

Pleasant Oaks Gem & Mineral Club of Dallas, TX

Chips and Chatter

February 2015
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1st Place, 2014 SCFMS Mini-Bulletin
1st Place, 2014 AFMS Mini-Bulletin

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Federation Information

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Purpose

The Pleasant Oaks Gem and Mineral Club of Dallas is organized for charitable and educational purposes to promote interest in the various earth sciences, particularly those hobbies dealing with the art of cutting and polishing gemstones, the science of gems, minerals and metal crafts, as well as their related fields.

Monthly Meeting

Our normal meeting date would be on 1 January 2014. Rather than interrupt any holiday plans, we have canceled the January meeting. Our next meeting will be Thursday, February 5th at 7:30 PM at the Garland Women's Activities Building

VISITORS ARE ALWAYS WELCOME

Club Officers for 2015

President:Ling Shurtz
1st VP, Programs: Open
2nd VP, Field Trips: Open
Secretary: Lee Elms
Treasurer: Del Grady
Editor: Don Shurtz
E-mail: ...don.shurtz@gmail.com, l.shurtz@gmail.com

**VISIT OUR AWARD WINNING WEB SITE TO
VIEW THE CHIPS AND CHATTER IN COLOR.**

www.pogmc.org

President's Message

Ling Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

We have a lot to discuss at the next meeting. The Dallas Regional Science and Engineering Fair is Saturday 21 February. The Brookhaven Science, Technology, Engineering and Mathematics (STEM) Fair is Saturday and Sunday, 21 and 22 February. We need volunteers to cover these activities. We also need volunteers for the 1st and 2nd Vice President positions. See you at the meeting.

Minutes

The January 2015 meeting was scheduled for the evening of 1 January. Rather than interfere with holiday plans, an attempt was made to move the meeting date. After an informal email vote, it was decided to cancel the January meeting. There are no meeting notes.

Editor

Show Calendar - Upcoming Show Dates

Jan 29 – Feb 15. Tucson shows – numerous shows in Tucson area,

Feb 14 – 15, Georgetown, TX, Williamson Co. G&MS, <http://www.wcgms.org/>

Feb 14 – 15, Plainview, TX, Hi-Plains G&MS, Ollie Liner Center,

Feb 21-22, Las Cruces, NM, Friends of the Museum, NM Farm & Ranch Heritage Museum, www.lcmuseumrocks.com

Mar 7 -8, Big Spring, TX, Big Spring Prospectors Club, Howard Co. Fair Barn, lsimp@swbell.net, www.gcgms.org

Mar 7 – 8, Robstown, TX, Gulf Coast G&MS, Regional Fairgrounds

Mar 7 – 8, Pasadena, TX, Clear Lake G&MS, Pasadena Convention Cntr.

Mar 12 – 15, Deming, NM, Deming G&MS, SWNM Fairgrounds, thedgms@gmail.com, www.thedgms.com

Mar 14 – 15, Live Oak, TX, Southwest G&MS, Live Oak Civic Cntr.

Mar 20 – 22, Albuquerque, NM, Albuquerque G&MC, NM State Fairground, pualhlava@q.com, agmc.info

Mar 21-22, San Antonio, TX, San Antonio G&MS, kbotx@gvtc.com, www.swgemandmineral.org

Mar 27 – 29, Eastern Federation, Hickory, NC

Mar 27-28, Ada, OK, Ada GM&FC, okieed42@windstream.net, <http://www.freewebs.com/agmfc/index.htm>

Apr 10 – 12, Northwest Federation, Ogden, UT

Apr 11-12, Abilene, TX, Central Texas G&MS, Abilene Civic Cntr., kmcdaniel23@suddenlink.net, rockclub.txol.net

Apr 16 -19, Alpine, TX, Chihuahua G&MS, Alpine Civic Center, jbrueske@sbcglobal.net

Apr 24 – 26, Dallas, TX, International Gem & Jewelry Show, Inc., Dallas Market Hall, <http://www.intergem.com/shows/>

Apr 25 – 26, Waco, TX, Waco G&MC, Extraco Events Cntr, babydocmac@aol.com

May 2 – 3, Lubbock, TX, Lubbock G&MS, Lubbock Civic Cntr., walt@lubbockremandmineral.org, www.lubbockgemandmineral.org

May 23 – 24, Ft. Worth, TX, Ft. Worth G&MS, Will Rogers Memorial Cntr.

May 23 – 24, Midwest Federation, Wheaton, IL

Jun 12 – 15, California Federation, Lodi, CA

Jul 16 – 18, Rocky Mountain Federation, Cody, WY

August 08 – 09, Baton Rouge, LA, Baton Rouge G&MS, Fraternal Order of Police

Aug 15 – 16, Bossier City, LA, ARK-LA-TEX G&MS, Bossier City Civic Cntr.

August 22 – 23, Jasper, TX, Pine Country G&MS, Events Cntr

Sep 26 – 27, Dallas, TX, Dallas G&MS, Restiol Expo Cntr

Oct 10 – 11, Temple, TX, Tri-City G&MS, Mayborn Civic Cntr.

23-25 Oct 2015 – Austin G&MS show, SCFMS Convention, and AFMS Convention

Ref:

December 2014 – January 2015 AFMS Newsletter

November / December 2014 SCFMS Newsletter

Rock & Gem Show Calendar, <http://www.rockngem.com/show-dates-display/?ShowState=ALL>

SAFETY REPORT SAFETY IN THE SHOP

By Owen Martin, SCFMS Safety, from the January – February SCFMS Newsletter

A note on safety in your shop, lab, work room, basement, etc. As a fossil hunter sometimes the thing that I most look forward to and likewise dread the most is getting my “stuff” back to the house.

I may have to use a pressure washer to blast off mud from my fossilized wood or 40 pound ammonites, use some chemicals to clean lime off some invertebrates or maybe use some tools, be they hand or pneumatic, to chip off the tougher crust. Maybe if I ‘m lucky I found a good “round” of pet wood that I want to cut and polish down at the club. Oooh, and I just found my first agate ever and I don’t even know what I can do to that yet!

Whatever it is that I do there is almost always some inherent risk in the process. Below is a list of different hazards to consider in the lab.

Eye Protection. As I mentioned above power washing is a good example of something a lot of us do that can potentially injure your eyes however certainly not the only thing. Almost every type of prep-work that we practice necessitates eye protection: grinding, polishing, cutting, shipping, sand blasting, soldering, chemical cleaning, etc. Different types of eye protection should be used depending on your activities. For most of us protective glasses are good, however, goggles may need to be worn when using chemicals or when grinding certain materials. As I co-worker of mine once said to a lady that liked to put on makeup while driving, “no matter how advanced modern medicine has become, glass eyes still don’t look real.”

Respiratory Protection. Similar in some ways to eye protection respiratory protection can be very important when handling certain cleaning chemicals and when dealing with certain dusts. Asbestos is a common example of a respirable dust that although not inherently toxic can cause cancer, especially with smokers. Other dusts can temporarily clog breathing passages thus impacting, sometimes critically, the body’s ability to get oxygen into the blood. Chemicals can be very bad, too, as the lungs can quickly introduce toxins into the blood. Of note some of the oils that we use in our cutting saws can be dangerous. Keep in mind that dust masks may not stop some dusts and certainly no airborne chemicals.

Chemical Safety. The most common chemical accidents usually have something to do with the above mentioned issues and involve acids, soaps, other caustics and solvents. PLEASE READ the safety notes or MSDS (Material Safety

Data Sheets) on all chemicals you may use. Some need to be used in areas where there is good ventilation, others require high-end respirators and still more may necessitate protective clothing. Not common in the shop, but you never know! Also, be aware of the potential danger of mixing chemicals and as a general rule don’t do it. Most of us have probably heard that mixing chlorine and ammonia, two of our most common household chemicals is bad. Essentially the mixing of the two releases chlorine into your air - very bad.

Hearing Protection. What? You didn’t hear me the first time? Do you remember the pictures of all the trees blown down in the same direction after Mount St. Helens erupted? Loud noise does the same thing to the ear and much like the trees once the filial (hearing fibers) are damaged, they don’t stand themselves back up. If you think “maybe I should be wearing ear plugs” then it’s usually a good indication that you already answered the question.

Electrical and Fire Hazards. If your shop is like mine, then it can get pretty cluttered. Bottles or boxes of old journals. Cleaning up the clutter has two (or more) benefits by reducing the fire hazards and making it more obvious where potential problems exist - like damaged electrical cords or overloaded outlets. Ideally flammable liquids will be stored in a flammables storage cabinet. If you have a pretty good sized shop then one of these is a good investment. For most clubs the local fire code will require enough to handle what you have on site. The hazards involving fire and electrical vary in type and risk level. Having been “grounded” on four different occasions I can tell you that water and electrical cords do not mix! I used to work as a caretaker for saltwater fish tanks and it had its challenges. Overloaded plugs can be a problem in our shops. Keep in mind that just because a tool isn’t turned on doesn’t necessarily mean that electricity still isn’t running through it. Fire and shock are both risks in this situation. It’s safer to keep your equipment unplugged and properly stored when not in use.

General Rules. Always wear eye protection. Keep your shops cleaned and well organized. Make sure electrical cords are in good condition. Keep reactive things away from each other, be they chemicals, electrical, fire hazards or combinations of each. Don’t mix chemicals. Practice safety in your shops! As always, if anyone has a safety incident or issue that they would like to share with the organization please contact me at:

owenmartin@yahoo.com - thanks!

February 2015

February's Birthstone: Amethyst

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

Amethyst – considered by many to be the most desirable member of the Quartz family. The chemical formula for amethyst is SiO_2 , silicon dioxide. However, SiO_2 is also the chemical formula for quartz, citrine, rose quartz, agate, jasper, glass, and who knows what else.

Agate and jasper are micro-crystalline – you need a microscope to see the crystals.

However, quartz, amethyst, and citrine all form macro-crystalline – they form larger crystals.

So what is it that causes quartz to be clear, citrine to be yellow, rose quartz to be pink, and amethyst to be purple? Like many minerals, it is a trace element that gets caught up in the crystal structure. Pure quartz, without any trace elements, is clear. The pink color of rose quartz is caused when a manganese atom occasionally replaces one of the silicon atoms.



The yellow color of citrine is caused when an iron atom occasionally replaces one of the silicon atoms. The purple color of amethyst is caused when an iron atom occasionally replaces one of the silicon atoms. Now if you read that carefully, you will note that both citrine and amethyst are colored by trace amounts of iron. SO WHAT IS GOING ON? If you can remember back to your school days, specifically your chemistry classes, you will recall that an atom can come in different valence states – valence being caused by the loss or gain of electrons. Citrine is colored by iron in the +3 valence state (Fe^{+3}) while amethyst is colored by iron in the +4 valence state (Fe^{+4}). In other words, the iron in citrine is short 3 electrons but in amethyst it is short 4 electrons – keep in mind that an electron has a negative charge, so the loss of an electron causes the atom to acquire a positive charge.

Some of the other properties of the quartz family include a Mohs hardness of 7 (quartz is the defining mineral for hardness 7), a white streak, and form in the trigonal crystal system, their crystal habitat being a six sided (hexagonal) crystal which ends in a six sided pyramid.



Amethyst has a rich history. The early Egyptians often cut (engraved) amethyst to form intaglio gems. The word amethyst comes from the Greek word “amethystos” which means “not drunken” (i.e., sober). The early Greeks believed that amethyst could prevent intoxication. In particular, they believed that you could not get intoxicated from wine that was consumed from an amethyst goblet. Amethyst was also one of the stones mentioned in the Bible – one of the stones on the Breast Plate of Hosen.

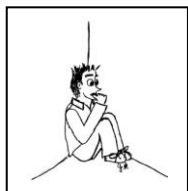
Amethyst is found in many parts of the world. The major commercial producers are Brazil and Zambia. Other countries where amethyst is found are Russia, South Korea, Australia, Canada, and India. In the United States, amethyst is found in Arizona, Colorado, Wyoming, Pennsylvania, North Carolina, Maine, Minnesota, Wisconsin, Michigan, and Texas. The Texas locations include the Blanca and Quitman Mountains near Sierra Blanca, Alpine, and Oxford. Amethyst geodes are also found in Brewster, Presidio, Culberson, and Hudspeth counties.

Ref:

- Amethyst, <http://en.wikipedia.org/wiki/Amethyst>
- February Birthstone, <http://www.americangemsociety.org/february-birthstones>
- Mineral Miners, <http://www.mineralminers.com/html/>

Pictures:

- Amethyst Crystal by Didier Descouens from <http://commons.wikimedia.org/wiki/Amethyst>, licensed under the Creative Commons Attribution-Share Alike 3.0
- Amethyst Intaglio by Clio20 from <http://commons.wikimedia.org/wiki/Amethyst>, licensed under the Creative Commons Attribution-Share Alike 3.0
- Amethyst Geode photo by Don Shurtz. Picture of the “Grape Jelly Bean” at the Perot Museum of Nature and Science



Editor's Corner

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

Hope you had a Happy New Year, but just in case you missed it, you still have a chance. The Chinese Lunar New Year is Thursday, February 19th and starts the year of the "Goat".

As I wrote in last month's Chips and Chatter, see you at the February meeting. **Bring a**

rock or mineral for Show and Tell, and if you can, bring a new member for our club!

What are Rocks, Gems, and Minerals?

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

Let's start with the easy one. The almost universal definition for a mineral is "a naturally occurring inorganic element or compound having an orderly internal structure and characteristic chemical composition, crystal form, and physical properties". An example is a snowflake; a counter example is a piece of coal. The mineral form of water, a snowflake, meets all the characteristics of the definition; the lump of coal is organic in origin and fails that part of the definition. What types of minerals are there? One way to classify minerals is by their crystal system (the basic shape of the crystal). There are six crystal systems: (1) Isometric (also called cubic) with three equal, mutually perpendicular axes; (2) Hexagonal with three axis intersecting at 120° and a fourth axis perpendicular to the 3 intersecting axes; (3) Tetragonal with three mutually perpendicular axes, two axes are equal while the third axis is not equal in length to the other two; (4) Orthorhombic with three mutually perpendicular axes but none of the axes are equal in length; (5) Monoclinic with 3 unequal axes, two of which intersect in an oblique angle and the third axis is perpendicular to the other two; and (6) Triclinic with 3 unequal length axes all of which meet at an oblique angle. Once you understand the basic crystal shapes, don't worry – there are books that can be written on the variation of crystal system (crystal forms, classes, symmetries, etc. Other factors which can help in identification of minerals are their hardness (Mohs hardness scale), their streak (the color when rubbed on a white ceramic tile or ground to a fine powdered), their density (their weight relative to an equal volume of water), luster (appearance), cleavage, fracture, and tenacity. Many classification systems rely on just hardness, streak, and density and are able to correctly identify most minerals. Note that the definition includes single element crystals such as diamond (carbon), gold, and silver.

A rock is "An aggregate of one or more minerals, e.g., granite, shale, marble; or a body of undifferentiated mineral matter...or of solid organic material". A lump of coal nicely matches the definition. Rocks are a little easier to classify. Igneous rocks are rocks which are formed the cooling of magma. If the magma cools and solidifies inside the crust the rocks are called plutonic – a classic example is granite. If the magma cools after reaching the earth's surface (lava), the rocks are called volcanic – basalt and pumice are examples. Sedimentary rocks which are formed on the earth's surface by the building up, layer by layer and cemented. Sedimentary rocks are formed from eroded particles of earlier rocks and often small organisms. Sedimentary rocks can contain fossils. Examples of sedimentary rocks are limestone, sandstone, and more exotic rocks such as agate. Metamorphic rocks are rocks that are changed by pressure and heat, often when they are subjected to folding and other deformations of the earth's plates. Metamorphic rocks can be formed from igneous, sedimentary, or older metamorphic rocks. An example of a metamorphic rock is marble – it started life as a limestone but was changed by heat and pressure.

A gem is a "cut-and-polished stone that has intrinsic value and possesses the necessary beauty, durability, rarity, and size for use in jewelry as an ornament or for personal adornment; a jewel whose value is not derived from its setting". Some will limit the definition of a gem to a cut-and-polished mineral, but they are missing out on the beautiful opals, agates, and a myriad of other cut-and-polished stones. Not covered by the definition, but which should be covered are some of the very soft minerals such as calcite and fluorite. These are too soft for use in jewelry (they seeming can be scratched just by looking at them. However, a cut (faceted) calcite or fluorite makes a beautiful piece that is suitable for display. I would count them as gems. How about you?

Ref:

Crystal Structure and System, <http://dave.ucsc.edu/myrtreia/crystal.html#SYSTEMS>

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Pleasant Oaks Gem and Mineral Club of Dallas, TX

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PLEASANT OAKS GEM and MINERAL CLUB of Dallas

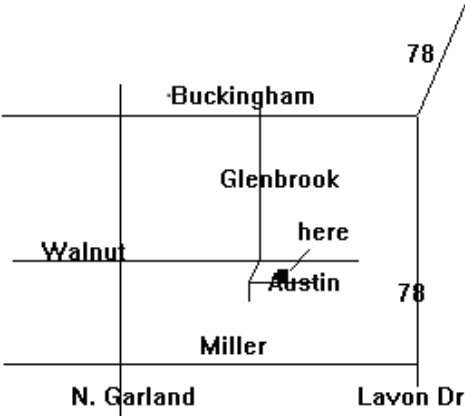


Meetings

First Thursday of each month, 7:30 PM
 Garland Women's Activities Building
 713 Austin St.
 Garland, TX
 (Northeast corner of Austin & Glenbrook)

Membership

Single Adult: \$16.50
 Junior: \$5.00, Family: \$27.50
 (Plus badge fee for new members)



CHIPS AND CHATTER
Pleasant Oaks Gem & Mineral Club
PO Box 831934
Richardson, TX 75083-1934

To:

February Meeting – February 5th, 7:30 PM at Garland Women's Activities Building
March Meeting – March 5th, 7:30 PM at Garland Women's Activities Building

Visit an Area Club

Arlington Gem & Mineral Club, 1408 Gibbins, Arlington, TX, 1st Tuesday of each month at 7:30 pm
 Dallas Bead Society, The Point at CC Young, 4847 W. Lawther Dr., Dallas, TX meets 1st Saturday of each month at 10:00 am
 Dallas Gem & Mineral Society meets the 3rd Tuesday of each month at 7 pm, VFW Hall, 10205 Plano Rd, Dallas TX (next to their shop)
 Dallas Paleontological Society, 2nd Wed. of each month at 7:30 pm, Brookhaven Geotechnology Institute, 3939 Valley View Lane, 75244
 Ft. Worth Gem & Mineral Club, meets the 4th Tuesday of each month at 7:30 pm, 3545 Bryan Ave, Ft Worth, TX
 CERA (Cowtown G, M, & Glass Club), meets the 2nd Tuesday at 7:00 pm, 3024 Acme Brick Plaza, Ft. Worth (formerly LM Stone Steppers)
 Oak Cliff Gem & Min Soc., 4th Tuesday of each month at 7:30 pm, South Hampton Community Hospital, 2929 S. Hampton Rd, Dallas, TX
 Pleasant Oaks Gem & Mineral Club meets the 1st Thur. of each month at 7:30 pm, Garland Women's Activities Bldg., 713 Austin, Garland,