formed as the stream eroded into the Catahoula Formation. In the distance, the stream is following along the top of the formation. The petrified wood source beds are within the first 10 feet or so of the Fleming Formation lying on top of the Catahoula Formation.

pinus love. Petrified wood occurs in this formation, but I suspect it to be eroded remains of Miocene Fleming Formation wood (I will eventually prove this, but it may take some time to build up enough samples).

As soon as we dropped down in elevation, we were leaving the Willis Fm behind and entering the Miocene Fleming Formation.

The description in Singleton (2008) is “fine to medium clayey sandstone or sandy claystone with poor sorting and is typically mottled with masses of orange and gray clay,

suggesting extensive soil formation on the sediments.” This formation produces a rich, dark soil that supports a diverse hardwood forest in East Texas. It often doesn’t have extensive areal exposures because it is so soft. In fact, the various geologic maps put out by the BEG don’t even show there being any Fleming Fm exposure between the Willis Fm and the Oligocene Catahoula Fm., which of course is not true as the mapping in Singleton (2008) demonstrated. Nonetheless, just as this formation is important for the diverse forest it supports, it also is the source of much of the petrified wood in this part of East Texas, as I will describe in the next section.

Once we hit the floor of the gullies in this area, we find ourselves standing on the resistant Oligocene Catahoula Formation. This formation is a hard,



Two pieces of petrified wood in situ within the lower portion of the Fleming Formation. The Catahoula Formation is in the lower portion of the picture, at and just above the water level (at this location the stream has eroded into the uppermost portion of the Catahoula).

gray to white clayey siltstone with a prominent unconformity at the top. It tends to produce ledges and high outcrops where it is eroded into. In the field trip site, the tributary stream we hunted along was entirely floored by the top of the Catahoula. Eventually downstream (to the north) the stream will erode into the Catahoula, and eventually upstream the creek will peter out into the Fleming Fm (as we saw in some of the feeder gullies to the creek). It is because of this highly fortuitous stratigraphic position that this area produces so much petrified wood.

Petrified Wood at the Field Trip Site

The purpose of the mapping done in Singleton (2008) was to document the stratigraphy and occurrence of fossil wood in this area. According to the results of that work, "petrified wood found in situ occurs within relatively narrow lenses of fluvial stream channels within the lower 10 ft. (3 m) of the Fleming Formation. The wood varies from small pieces to large logs and typically has a small degree of rounding, indicating that it is not in the original fossilization location. However, the presence of large, intact logs indicates that it has not been transported far. Paleobotanical evidence corroborates this, indicating that the logs are either Miocene or Oligocene in origin."

Since that article was written, I've come to believe that wood occurring in lag deposits at the base of formations immediately above an unconformity primarily contain wood from that formation and not the immediately older formation. There are numerous examples of this phenomenon in the Texas Gulf Coast. Both the Catahoula and Fleming have unconformities at their bases and contain wood in fluvial lag deposits. I have not seen to this point in time any examples of wood in these basal lag deposits that was sourced in the preceding formation. Of course, having made that comment, it still remains to work out the details of how wood is emplaced in these basal lag deposits with rounding. If the rounding was due to transport of the original logs then that is to be expected. However, if the rounding is due to transport of the fossilized wood (as my 2008 article suggests), then that is a problem because that wood would have needed to be preserved at some point, unearthed, and then transported, all within the same geologic age. That's a difficult scenario to envision and I feel it is unlikely.

At our field trip site, much of the material appeared to be in modern-day lag deposits produced as fossil wood was unearthed from the Miocene source beds and deposited into the current-day stream (as we saw on our field trip), then the stream meandered and its previous stream bed was buried along with larger pieces of fossil wood. This is because several of the lag deposits I observed were immediately above the top of the Catahoula (i.e. lying on the Catahoula surface), which is the precise stratigraphic location of the current stream, and the lags were floored with pebbles and petrified wood with some degree of rounding. What I was looking for is an original stream lag deposit that was entirely surrounded by undisturbed formation sediments (as I showed in my 2008 article). I did find that in one location (see picture below), which was enough to demonstrate to me that the surrounding lower Fleming are the source beds of all the petrified wood we were finding in the modern day stream bed. This assumption was further strengthened by the presence of several feeder gullies leading to the main stream bed. Many of these feeder gullies were choked with petrified wood, further giving credence to the hypothesis that they were traversing the actual source beds for the petrified wood we were seeing in the main stream.

ID of Petrified Wood in the Fleming Formation of East Texas

My ID project for petrified wood in Texas is ongoing, but to date there are several families that I always find in the East Texas Miocene. These families appear to be an unusual mix of tropical holdovers from the warm climates of the Eocene and invaders that had been progressively moving south with the cooling climates of the late Eocene, Oligocene, and Miocene. I will divide these into three classes depending on the time of invasion:

Tropical Woods

These woods are holdovers from the warm climates of the Eocene. Many of their contemporaries have already disappeared, but these genera seem to hold on for a little while longer.

1. **Palm**—these plants never seem to be predominant components of the fossil wood assemblage, but nonetheless they are common enough and have been since the Cretaceous. Because of the primitive cellular structure of the Monocots, it is not possible to identify genera or families from wood structure alone.
2. **Apocynaceae family**, *Couma* genus (?)—these plants have been in Texas since the Eocene, but it's difficult nailing down the exact genus because there are several that look similar. And in fact, the possible matches extend to other families. I suspect that at different localities and in different age formations, the identification could vary significantly. Today this family consists of shrubs and trees in tropical and sub-tropical environments worldwide, even some in temperate climates. In the Americas, it is known as the Dogbane family. The *Couma* genus is currently native of northern South America.
3. **Flacourtiaceae family**, *Scottellia* genus—these plants are found in Texas in the Eocene similar to *Couma* and have hung on since then. This family is strictly tropical but has had lots of problems with its definition, so much so that it has been officially disbanded and its genera scattered to several other families. It is likely that I will have to re-identify this genus before I manage to publish an ID of it. Currently the genus *Scottellia* is restricted to the West African tropical rain forests.

Warm Temperate Woods

These are woods that started invading the southern North American continent (likely from the north) during the late Eocene, although the timing varies with family.

1. **Legumes**—this is a very large family (Leguminosae, also known as Fabaceae) and is known as the bean family or the pea family because all of its members have bean pods. It consists of ground-hugging shrubs such as the lima bean and trees such as *Mimosa* and *Acacia*. Legumes are found all through the Eocene but only become a major component of the assemblage in the Late Eocene through the Miocene. In the fossil record, there are several distinct genera represented; usually I can find two distinct wood types. I have not yet made the effort to identify them to genus or species, although I can say that I often see Locust in the East Texas Miocene.
2. **Juglandaceae family**, *Engelhardia* genus—this is the tropical representative of the walnut family. It has been identified in the Miocene of the northwestern US and now I have extended its range to Texas. It has long been established that the pollen of the walnut family sometimes dominates the entire assemblage in some sites in the Late Eocene of Texas; this is when I start finding this genus in the fossil wood record.

Temperate Woods

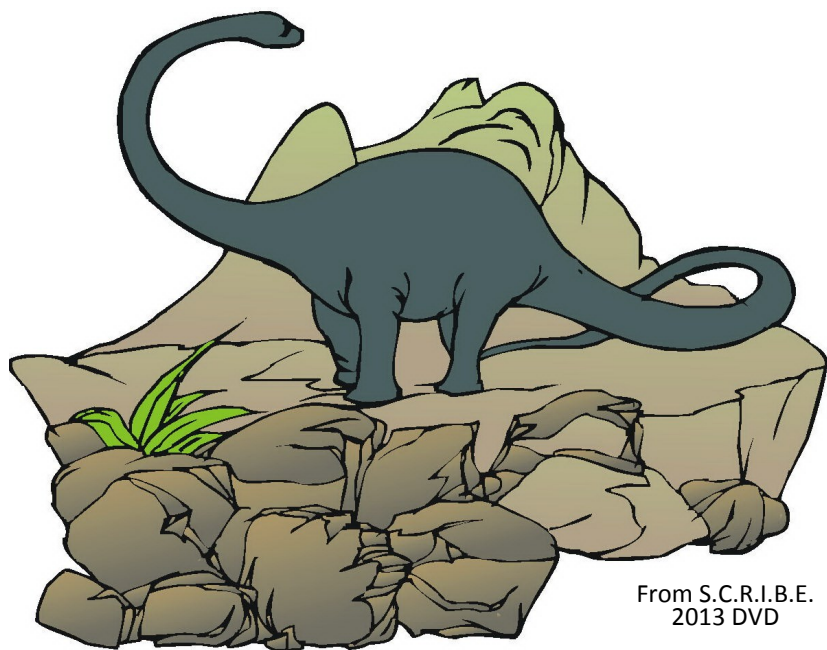
1. **Live Oak**—this genus sometimes makes up well over half the

specimens in the East Texas Miocene. Other Miocene sites in Central or South Texas also share this predominance. To this date, I have not seen any difference in the cellular structure of Miocene live oaks from present day live oaks (*Quercus virginiana*).

2. **Elm**—this wood type is as ever-present as live oaks in the Miocene fossil assemblage and probably invaded at the same time. The specific type of elm represented in the Texan fossil assemblage is the hard elm group, such as the Winged Elm (*Ulmus alata*), which is distinct from the elm that now populates North America (the American Elm, *Ulmus americana*).
3. **Conifers**—strictly speaking, conifers are not an invader from cooling climate although the family did undergo a change. In the Texas Eocene, conifers are well represented but exclusively by the Taxodiaceae family (bald cypress, sequoia). My research has indicated there were a number of genera present although they probably were specific to the time interval and location. These genera are very difficult to separate based on wood anatomy characteristics so I haven't yet done so. At some point, either in the Oligocene or Miocene (I haven't determined when exactly) this assemblage changed and the Taxodiaceae were replaced by either the Cupressaceae (cedar family) or the Podocarpaceae, which are currently restricted to the southern hemisphere and are similar in wood characteristics to the Cupressaceae.

References

Singleton, S.W., 2008, Petrified wood in the Miocene Fleming Formation, Jasper County, Texas: Gulf Coast Association of Geological Societies Transactions, v. 58, p. 797-814.



From S.C.R.I.B.E.
2013 DVD

Archaeology Section

by Nancy Engelhardt-Moore

June 2, 2015: The meeting scheduled for 7:30 p.m. was officially cancelled by Nancy Engelhardt-Moore due to heavy rain and the threat of high water near the Clubhouse. The speaker, Douglas Mangum was to give a talk on artifact finds from the San Jacinto battleground. His talk will be rescheduled for the August meeting. Although the meeting was cancelled, Garth Clark, Section Vice-chair, reported that 11 people showed up, so an informal Show & Tell was held. Marshall Bird brought pictures of a perennial water source as a possible archaeological site west of Houston. He noted that several archaic points and artifacts have been found at the site. Jeff Kelly brought close to 100 artifacts found on his property—including points, scrapers, trade blanks, and a stone weight. The photo below taken by Garth shows Tom Schwartz, Jeff Kelly, Lisa Schwartz, and Marshall Bird studying artifacts brought by Jeff Kelly.

July 7, 2016: There will be no July meeting due to its close proximity to a holiday weekend.

August 4, 2016: Douglas Mangum, Principal Investigator with Moore Archeological Consulting, Inc. will give his talk on ***“Canister and Grape: Artillery-related artifacts from the San Jacinto Battleground”*** that was scheduled for the June meeting (for details, see the June 2016 BBG). Watch for meeting announcements on the Facebook HGMS Group site, HGMS Web site at <http://hgms.org/Home/UpcomingPrograms> and by e-mail.



Photo (left to right): Tom Schwartz, Jeff Kelly, Lisa Schwartz, and Marshall Bird

Get last-minute news about club events by sending a note to Jim Kendall at kendal_ja@yahoo.com

General Meeting Minutes

May 24, 2016

by Nancy English, HGMS Secretary

The meeting was called to order by President Paul Brandes at 7:30 p.m. He thanked everyone for coming to the May 24, 2016 General meeting.

The meeting was attended by 28 regular members, one new member, and two visitors.

President Brandes asked the new members and visitors to stand and be recognized. The new member is Aaron Jordon Waak. Steven Powell, and Joshua and Mike Ell were visitors.

Minutes: Joan Riley moved to approve the minutes of the April 26, 2016 General Meeting as published in the June 2016 BBG and in the weekly email blast. Karen Burns seconded, and the membership passed the motion.

Phyllis George distributed certificates and plaques to winners in the 2016 SCFMS Author/Editor Contest for articles and poems published in 2015. Two First Place awards went to Neal Immega. The BBG was awarded First Place due to the first-class editing done by Phyllis George.

President's Announcements:

Library: The locks have been changed on the Library door. Access will resume when the Librarian is finished cataloging and arranging the contents of the library.

Trade Show: The next Trade Show is scheduled for July 23, 2016. Table reservations will open after the new floor plan is approved by the Board.

New Web Site: There continue to be delays due to Autumn Breese's recovery from surgeries for her broken leg. We are working with her to get the Web site updated.

Scholarship: Five (5) scholarship applications have been received. President Brandes will forward the paperwork to the BOD members to facilitate choosing candidates for the two \$2500 gifts.

Badges and patches display: Thanks to Neal Immega for creating the display of the patches and badges from Tom Wright and Fred Brueckner. It is hanging on the meeting room wall.

Section Reports

In the interest of time, President Brandes asked the members to look for Section Reports in the BBG, on the Web site, or to read the weekly email blast from Jim Kendall for future Section meetings and presentations. President Brandes invited Section Chairs at this time to make any additional special announcements.

Mineral Section: Steve Blyskal announced that setup for the Annual Swap Sale will start at 7:00 p.m. on June 1. The Swap Sale will start at 7:30 p.m.

Old Business

Also in the interest of time, President Brandes asked the members to follow the progress of Old Business items from the May 3, 2016 Board meeting and the April 24, 2016 General Meeting minutes as published in the June 2016 edition of the BBG.

Library: Librarian Nathalie Brandes reported that organizing the library is a lot easier now that the locks have been changed. The search process is being created for key word searches. The books will be labeled with the Library of Congress call numbers.

New Business

Shop News: Shop users would like to thank the Lapidary Section for the new aprons. Thanks to Mary Ann Mitscherling for doing the leg work to make it happen.

Mineral ID Workshop: Steve Blyskal invited everyone to the Basic Mineral and Rock Identification workshop on Saturday, June 25 from 2–5 pm. The introductory speaker will be Dr. Nathalie Brandes, Professor of Geology at Lone Star College in Montgomery County. She will give an overview of rock identification and the rock cycle, and how basic minerals are related to the rocks where they are found. Following her talk there will be a hands-on session, where participants can practice techniques such as identifying streak, determining Specific Gravity, and learning about hardness tests to find out how they are used with visual clues (color, crystal form, etc.) to identify minerals. The workshop is sponsored by the Mineral Section.

Drawing: Phyllis George won the drawing for the polished agate slab.

Show 'n Tell:

Scott Singleton showed a two-foot-long petrified wood log found at a new site on the Timber Company Land. The palmwood log was found sticking out of a creek bank. Others found colorful tropical woods.

Chase Jennings showed his recent shipment of trilobites from Morocco.

The next **Board of Directors meeting** is Tuesday, June 7, at 7:30 p.m.

The next **General Meeting** is June 28, 2016 at 7:30 p.m. The program: Sigrid Stewart will present Clear Creek County, Colorado, and its Minerals.

Adjourn: Karen Burns moved to adjourn the business meeting, and Joan Riley seconded. The motion passed unanimously, and the

meeting was adjourned at 8:05 p.m.

Refreshment Break for 10 minutes. Refreshments provided by Nancy English.

General meeting program: President Brandes called on Vice President Sigrid Stewart to introduce our speaker. Alan Cherepon of the Austin Gem & Mineral Society spoke on the Karnes Uranium District, and displayed specimens he has collected. This area in Karnes County, Texas, is well known for uranium mines, but it also hosts an interesting assortment of minerals—many fluorescent—as well as petrified wood and concretions. Alan has a long association with exploration in the area, and he has published several articles on the subject.

Board of Directors Meeting

June 7, 2016

by Nancy English

X	President - Paul Brandes	X	Archeology Rep – Garth Clark
X	1st Vice President – Sigrid Stewart		Beading Rep – Diane Sisson
X	2nd Vice President - Beverly Mace	X	Daylight Rep - Mary Ann Mitscherling
X	Treasurer - Rodney Linehan	X	Faceting Rep - Gary Tober
X	Secretary - Nancy English	X	Lapidary Rep - Phyllis George
	Former President – Ray Kizer	X	Mineral Rep - Mike Sommers
		X	Paleontology Rep - Mike Dawkins

Call to Order: President Paul Brandes called the meeting to order at 7:40 p.m. A quorum was present. Two other non-voting members were at the meeting: Scott Singleton, Show Committee and Web Site; and Carrie Hart, Education.

President's Comments:

Hawaii trip: Paul and Nathalie Brandes went to Hawaii Island for their Fifteenth Wedding Anniversary. Among the many adventures they experienced was a trip to the Tsunami Museum. At the Hawaii Volcano Observatory, Paul allowed himself to be strapped into a harness, and he leaned out over the rim of an active lava pool to take a picture of it. He was about 120 to 150 ft. above the 1100 degree Celsius lava pool.

Approval of Previous Month Board Minutes: Phyllis George moved and Gary Tober seconded a motion to approve the Minutes of the May BOD as published in the June BBG. The motion passed.

Treasurer's Report: Rodney Linehan emailed financials to all Board members in advance of the meeting.

Office, Committee, and Section Reports

Archeology Section: The next Archeology Section meeting is Thursday, August 4, 2016, 7:30 p.m. The program will be about findings at the San Jacinto Battlefield in August. A potential archeological site might be the program in June.

The Archeology Section was to meet officially on June 2, and Dr. Douglas Mangum was to give a talk on artifact finds from the San Jacinto battleground. The meeting was cancelled due to inclement weather; however 11 people

showed up and an informal meeting was held. Marshall Bird brought pictures of a perennial water source as a possible archaeological site west of Houston. Several archaic points and artifacts have been found at the site. Jeff Kelly brought close to 100 artifacts found on his property, including points, scrapers, trade blanks, and a stone weight.

There will be no July meeting due to its close proximity to July 4, a holiday weekend.

Beading Section: Dianne Sisson reported that the May meeting had to be cancelled because she and Jillynn Hailes were both out of town. The next regular Beading Section meeting will be on Saturday, June 18, 2016 at 1:30 p.m. Program to be announced.

Day Light Section: Members made air chasing bracelets at the June 1, 2016 meeting. The next meeting is scheduled for Wednesday July 6, 2016, at 1:00 p.m. The program will be on saltwater etching. Videos are available on the Web and are useful for understanding the possibilities of the technique. Anyone who wants to continue with the prior month's program project is free to continue on their bracelet.

Education Committee: Carrie Hart reported that Karen Burns will teach how to make a Byzantine Bracelet on Saturday, July 9, 2016, in the small classroom. The cost is \$45.00. All tools and supplies will be provided. Please contact Carrie Hart at carriehart2000@yahoo.com.

Gemstones & Faceting Section: Randy Carlson reported that the next meeting is on **Wednesday, June 8 from 7 p.m. to 8:30 p.m.**

Program: Polishing with Spectra Laps, Oxides & Diamond Powders Bring any "Show & Tells." This is an interactive section that is enhanced with participation.

Education segment - Polishing with Spectra Laps, Oxides, & Diamond Powders. We will set up two of the machines to demonstrate how to use oxide and diamond powders. Please contribute with your methods of how you polish. What you know may not be known by others and would enhance everyone's learning.

Lapidary and Silversmithing Section: The next regular meeting is on Monday, June 20, 2016, at 7:30 P.M. Steve Wilkerson will demonstrate spool polishing. The shop will be open 5:00 to 7:15.

Library Committee: Nathalie Brandes reports that progress is being made cataloging the Library. She is getting ready to order new archival labels to make it easier to organize and reshelv the books. She wishes to thank Neal for changing the lock on the door to keep things in order, and to thank the Board for backing her on that decision.

Mineral Section: There are no meetings during the summer hiatus. The next regular meeting will be the first Wednesday in September. However, there will be a summer workshop on Mineral ID on June 25. See below under New Business for more details. During the last successful Midlothian, TX field trip, many people found pyrite.

Paleo Section: The next meeting is scheduled for Tuesday, June 21, 2016, at 7:30. Chase Jennings will present "The Trilobites of Morocco and Trilobite Authentication."

Publicity Committee: Chase Jennings reported, "I've been getting pricing for online advertising for the annual show. That is going extremely well. I think we'll be able to reach vastly more people this year with our expansion into online advertising."

Youth Section: The next meeting is on Saturday, June 18, 2016, from 10:00 a.m. to noon. The June 4 meeting was cancelled due to heavy rain.

BBG Editor: Phyllis George reported that the deadline to send in articles is June 15, 2016.

Shop News

AC/Heating - The relay for the furnace that feeds the meeting room has been replaced—obviously a silly thing to do for the month of June! We may need it later. We did not have any heat last winter in the meeting room, and survived quite well.

The A/C Technician determined there is no restriction in airflow to the libraries. It is a weak flow because of the long run from the plenum chamber. No mildew problem has been detected in the libraries.

The AC people said we would have to double the AC capacity to make the libraries cool, and we do not have the current to do that since so much is used by the shops.

Sigrid Stewart volunteered to contact Amigo Energy to ask for an evaluation of HGMS electric efficiency. She later emailed the Board to report that, "Amigo does not offer any energy audits at this time."

In response to the discussion on adding insulation to the attic, Garth Clark offered to put HGMS on a list of non-profits to receive free insulation from Katy Recycling for Charity (when KRC has insulation donated to it).

Shop/Travel News

Neal Immega is traveling out of state. Inda and Neal are taking their annual summer car trip to the American Association of Petroleum Geologists (AAPG) convention. This year it is in Calgary, Alberta, Canada. He has found shop supers for Saturday Shop hours, June 11 to July 9 or so. Be nice to his replacements.

Old Business

1. Web Site:

- a. Scott Singleton reported: Web updates have not been happening for the last month as the webmaster (Autumn Breese) recovers from her accident. Discussion on how to move forward with the Web site led to President Brandes creating a task force to investigate possible courses of action. Scott Singleton, Carrie Hart, Mark Groseth (programmer), Phyllis George, and Sigrid Stewart will form this committee initially. Individuals may be added or subtracted at a later date depending on availability, interest, and the path we end up taking with the Web site.
- b. Nancy sent the Get Well fruit and food basket to Autumn on May22.

2. **Security System:** Garth Clark reported that the remote viewing should be available by Thursday, June 8. He is still working on the smoke detectors and outdoor cameras.
3. **Trade Show July 23:** Chase Jennings and Mary Ann Mitscherling worked out a new floor plan. Chase was unable to attend or to send the floor plan prior to the meeting. In subsequent emails and after the BOD reviewed the floor plan, the plan was approved with one modification—tables cannot be set up in the kitchen.
4. **The Show Committee:** Scott Singleton reported that the Publicity Committee met May 31, 2016. The Dealer Committee will meet June 8.
5. **Scholarships Status:** Members discussed the five candidates who had already applied. We became aware of a sixth entrant, and Paul

Brandes will send her information by email.

- a. **Elizabeth Jean Smith Scholarship:** Nancy English will be able to send the Thank You email to Mark Jacobson on June 8, 2016. After Brett Smith's email is received, she will send him a Thank You email as well. Rodney Linehan reported that one royalty check has already been received and deposited. A scholarship of \$2500 will be awarded the year after \$2500 has been accumulated.
 - b. The BOD agreed on a specific set of criteria to measure the five scholarship applicants.
 - c. Three applications are missing documentation. They will be contacted and given until June 15 to provide the missing documents to the Board. Then the Board will provide their choices by June 20.
6. **Subscription to magazines:** After investigating magazine subscriptions, Nancy English proposed a different plan to subscribe and renew. Treasurer Rodney Linehan committed to order and renew subscriptions for Sections if he receives detailed instructions. The BOD Section representatives agreed to report the new plan to Sections. The magazines should be addressed to HGMS attn. Section name. The renewal notice can be dropped in the Treasurer's in box when received.

New Business

1. **General Meeting Presentation June 28, 2016:** Sigrid Stewart will present Clear Creek County, Colorado, and its Minerals.
2. **Mineral ID Workshop.** The Mineral Section will host a Basic Mineral and Rock Identification workshop on Saturday, June 25 from 2–5 pm. The introductory speaker will be Dr. Nathalie Brandes, Professor of Geology at Lone Star College in Montgomery County. She will give an overview of rock identification and the rock cycle, and how basic minerals are related to the rocks where they are found. Following her talk, there will be a hands-on session, where participants can practice techniques such as identifying by streak, determining Specific Gravity, and learning hardness tests to find out how they are used with visual clues (color, crystal form, etc.) to identify minerals. This workshop will give you some tools to use in identifying rocks and minerals in the field, in the shop, and at a show. In addition, attendees can bring in rocks and minerals to be identified. This is a great opportunity to have them examined by experienced Mineral Section members. (The shop will be open during this time, but large saws will not be available to be used so that speakers can be heard.) The Shop foreman will be asked to suspend large-saw use during the workshop.

Adjourn: Gary Tober moved to adjourn the meeting, and Mary Ann Mitscherling seconded. The motion passed unanimously, and the meeting was adjourned at 9:55 p.m.



Bench Tips

by Brad Smith

"Bench Tips for Jewelry Making" and "Broom Casting for Creative Jewelry" are available on Amazon.
www.BradSmithJewelry.co

DO BEZELS SHRINK?

The engineer in me says there's no reason a bezel should shrink when I solder it onto a base plate, but I sometimes find that the stone won't quite fit into the bezel that was perfect just before soldering.

If that ever happens to you, here's a fix that usually works for those times when there's just a minor problem. I file or sand the stone down a little around its base. For soft cabs like turquoise, lapis, jet, or howlite, you can use a sanding stick. Harder cabs like jasper or agates will require a diamond file. In a pinch, a ruby nail file from the drugstore will work.



There are two important things to remember when doing this. First, you can only make a minor adjustment to the stone's size. All filing or sanding has to be hidden by the bezel because it takes the polish off the stone. Secondly, remember to round off all sharp edges on the bottom of the stone. A sharp edge here might sit on a little extra solder that's in the bottom joint of your bezel. Just a little bump here can put enough stress on the stone to risk breakage when you burnish the bezel down over the stone.

STRAIGHTENING WIRE

Have you ever pulled out some silver wire only to find that it's all bent up? The easiest way I've found to straighten it out is to stretch it a bit.

Simply put one end in the vise and grab the other end with a pair of serrated tip pliers. Then pull just enough to feel the wire stretch like a rubber band. This works best on smaller wire diameters, up to about 16 ga.



Be careful if you are trying to pull hard on a thick wire. Brace yourself in case the wire breaks or pulls out of the pliers.



**Biggs Jasper
cabochons**

**From 2013
S.C.R.I.B.E
DVD**

Show Time 2016

July 2-3	Grapevine, TX	Arlington Gem & Mineral Club Grapevine Convention Center 1209 S. Main St show@agemclub.org; www.agemclub.org
July 25-30	Houghton, MI	Keweenaw Mineral Days A.E. Seaman Mineral Museum Michigan Technological University 1404 E. Sharon Avenue http://www.museum.mtu.edu/keweenaw_mineral_days/index.html www.museum.mtu.edu
July 27-Aug. 1	Albany, OR	AFMS/NFMS/Willamette Agate & Min. Soc. Willamette Event Center, 3700 Knox Butte Rd.
July 30-31	Fort Worth, TX	Cowtown Gem & Mineral Glass Society 3939 Bryant Irvin Rd.
August 13-14	Gonzales, LA	Baton Rouge Gem & Mineral Society Lamar-Dixon Expo Center Trademart Bldg. 9039 S Saint Landry Ave mercymom3@gmail.com www.brgemandmineral.org
August 20-21	Bossier City, LA	Arklatex Gem & Mineral Society Bossier City Civic Center; Old Benton Rd. larockclub@gmail.com; larockclub.com
August 27-28	Jasper, TX	Pine Country Gem & Mineral Society The Event Center; 6258 Highway 190 West jonetta.nash@yahoo.com www.pinecountry-gms.org
September 10-18	Denver, CO	Multiple shows and locations Eons Expos, Denver Coliseum, 4600 Humboldt St 250 dealers in Denver Coliseum plus 100 tents http://www.ColiseumShow.com
October 7-8	Mount Ida, AR	Quartz Crystal Digging Contest; Mount Ida Area Chamber of Commerce Montgomery County Fairgrounds Fairgrounds Rd. director@mountidachamber.com; www.mountidachamer.com
October 8-9	Temple, TX	Tri-City Gem and Mineral Society Mayborn Center; 3303 North 3rd trinity4112@me.com
October 14-16	Westwego, LA	Gem & Mineral Society of Louisiana The Alario Center, 2000 Segnette Blvd. gemshow2016@gmail.com www.facebook.com/GemAndMineralSocietyOfLouisiana
October 21-23	Austin, TX	Austin Gem & Mineral Society Palmer Events Center
October 29-30	Glen Rose, TX	Paleological Society of Austin Somervell Expo Center; Hwy 67
November 6-7	Midland, TX	Midland Gem & Mineral Society Midland Center

2016		July					2016
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
					1	2 10-5 Shop Open 10-Noon Youth Section	
3 10-4 Shop Open	4 Independence Day	5 7:30 Board Meeting	6 10-3 Shop Open 1:00-3:00 Day Light Section 7:30--Mineral Section	7 7:30 Archeology Section	8	9 10-5 Shop Open	
10 10-4 Shop Open	11	12 NO Show Committee	13 10-3 Shop Open 6:30 Gemstones & Faceting Section	14	15	16 10-5 Shop Open 10-Noon Youth Section 1:30 Beading Section	
17 10-4 Shop Open	18 7:30 Lapidary Section	19 7:30 Paleo Section	20 10-3 Shop Open 7:30 Mineral Section	21	22	23 10-5 Shop Open	
24 10-4 Shop Open 10-4 Shop Open 31	25	26 7:30 General Meeting	27 10-3 Shop Open	28	29	30 10-5 Shop Open	

2016		August					2016
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
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7 10-4 Shop Open	8	9 YES!!! 7:30 Show Committee	10 10-3 Shop Open 6:30 Gemstones & Faceting Section	11	12	13 10-5 Shop Open	
14 10-4 Shop Open	15 7:30 Lapidary Section	16 7:30 Paleo Section	17 10-3 Shop Open	18	19	20 10-5 Shop Open 10-Noon Youth Section 1:30 Beading Section	
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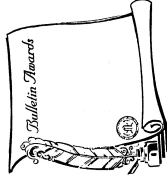
The BACKBENDER'S GAZETTE

The Newsletter of the
Houston Gem & Mineral Society

10805 Brooklet

Houston, Texas 77099

(281) 530-0942



SCFMS

1998 - 1st (Large)
2000 - 1st (Large)
2003 - 1st (Large)
2005 - 1st (Large)
2006-2012 - 1st (Large)
2013 - 1st (Large)
2014 - 1st (Large)
2015 - 1st (Large)



AFMS

1998 - 2nd (Large)
2004 - 3rd (Large)
2007 - 1st (Large)
2010 - 2nd (Large)
2012 - 3rd (Large)
2013 - 3rd (Large)
2014 - 2nd (Large)



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