



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.

EPIDOTE

By Susan Celestian

Epidote is a fairly abundant rock-forming mineral. Of secondary origin, either during metamorphosis or hydrothermal alteration, epidote is commonly found among the igneous and metamorphic rocks of Arizona. Crystals are commonly encountered in Arizona; however, the more common massive pistachio-green rocks make an interesting lapidary material.

Formula: $\text{Ca}_2\text{Fe}^{3+}\text{Al}_2(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$

(Copper Iron Aluminum Silicate Oxide Hydroxide)

Crystal System: *Monoclinic*

Crystal Forms: *Prismatic (long slender; sometimes striated), fibrous, wheat-sheaf groups, massive*

Color: *Pistachio-green, yellow-green, brownish-green, greenish-black, gray*

Cleavage/Fracture: *2 directions of cleavage (one perfect, one imperfect); uneven to conchoidal fracture*

Tenacity: *Brittle*

Luster: *Vitreous, pearly*

Streak: *White to grayish-white*

Specific Gravity: *3.3-3.6*

Hardness: *6-7*

Associated Minerals: *quartz, feldspar, amphiboles, chlorite*

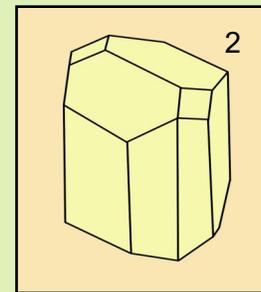
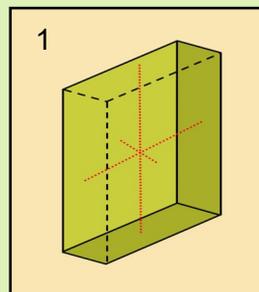
Pleochroism*: *green, yellow, brown*

* **Pleochroism:** "many colored" - the property of a mineral where the color changes, depending on the direction the crystal is observed. Best displayed in a transparent crystal. It is caused by the ways light interacts with the crystal structure of the mineral. Includes **dichroism** (2 colors) and **trichroism** (3 colors).

The name 'epidote' was derived from the Greek "epidosis", for "increase", in allusion to crystals having one side longer at the base.

Epidote is a group classified within the Clinozoisite Group, along with the Allanite Group, the Åskagenite Group, and the Dollaseite Group. The Epidote minerals are Epidote-(Pb) or Hancockite, and Epidote-(Sr). And it forms a series with Clinozoisite, with the latter being more iron-rich.

It is in the Monoclinic System, which has three axes of different lengths, and no 90° angles. When you find simple prismatic crystals, you may at first think you are looking at a 4-sided column, with a square cross-section. But look closely! None of the edges will meet at 90°. See Figures 1 & 2.



FIGURES 1 & 2 Epidote Crystals On the left, is a simple crystal form; while on the right is a more complex form, interesting wedgy termination faces -- both monoclinic epidote. *Illustration by Susan Celestian*

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Meeting Minutes — May 12, 2017

No minutes available.

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

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

UPCOMING WGMS FIELD TRIPS**NO FIELD TRIPS SCHEDULED AT THIS TIME**

CONSIDER VOLUNTEERING TO PLAN OR HELP PLAN TRIPS. YOU WOULD NOT NEED TO LEAD EVERY TRIP, BUT KEEP THINGS ON TRACK

If you all have some place that you would like to go, let Craig J. 208-681-4770 or Mel C. 502-641-3118 know. This is your club. Let's go out and have some fun.

<http://www.wickenburggms.org/>

If you ever have photos from a club field trip, send a couple to Dale, for posting on the website.

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

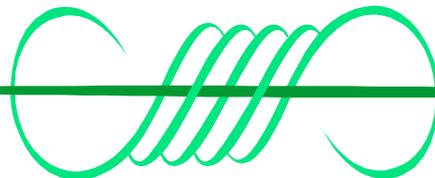
Meetings are held the **2nd Friday most months** at **Coffinger Park banquet room**. Potluck dessert at 6:30 pm. Business meeting at 7:00 pm. **Exceptions: February and December** meetings are held on the **first Friday of the month**. We do not meet in the summer — **no meetings in June, July or August**.

**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)

**NOTES FROM THE EDITOR**

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Write a short story (pictures would be great). I'd like topic suggestions also.

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:
 Susan Celestian, editor
 6415 N 183rd Av
 Waddell, AZ 85355
 azrocklady@gmail.com

.....Epidote continued from page 1

If you go to <http://www.minerals.net/mineral/epidote.aspx>, and scroll down to 3D Crystal Atlas, you will find a couple of rotatable epidote graphics. Figures 3-6 illustrate some epidote forms.



FIGURE 3 This epidote specimen (2.2 inches tall) is from Aracuai, Minas Gerais, Brazil. The fibrous look is also common in epidote crystals, often found growing in crevices of Arizona rocks.
Photo by Stan Celestian



FIGURE 4 These splintery bundles of epidote crystals are from the Char Kohan Mountains, Kharan, Balochistan, Pakistan (2.7 inches across).
Photo by Stan Celestian



FIGURE 5 This is a lustrous, wedgy crystal cluster from the famous Green Monster Claim, Prince of Wales Island, Southeast Alaska. *Photo by Stan Celestian*



FIGURE 6 Massive Epidote This is an example of the classic pistachio-green massive variety of epidote. It makes a great lapidary material, due to its texture and unusual color. *Photo by Stan Celestian*

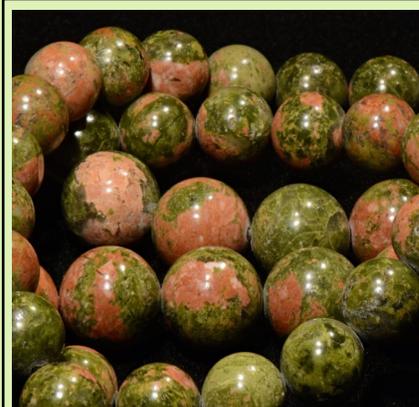
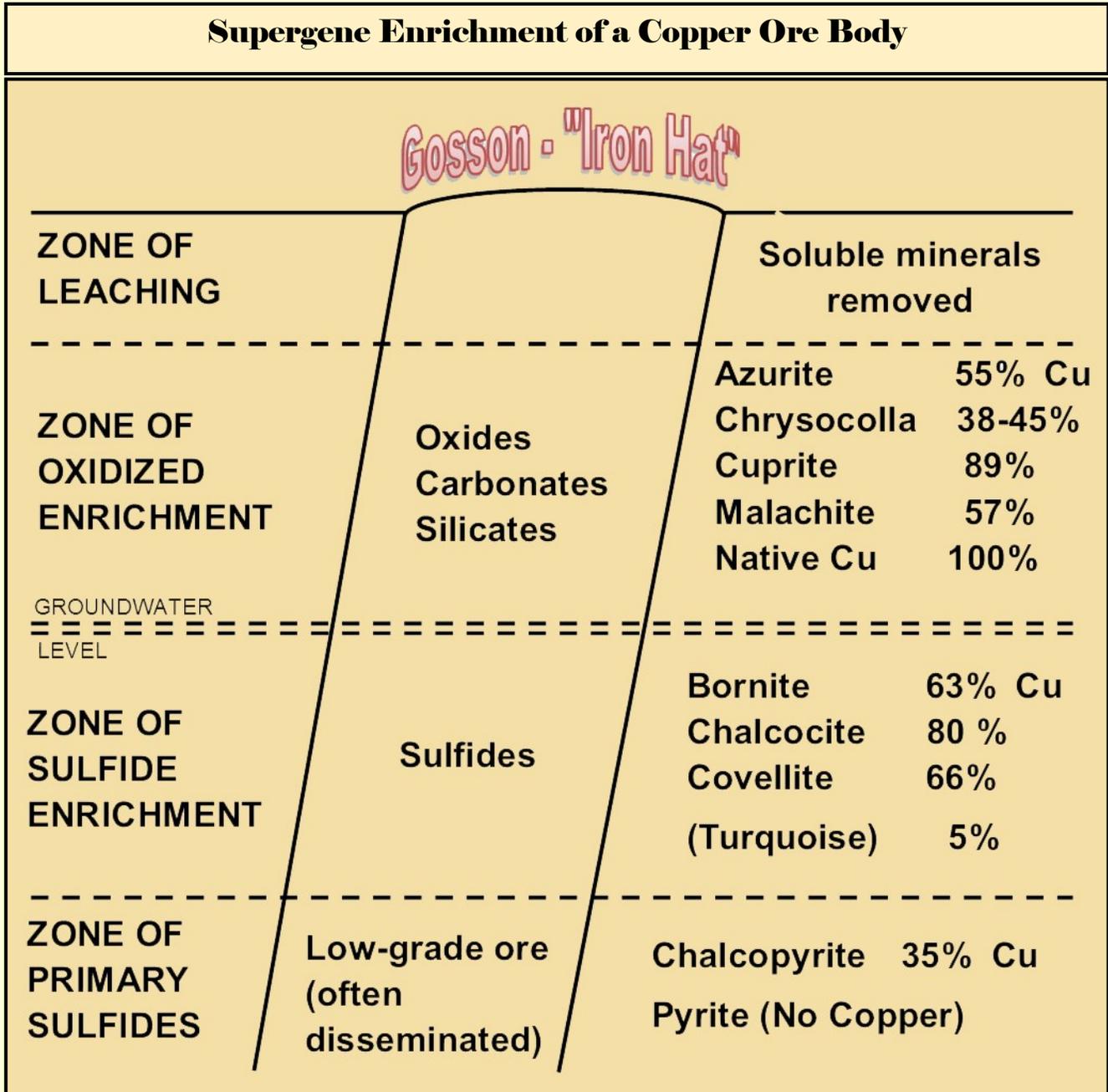


FIGURE 7 Unakite Beads Unakite is an epidote-rich rock, formed when granite is altered hydrothermally. In the process, plagioclase feldspar is replaced by epidote. The pink orthoclase feldspar and clear quartz remain unchanged. The contrasting pink and green colors make the rock an attractive lapidary material. In fact, unakite adorns the front steps of the Washington D.C.'s Smithsonian National Museum of Natural History, and was used as tiles of the floor at the Smithsonian's south entrance. *Photo by Stan Celestian*

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In the April 2017 newsletter, the diagram for Supergene Enrichment of a copper ore body contained some erroneous numbers. Below is a corrected version. *Diagram by Susan Celestian*



Susan Celestian, editor
For Wickenburg Gem and Mineral Society, Inc
6415 N 183rd Av
Waddell, AZ 85355