NON-CLASTIC SEDIMENTARY ROCKS — Dolostone and Chert
By Susan Celestian

Dolostone is a rock composed of the mineral dolomite -- in fact the rock is most often referred to as dolomite. But for our purposes, the term dolostone will help distinguish the rock from the mineral. See Table 1. Dolostone is essentially not visually distinguishable from limestone, however is typically devoid of fossils, due probably to the recrystallization process that produced the rock (see the next section, for a description of this). The rock is subject to attack by acid, as is limestone. However, dolomite is less susceptible than is calcite, must be powdered, and will not react as vigorously. See Figure 1.

TABLE 1 Non-Clastic Sedimentary Rock Chart

Dolostone/Chert continued on page 4.....
Board Meeting Minutes — December 5, 2017

The meeting was called to order by President Ed Winbourne at 5:05 p.m. Those present were Ed W., Bob Salter, Victoria Peterson, Sue and Stan Celestian, Cynthia Buckner, Tiffany Poetch, and Tami Early. A quorum was established.

November minutes: Motion: made by Ed W., seconded by Tiffany and approved unanimously to approve the November minutes with the following addition: Board members retaining their Board positions for 2018 are Bob Salter and Sue Celestian.

Financial Report: Cynthia gave the financial report After discussion, it was decided Cynthia will no longer provide the financial statement in monthly emails, as the financial report is available in hard copy at each meeting, either by viewing in the Minutes book or by visiting with the Treasurer – Cynthia.

Bob Salter mentioned the Club needs a year end audit. Ed will talk with Dan Janko and Dave Favaro to see if either would be willing to volunteer to conduct this audit. A business plan is also a necessity, and Ed will discuss this with Dave Haneline as to whether he would be willing to work on the business plan for the Club.

Christmas Party: Victoria reported the party committee consisting of Victoria, Susan Winbourne, Jeanne Smardo and Robin Shannon met and completed planning for the party to be held at Robin’s home on Saturday, December 9th.

2018 Gem & Mineral Show: A marketing meeting was held; flyers are available for disseminating in the community. Ed met with David at CKM Company to discuss online marketing of the show. David would charge $400 for marketing to 200 sites. The design for online marketing is being worked on. Clark Little obtained information on a food truck. We don’t have final approval from Deer Valley School District as yet on rental of the facility; however, expect to receive this approval shortly.

Jennifer Gecho’s mother, Andrea Bowen-Gecho, has a portable ATM machine which she has volunteered to make available for the show. She will give the Club a percentage of sales.

Board Nominations: Stan suggested we review Club bylaws as to term limits, as well as how many Board members there should be.

Motion: made by Victoria, seconded by Stan and unanimously carried to present to membership meeting that we increase Board members by five. The voting on increase in Board members will be voted on at January meeting.

Respectfully submitted,
Victoria Peterson, Secretary

Membership Meeting Minutes — December 7, 2017

The meeting was called to order by President Ed Winbourne at 6:30 p.m.

Speaker: The evening’s speaker was Susan Celestian, Professor of Geology, our Club Newsletter Editor, and former Curator of the Mining and Mineral Museum in Phoenix. Susan spoke about copper and mineral mining, and gave an informative power point presentation which was enjoyed by the group.

Raffle: The raffle was conducted by Robin Shannon with items donated by Fire Mountain Gems, Dave Haneline, Stan Celestian, Ed Winbourne, and Howard Roose. Winners were Shirley Cote, Howard Roose, Cynthia Freese, Maria Little, Ed Winbourne, Rise Pappas, Donna Werkele, Jessica Caltabiano, Allan Viles, Willow Calcino, Joe Gecho, Jeanne Smardo, Sue Celestian, Linda Roose, William Freese, Tammi Early, Jeff Paris and Alan Larson.

Membership and Change in Bylaws: Ed informed the membership that we will be voting in January on a change to the Club bylaws adding five members to the Board of Directors. This change is necessary as our Club membership has grown to over 130 members and the additional Board members will be more appropriately representative of the membership.

Guest Performer: Jeff Paris, a member and local performer, gave an entertaining performance of song and guitar. He has also volunteered to provide music for the Christmas party. Thanks Jeff, your performance was much appreciated and enjoyed!!

Financial Report: Cynthia gave the report (attached). Ed stated in the future the financial statement will be provided at the meetings in the meeting minutes book and a verbal report by the Treasurer. The financial report will not be included in the monthly newsletter.

Executive Committee Meeting: Victoria reported on the Executive Committee Meeting.

2018 Gem & Mineral Show: Howard Roose reported last year’s attendance was 1500 and the goal for 2018 is over 2,000. We will have a Hawaiian food truck this year. Ed reported that jewelry vendors are very popular and we will have more of this type of vendor this year.

Field Trip: Ed reported Saturday, December 9th the field trip will be to the Purple Passion Mine, north of Wickenburg. We will meet at 7:30 a.m. and it is necessary to have a high clearance vehicle. The fee charged the club for entrance is $15 per person.

Minutes continued on page 3…..
**Education:** Bob Salter reported on his presentation to the Glendale Preparatory Academy. There were 104 8th grade students in attendance. The talk was well received and Bob gave credit to Bill Smardo, Dave Haneline and Stan Celestian for providing information, samples and especially to Bill for assisting with the presentation.

**Wire Wrapping Class:** Jennifer Gecho reported she needs volunteers on January 2nd to help make items for the Kids Corner at the Gem Show.

**Christmas Party:** Robin discussed the Saturday, December 9th party. Evite invitations have been sent out as well as reminders. It looks like there will be a great group attending. Special Thanks to Robin for lending her home!!

**Yearly Club Dues:** Cynthia and Ed reminded members that dues are payable by December 15, no later than the January 2nd meeting.

**Board Nominations and voting:** Ed stated we do not need to vote on the nominated members to the Board, as we will be increasing the Board membership by five at the January meeting. The following new member will take office as Board members in January: Howard Roose, Clark Little, Tammy Earli, Joe Gecho and Claudia Merek. Following members will remain in office: Ed Winbourne – President; Stan Celestian – Vice President; Victoria Peterson – Secretary; Cynthia Buckner - Treasurer; Members: Bob Salter, Bob Evans, Whit Revel, Sue Celestian and Tiffany Poetch.

There being no further business, the meeting adjourned at 8:40 p.m.

Respectfully submitted,
Victoria Peterson, Secretary
Jasper - Very similar to flint, jasper generally refers to red, yellow, green, and brown varieties of extremely fine-grained quartz. Jasper has waxy luster, and conchoidal to sub-conchoidal fracture. Some variety types include radiolarite, novaculite, bloodstone, plasma, prase, Biggs, Bruneau, leopard, ocean, turritella, petrified wood, and many more. See Figures 3 and 4.

Dolostone Environments of Deposition: Rarely is dolomite precipitated directly (some have been seen to form in saline marine lagoons), and lab results have shown that dolomite does not precipitate readily at normal atmospheric conditions. Rather, it is thought that most dolostones form from limestones or lime muds, by a process called dolomitization -- a process that generally occurs in hot, arid environments. During dolomitization, Calcite (CaCO₃) is recrystallized to Dolomite (CaMgCO₃)₂, when magnesium-rich groundwater circulates through previously-formed limestone.

Chert (synonym = chalcedony) is crypto-crystalline silica (Quartz). Chert is really an all inclusive term for rocks composed of extremely fine-grained silica, and includes flint, jasper, chalcedony, agate, and sometimes opal.

Flint - Strictly speaking, flint occurs in chalk or marly limestone. It is white to black in color. Flint has waxy-dull luster, and well-expressed conchoidal fracture. See Figure 2.
**Chalcedony** - This is another term that has many implications. It is used to refer to all forms of chert, except opal. But we will use it to refer to a translucent variety, composed of parallel fibers of quartz and moganite -- both silica, but with different atomic arrangements. Desert roses, fire 'agate', and carnelian fall into this category. Chalcedony is very waxy, tough, and with sub-conchoidal fracture. See Figure 5.

**Opal** - Opal is a special case, really generally not considered chert -- but we'll stick it in here for now. It is considered a hydrated form of amorphous silica, and is classified as a mineraloid, as it has no real organized atomic structure. Opal is composed of tiny spheres. In *Common Opal*, the spheres vary in size and are not regularly arranged -- so it will be plain, although it may exhibit **opalscence** or **adularascence** (a milky, bluish schiller). *Precious Opal* has uniformly-sized, regularly arranged spheres. The arrangement causes various wavelengths of light passing through the material to bend or diffract -- or splitting up into different color rays, like what happens when light passes through a prism -- causing a **play of color**. See Figure 7.

**Chert Environments of Deposition**: Chert can form in continental or marine environments. Most forms of chert form at low temperatures, and in association with water and volcanic ash -- with the ash being the source of the silica. Initially, the cherts are deposited in vugs, cracks, and crevices as a gel, that later solidifies. In the cases of novaculite, radiolarite, and flint, the source of silica is the microscopic shells of radiolarian and diatoms, and sponge spicules. Occurring in both shallow and deep marine environments, sometimes the transformation of these biological components into chert occurs in deep ocean basins, where there is little land-derived sediment, and thick sequences can build up.

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*FIGURE 5 Chalcedony*

The top two photos are of desert roses, very waxy-looking, translucent, bubbly and wrinkled fine-grained quartz. The orange image, below, is of carnelian. *Photos by Stan Celestian*

*FIGURE 6 Agate* This is a close-up of iris agate from Brazil. *Photo courtesy of the Natural History Museum of Los Angeles County. Photo by Stan Celestian*
GIFT SWAP

FELLOWSHIP
UPCOMING FIELD TRIPS

**WHEN:** January 20, 2018  
**WHERE:** Aguila  
**WHAT:** Geodes, Apache tears

**WHEN:** February 2018 (TBA)  
**WHERE:** Tucson Gem & Mineral Show  
**WHAT:** Minerals, fossils, jewelry, artifacts for sale

**WHEN:** February 17, 2018  
**WHERE:** Seven Springs/Red Rover Mine  
**WHAT:** Jasper, copper minerals, travertine

**WHEN:** March 2018 (TBA)  
**WHERE:** Pete the Miner  
**WHAT:** Gold mine tour (fee)

**WHEN:** April 2018 (TBA)  
**WHERE:** Peridot Mesa  
**WHAT:** Peridot in basalt (fee)

**WHEN:** May 2018 (TBA)  
**WHERE:** Payson area  
**WHAT:** Zebra agate, peach agate, Pennsylvanian fossils

**WHEN:** June 2018 (TBA)  
**WHERE:** Jerome  
**WHAT:** Fossils, possible Gold mine tour (fee)

DATES SUBJECT TO CHANGE

DUES ARE DUE OVERDUE!

Get those 2018 dues in, and don’t miss a minute of the adventure!! You may mail it in or pay Victoria in person at a meeting.

FIRST ATTEMPT AT WIRE WRAPPING  
By Stan Celestian

I started with a lovely lepidolite mica cab, I made from some material collected a few years ago, at the Cryo-Genie Mine, San Diego, Co., CA.

Next, using three 24-inch lengths of 16 gauge solid copper wire, I encased the attractive stone in loops of wire coils to provide a secure setting. The copper wire was also used to create the sturdy and attractive bail at the top. This is accentuated by a very impressive red insulated multi-strand 20-gauge copper wire necklace.

DOES YOUR WIRE WRAPPING LOOK LIKE THIS? Then you need guidance!!!!

ARE YOU LOOKING FOR A WAY TO USE YOUR BEAUTIFUL CABS YOU MAKE AFTER EVERY FIELD TRIP?

ATTEND the Wire Wrapping Class, enthusiastically taught by Jennifer Gecho.

**WHERE:** Anthem Civic Building, 3701 W Anthem Way, Anthem, AZ (Same building in which the club meetings are held.)

**WHEN:** 4:30 on the 1st Tuesday of the month (same night as club meeting)

**BRING:** 20 & 24-26 gauge wire, a stone to wrap, pliers (round nose, needle nose), side cutters, and a metal spring clamp.

**DONATION:** $5-10
UPCOMING AZ MINERAL SHOWS

January 5-7 - Mesa, AZ  Flagg Mineral Foundation -- Flagg Gem & Mineral Show; Mesa Community College; 1833 W Southern Av; Fri-Sun 9-5; Admission: free.

January 12-14 - Globe, AZ  Gila County Gem & Mineral Society; Gila County Fairgrounds; Hwy 60, 3 miles north of Globe; Fri-Sat 9-5, Sun 9-4; Admission: $3 indiv, $5 couple, students/children free.

January 19 - February 11- Tucson, AZ  There will be many separate shows throughout Tucson during this period. For a general schedule, go to: http://www.tucsongemshows.net/coming.html

January 19 - February 11 - Marana, AZ  Smoky’s Miner’s Co-op; 6901 N Casa Grande Hwy; Daily 8:30-6; Admission: free.

February 8-11 - Tucson, AZ  Tucson Gem and Mineral Society; Tucson Convention Center; 260 S Church Av; Thur-Sat 10-6, Sun 10-5; Admission: $13, children 14 and under free.

February 8-11 - Mesa, AZ  Apache Jct Rock and Gem Club; Skyline High School, 845 S Crimson Rd.; Sat 9-5, Sun 10-4; Admission: $3 adults, $1 students, children 12 and under free.

March 24-25 - Anthem, AZ  Daisy Mountain Rock and Mineral Club; Boulder Creek High School Gym, 40404 N Gavilan Peak Pkwy; Sat 9-5, Sun 10-4; Admission: $3 adults, $2 seniors and children, children 12 and under free.

October 13-14 - Sierra Vista, AZ  Huachuca Mineral and Gem Club; Cochise College, 901 N Colombo Av; Sat 9-5, Sun 10-4; Admission: 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

NOTE FROM THE EDITORS

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Send us pictures -- or write a short story (pictures would be great). We encourage topic suggestions also.

Deadline for the newsletter is the 22nd of the month.

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

Facebook
Visit the club page periodically. See what is happening, and boost our visibility on the web. Go to: The Daisy Mountain Rock and Mineral Club. It is set up so you can post photos of outings or related items.

WEBSITE
http://www.dmrmc.com/
Here you will find photos highlighting field trips, activities/classes, and our show, links to rockhounding regulations, newsletter archive, geologic articles, and links to geologic resources.

If you have comments, contact webmaster, Nancy Gallagher.

Officers and Chairpersons
President: Ed Winbourne.....ewinbourne@gmail.com
Vice President: Stan Celestian
Secretary: Victoria Peterson
Treasurer: Cynthia Buckner
Publicity:
Membership: Victoria Peterson
g.victoriapeterson@yahoo.com
Editors: Susan & Stan Celestian……………………azrocklady@gmail.com
Field Trip: Stan Celestian
Show Chair: Ed Winbourne

Meetings are held the 1st Tuesday of the month at the Anthem Civic Building, 3701 W Anthem Way, Anthem, AZ 85086. Business meeting at 6:30 pm. We do not meet in July or August.

DMRMCLUB@GMAIL.COM

Membership Dues: $20.00 Adults per Person
$25.00 Family (2 people)
$ 5.00 Additional children

Meeting Dates for 2018
Jan 2, Feb 6, Mar 6, Apr 3, May 1, June 5, Sept 4, Oct 2, Nov 6, Dec 4
USES (AND USEFULNESS) OF DOLOMITE

- Dolomite is used in the same ways as is limestone (as outlined in the August 2016 newsletter)
  - A magnesia (MgO) source

USES OF CHERT

- Historically -- Flintknapping (method of shaping flint) created tools and arrow/spear heads
  - Firestarter, even in early firearms (such as the flintlock)
    - Gemstone
    - Building or facing stone
    - Paving or curbing stone
    - Sharpening stone (novaculite)
  - Mill balls (grind glazes and other materials used in the ceramics industry)

- Clay additive in ceramics industry (Flint was roasted to 1000°C to remove organic impurities and create cristobalite. This was then milled to a very fine size. Today quartz has replaced flint, however some potters still use the term “flint” to refer to siliceous additives.)