# The BACKBENDER'S GAZETTE

## The Newsletter of the Houston Gem & Mineral Society

**Volume XLVII—No. 08** **August 2016**


### President's Message

*by Paul Brandes*

Summer is definitely in full swing here in Southeast Texas. I was coming home from work today, and while the car read 98 degrees, the heat index was at 105. I don't know about all of you, but this Scot begins to melt at anything above about 85. This is definitely not the time to be out on the rock pile or hunting for the next big thing in paleontology, but all is not lost. This is a great time of the year to complete those indoor chores. I am in the process of rearranging my minerals in the cabinets to make them more presentable. I know other folks are cataloging their collections, while others are catching up on photographing their specimens. If you're not into these activities, then why not visit the Houston Museum of Natural Science and get reacquainted with the fantastic mineral displays and the world-famous paleontology hall that our museum has to offer. I guess what I'm trying to say is just because it's a sauna outside doesn't mean you can't enjoy the hobby you love from indoors. It will get cooler soon enough.

We have some activities coming up, one of which is the next Trade Show scheduled for Saturday, July 23. This will be the last of the Trade Shows before our Annual Show in November. Speaking of which, our Annual Show is beginning to take shape, but a Show of this size cannot run itself!

*(Continued on page 4)*

### Upcoming General Meeting Program

*by Sigrid Stewart*

**August 23, 2016**: Steve Blyskal will talk about the recent Agate Expo in Cedarburg, Wisconsin, which he and wife Sigrid Stewart attended. This expo, held every four years, was hosted by Cedarburgs' The Gem Shop which for years has been involved in digging agates in Mexico. Agates, pictures of the displays at the expo, and pictures of the area, including the Door Peninsula, will also be shown.

## Contents





*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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## 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**.

It takes a group of dedicated volunteers to ensure everything runs as smoothly as possible. This is why every year we ask you—the wonderful members of the HGMS—to volunteer your time and knowledge to the Annual Show. Not only is it very gratifying work but it's also a lot of fun, and your assistance is greatly appreciated by the Show Committee. If you are interested in volunteering, please see Scott Singleton, Nancy English, or me, and we can get you pointed in the right direction.

I'm hoping to be able to produce a President's Message from the road for next month as I will be in the Upper Peninsula of Michigan for two weeks enjoying some time home. I'll also be spending time in Lake Superior—at least a quick dip anyway; the current water temps are still in the low 50s!

## Did You Know?

1. Your shoes are the first thing people subconsciously notice about you. Wear nice shoes.
2. If you sit for more than 11 hours a day, there's a 50% chance you'll die within the next 3 years.
3. There are at least 6 people in the world who look exactly like you. There's a 9% chance that you'll meet one of them in your lifetime.
4. Sleeping without a pillow reduces back pain and keeps your spine stronger.
5. A person's height is determined by their father, and their weight is determined by their mother.
6. If a part of your body "falls asleep," you can almost always "wake it up" by shaking your head.
7. There are three things the human brain cannot resist noticing—food, attractive people, and danger.
8. Right-handed people tend to chew food on their right side.
9. Putting dry tea bags in gym bags or smelly shoes will absorb the unpleasant odor.

## Mineral Section Sponsors Mineral/Rock ID Workshop

*by Stephen Blyskal*
*Photos by Stephen Blyskal*

On Saturday, July 25, 2016 the Mineral Section of the Houston Gem & Mineral Society held a Mineral/Rock ID Workshop at the clubhouse in the main room from 2–5 p.m. The featured speaker was Dr. Nathalie Brandes, a Professor of Geology at Lone Star College in Tomball, TX. Dr. Brandes is a member of HGMS and currently is the acting librarian at our club. Her husband, Paul Brandes, is currently serving a term as president of HGMS.

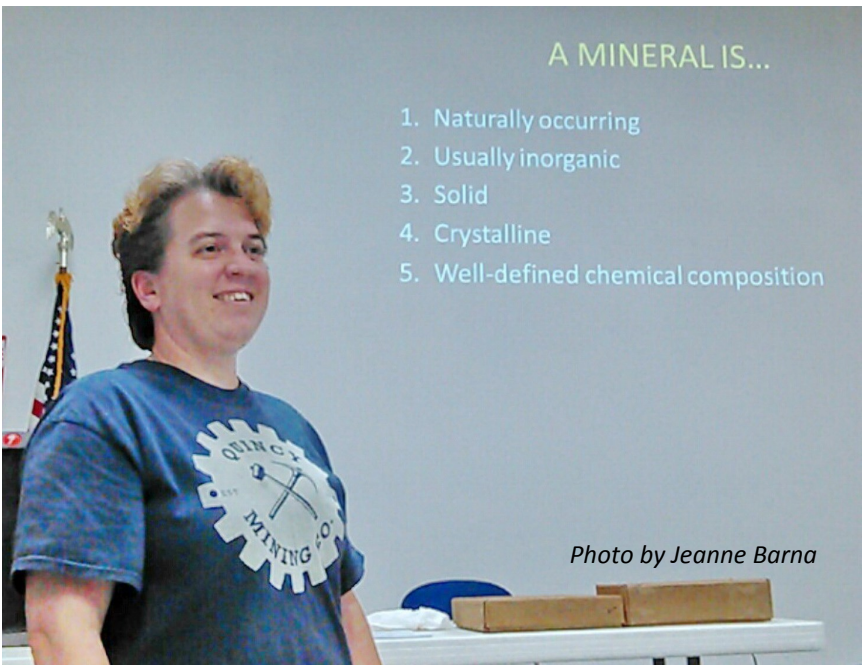



*Photo by Jeanne Barna*

Dr. Brandes gave a talk on the origins and classification of minerals and rocks and their relationship to each other. She talked about the Rock Cycle, an important concept that links the three major rock types: Sedimentary, Igneous, and Metamorphic. She also gave details on the formation of rocks within each group. When she discussed minerals, she explained the Mohs hardness scale and demonstrated how to use it and other physical methods to identify various minerals, illustrating the talk with charts and graphs.

After the session, the participants worked with mineral and rock sets put together by the Mineral Section members from the School Collections stock. These sets, in two boxes, contained common minerals and sedimentary, igneous, and metamorphic rocks all in small, numbered boxes. Also provided was a glass plate, streak plate, magnet, and acid bottle. Dr. Brandes provided excellent worksheets like those she uses in her labs in college, and showed everyone how to use them to determine what mineral or rock they were holding. Members of the Mineral Section, including Steve Blyskal, Sigrid Stewart, Paul Brandes, Dean Lagerwall, and Sam Norwood provided assistance to the 22 attendees to help them learn to use the worksheets in

the hands-on portion. Responses from the participants, who ranged in age from 10 to 70, was very positive. This is the second year the Mineral Section has sponsored this Workshop, and the kits will be stored for use in future workshops. Members who would like to have more time practicing with the sets may check sets out to use at the clubhouse.

**Photos by Steve Blyskal**

Dr. Nathalie Brandes directs hands-on Mineral Identification

Mary Griffin, Mary Ann Mitscherling, Mamie Lew, and Ginestra family on the right

*(Continued on page 7)*

Luan Troxel and her son, and Laura Hards

## More Mineral ID Training Photos

Taken by Jeanne Barna

**On left**: Minerals to be identified

**On right**: Members identifying minerals during workshop

## Archaeology Section

*by Nancy Engelhardt-Moore*

**July 7, 2016:** No meeting was held. The cancelled June program has been rescheduled for August.

**August 4, 2016**: Douglas Mangum, Principal Investigator with Moore Archeological Consulting, Inc. will give a talk on "***Canister and Grape: Artillery related artifacts from the San Jacinto Battleground***". Over the last decade, there has been numerous archeological investigations in and around the San Jacinto Battleground State Historic Site. His company has recovered more than 1400 artifacts associated with the battle. Analysis of these artifacts and their distribution have suggested answers to some questions regarding The Battle. Douglas will address one of the major questions that has been answered, as well as discuss how this information was integrated into a chapter in the book *The Archeology of Engagement: Conflict and Revolutions in the United States*, which was recently published by Texas A&M University Press. Come hear this talk Thursday evening and learn new details about the historic Battle of San Jacinto!

## Value

*by Edward Clay*
*Member of the Houston Gem & Mineral Society*

Though years pass,
Each day another step in a life,
The eye is still sharp enough
to discern,
The heart still open enough
to find
The beauty created inside
some stones of the earth.

To cut, shape, and find
almost miraculous
shapes or designs
inside.
To understand and see
the trick of light and structure.
To mimic stars
or copy rainbows.
To locate by orientation
neon-bright colors
in rock.

Years have passed.
Skill learned by much practice
Has allowed
my hands to find beauty,
My eyes to see color,
My heart to find content
in being able to
return value from my existence.

## General Meeting Minutes

*June 28, 2016 Agenda*
*by Nancy English, HGMS Secretary*

The meeting was called to order by President Paul Brandes at 7:35 p.m. He thanked everyone for coming to the June 28, 2016 General meeting.

The meeting was attended by 20 regular members.

**Minutes:** Karen Burns moved to approve the minutes of the May 24, 2016 General Meeting as published in the June 2016 BBG and in the weekly email blast. Joan Riley seconded, and the membership passed the motion.

**President's Announcements:**

**Library:** The work is progressing. Nathalie Brandes will be ordering labels for the spines of books soon.

**Trade Show**: The next Trade Show is scheduled for **Saturday, July 23, 2016**. So far, we have 2,300 people signed up on the Facebook event and steadily rising. All tables are sold. With our paid advertising about to kick in, we should easily break 3,000—plus the email listserv of course. We only had 1,800 signed up for the last show, which was already at least 300 more than the second and 1000 more than the first. Suffice it to say, this will be our biggest show yet. If interested in volunteering, contact Chase Jennings.

**New Web Site**: No update available. The Web Site Committee is working on getting the new site up and running soon.

**Scholarship:** There are two $2,500 scholarships available for 2016: the HGMS Annual Scholarship and the (this year only) Richard Baker Scholarship. This year's winners are Presly Carr, a student at the University of Houston for the HGMS scholarship, and Tyler Skelton, a student at Texas A&M University for the Richard Baker scholarship. President Brandes stated that he would call the winners later in the week to announce they had won. He will also invite each winner to the July General Meeting.

**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.

**Day Light Section** will be making jewelry in July and August at their meetings. Karen Burns had demonstration pieces of air chased copper jewelry on display for Show n' Tell.

**Education Committee:** 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. By popular demand, there will be two (2) classes for the Byzantine Bracelet—the originally scheduled July 9 class plus a second class on Sunday, July 10.

**Shop News**: Neal is on vacation. He will be back around July 9, 2016.

**The Mineral Section** hosted a Mineral & Rock Identification Workshop for all HGMS members. The event was well-attended (around 25 people),- and folks enjoyed the workshop. Dr. Nathalie Brandes presented a program on mineral and rock Identification, then participants got to identify a set of specimens on their own—with the help of Nathalie and Mineral Section members. A short article with photos will show up in the BBG.

**Old Business**

Also in the interest of time, President Brandes asked the members to follow the progress of Old Business items from the June 7, 2016 Board meeting and the May 24, 2016 General Meeting minutes as published in the July 2016 edition of the BBG.

**New Business**

**Hill Country Autumn Field Trip for minerals:** Yes! It was recommended to have it in the fall after the November Show. This will be discussed in the future.

Joan Riley thanks everyone for their donations to the charity with which she works.

**The next Board of Directors meeting is Tuesday, July 5, at 7:30 p.m.**

**The next General Meeting is July 26, 2016 at 7:30 p.m. The program:** Neal Immega will talk about his trip in January to Deming, NM to dig agate and thundereggs. Neal has been cutting many of these and will be wearing one of them during the presentation.

**Drawing:** Karen Burns won the drawing for the Arkansas quartz.

**Show 'n Tell:**

Steve Blyskal showed a flat of recent mineral purchases, including prehnite. Karen Burns had air chased copper pieces to demonstrate class projects. Sigrid Stewart had three Clear Creek County specimens for her talk.

**Adjourn**: Karen Burns moved to adjourn the business meeting, and Jeanne Barna seconded. The motion passed unanimously, and the meeting was adjourned at 7:55 p.m.

**Refreshments:** Provided by Beverly Mace.

**General meeting program**: Steve Blyskal introduced Sigrid Stewart for her presentation: "Minerals and History of Clear Creek County, Colorado."

## Board of Director's Meeting

*July 5, 2016*
*by Nancy English*

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

President Paul Brandes called the meeting to order at 7:30 p.m. A quorum was not present. Two other non-voting members attended: Carrie Hart—Education, and Chase Jennings—Trade Show and Publicity.

**President's Comments**:

The **Mineral Section Rock Identification Workshop** on June 25, 2016, was a huge success. Nathalie Brandes spoke for an hour on basic rock ID. Afterward, twenty-five people were given box flats of different rocks to practice their new skills. Participants were enthusiastic about having a Rock ID Workshop next year.

**Hill Country Field Trip**: A show of hands at the General Meeting on June 28 encouraged planners to start the process of creating a field trip to the Hill County this fall after the HGMS November Show.

Approval of Previous Month Board Minutes: Voting on the June BOD minutes as published in the July 2016 BBG was postponed until the August 2, 2016, meeting because there was no quorum.

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

**Officer, Committee, and Section Reports**

**Archaeology Section** - Thursday July 7 - NO MEETING

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.

**Beading Section**: The next regular Beading Section meeting will be on Saturday, July 16, 2016 at 1:30 p.m. Participants will make a flower bracelet. Two new HGMS members and one guest came to the June meeting. The group made USA Flag 4th of July earrings.

**Day Light Section**: The next meeting is scheduled for Wednesday, July 6, 2016 at 1:00 p.m. The program will be Salt Water Etching. The August 3 program will be on use of the small rolling mill to fashion copper sheets into

jewelry items that will then be chased with various designs. The September 7 program will be chasing and punching segments of copper sheet that will be connected with copper wire into a segmented copper 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. A second class will be on Sunday, July 10 from 1:00 to 4:00. 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, July 13 from 6:30 p.m. to 8:30 p.m. Members will learn gem measurement.

**Lapidary and Silversmithing Section:** The next regular meeting is on Monday, June 18, 2016, at 7:30 P.M. Ed Clay will demonstrate use of the lapidary machines in the shop. The Lapidary Section has volunteered to fund the process of copying the VHS tapes of Lapidary lessons to DVDs.

**Library Committee**: Nathalie is working diligently in the Library. She will be able to spend more time in the Library after Summer School is over in mid-July and in August before the Brandes go on vacation. Thank you, Nathalie.

**Mineral Section**: Mineral Section - Wednesday July 6 - NO MEETING (Summer Hiatus)

**Paleo Section**: The next meeting is scheduled for Tuesday, July 19, 2016, at 7:30 p.m. The Paleo program will be on the shark Helicoprion, the saw blade shark.

**Publicity Committee**: Chase Jennings reported that we have reached a milestone, hitting 1,000 followers on Facebook. We have also reached 107,000 page views as people continue to share our event and invite their friends. Responders totaling 2,800 have committed to coming to the July 23 Trade Show. The paid advertising I'm experimenting with will kick off in a couple weeks before our Trade Show for the best effect. We will see what the number reaches when that happens.

**Shop News**: Neal Immega should be back July 9, 2016. Thank you to Rick Rexroad for being shop foreman on Wednesdays and Gary Anderson on Saturdays. And of course, continued appreciation for Al Mowery being the shop foreman on Sundays.

**Youth Section**: The next two meetings are on Saturday, July 16, and on August 6, 2016, from 10:00 a.m. to noon.

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

**Old Business**

1. **Web Site**: Under the direction of the President, Phyllis George will resurrect the original Infinology HGMS Web site. She will be reimbursed for the $142.00 to reopen the site. Chase Jennings presented a brief overview of the Drag and Drop Web site builder to be considered for future reference.
2. **Security System**: Garth Clark was not present, so there was no updated report on remote viewing, the smoke detector connections to the new security system, and the outdoor cameras.

3. **Trade Show July 23**: Chase Jennings said there are 2,742 potential attendees for our upcoming trade show. This is around 1,200 more than the April 30 Show. He is already expecting two to three times as many people as before.

   **Trade Show Security**: Nancy English will reach out to former volunteers and ask for help on July 23 to manage the expected crowds. Vests from the big show will be provided. Volunteers should wear hats when they are outside and stay hydrated.

   **Future Trade Shows**: Notification emails about when table registration will commence will be sent to all members of HGMS simultaneously.

   **Appreciation**: Chase also said, "I would also like to say that I really appreciate the outpouring of support I've received lately from many members of the Board. It means a lot to me and keeps me energized in my efforts to grow and improve this organization. Again, it's your support and faith in me that makes these achievements possible."

4. **The Show Committee**: Nothing new to report.

5. **Scholarships Status**: Thank you to Mary Ann Mitscherling for her scoring grid quantifying information on the applicants. Thanks to the Board Members who voted. President Brandes notified the winners just before July 4 weekend. He invited them to the July General meeting.
   a. Richard Baker Scholarship was awarded to Tyler Skelton, student at Texas A&M.
   b. HGMS Scholarship was awarded to Presley Carr, student at University of Houston.

6. **Sigrid Stewart** reported in an email after the June BOD meeting: "In response to the question could we have Amigo Energy check how efficient our energy use is in the clubhouse, and let us know whether we need more insulation—Amigo does not offer any energy audits at this time."

**New Business**

1. **Display Case**: The large display case at the back of the meeting room has already been rented for the July 23 Trade Show. After examining the case, the Board suggested the wooden bars be removed to make better use of the surface as a table.

2. **Copier/Printer Discussion**: Phyllis George's son donated the used laser jet office-sized copier-printer to HGMS last year. Phyllis will have him call President Brandes to discuss the repairs needed.

3. **Scholarship Committee**: Nancy English suggested that the BOD establish a Scholarship committee to review the school contacts in a timely fashion so letters and emails can be sent out by March 1. Applications will be due to the committee by April 30. The committee would receive, review, and qualify the applicants. to provide to the BOD by May 15. Each entrant would need to submit his or her spring semester grades as soon as the school makes them available. The BOD would review and score the applications by May 31. Nancy English will look for HGMS non-Board members to be on the Scholarship Committee for 2017. Please contact her if you are interested in this valuable process: nancyjodi@aol.com.

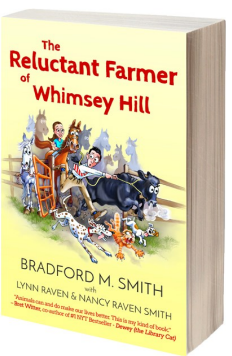
4. **Next Board of Director's meeting**: August 2, 2016, 7:30 p.m.
5. **General Meeting**: July 25, 2016, 7:30 p.m. Neal Immega will present Rock Fever—900 miles to the Deming Rock Roundup, and he is giving away prime specimens of Deming Rock.

Shop will be open from 5:00 to 7:15

**Adjourn**: The meeting was adjourned without a motion at 8:55 p.m.

## Bench Tips

*by Brad Smith*
*www.BradSmithJewelry.com*
*"Bench Tips for Jewelry Making" and "Broom Casting for Creative Jewelry" are available on Amazon*



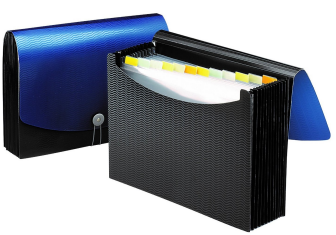

And as a personal note, I'm excited to tell you about my family memoir.

"**The Reluctant Farmer of Whimsey Hill**" is the true, light-hearted love story about a city boy (me) moving to a farm where dealing with my new wife's crazy rescue animals almost did me in. If you enjoy a good pet story like "Marley and Me" or "All Creatures Great and Small," take a look at the sample chapters on Amazon. http://amzn.to/1Xobls

Many thanks, Brad

**SHEET & WIRE STORAGE**

The more you work with jewelry, the more problems you have finding the piece of metal you need. My pieces of sheet were generally stored in various plastic bags, and the wire was in separate coils. Few were marked, so it often took me a while to locate that piece of 26 ga fine sheet I bought last year, especially since I usually take my supplies back and forth to classes.



A tip from a friend helped me organize everything. I bought an expanding file folder from the office supplies store (the kind that has 13 slots and a folding cover) and marked the tabs for each gauge of metal I use. Then I marked all my pieces of sheet with their gauge, put them in plastic bags, marked the gauge on the bag, and popped them into the folder. I usually store coils of wire loose in the folder, but they can also be bagged if you prefer. I use one tab for bezel wire and one for the odd, miscellaneous items.

The resulting folder is really convenient when I want to take my metal out to a class or workshop, and it's colorful enough for me to easily find in the clutter of the shop!

**LITTLE BALLS**

I often use little balls of silver and gold as accent pieces on my designs. They can be made as needed from pieces of scrap. Cut the scrap into little pieces,

put them on a solder pad and melt them with a torch.

Then throw the balls into a small cup of pickle.

If you need to make all the balls the same size, you need the same amount of metal to melt each time. The best way to do that is to clip equal lengths of wire.

But there's an easier way to get a good supply of balls. Some casting grain comes in near-perfect ball form. Just grab your tweezers and pick out the ones you need. When you need larger quantities of balls, pour the casting grain out onto a baking pan, tilt the pan a bit, and let all the round pieces roll to the bottom. Bag the good ones, and pour the rest back into your bag for casting. Balls can be sorted into different sizes using multiple screens.

## How do you say that? "Psilomelane"

*from OMGS The Sooner Rockologist 5/2016, via The Glacial Drifter 6/2016, via Stoney Statements 7/2016*

**Silo-melane? Pasi-lomelane? Who knows?**

However you say it, psilomelane is manganese oxide containing barium and potassium. It looks similar to hematite and polishes up beautifully.

Unlike when working with hematite it is a good idea to be careful (gloves and dust mask), especially if grinding, because its barium content can make it slightly toxic.

Its name is from the Greek meaning "smooth" and "black." It is an important ore of manganese with large deposits in England and in Vermont, Virginia, and Arkansas.

## Road Cut Collecting

*by Dick Stata*
from S.C.R.I.B.E. 4–6/2016

The road cut appeared like magic, a sentinel beside the road.
A rumpled marvel of engineering, as those long lines of drill holes showed.
Three terraces high, maybe a hundred feet, very impressive to some.
It broke the flat monotony, a glimpse of change to come.

I slowed the car and gazed with rapt attention at the wall,
Then I saw it just ahead, a section of rubble from an earlier fall.
Splotches of white ran haphazardly through layers of red and grey.
This rotten rock appealed to me, it beckoned, please stop and play.

I drove my car into the ditch, I had to park it off the road,
I got out to look around, at first nothing interesting showed.
I poked around and studied the piles of talus laying there,
Then I found a broken crystal of quartz, but from where?

My investigation led me to a vein, buried in the dusty rubble,
Then I located a cavity, well worth my time and trouble.
I got my rock pick and shovel from the car, and started in to digging,
The work was hard, hot, and dusty, and I had no water for swigging.

The cavity grew, the rock was fractured and crumbled,
I was successful—I hit a crystal pocket, but on it some large rocks tumbled.
Oh! Woe is me! The quartz was shattered, and a rock bounced off my knee,
The hole just kept caving in, I was dodging the bouncing scree.

I dug out that hole, but most of those crystals were broken.
There were a couple of half-decent pieces. I keep them as a token.
It was frustrating as hell, to have all that hard work wasted.
Maybe there's more buried in there, success just has to be tasted.

I shoveled rock for another hour, the hole, it grew immense,
There was a grinding, then a rock fell, I jumped from my rocky trench.
The 500 pound boulder bounced into my car, I saw metal tear,
Dust, chrome, and glass went flying. All I could do was stare.

I stood in stunned amazement. It went right in through the door.
I threw my tools into my trunk; I wasn't collecting anymore.
There it sat perched in the back seat, ready to take a ride.
I tried to shove that boulder out, but it was stuck inside.

Well, I drove home, one side of the car a holy mess.
The costliest field trip, I have ever taken, I must confess.
It was too late for me to cry, but I bet my wife will moan,
But Dear, it's the largest piece of Garden Rock, that I ever brought back home.

## Dousing Is Where You Find It

*by James Marburger*
*from Pick & Shovel 2/2016*

There have been numerous articles written about the art, or gift, of dousing. The possibilities are fascinating, whether you believe in this subject or not. Many things can be used as dousing tools. As a young lad, I was introduced to the art at an early age. I remember one time at my home in Humboldt, a problem came up with the water lines to our house. The city water folks had to come out and find the shutoff valve. After about an hour of searching with maps and a pipe locator, they had dug up a lot of the front parking area, with no luck in finding the shutoff. (The riser had been broken off below the surface.) A passerby asked what was going on, and wondered if he could help. Out of the leather pouch on his belt, he pulled a common CeeTee pliers, or farmer pliers. Holding it by the bolt so the handles were parallel to the ground, he started to walk around the large hole that had been dug. In just a few minutes, the handles of the pliers opened full wide apart. He said, "Try here." Within a few shovels of dirt, there was the broken shutoff riser.

Another bump with dousing was when I was visiting Stan Shurtleff, a rockhound friend and manufacturer of rock equipment north of Humboldt. He built grinding units, flat laps, and rock saws in his shop for many years. Being an avid rockhound, he also collected local rocks around the area of his farm.

While visiting him one time, we talked about the glacial tills of the area and how to identify the best areas to look in. This was due to having three glacial till types all mixed beside each other in the area. He said that he looks on the topographic maps of the area first with his rock locater. Okay, now I wanted one of these locators. He used a tip section end of a bamboo fly rod, about 3 feet long, with a sample of rock taped on the end. Holding the rod and moving it slowly over the topographic map it began to bounce. "There," he said, marking in pencil the area where he felt the strongest pull. "You should find Lake Superior agates on that hill." It worked! He further said that whatever sample you taped to the stick, that is what it was going to locate. As for the stick, it could be most anything, but it had to be flexible and natural.

To hone my dousing skills, we went to the rock room and placed samples on the floor and covered them with a cloth. We then affixed the sample to the rod and started looking for what was under the cloth. Holding the rod parallel to the floor and moving over each of the lumps, wham! It would start to bounce. There was the rock that we were looking for. Strange? Yes. Spooky? Yes. Moving the rocks around again in a different order, I was able to locate it every time.

Throughout history, dousing has been used to locate water, minerals, oil, gold, and many other items. Does it work? Yes. No, not everyone is able to connect with this unique power of man. If this has piqued your interest, a short trip to the Internet *Wizard of know it all*, GOOGLE, to research dousing. Try it. You might just save some time looking for rocks—and also have some fun with it.

**Cooking Tuxedo Agate**

*by Daniel Bontempo, TGMS Member*
*Published in The Glacial Drifter, Vol. 55, No. 3, 3/2012 (Topeka Gem & Mineral Society, Inc.), via Pick & Shovel 1/2016*
*(Due to outdated information and Web links, this article has been edited and updated by the Pick & Shovel Editor)*

Treating or enhancing gemstones is a controversial topic. Most objections pertain to high-end transparent, facet-grade gems, where any attempt to hide flaws could be fraud if not disclosed. Likewise, artificial diamonds or pearls have a much lower value than unflawed natural ones. In contrast, with semi-precious gemstones, it is often more acceptable to stabilize or heal material if it means colorful, well-patterned, material can be rescued from the scrap heap. Many agates and jaspers have pits, soft spots, or partially healed fractures. Sometimes whole varieties are known for their problems (e.g., Morgan Hill Poppy Jasper is notoriously fractured). Perhaps this is because the small-dollar value of the slab or cabochon does not change a lot pre-post treatment, so it is not a financial fraud. As noted in an article about gemstone coloring on the Mindat.org Web site, (http://www.mindat.org/article.php/170/Historic+Methods+of+Artificially+Coloring+Agates) "coloring of gem materials to make them more desirable to the consumer is as ancient as greed and avarice." Clearly, potential financial motivations are a large part of the controversy.

Nonetheless, semi-precious stone treatments that heal, or other treatments that color or enhance, are not always viewed negatively. Many semi-precious stone enthusiasts place value on natural and healing (or stabilizing) with a transparent resin, and it is generally perceived as less unnatural than changing the color or pattern of a stone. I, personally, have never liked the bright pink, neon purple, and aqua blue dyed Brazilian agate slices found in many gift shops. Besides looking very unnatural, some of the dye is toxic. I usually turn my nose up at dyed material.

Sometimes, for some people, heat-treating to bring out reds and browns is not considered beyond the pale of natural. At least toxic chemicals are not involved, and natural variation/pattern is often preserved—only in deeper colors.

One process for dying/enhancing agate that fascinates me is called the sugar -acid process, and it has a long history dating back to Roman times. This process can take an uninteresting pale-grayish agate with light (sometimes not too noticeable) white banding and transform it into a vivid agate with bold white bands against a stark black (or espresso brown) background. Essentially, a dissolved sugar ($CnH_2nOn$, where n is between 3 and 7) is given time to penetrate the pore space of the agate, and subsequently heated acid is used to strip off the $H_2nOn$ atoms and leave behind the Cn atoms – pure black carbon. It is not known when this was first done, but Pliny the Elder (born 23 AD, died 79 AD), in his *Natural History,* seems to describe this process using honey and vinegar (acetic acid). [Kurt Nassau quotes applicable passages from Pliny on p 69 of the 2nd edition of his book *Gemstone Enhancement: History, Science, and State of the Art*.]

In the 1800s, gem cutters in Germany and elsewhere applied more modern

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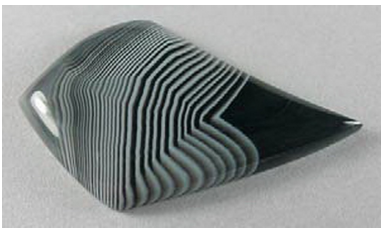
chemistry. Nassau credits a German gem cutter in Oberstein and Idar with rediscovery of the process in about 1820. Sulfuric acid was found to work much better than acetic acid.

Daniel Russell, who wrote the above-cited article at Mindat.org, excerpts several scientific publications from around 1850 describing the process in some detail. Particular emphasis is placed on the fact that not all agates are porous enough, and noting how water penetrates or beads on the surface can predict whether the agate can be treated. One of the most detailed recipes is given by George W. Fisher in his 1990 book on *Gemstone Coloration and Dying*, largely based on his own home experiments. (Text is available at http://www.ganoksin.com/borisat/nenam/black-dying-agate.htm).

On today's Internet, you can find various references to the sugar-acid process, or even recipe details. There are some discrepancies about the exact concentrations, times, and amount of heat/boiling needed, as well as recommended types of agate and slab thickness, so any adventurous lapidary wishing to practice this ancient art should expect to have to work some bits out, or to engage in a bit of trial and error. For example, Fisher mentions boiling acid, but the boiling point listed on Wikipedia is 639°F., which seems hotter than the hotplate described by Fisher was likely to produce—most likely, he meant simmer at 300–400°F., where water in less than 100% sulfuric acid can be seen to make vapor bubbles. Fisher recommends Brazilian Agate and agate from Coconut Geodes as having suitable bands in otherwise porous agate.



Periodically, there has been modern commercial manufacture of small sugar-acid batches. My first introduction was via a stone called Tuxedo Agate, produced by The Gem Shop in Cedarburg, Wisconsin, and sold in Tucson shows in 2005. Slabs, generally cut thin to ensure penetration, also were sold. When I inquired, I was told they had used Moroccan Agate.

To date, I have made three batches of Tuxedo Agate from some rather plain Moroccan Agate, and an additional batch with Madagascar Agate, crazy lace agates, and other experimental materials. I also recooked part of my first batch because only a dark brown coloring was initially achieved. I recently got some very plain Brazilian agate, and hope to get it slabbed and into sugar water before too long. Another small

batch has been in sugar solution for a very long time now, and one spring day, I will have a patio cookout. Gloves, pot holders, tongs, eye-protection, fume venting, and all the usual sensible precautions apply. (This includes having a plan to neutralize and dispose of sulfuric acid. Washing soda is great to have on hand.) There have been a few glitches, and I am getting slightly less than ⅛" penetration, so ¼" slabs may not color all the way through. I figure there is still room to tweak my process, and the ideal agate for dying could be found any day. My efforts, complete with pre-post pictures and discussion of difficulties, disappointments, and successes, have been posted on online lapidary forums (see URLs below).

**photos from www.samsilverhawk.com**

http://andy321.proboards.com/index.cgi?board=sawingb&action=display&thread=3409

http://andy321.proboards.com/index.cgi?board=sawingb&action=display&thread=3388

http://andy321.proboards.com/index.cgi?board=sawingb&action=display&thread=3811

http://andy321.proboards.com/index.cgi?board=sawingb&action=display&thread=3824

## Bring on the Heat

*by Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas*
*from Chips and Chatter 07/2016*

Summer is now officially here, and all indications are that it will be a hot hot hot summer! We will soon have our first triple digit temperature for the year. However, we have had had our first "feels like" over a hundred degrees day, in fact we have had several of them. It is the "feels like" or, more properly, the heat index which determines if we have a Heat Advisory. A Heat Advisory will normally be issued by the National Weather Service if the heat index is predicted to reach 105 to 115 degrees for 3 or more hours on 2 or more consecutive days, if the heat index is predicted to exceed 115 degrees, or if the night time heat index is predicted to be 80 or more degrees for 2 or consecutive nights. We met those criteria for several days running in late June.

As indicated, the heat index is the "feels like" temperature. There are two factors which determine the heat index; air temperature and humidity. The reason that humidity enters the equation is that the body tries to cool itself by perspiration (sweating), but if the humidity is high then the perspiration can't readily evaporate and cool us down. There is a complicated formula for calculating the heat index, but it is much simpler to just look at a table from the National Weather Service (download the PDF chart at http://www.srh.weather.gov/jetstream/downloads/heatindex_rh_f_20x12.pdf) or other on-line sites, or just listen for the heat index on your television or radio weather forecast.

**Heat is DANGEROUS**! It can lead to heat exhaustion or, even worse, heat (sun) stroke and even death. Heat exhaustion has been known to occur in infants and the elderly just due to the heat alone – no physical activity required. However, if you are physically active out doors on a high heat

index day, it can occur. Symptoms include nausea, dizziness, headache, thirst, and excessive sweating. If you think you have heat exhaustion, move to a cool place (even just moving to a shaded area will help), take off any extra layers of clothing, cool off by sitting in front of a fan or using cool wet towels. If not promptly treated, heat exhaustion could lead to heat stroke. Heat stoke is hyperthermia of the body with core body temperatures greater than 105.1 degrees. In addition to high temperature, other symptoms include disorientation and lack of sweating. Treatment is to cool the body core temperature. Cooling can include bathing or showering in cold water, cold compresses to the body, neck, head, and groin, or at least a fan or air conditioner to aid in evaporation of sweat or water (toweling or misting). Hydration (taking in fluids) is important. Water or sports drinks may be a good starting point, but too much water may lead to an electrolyte imbalance. Pedialyte® can be helpful in hydration and adding electrolytes. Pedialyte® is not just for infants! Also, don't be reluctant to call 911 for emergency help – it could save a life.

Of course the best way to treat heat exhaustion or heat stoke is to take proactive steps to avoid them. If the heat index is way up there, say inside in the air conditioning (going to a mall or a theater is a good option if your air conditioner is broken). If you must work outside, take it easy. Take frequent breaks, drink lots of fluids, and cool down if you start feeling any symptoms. When roofers came last week to do our roof, they were an older crew trying to help out and earn a few extra bucks. At first there were 5 workers, by the end of the day only 2 were still working. The next morning only 3 returned, and basically only the same 2 worked. On Day 1 they had run out of their water and sports drinks about 1:00 in the afternoon and didn't tell anyone. They kept cool by hosing down, but they needed hydration. They only had to mention it and the hydration issue would have been solved.

From 2013 SCRIBE DVD

How does all this apply to rockhounds and our activities? For one thing, we tend to be a hobby of senior citizens with a smattering of younger members mixed in. We all need to take care and watch for symptoms. Field trips should be planned for the months with historically milder temperatures. If you do go on that trip in the summer months, try to plan to do the strenuous activities in the cooler hours of the morning or evening. However, even the cooler temperatures may not be enough – the moisture is already in place, so in the morning the relative humidity is even higher, thus it is harder to cool down from just sweating. If you have to hike to your area, take plenty of water (along with sun screen, insect repellent, etc.). Take frequent rests and keep yourself as cool as possible. Better yet, do it earlier or later in the year.

## Minerals and Rocks

*by Chip Burnette*
*from The Rock Prattle 1/2016*

In this article we, as rockhounds, will back up a bit and review some basic definitions and concepts which many of us may—or may not—already understand. The formal definition of a mineral, approved by the International Mineralogical Association (IMA) in 1995 is "A mineral is an element or chemical compound that is normally crystalline and that has been formed as a result of geological processes." In addition, biogenic (man-made) substances were explicitly excluded: "Biogenic substances are chemical compounds produced entirely by biological processes without a geological component (e.g., urinary calculi, oxalate crystals in plant tissues, shells of marine molluscs, etc.) and are not regarded as minerals. However, if geological processes were involved in the genesis of the compound, then the product can be accepted as a mineral." But what does that really mean?

According to Dyar, Gunter, and Tasa (2007) *Mineralogy and Optical Minerology* Mineralogy Society of America, pp 2–4; a mineral meets the following criteria:

1. Naturally occurring.
2. Stable at room temperature.
3. Represented by a chemical formula.
4. Usually abiogenic.
5. Ordered atomic arrangement.

While this is generally accepted, there are some exceptions to the rules. For example, ice and native mercury are both liquids at room temperature, but both were described as minerals prior to 1959, and were grandfathered in by the International Mineralogical Association (IMA). Modern advances have included study of "liquid crystals," which extensively involve mineralogy and may eventually lead to a new definition, or a change to these "criteria." Recent advances in high resolution genetics and X-ray absorption spectroscopy are providing revelations on the biochemical relations between microorganisms and minerals that may make the biogenic exclusion obsolete.

A rock is either an aggregate of one or more minerals or mineraloids, or is not composed of minerals at all. Rocks are generally classified into three major classifications, based on how they were formed: Igneous, Sedimentary, and Metamorphic.

Igneous rocks are formed from melted, cooled material. Magma, the molten center of the earth, occasionally surges toward the surface. Usually the magma stops short of the surface and cools, more or less slowly, and are called intrusive igneous rocks. Sometimes the magma succeeds in reaching the surface and creates a volcano. Rocks that have formed on the surface

from cooling lava are called extrusive igneous rocks. Lava thrown out of a volcano cools so rapidly that individual mineral grains have little time to form, and is smooth textured, even glassy. If glassy, it is called obsidian, if dark in color but fine grained, it is called basalt.

Sedimentary rocks are formed by gravels, sands, and clays deposited—most frequently by water, but sometimes by wind or by glacial ice—in slowly building layers. Ultimately, the sediments are converted to rock by compression resulting from weight of other sediments on top of the pile. This conversion, or lithification, can also be caused by cementing of the sediment particles. Cementing agents, usually quartz, limonite, or limestone, are carried by water solution and deposited between the grains.

Metamorphic rocks are formed by changes in already existing rocks. When any type of rock is exposed to heat, pressure, liquids, or gasses, it is changed—becoming a metamorphic rock. Metamorphic rocks are subdivided into three classes, based on the primary mechanism of how they were formed. An intrusion of magma which heats the surrounding rock causes contact metamorphism—heat being the primary cause of the change. Pressure metamorphism is caused by deep burial of rocks, and is called burial metamorphism. Change caused by both pressure and heat is called regional metamorphism, and is most common in mountain building areas.

**References**:

Cipriani and Borelli (1986) *Gems and Precious Stones*

Desautels (1968) *The Mineral Kingdom*

Dyar, Gunter, and Tasa (2007) *Mineralogy and Optical Mineralogy*


**Halite**
from 2013 SCRIBE DVD

## Rescue at Courtright

*by Rex Nishimura, Pasadena (California) Lapidary Society*
*from Rockhound Ramblings 06/2016, via The Rockhounder 06/2016*

At a recent meeting, my 13-year-old son and Junior Member, Jared, talked about using radios, compass, and whistles to be prepared for emergencies on field trips. Last month, our family headed out for a warm weekend of fishing and rock collecting adventure near the Courtright Reservoir, south of Yosemite, California. Then the unexpected arrived—a combination of cold, windy, weather and thunder-storms produced mediocre fishing and hid rocks under a layer of snow!

Around 9:30 P.M. on Friday night, a man appeared at our camp while I was cleaning dishes. He was looking for his wife, Laura, and their dog, who were two hours overdue back at their campsite from a hike, and he was contacting campers in the area. I thought about this woman lost in the woods—and about Courtright Reservoir being an hour from the nearest phone, and two hours from the nearest Fresno County Sheriff's office—and I knew that there would be no search and rescue team before dawn. With the temperature approaching freezing, this person might not survive this night on her own. I knew the area well from years of backpacking, and I consulted my maps and reviewed search options with my wife. Jared and I quickly assembled a rescue kit with a warm jacket, compasses, signaling whistle, matches, flashlights and batteries, ham radio, backup radio, and GPS unit. We drank water beforehand to avoid having to carry extra weight.

We started our search at the husband's camp—on the other side of the lake. There was no idea which direction the wife had gone, but I had previously noted the Courtright Intrusion Zone, a rather peculiar area where volcanic rock intruded upon sedimentary rock. Thinking that this might also have drawn Laura's interest, we began our search in this area, hiking and blowing our whistle, then listening for a response. We searched the entire 66 acres of the intrusion zone, finding footprints but no other traces of Laura. The zone terminated in a series of ledges and cliffs and we couldn't go any further.

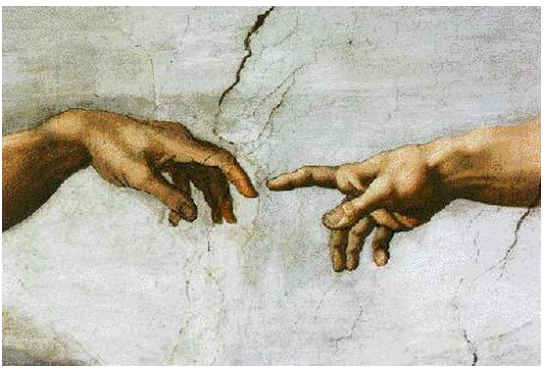
My compass then began acting erratically, failing to acquire a north in agreement with the stars. I wondered if I had stumbled onto a deposit of magnetite, a naturally forming magnetic rock. My mind began playing tricks on me as the stream seemed to have changed from being the west side of me to the east side. What was going on? The solution was relatively simple. My survival whistle had a tiny compass of its own built into the body of the whistle. When the two compasses were near each other, the dials would spin wildly. I gave the whistle to Jared.

As we continued our search, I only heard the sound of crunching rocks, my heavy breathing, and an occasional buzz from our ham radio. We then

reached the summit of a granite-topped hill—beyond which was a 400-foot drop into a rushing stream. In vain, we tried to make out objects below us, but our flashlights found nothing to illuminate.

Then we heard a faint cry above the stream's din. Were we dreaming? We blew our whistle and then heard it again! This was definitely not an animal cry. We radioed in our position and the potential good news that we may have identified her location. We couldn't descend the cliff, so we had to hike half an hour back down and around the hill to try to reach her position. She had stopped responding to our whistle, and I was worried that we were too late!

A few minutes later, our flashlights illuminated a miserable figure standing next to a small white dog. "Are you Laura?" I asked. She began crying and babbling something about dying out there and being thirsty even though she was standing next to a stream. She was hypothermic, and exhausted, and needed warmth and rest before we could walk her the mile or so to safety. As I pulled out the jacket and put it on her, Jared gathered wood and built a fire to warm her. She asked "So is this what you and your son do? You wander the hills looking for people to help?" "We're not search and rescue." I told her, "We're just campers—looking for you." While she slept, I made radio contact with my camp, giving my wife our position, Laura's condition, and our status. A sheriff's deputy was at our campsite and was waiting for this information. As I suspected, search and rescue teams would not arrive until dawn. After a while Laura was rested, warm, hydrated, and ready to walk. Her dog, Lilac, was unable to walk due to sore paws, so I carried the dog in my arms as we slowly walked Laura back to her camp. Jared kept his hand in Laura's, guiding her so she wouldn't fall off the steep trail. The deputy was waiting for us at Laura's campsite, and after taking a report from Laura and her husband, he gave us a ride back to our camp. He told us that Laura would have died if we hadn't gotten to her when we did. Laura's husband thinks Jared and I were sent from heaven. I don't know how God works—but somehow, when Laura needed help, we were in the right place at the right time!



## Show Time 2016

| | | |
|---|---|---|
| **July 27-Aug. 1** | **Albany, OR** | **AFMS/NFMS/Willamette Agate & Min. Soc.**<br>Willamette Event Center, 3700 Knox Butte Rd. |
| July 30-31 | Fort Worth, TX | Cowtown Gem & Mineral Glass Society<br>3939 Bryant Irvin Rd. |
| August 13-14 | Gonzales, LA | Baton Rouge Gem & Mineral Society<br>Lamar-Dixon Expo Center Trademart Bldg.<br>9039 S Saint Landry Ave<br>mercymom3@gmail.com<br>www.brgemandmineral.org |
| August 20-21 | Bossier City, LA | Arklatex Gem & Mineral Society<br>Bossier City Civic Center; Old Benton Rd.<br>larockclub@gmail.com; larockclub.com |
| August 27-28 | Jasper, TX | Pine Country Gem & Mineral Society<br>The Event Center; 6258 Highway 190 West<br>jonetta.nash@yahoo.com<br>www.pinecountry-gms.org |
| September 10-18 | Denver, CO | Multiple shows and locations<br>Eons Expos, Denver Coliseum, 4600 Humboldt St<br>250 dealers in Denver Coliseum plus 100 tents<br>http://www.ColiseumShow.com |
| October 7-8 | Mount Ida, AR | Quartz Crystal Digging Contest;<br>Mount Ida Area Chamber of Commerce<br>Montgomery County Fairgrounds<br>Fairgrounds Rd.<br>director@mountidachamber.com;<br>www.mountidachamer.com |
| October 8-9 | Temple, TX | Tri-City Gem and Mineral Society<br>Mayborn Center; 3303 North 3rd<br>trinity4112@me.com |
| October 14-16 | Westwego, LA | Gem & Mineral Society of Louisiana<br>The Alario Center, 2000 Segnette Blvd.<br>gemshow2016@gmail.com<br>www.facebook.com/GemAndMineralSocietyOfLouisiana |
| October 21-23 | Austin, TX | Austin Gem & Mineral Society<br>Palmer Events Center, 900 Barton Springs Rd<br>showchairman@austingemandmineral.org<br>www.gemcapers.com |
| October 29-30 | Glen Rose, TX | Paleological Society of Austin<br>Somervell Expo Center; Hwy 67 |
| November 6-7 | Midland, TX | Midland Gem & Mineral Society<br>Midland Center |
| November 5-6 | Amarillo, TX | Golden Spread Gem & Mineral Society<br>Amarillo Civic Center, 400 S. Buchanan St.<br>kendrick@amaonline.com |
| November 11-13 | Humble, TX | Houston Gem & Mineral Society<br>Humble Civic Center, 8233 Will Clayton Pkwy.<br>5 miles east of Bush Intercontinental Airport<br>1 mile east of Hwy. 59<br>www.hgms.org; showchair@hgms.org |

| 2016 | | August | | | | 2016 |
|---|---|---|---|---|---|---|
| **Sun** | **Mon** | **Tue** | **Wed** | **Thu** | **Fri** | **Sat** |
| | 1 | 2 7:30 Board Meeting | 3 10–3 Shop Open 1:00–3:00 Day Light Section 7:30--Mineral Section | 4 7:30 Archeology Section | 5 | 6 10–5 Shop Open 10–Noon Youth Section |
| 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 |
| 21 10–4 Shop Open | 22 | 23 7:30 General Meeting | 24 10–3 Shop Open | 25 | 26 | 27 10–5 Shop Open |
| 28 10–4 Shop Open | 29 | 30 | 31 10–3 Shop Open | | | |

| 2016 | | September | | | | 2016 |
|---|---|---|---|---|---|---|
| **Sun** | **Mon** | **Tue** | **Wed** | **Thu** | **Fri** | **Sat** |
| | | | | 1 7:30 Archeology Section | 2 | 3 10–5 Shop Open 10–Noon Youth Section |
| 4 10–4 Shop Open | 5 Labor Day | 6 7:30 Board Meeting | 7 10–3 Shop Open 1:00–3:00 Day Light Section 7:30--Mineral Section | 8 | 9 | 10 10–5 Shop Open |
| 11 10–4 Shop Open | 12 | 13 7:30 Show Committee | 14 10–3 Shop Open 6:30 Gemstones & Faceting Section | 15 | 16 | 17 10–5 Shop Open 10–Noon Youth Section 1:30 Beading Section |
| 18 10–4 Shop Open | 19 7:30 Lapidary Section | 20 7:30 Paleo Section | 21 10–3 Shop Open 7:30--Mineral Section | 22 First day of Autumn | 23 | 24 10–5 Shop Open |
| 25 10–4 Shop Open | 26 | 27 7:30 General Meeting | 28 10–3 Shop Open | 29 | 30 | |

# The BACKBENDER'S GAZETTE

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