



## Wickenburg Gem & Mineral Society, Inc.

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[www.wickenburggms.org](http://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.*

## CHRYSOCOLLA

By Susan Celestian

Chrysocolla got its name from the copper alloys used to solder gold. In Greek, the solder is χρυσός κολλα (chrysos kolla), meaning "gold glue".

This is a mineral that is found in many, many localities throughout Arizona. And it is often confused with Turquoise, a hydrous copper aluminum phosphate hydroxide.

*Field test to distinguish chrysocolla from turquoise: As long as the chrysocolla is not silicified (combined with quartz), one can touch one's tongue to the sample. Chrysocolla will absorb water, and one's tongue will stick to the chrysocolla; while there will be no effect on turquoise. Give it a try!*

Chrysocolla most typically occurs as thin veins or coatings, massive or botryoidal ('bubbly') veins and coatings, or fibrous tufts -- never as large crystals. Desirable specimens are coated with a coating of drusy quartz.

**Formula:**  $(Cu_{2-x}Al_x)H_{2-x}Si_2O_5(OH)_4 \cdot nH_2O$  (Hydrous Copper Aluminum Silicate Hydroxide)

**Crystal System:** Orthorhombic

**Crystal Forms:** Massive, botryoidal

**Color:** Light blue, blue-green, green, can be black

**Cleavage/Fracture:** No cleavage; irregular to sub-conchoidal fracture

**Tenacity:** Brittle to sectile

**Luster:** Vitreous to dull

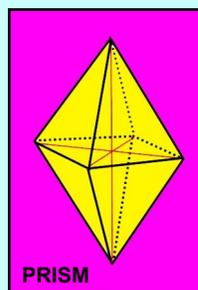
**Streak:** White to blue-green

**Specific Gravity:** 1.9-2.4

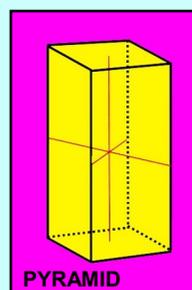
**Hardness:** 2.5-3.5

**Associated Minerals:** quartz, limonite, malachite, azurite, cuprite, other copper minerals

Crystals in the orthorhombic system have 3 axes: each of different length, so the crystals are generally tall or squat, with a diamond-shaped cross-section. See Figure 1.

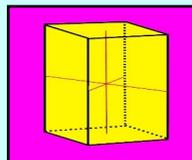
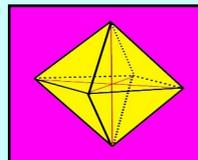


PRISM



PYRAMID

**FIGURE 1** Forms of the Orthorhombic System As illustrated in the Orthorhombic system diagrams, all three axes are of different lengths. Diagrams by Susan Celestian



CROSS-SECTION



CROSS-SECTION

Occurring as a secondary mineral in the oxidized zone of copper deposits, chrysocolla is a minor ore of copper. Chrysocolla is higher in copper than are the primarily emplaced sulfides, such as chalcopyrite. It forms during long-term weathering and re-deposition process, called Supergene Enrichment. During this process, copper is concentrated in new minerals. See Figure 2.

*Chrysocolla continued on page 3...*

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APRIL 2017

### Meeting Minutes — April 14, 2017

The meeting was called to order by Craig Jones 7:00. The pledge of allegiance was recited. One new member was introduced. A reading of the minutes was skipped. Debbie gave the treasurer's report. It was approved.

The field trips with Jim and Alice-south of Vulture mine for mud stone (common Opal), and Jackrabbit Wash for Apache tears, the fluorite trip to Harquahala Mt for green and lavender fluorite, and Burro Creek, were discussed. Tomorrow is Bullard Mine.

Beth says all except 3 inside tables are filled for the next show. There is still lots of room outside. This will be the 17th annual show. Craig wants a table at each door to sell more raffle tickets. We do the raffle instead of an entrance fee to fund the scholarship. Karen asked how much to spend for this years gold nugget to raffle. It was decided it should be around \$375. \_\_\_\_\_, who won last years nugget, will donate it back, to be raffled again.

The scholarship for earth science will be decided in about 2 weeks. There are currently 2 applicants.

There was no unfinished business. There was a discussion about whether the club should have a phone and email list for members. Steve says the claims at Deer Creek are fine. Taxes are paid and filed.

The room contract for our Coffinger Park meetings, next year, is due. It was voted not to have a Sept. Meeting, because too many people haven't returned yet. The first meeting will be the second week in October.

There are 3 people with Show and Tell. Steve won the door prize.

Dale's Game. When we entered the room there was a table with a series of rocks. There was a question to be answered about each rock, and a prize. Everyone got 5 tickets. You answered the question on the back of the ticket for whatever rock interested you. A ticket was picked-if it had the wrong answer, another ticket was picked, if it had the correct answer you got the prize.

There will be a May 12th meeting. There will be no pot luck.

Meeting was adjourned at 8:00.

Respectfully submitted, Allison A., acting secretary



## APRIL 22 IS EARTH DAY

Earth Day is an annual event that occurs on April 22nd. However, many organizations and institutions celebrate Earth Week, around that day. During this time, events and speakers are scheduled, to bring attention to the environmental issues of concern these days.

This is a good time to consider adopting practices that support the sustainability of our environment -- air, soil, water, biota. Plant a tree (or trees); start recycling; go paperless for bills; plant desert milkweed to support migrating monarch and queen butterflies; plant bee-friendly flowers; limit use of pesticides; start using re-useable water bottles, rather than buying bottled water; install drip irrigation to your landscape (or practice xeriscape landscaping); and so on.



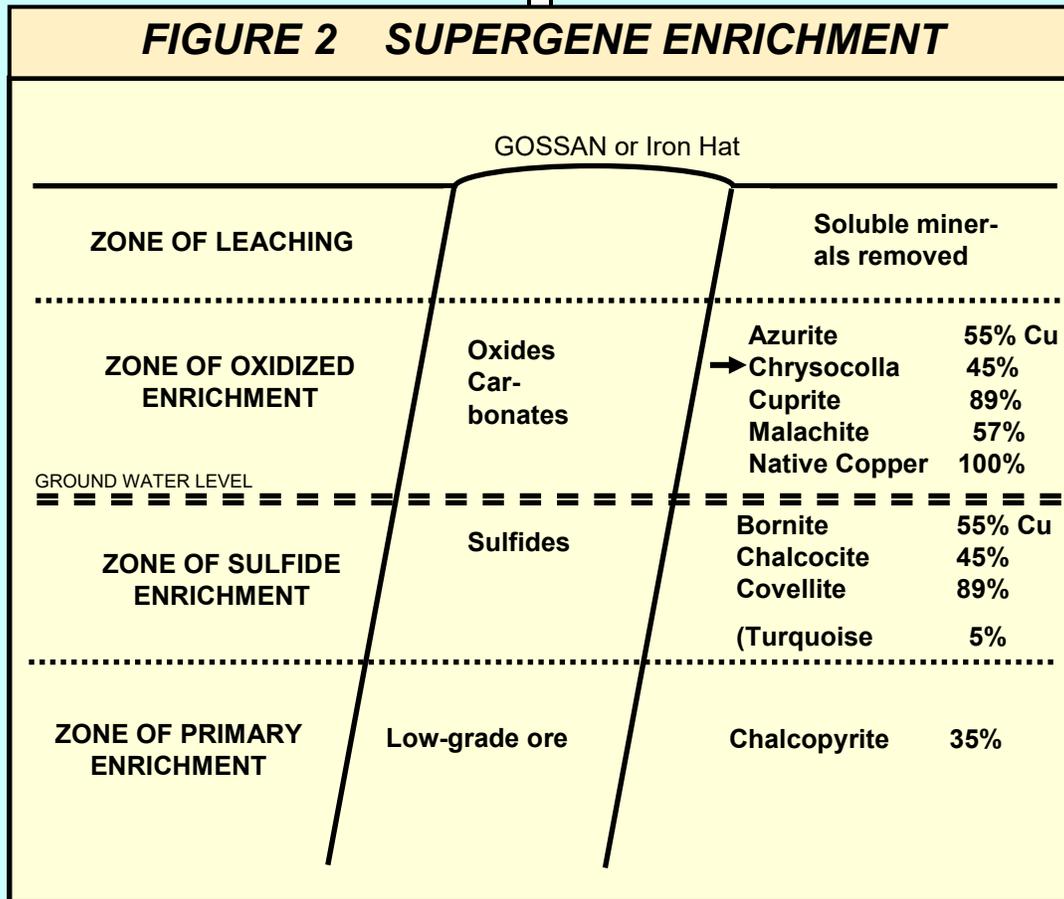
### NOTES FROM THE EDITOR

I would love to have some pictures from field trips! Snap a couple and send them to me.

Deadline for the newsletter is the 27th of the month.

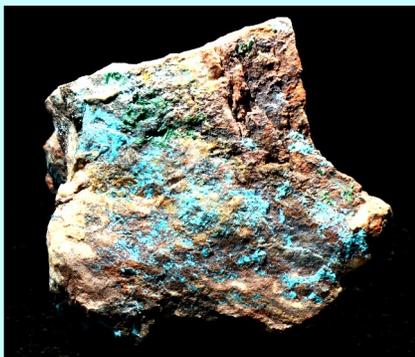
Mail or Email submissions to:  
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.....Chrysocolla continued from page 1

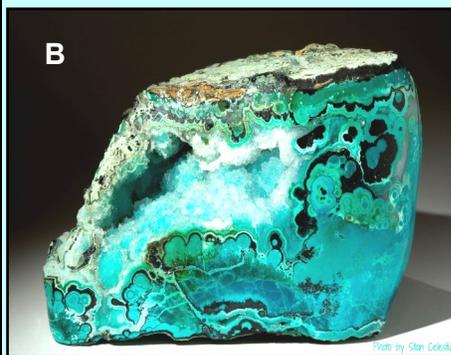


Pictures of chrysocolla follow in Figures 3-5.

**FIGURE 3** This is a sample from the Bullard Mine. The chrysocolla occurs as thin coatings and veinlets. *Photo by Stan Celestian*

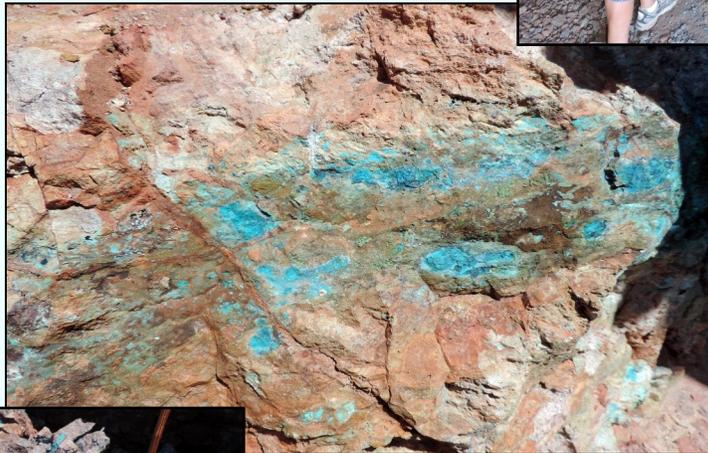
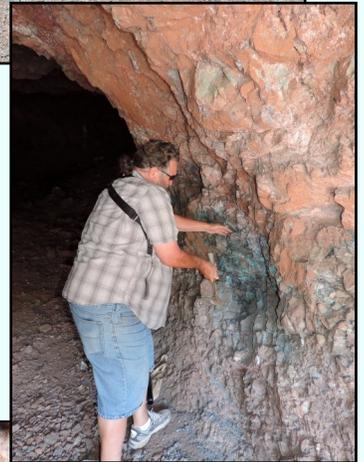


**FIGURE 4** This lovely specimen is from the Morenci Mine. Both the blue and green of the surface is chrysocolla. Azurite can be seen where the specimen is broken in the upper left. *Photo by Stan Celestian*



**FIGURE 5 A & B** Both of these specimens are from the Bagdad Mine. Stalactitic and botryoidal to massive chrysocolla (and associated green malachite), have been coated with drusy quartz, creating enchanting and jewel-like specimens. *Photos by Stan Celestian*

# FIELD TRIP TO BULLARD MINE APRIL 15, 2017



Seeing  
Blue

**UPCOMING AZ MINERAL SHOWS**

**Monthly - Tempe, AZ** Gallery TCR , 906 S Priest, #107; Sat 9-6; Free. For dates, go to: [https://www.facebook.com/pg/gallerytcr/events/?ref=pag\\_e\\_internal](https://www.facebook.com/pg/gallerytcr/events/?ref=pag_e_internal)

**May 6-7 - Kingman, AZ** Mohave Co. Gemstoners; Kingman Academy of Learning, 3420 N Burbank Av.; Sat 9-5, Sun 9-4; Admission: free.

**May 27-28 - Pinetop, AZ** White Mt. Gem and Mineral Club; Hon-Dah Convention Center, 777 Hwy 260; Sat 9-6, Sun 10-4; Admission: \$2/adult, \$1/seniors.

**May 27-28 - Bisbee, AZ** City of Bisbee; Queen Mine, 478 N Dart St.; Sat-Sun 9-5; Admission: free.

**June 2-4 - Flagstaff, AZ** Coconino Lapidary Club Gem, Mineral and Jewelry Show, Silver Saddle Outdoor Market, Hwy 89N & Silver Saddle Rd (3.5 mi north of Flagstaff Mall); 9-4 daily; Admission: free.

**August 4-6 - Prescott Valley, AZ** Prescott Gem and Mineral Club; Prescott Valley Event Center, 1301 Main; Fri-Sat 9-5, Sun 9-4; Admission: \$5/adult, \$4/seniors, children under 12 free.

**October 6-8 - Buckeye, AZ** Helzarockin' Gem & Mineral Show, Helzapoppin' Arena, 802 N 1st St (Miller Rd); Fri-Sat 9-4, Sun 9-2; Admission: \$3/adult; children under 12 free.

If you are travelling, a good source of shows AND clubs is <http://www.the-vug.com/vug/vugshows.html> or <http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ> For out-of-the-country shows: <http://www.mindat.org/shows.php?current=1>

A good source for a list of Arizona Mineral Clubs and contact information is [http://whitemountain-azrockclub.org/Public\\_AZ\\_Clubs\\_Links.html](http://whitemountain-azrockclub.org/Public_AZ_Clubs_Links.html)



March and April were adorned by fields of California Poppies (*Eschscholzia californica*)  
*Photo by Susan Celestian*

**UPCOMING WGMS FIELD TRIPS**

**NO FIELD TRIPS SCHEDULED AT THIS TIME**



Slickensides visible in the adit at the Bullard Mine. Slickensides are polished and striated surfaces that form when rocks move past one another, as along a fault. Sometimes concurrent mineral growth will produce irregularities that leave a surface that is smoother when stroked in the direction of movement, and rough when stroked in the opposite direction. *Photo by Stan Celestian*

**Officers and Chairperson**

- President:** Craig Jones.....208-523-9355
- Vice President:** Mel Canter ..... 502-641-3118
- Secretary:** Judy Zimmerlee..... 517-652-1355
- 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:** Craig J, Bob B, Mel C
- 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 do not 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 2017**

**Wickenburg:** Jan 13, Feb 3, Mar 10, Apr 14, May 12, Sept 8, Oct 13, Nov 10, Dec 1

**Stanton meets** Thursday after the Wickenburg meetings.  
Jan 19, Feb 9, Mar 16, Apr 20, May 18, Sept 14, Oct 19, Nov 16, Dec 7 (subject to change)

# WHITE MOUNTAIN GEM & MINERAL CLUB PRESENTS

## 20th GEM, MINERAL & FOSSIL SHOW

Club website: <http://www.whitemountain-azrockclub.org>



JEWELRY, GEMS, MINERALS, FOSSILS, BEADS

LAPIDARY EQUIPMENT and SUPPLIES, DISPLAY CASES,  
DOOR PRIZES, SILENT AUCTION, RAFFLE, WHEEL OF FORTUNE,  
CHILDREN ACTIVITIES, and MORE



MAY 27-28, 2017



SATURDAY 9:00 am - 6:00 pm

SUNDAY 10:00 am - 4:00 pm

### LOCATION

HON-DAH RESORT &  
CONFERENCE CENTER



Junction of State Routes 73 & 260  
Pinetop, Arizona 85935

### SHOW COORDINATOR

Gary Alves

(928)-679-3644

[Garyalves.chairman@gmail.com](mailto:Garyalves.chairman@gmail.com)



### ADMISSION

ADULTS \$2.00

JUNIORS (18 and under with Student ID) FREE (accompanied by an adult)

SENIORS 70 & Over \$1.00

Sponsor is a Non-Profit Organization

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