



The Pineywoods Rooter

Newsletter of
PINE COUNTRY GEM & MINERAL SOCIETY
of Deep East Texas

October 2014

Volume 22 Number 10

Club Officers

President, Bill Talcott 384-8244
Vice President, Joe Griggs 381-1123
Secretary, Michelle Talcott 384-8244
Treasurer, Sharon Stalsby 382-5314

Membership & Publicity,
Jonetta Nash

Newsletter Editor

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Member News, Michelle Talcott
fizzycola@sbcglobal.net

Membership

Club Membership is open to all who
are interested in the Earth Sciences
and the Lapidary arts.

Dues are \$24 yearly for families,
\$18 for single adults and \$2 for kids.

Meetings

The regular monthly meeting is held
on the third Thursday of every month
at 7 p.m. in the Club Building at 110
N.Zavalla St. in downtown Jasper.

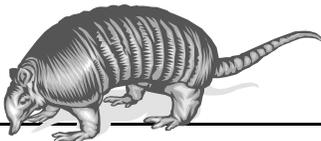
Visitors are invited to attend any of
the regularly scheduled meetings.

Club Purpose

Pine Country Gem & Mineral Society
was formed for the purpose of
encouraging interest and a better
understanding of all phases of the Earth
Sciences and Lapidary Arts and to
promote fellowship and cooperation
among members and with other
groups with like interests.

Member Club

South Central Federation of
Mineralogical Societies
and
American Federation of
Mineralogical Societies



PRESIDENT'S MESSAGE

You can feel fall in the air early in the mornings. It will not be long before the leaves will fall and the days will become shorter. It's getting time for us to do some more work on the club house. I would like to get a lot done before the end of the year if possible. In the mean time there are some up coming items for everyone to consider before the end of the year. One is the election of officers for the coming year. Also we will have to appoint some new board members. Also keep in mind that " rock hound" of the year will need to be nominated.

Also The Christmas party is not too far away. We always are in need of program each month so keep that in mind as you talk to people or see something that would be of interest to the club.

One other thing to keep I mind and that's that Michele has had the first informational meeting with the kids club and there will be times when she may call on some of you to help. They are going to be the future of our club. Along with that their parents are potential new club members for our club. Be safe and we will see you this Thursday night.

Bill Talcott
President

**NEXT MEETING: Thursday, October 16, 2014
7:00 P.M.**

102 Zavalla Street, Jasper, Texas

Program: Dr. Kevin Stafford

"Gypsum"

Dr. Stafford is Professor of Geology at SFA

UP-COMING SHOWS &

- OCTOBER 11-12 **TEMPLE, TEXAS**
 Tri-City Gem & Mineral Society
 Mayborn Clvlc & Convention Center
 burnette@aceweb.com
- OCTOBER 11-12 **FORT WORTH TEXAS**
 Cowtown Gem, Mineral, and Glass Club
 BIRC Fitness Center
 3300 Bryant Irving Road
- OCTOBER 17-19 **VICTORIA, TEXAS**
 Victoria Gem & Mineral Society
 Community Center
 2950 Rast North Street
- NOVEMBER 1-2 **AMARILLO, TEXAS**
 Golden Spread Gem & Mineral Society
 Amarillo Civic Center
 Wanda Finley, finfran@midplains.coop
- NOVEMBER 1-2 **MIDLAND, TEXAS**
 Midland gem & Mineral Society

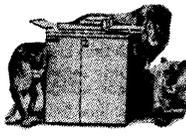
ANNIVERSARIES
 Ann & Paul James 18/10
 Martha & George Wells 20/10
 Bobbi & Jay McDonald 29/10

2014 Officers
 President Bill Talcott
 Vice President . . . Joe Griggs
 Secretary Michelle Talcott
 Treasurer Sharon Stalsby

Board Appointees
 Activity - Field Trips . . . Fred Brown, Paul James
 Membership - Publicity . . Jonetta Nash
 Web Page . . . Linda Lang
 Programs . . Bill Talcott & Others!
 Historian . . . Imogene Mitchem
 Auction . . . John Nash
 Education . . . Janice Herron
 Chamber of Commerce...Ann James
 Show Chairperson . . .Ann James
 Hostess...Donna Ducote
 Building Chairman...Bill Talcott
 Address Correspondence to:
 Pine Country Gem & Mineral Society
 P O Box 2513, Jasper TX 75951
CLUB WEB SITE: www.pinecountry-gms.org

BIRTHDAYS:
 Joyce Weissbohn 2/10
 Misty Ratliff 9/10
 Wanda Hobbs 11/10
 Ron Ducote 12/10
 Jay McDonald 22/10
 Jody Dorman 24/10
 Joanne Davidson 25/10
 Dan Courtney 28/10

Star graphics 

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BIRTHSTONE FOR OCTOBER:
OPAL OR TOURMALINE

Pine Country Gem & Mineral Society Meeting

Pine Country Gem and Mineral Society Meeting

P. O. Box 2513 – Jasper, Texas –

MINUTES FOR SEPTEMBER 18, 2014



The PCG&MS met on September 18, 2014 at the clubhouse for the regular monthly meeting. There were thirty-two members and one visitor Vicki Brannon.

The meeting was called to order by Joe Griggs. The business meeting began with a motion by Charles Kerr and a second by Ron Ducote to accept the minutes as recorded in the bulletin. The motion passed. The Treasurers report was given by Sharon Stalsby with a motion to accept by Sonya Richard and seconded by Ron Ducote, the motion passed.

Ann James and each committee chairman reported about the annual show. It was reported that the show profit was over \$5100.00. Each committee reported a great response and fun time during the show. There were many club members that volunteered which made everything run very smoothly. Ann asked that everyone write down any suggestions for improvements or changes for next year.

In new business it was reported that nominations for officers will be in November. The Fall Fest and Butterfly Festival will be October 4, 2014. Holiday Market will be November 8, 2014.

Winner of the half and half drawing was Joe Griggs and Tom Howell won the door prize drawing that was provided by Roger Page.

On a motion by Sonya Richard and seconded by Ron Ducote, the meeting was adjourned.

Attendees at the Meeting: Lonnie and Sharon Stalsby, Paul and Ann James, Michelle and Carter Talcott, Ron and Donna Ducote, John and Jonetta

Nash, Joe Griggs, Maxine Wagner, Charles and Sharon Kerr, Julia McCormick, Fred and Janice Herron, Fred Brown, Keith Stephens, Roger and Wanda Page, Ruth Howell, Tom Howell, Kimberly Brannon, Jay and Bobbie McDonald, Imogene Mitchum, Robert Yarborough, Al and Joyce Weiss-bohm, Beaver Vance, and Sonya Richard,

Submitted by Michelle Talcott, Secretary

Members Happenings

By Michelle Talcott

Fall Fest and the Butterfly Festival were the first weekend of October. A mild cool front made the weather beautiful. Many club members were out and about for the activities. The Talcott's were in Huntsville, Texas for Fair on the Square. It was a great weekend to celebrate fall.

The Talcott's will be traveling to Plano for the Heart of Texas show.

A reminder to send me information on travels or interesting things that you do. My e-mail address is :

fizzycola@sbcglobal.net

MOONSTONE

by Jody Dorman, member PCGMS

Moonstone is one of the modern June birthstone and an accepted gem for the 13th wedding anniversary. Moonstone belongs to the large mineral family of feldspars. It is an opalescent stone which can range from colorless to blue, peach, green, pink, yellow, brown, or gray with silvery sheen. This iridescence is known as schiller but in moonstone it is called Adularia. Clarity ranges from transparent to translucent. Rainbow moonstone is the most valuable form of feldspar and is composed of albite, which gives it the bluish sheen, and orthoclase feldspar. Moonstone is found in Brazil, Germany, India, Madagascar, Mexico, and the US. Moonstone was used in jewelry by the Romans who believed that the stone was formed from the light of the moon. Moonstone is considered a sacred stone in India. It is believed to bring good fortune, to enhance passion, and balance the yin and yang and is said to protect women and children. In early times, moonstone was believed that one could see the future if the stone was held in the mouth during A full moon. According to legend, moonstone will ensure abundant crops. Moonstone's healing properties are said to promote digestion, to protect against epilepsy, to calm emotions, cure headaches, and nose bleeds and protect against sunstroke. Moonstone is a sodium potassium silicate. Its name is derived from a visual effect, or sheen caused by light diffraction within a microstructure consisting of a regular succession of feldspar layers.

Properties

Fracture: Uneven

MOHS Scale 6.0

Luster: Opalescent

Streak: White

Gravity: 2.61

Out bicycling one day with my eight-year-old granddaughter, Carolyn, I got a little wistful. "In ten years," I said, "you'll want to be with your friends and you won't go walking, biking, and swimming with me like you do now."

Mineral Primer

Bridget Joubert, CenLa Rockhound

Many of us bring rocks into the meeting to have them ID-ed. Here are some basic mineral facts that may help guide you as you wonder what they are. From the "Glacial Drifter, Vol.57.#2, Feb.'14" the following facts were found:

Minerals are the building blocks of rocks and a rock may (usually) be made up of more than one mineral. As one looks at the different colors in a rock, this often indicated the presence of those multiple minerals. Even though there are over 3000 minerals described in the literature, there are only about 30 that we casual collectors need be concerned about. Of course, first, is it really a mineral? 1) not formed from the remains of plants and animal. These are classed as fossils. 2) naturally occurring and not man-made, i.e. concrete, many counter tops, etc 3) Has the same chemical make-up wherever it is found, i.e., quartz minerals are always made of SiO₂. 4) has a crystalline structure. Massive forms may require a microscope to see the crystal nature.

Now that you are sure that it is a mineral, these tests are used to try to ID the mineral class. A Geology or Rock field guide book is very helpful to use as you do these tests. Color: Many minerals are colored and this can be very helpful BUT not used alone, i.e. copper minerals are blue to blue-green Shape: the crystal make-up often gives a mineral a distinctive shape / style. Quartz has only one basic crystal shape but calcite can have many styles... to confuse the novice. Hardness: always carry a pin knife to see if the mineral scratches. This will help split the minerals you collect into those harder than a knife (+6.0) and those softer. Quartz never scratches, calcite often does, even though they may both look somewhat similar! Learn the Mohs hardness scale!!! Streak: using the back of a white ceramic tile, scratch the mineral and see what color the mineral leaves on the tile. No matter what shape/color the mineral exhibits, it will scratch the same color. Density: the density refers to the weight of a mineral per unit size. Topaz will weigh more than the same size piece of quartz. Lead(galena) will be very heavy, more so than iron(hematite). Luster: the way light reflects off a mineral is sometime very useful in separating one group from another.

Now go out there and get those rocks and prac-

IRON SULFIDE MINERALS, PART 2

MACKINAWITE, PYRRHOTITE AND TRIOLITE, (etc.)

Zeb William Rike III

There are several Iron Sulfide minerals as well as iron sulfides which do not occur in nature. Earlier, I discussed Pyrite and Marcasite and how the two are both FeS_2 but differ in unit cell structure.

Also we covered how the 'chemistry works' when Iron is usually divalent or trivalent (Fe^{2+} or Fe^{3+}) and sulfide is *usually* divalent (S^{2-}). I recommend reviewing that article. Pyrite is the most stable of the Iron Sulfide minerals, followed by Marcasite.

(1) As we discuss the other iron sulfides, we will see just how 'weird' iron and sulfur chemistry really is. These first three iron sulfides discussed here are all FeS but two are non-stoichiometric compounds, violating 'freshman chemistry rules', but really just having to be explained at a little greater depth. All three are FeS but with [Pyrrhotite](#), Fe_{1-x}S (where $x = 0$ to 0.2), or Fe_7S_8 iron deficient for the simple formula; Triolite, FeS an 'end member', between the two and [Mackinawite](#), Fe_{1+x}S (where $x = 0$ to 0.1) has excess iron. (Again everything is not quite as simple as that, but a good point for a discussion to begin.)

MACKINAWITE (2)

[Mackinawite](#), is 'almost' FeS , but has an excess of Iron over the theoretical formula. It is Fe_{1+x}S (where $x = 0$ to 0.1). It frequently has Nickel, so is shown as $(\text{Fe}, \text{Ni})_{1+x}\text{S}$. The color is bronze to white grey and it has a black streak.

It crystallizes in the tetragonal system and makes well-formed thin tabular crystals or occurs as massive or feathery forms. The unit cell has $a = 3.67 \text{ \AA}$, $c = 5.03 \text{ \AA}$; $Z=2$ (two formula units per unit cell). It has a perfect cleavage in one direction. It is opaque with a metallic luster, Moh's hardness of 2.5 and a specific gravity of 4.17. It is found in hydrothermally altered (serpentinized) peridotite, as

fine grained solids in black ooze in anaerobic river sediments, and in some meteorites. It is non-magnetic. (2, 3)

PYRRHOTITE (4)

[Pyrrhotite](#), is 'almost' FeS , but has a deficiency of Iron under the theoretical formula. It is Fe_{1-x}S (where $x = 0$ to 0.2), or roughly Fe_7S_8 . It is sometimes known as 'magnetic pyrite'. The color looks similar to pyrite (bronze to dark brown), and has a dark gray to black streak. It is weakly ferromagnetic and becomes strongly magnetic on heating... Magnetism increases as the iron content decreases. Magnetism is associated with empty sites in the crystal lattice which should contain iron.

It is monoclinic prismatic. The unit cell has $a = 11.88 \text{ \AA}$, $b = 6.87 \text{ \AA}$, $c = 22.79 \text{ \AA}$, angle beta of 90.47 degrees, and has 26 formula units. Crystal habit is tabular or prismatic (hexagonal prisms), massive or granular. It has no cleavage and irregular fracture. It is opaque with a metallic luster, Moh's hardness of 3.5-4.5, and specific gravity of 4.58-4.65, average = 4.61. It has a fusibility of 3. It is soluble in hydrochloric acid. (4, 5)

TRIOLITE (6)

Triolite is the stoichiometric ferrous sulfide, FeS . In the earth, it is a rare mineral but is common in meteorites; it is likely that most of the Triolite on the earth came from meteorite impacts. It is pale gray to brown and has a gray-black streak. It is non-magnetic.

It crystallizes in hexagonal system and occurs in massive, granular, nodular, plate like or tabular form. The unit cell has $a = 5.985 \text{ \AA}$ and $c = 11.74 \text{ \AA}$ has twelve formula units. It has no cleavage and an irregular fracture. It is opaque with a metallic luster, Moh's hardness of 3.5-4.0 and specific gravity of 4.67-4.79.

Triolite is the most common sulfide mineral in the crust of the moon and Mars, making up about 1%. It was first found by Domenico Troili in a meteorite which fell in Italy in 1766. It is found in al-

most all meteorites, with the Mundrabilla (Australia) meteorite containing 25-35% by volume. The Canon Diablo meteorite of Arizona is the most famous and its Troilite is used as the standard for sulfur isotope ratio.

UNIT CELL PROPERTIES

We are used to the unit cell of a crystal having one or two formula units. In these first three, we have 2, 12 or 26 formula units per unit cell due to the stoichiometry.

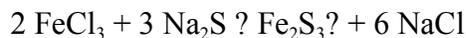
THE "ETC" (OTHER MINERALS AND COMPOUNDS)

GREIGITE (8)

Greigite (Fe_3S_4) is a naturally occurring sulfur analog of Magnetite (Fe_3O_4) and is strongly magnetic. It is $\text{Fe}^{+2}\text{Fe}^{+3}_2\text{S}_4$, having both ferrous and ferric iron in the one formula. It has isometric crystal symmetry with $a = 9.876 \text{ \AA}$ and 8 formula units per unit cell. It is opaque with metallic to earthy luster and is pink and tarnishes to a metallic blue-black. It has Moh's hardness of 4 to 4.5 and specific gravity of 4.049. It most commonly occurs as microscopic ($< 0.03 \text{ mm}$) isometric hex-octahedral crystals and as minute sooty masses in lacustrine sediments with clays and in hydrothermal vents. It is formed by magneto-tactic bacteria. It is a flavor and color imparting trace component of some rock salt, principally Indian Black Salt, long used as a condiment in South Asian cuisine and in Ayurvedic therapeutics. It was first discovered in 1964.

IRON(III) SULFIDE (9)

Di-Iron Tri-Sulfide (Fe_2S_3), the sulfur analog of Ferric Oxide (Fe_2O_3) is not a naturally occurring compound. It can be formed by allowing refrigerated ferric chloride (FeCl_3) solution to react with refrigerated sodium sulfide (Na_2S) solution



. It is a black powder that decomposes at a temperature over 20°C to a green powder.



IRON SULFIDE, AMORPHOUS (10)

This is not naturally occurring but is formed in the classic chemistry demonstration of heating iron filings with sulfur. It is amorphous with a variable Iron/Sulfur ratio. When powdered, it is pyrophoric (ignite spontaneously in air). With hydrochloric acid, it liberates hydrogen sulfide (rotten egg smell, also part of demonstration).

NON-STOICHIOMETRIC SOLIDS (11)

A number of types of defects in crystals are well explained in the Wikipedia article on Crystallographic defects. I will leave it to the reader to check it out but I will point out one example of the FeS with a deficiency of iron. A compound obviously has to be electrically neutral. A way for this to take place is for a location in the lattice which 'should' have three Fe^{+2} ions to have only two, but with them being Fe^{+3} .

FOOTNOTES

1. https://en.wikipedia.org/wiki/Iron_sulfide
2. <https://en.wikipedia.org/wiki/Mackinawite>
3. <http://webmineral.com/sounds/Mackinaw.wav>
4. <https://en.wikipedia.org/wiki/Pyrrhotite>
5. <http://www.howjsay.com/index.php?word=pyrrhotite>
6. <https://en.wikipedia.org/wiki/Troilite>
7. <https://en.wikipedia.org/wiki/Greigite>
8. <http://webmineral.com/sounds/Greigite.wav>
9. https://en.wikipedia.org/wiki/Iron%28III%29_sulfide
10. http://en.wikipedia.org/wiki/Iron%28II%29_sulfide
11. http://en.wikipedia.org/wiki/Crystallographic_defects

182-Carat Diamond Found

From Clyf Bourne, Che-Hanna RMC

You might think a 25 year old miner in Guinea, Africa struck it rich recently, when his shovel struck a stone about two and one-half by four inches in size which turned out to be a 182-carat diamond, not perfect, but still worth millions of dollars.

Unfortunately, it is not a case of “finders keepers” for the workers for mining companies. In this case, the Guinea government was the keeper. The stone was soon deposited in the Central Bank vault. The young miner’s whereabouts are not now known, but after re-evaluation by the government, he may be awarded a share - if he is lucky.

By comparison, the world’s most famous diamond, the Hope, is only 45.52 carats. The Cullinan, the largest diamond ever found, was a mind-boggling 3,106 carats and is as big as a bowling ball. In 2000, the Congo government confiscated a 265carat stone from a buyer and jailed him for a month before letting him go, in the face of public protest. At auction in Israel, it went for an estimated 13 to 20 million dollars.

A big mining company may average 30,000 carats a year, while small-scale individual miners on leased plots may average 300 to 400. On average, people in Guinea live on less than a dollar a day.

(From The Shin-Skinner News, 09/2004) via Hound's Howl Oct. 04

PATRON II RECIPIENTS

At the Annual Meeting, John Nash presented a certificate to: Emerson Tucker and Paul Good.

John also had certificates for Pat Tucker, Ed Ries and Margaret Good, who were not at the meeting.

They joined the past Patron II Recipients who are: James Engelking; Else Engelking; Jim Belcher; Ed Immel; Mignon Wagner; Jean Wallace and George Browne.

via SCFMS Newsletter

What’s in a Name???

Bridget Joubert, CenLa Rockhounds

One of the problems of mineral collecting is the variety of names for the minerals we want. Take ‘The Feldspars’ for example, this mineral group is composed of several subclasses and each have their own names. Some of these names are used so often that one might think they were separate minerals in their own right!

Industrially the Feldspar group are very important. They are key minerals in the ceramic and glass manufacturing. A trip to Lowes/ Home Depot will show the wide variety tiles and porcelain products! Add some Feldspar and this makes glass more impact resistant and less sensitive to temperature changes (Corning Ware).

In the USA, S. Dakota, N. Carolina, Colorado, and several other states have active mines. Jim and I have mined some of these old mines until they reopened to start mining again. Jim also cut some nice gemstones from some feldspar gathered from west Texas! The feldspars are divided by the amount of potassium, calcium, and sodium in them. High potassium feldspar is called **orthoclase** and **microcline**. Sodium feldspar is **albite** and calcium feldspar is **anorthite**. What if it is mixture of all of the above? Then things get even more interesting: **Oligoclase** and **Labradorite** occur! Collectively these are called the “soda-lime” ... or **plagioclase** group! Confused yet? Wait, there is more!

For us collectors, there are the following feldspar mineral names:

Amazonite: a potash variety of **microcline**, often with a blue green color.

Moonstone: either **orthoclase**(blue opalescence) or **albite** (blue sheen)

Sunstone: an **Oligoclase (plagioclase)** with copper and iron inclusions.

Labradorite: a **plagioclase** with gold and blue flashes of color. In west Texas, there is a crystal clear yellow variety that can be cut into attractive gemstones (see Jim’s Booth at shows to see one)

Now are you thoroughly confused? Welcome to mineral collecting!!!! via Huntin & Diggin, DeRidder GMS,