



Wickenburg Gem & Mineral Society, Inc.

P.O. Box 20375, Wickenburg, Arizona, 85358
 E-Mail – wgmsociety@gmail.com
 www.wickenburggms.org

The purpose of this organization shall be to educate and to provide fellowship for people interested in rocks and minerals; to foster love and appreciation of minerals, rocks, gems, and the Earth. Membership shall be open to all interested people.

LIFETIME MEMBERS NAMED

Congratulations to Erma and Al Roe — and thank you for your service to the club!!

These stalwart rockhounds have been members of the Wickenburg Gem and Mineral Society since 1974. AND they have missed only 2 meetings!

FREE GEM TREE CLASS

WHERE: Coffinger Park banquet room
 (regular meeting room)

WHEN: February 7 & March 14
 4:30-6:30



Before the club meetings on February 7th and March 14th, club member Dave Perry will teach a free class on **Gem Tree Making**. During the first class, the trees will be constructed; and during the second class, the polished stones will be glued onto the branches and the trees will be glued to their bases.

If you have not yet signed up and would like to, contact Debbie Keiser, so enough materials will be available.

PROVIDED: black wire, 35 little polished stones, wire cutter

TO BRING: wire cutter, smooth round pliers (needle nose best, but any smooth plier may be useful) wire if you want a color other than black (24 gauge craft wire), a cool rock for the tree base (3-4 inches long, 2-3

PEGMATITE MINERALS...

What Good are They?

Pegmatites was the topic of Dale Keiser's program at this month's meeting, and the field trip was to the Dragon Mine, so it might be interesting to take a close look at the primary constituent minerals — Quartz, K-Feldspar, and Mica — most pegmatites being felsic (or having the general composition of granite).

To Summarize Dale's Main Points: Pegmatites are related to magma bodies. As a large magma mass cools, the components, that are not part of the make-up of the primary minerals, are excluded — water, excess silica and basic ions, and exotic elements (such as lithium, beryllium, niobium, tantalum, and rare earths).

Pegmatites essentially form out of hydrothermal water, rather than magma. As such, the atoms are very free to move about, and thus very large crystals may form. The crystal size is a diagnostic property of pegmatites. And their unique chemical concentrations make them a frequent source of gemstone minerals — except in Arizona ☺

K-FELDSPAR

Composition - $KAlSi_3O_8$

System - Monoclinic (Orthoclase); Triclinic (Microcline)

Color - Clear, white, pink to flesh, greyish, blue-green (Microcline)

Luster - Vitreous to pearly

Streak - White

Hardness - 6-6.5

Density - 2.55

Fracture/Cleavage - 2 directions of cleavage, at 90° to each other

Feldspar is really a group of twenty mineral species (potassium-K, sodium-Na and calcium-Ca silicates), that make up to 60% of Earth's crust. The most common feldspars in pegmatites are Orthoclase and Microcline. Usually found as large masses, crystals tend to be rectangular and lath-like, and the two perpendicular cleavages give feldspars a blocky appearance.

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DUES ARE PAST DUE

Please send dues \$ to:
 WGMS
 PO Box 20375
 Wickenburg, AZ 85358



Meeting Minutes—January 10, 2014

Craig Jones called the meeting to order at 7 pm. There were two guests with 41 people in attendance.

Debbie's treasurer's report shows \$791.16 in checking as of the end of December. Debbie went over the 2013 budget and the Rock & Gem show proceeds. The show made \$7,342 with approximately 940 people attending. The 2014 budget was approved as presented.

The December minutes were read and approved.

Beth Myerson talked about the show and thanked everyone for all of their work and support. The show will be in the same place as last year; however, the name has been changed to The Wrangler Event Center. All of the advertising banners were handed out to volunteers to change to the new name and date. Debbie Norton volunteered to launder all of the table covers used at the show. Craig asked more volunteers to help with the show and Beth asked for more help with setup before the show and takedown Sunday after the show.

A suggestion was made to have more showcases at the show. The board will discuss this.

Dave Perry discussed the class he will be teaching on the Wire Gem Tree. The class is at 4:30 pm on Friday, February 7.

Debbie announced that Al and Erma Roe have been made lifetime members of the club. They joined the club in 1973 and have been very active since then.

Karen Coulter announced that there would be a field trip out of Stanton on February 9 with a tour of the ghost town. Hamburgers and hotdogs will be furnished. She asked those going to bring a side dish.

There were many show and tell pieces with Beth Myerson winning the show and tell prize.

Door prizes were won by Lorren Pearsall, Erma Roe, Barbara Richards, and Roger Schlaepfi.

The Stanton group is meeting Tuesday the 14th at 9:30 am to go to Date Creek.

Stan Celestian gave a presentation on the upcoming Peridot field trip.

Dale Keiser gave a presentation on the field trip to the Dragon Mine area to look for Pegmatite Sunday, January 12 meeting at Carl's Jr. at 9 am. Pegmatite means rock with large crystals.

February 7th is the next meeting. Snacks and desserts will be at 6:30 with the meeting at 7:00 pm.

Respectively submitted:
Susan Jones, Secretary

.... *Pegmatite Minerals continued from page 1*

Within the weathering environment, feldspars alter to clay minerals, and therefore Shale (a sedimentary rock composed of clays) is the most common rock in the Earth's crust.

USES of K-Feldspar

- ◆ flux in glass and ceramic making (accounts for 70% of feldspar mined)
 - ◆ bathroom appliances, building tiles, electrical insulators
 - ◆ poultry grit
 - ◆ filler/extender in paint
 - ◆ minor aggregate in concrete
- ◆ gemstones (moonstone & amazonite)



QUARTZ

Composition - SiO₂

System - Trigonal

Color - Clear, white, pink, purple, green, yellow, brown, black

Luster - Vitreous

Streak - White

Hardness - 7

Density - 2.65

Fracture/Cleavage - No cleavage, conchoidal to subconchoidal fracture

The second most abundant mineral in the Earth's crust is Quartz (or the most abundant discreet mineral species). It is a quite variable mineral, occurring from coarse-grained to microcrystalline (chert, agate); and the color may vary, depending on impurities or disruptions of the atomic structure.



PEGMATITE FIELD TRIP TO DRAGON MINE, JANUARY 12, 2014



Travelling San Domingo Wash



Making the turn



Climbing out of San Domingo Wash



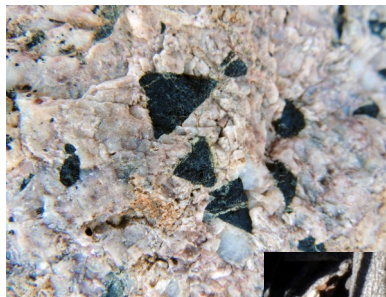
Attacking the Pegmatite



Overview of Dragon Mine and area

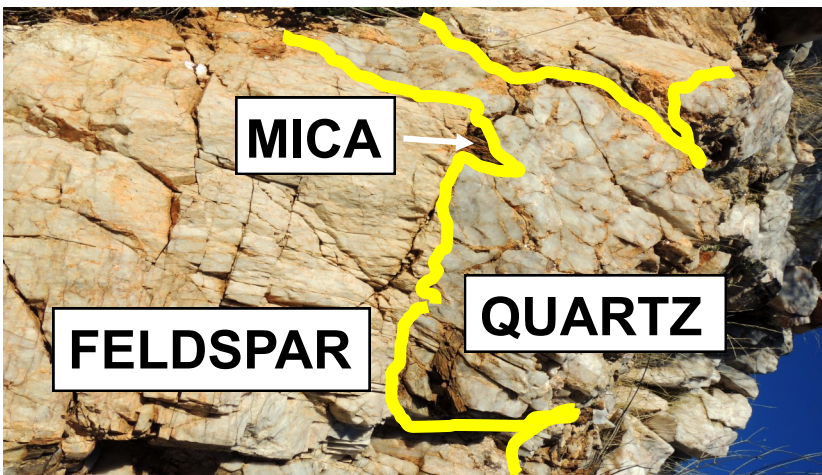


← Big shiny Feldspar crystal amidst a sea of Quartz



→ Triangular cross-sections of Schorl (black tourmaline) crystals. Tourmaline is in the Trigonal Class.

Could this be the one of the Dragons, guarding the Dragon Mine?



LARGE CRYSTALS

(note that most occur
in pegmatites!)

- 162' Microcline (Devil's Hole Beryl Mine, CO)
- 59' Beryl (Bumpus Quarry, ME) PHOTO TO RIGHT
- 47' Spodumene (Etta mine, SD)
- 39' Gypsum (Naica, Mexico)
- 33' Phlogopite (Lacey Mine, Ontario)
- Almost 33' Orthoclase (Urals, Russia)
- 23' Calcite (Kramer, CA)
- 20' Quartz (Itapora, Goiaz, Brazil)
- 15' Muscovite (Inikurti Mine, India)
- Almost 10' Biotite (Rosas, Norway)
- 10' diameter, 15' thick Muscovite (Holland)
- 7.5' diameter Garnet (Kristiansand, Norway)

EDITOR'S NOTE: My college mineralogy professor told of a single Spodumene(?) crystal, in New England, that he followed for over 1/4 mile

UPCOMING WGMS FIELD TRIPS

SUNDAY, FEBRUARY 9

WHERE: Club Gold Claim near Stanton

WHEN: 10:00 am

WHY: To become familiar with the claim; machine demos

WHAT: Bring a side dish or dessert; hamburgers and hot dogs provided by the Stanton Club

According to Dale, Corvettes, Lamborghinis, and low-riders are discouraged, but everything else should be okay. There is sometimes some serious washboard on that road.

LEADERS: Bill and Karen Coulter

MEET AT THE flagpole in Stanton at 10:00



FRIDAY, FEBRUARY 7 & MARCH 14

WHERE: Coffinger Park banquet room, Wickenburg

WHEN: 4:30 pm

WHY: To make Gem Trees

LEADER: Dave Perry

SIGN UP TO ENSURE ADEQUATE MATERIALS!

The PERIDOT MESA TRIP for January 25 has filled. If there is enough further interest, Stan is happy to schedule another. Let him know!

WHERE: Peridot Mesa, Apache Indian Reservation

WHY: To collect peridot (facetable & specimens)

WHAT: There will be fee involved: \$10 for access to the reservation; \$30 fee to mine owner, includes collecting material (at discretion of mine owner; additional specimens for sale

LEADER: Stan Celestian



Officers and Chairpersons

President: Craig Jones208-523-9355
Vice President: Martin Hagan 602-469-7770
Secretary: Sue Jones 208-523-9355
Treasurer: Debra Keiser 928-684-1013
Program Director: Dale Keiser 928-684-1013
Publicity: currently open position
Membership: Roma Hagan 602-469-7662
Editor: Susan Celestian 602-361-0739
Field Trip: Dale Keiser & Stan Celestian
Show Chair: Beth Myerson 480-540-2318
Scholarship Chair: Steve Hill 928-533-3825
Historian: Jeanine Brown 928-684-0489

Meetings are held the **2nd Friday most months** at **Coffinger Park banquet room**. Potluck dessert at 6:30 pm. Business meeting at 7:00 pm. **Exceptions: February and December** meetings are held on the **first Friday of the month**. We don't meet in the summer — **no meetings in June, July or August**.

Membership Dues: \$15.00 Adults per Person
\$ 5.00 Juniors and Students

Meeting Dates for 2013/14

Wickenburg: Dec 6, Jan 10, Feb 7, Mar 14, Apr 11, May 9
 Wickenburg field trips are usually the Sunday after the meeting.

Stanton meets 1st and 3rd Tuesday, Field Trips are 2nd & 4th Tuesday of the month.

NOTES FROM THE EDITOR

Have a geological interest? Been somewhere interesting? Collected some great material? Write a short story (pictures would be great). I take topic suggestions too.
Deadline for the newsletter is the 20th of the month

Mail or Email submissions to:
 Susan Celestian, editor
 6415 N 183rd Av
 Waddell, AZ 85355
 azrocklady@gmail.com

UPCOMING AZ MINERAL SHOWS

January 3-12 & 17-26 - Quartzsite, AZ

Tyson Wells Enterprises Inc.; Tyson Wells Show Grounds; 100 W. Kuehn St.; Daily 9-5; free admission; dealers from around the world; Web site: www.tysonwells.com

February - Tucson, AZ mineral/fossil shows

<http://www.xpopress.com/AZ-show-schedule.html>

February 13-15 - Tucson, Gem & Mineral Show

Main show at Tucson Convention Center; 260 S Church St; Th-Sat 10-6, Sun 10-5; Admission \$10, 14 & under free; vendors from around the world; Web site: <http://www.tgms.org/2014showinfo.htm>

February 22-23 - Apache Junction, AZ

Apache Gem & Mineral Club; Skyline HS; 845 S Crimson Rd; Sat 9-6, Sun 10-4; Admission \$3, students \$1, children free; Web site: ajrockclub.com

April 4-6 - Phoenix, AZ

Minerals of Arizona Symposium; Clarion Hotel at the Phoenix Tech Center; northwest corner of Elliot Rd & I-10. Symposium registration fee is \$40; but the Mineral Sale is FREE — there will be dealers in several of the hotel rooms: Friday 5-10, Sat 4:30-6 and after dinner. More information at: <http://flaggmineralfoundation.org/home/minerals-of-az-symposium/>

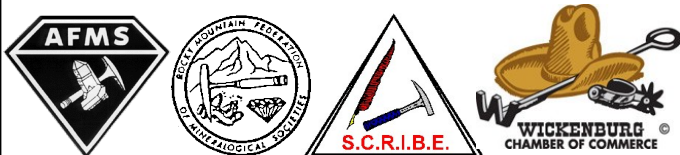
April 12-13 - Anthem, AZ

Daisy Mountain Rock & Mineral Club; Anthem School; 41020 N Freedom Way; Sat 10-5, Sun 10-4; Admission \$3, seniors & students \$2, children free

If you are travelling, a good source for out-of-state (or in-state) gem and mineral shows AND clubs is <http://www.the-vug.com/vug/vugshows.html>



Wickenburg Gem and Mineral Society is a member of the following:



ADDENDUM TO DECEMBER NEWSLETTER:

The club thanks Chuck and Harriet Wills AND Marty and Roma Hagan for preparing the Breakfasts and Lunches for the Show's café. It was a wonderful component of the Show's success!

.... *Pegmatite Minerals continued from page 2*

Though generally massive, distinct crystals of quartz are fairly common in pegmatites. They have a distinctive form — tall, six-sided prisms terminated by six faces coming to a point. Varieties most often encountered in pegmatites are:

- ◇ Rock Crystal — this quartz is clear
- ◇ Milky — white, due to fluid inclusions of gas and/or liquid
- ◇ Rose — pink, due to iron, titanium or manganese as impurities, though may be due to micro-fibers of a mineral, such as dumortierite
- ◇ Amethyst — purple, due to disruptions of the atomic structure (color centers), caused by gamma radiation changing the oxidation state of iron impurities
- ◇ Citrine — yellow to yellow-brown, due to iron as an impurity. May be related to radiation, as most commercial citrine is created by heat-treating amethyst or smoky
- ◇ Smoky — brown to black, due to irradiation and trace aluminum: (i.e. color centers)



Typical milky quartz from a pegmatite near Cleator, AZ. Note the lack of cleavage and distinct vitreous luster. Silver mineral is molybdenite. Photo by Stan Celestian

Smoky Quartz & Amazonite from Smoky Hawk Mine, CO. Photo

Rose Quartz Photo from



Typical Rock Crystal Quartz crystals from Arkansas pegmatite. Photo by Stan Celestian

PEGMATITE QUARTZ VARIETIES

USES of Quartz

- ◆ glass - quartz is the primary component
- ◆ abrasives (sand blasting, sandpaper)
 - ◆ filter for liquids
 - ◆ aggregate in cement/mortar
- ◆ watches/clocks - quartz is piezoelectric, meaning that it will generate an electric current when stressed. The current of a battery provides the stress, and the deformed quartz wafer will vibrate imperturbably at a rate suitable for powering accurate time pieces
 - ◆ gemstones
- ◆ flame-resistant bricks in the ceramics industry
- ◆ sand — as quartz is chemically stable and physically durable, it persists at the Earth's surface
 - ◆ source of silicon, used in the electronic circuit industry, solar cells, and more



MICA

Composition - $KAl_2(AlSi_3O_{10})(F,OH)$ - Muscovite;
 $K(Li,Al,Rb)_3(Al,Si)_4O_{10}(F,OH)_2$ - Lepidolite

System - Monoclinic

Color - Clear, white, gray, silvery (Muscovite);
 lilac, pink, rose, yellowish (Lepidolite)

Luster - Vitreous

Streak - White

Hardness - 2-2.5

Density - 2.76-3

Fracture/Cleavage - 1 direction of perfect cleavage

Mica constitutes a large group of 47 minerals, although there are about 8 common ones, including Biotite, Lepidolite, Muscovite, and Phlogopite. Muscovite is the most common mica in pegmatites, with Lepidolite a less common second.

The atomic structure is layered or sheeted, with each layer weakly bonded to the next. As a result, micas easily separate (cleave) along those weak bonds, into elastic and flexible sheets or flakes. Mica is reflective, elastic, easily cut, lightweight, electrically resistant, insulating, and chemically inert — all properties that are industrially useful.

Platy "books" (stacks of sheets) of muscovite. Note the distinctive cleavage.

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.... Pegmatite Minerals continued from page 6



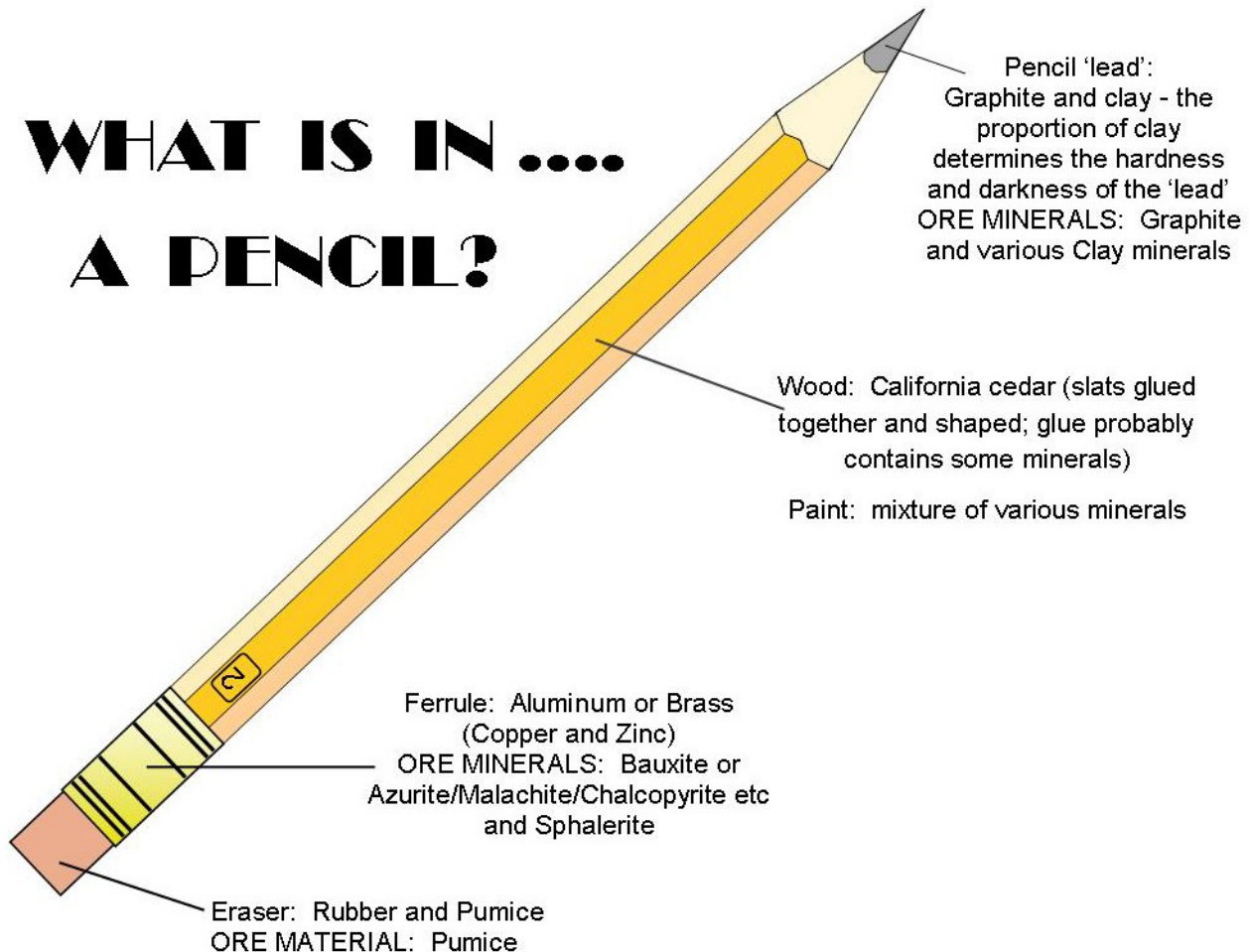
Star mica, formed by twinning, from a Brazilian pegmatite.
Photo by Stan Celestian

USES of Muscovite

- ◆ **HISTORICAL:** *Isinglass* — sheets of mica used as window panes, windows in ovens, kilns, lanterns, heaters; dial covers in fighter planes during WWII
- ◆ **SHEET:** electrical insulators, supports for heating wire, optical filters, windows in radiation detectors, dial covers, diaphragms in oxygen-breathing equipment, capacitors (high frequency & radio)
- ◆ **GROUND:** filler/extender in joint compound, in paint to enhance resistance to water penetration and prevent shrinking, sealant in well-drilling muds, coating between asphalt shingles to prevent sticking, decorative sparkle in stucco, paint & pottery, asbestos substitute in brakes and clutches, reflective component in cosmetics, abrasive in some toothpastes, durability additive to axle grease, soil conditioner
- ◆ **COMPOSITE:** sheets of compressed and bonded mica flakes are used as electrical insulation (look behind the wires in your toaster) and in kiln, smelters, and furnaces

Sources: Wikipedia, Answers.com, Minerals Information Coalition, Mineral Information Institute, HowStuffWorks.com, Ask.com, Industrial Minerals Association

WHAT IS IN ... A PENCIL?



2014 INTER-REGIONAL FIELDTRIP

TERRY, MONTANA

8

JULY 31, AUGUST 1-3, 2014

4 days of Fieldtrips, Speakers, Potlucks, Benefit BBQ, Live Music, Rock Swap, Swimming, Special Kids Rock Hunt, Country Fair, Badlands Tour, Special Breakfasts, Museum Tours

3 DAYS OF COLLECTING TRIPS:

- ◆ Gravel bars of the Yellowstone River, with special access by bus through private ranches — at least 3 trips per day (4-5 hours each); a new spot each day:
 - ◇ Montana Agate
 - ◇ Jasper
 - ◇ Petrified Wood
 - ◇ Fossil Coral
- ◆ Pierre Shale for Cretaceous fossils — 2 trips per day:
 - ◇ Fossil Ammonites (including *Scaphites*)
 - ◇ Nautiloids
 - ◇ Bivalves, Gastropods, and more
- ◆ Possible trips to Hell Creek Formation to collect Dinosaur Fossils

ACCOMODATIONS:

- ◆ The town of Terry has given their beautiful two-city-block Park in which to circle our campers (with doors facing the Park); first come-first served.
- ◆ The County has provided a half-city-block (across the street) for tent camping and RV overflow; first come-first served.
- ◆ All motels and RV parks in Terry are fully booked. If you want a motel or campground, you will have to make reservations in Miles City, MT (37 miles away)
- ◆ The School District has provided a room for meetings and programs, next door to the Park.

EVENING SCHEDULE:

Wednesday evening, July 30 — Welcome Potluck with live music

Thursday evening, July 31 — 2 talks: Yellowstone River & Montana Agate

Friday evening, August 1 — 2 talks: Lewis & Clark (presented by BLM) & Wyoming Jade

PLAN ON:

- ◇ Daytime temps between 85-95 degrees
- ◇ Occasional rattlesnake, possible ticks, cactus
- ◇ Wearing long pants, hats, good shoes, sunblock
 - ◇ Carrying plenty of water

For more information or to get on the list, contact Doug True at
dtruefossils12@yahoo.com



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