WHAT ARE SEDIMENTARY ROCKS??

By Susan Celestian

Sedimentary rocks form at the Earth’s surface. They are created by the weathering (breakdown) of pre-existing rocks (into fragments and ions-in-solution), erosion (transportation), deposition (or precipitation) by gravity, wind, or water, and lithification (hardening). The environments in which they form will be reflected in the characteristics of the rock — color, grain size, grain shape, mix of grain sizes, mineralogy assortment, sedimentary structures, and included fossils. It is from sedimentary rocks that geologists draw the clues needed to reconstruct the surface environments of Earth’s past. Who lived here? Where were the oceans, and sandy beaches? Where did streams flow? Where did glaciers shape the topography?

Insider Tip

There are two types of sedimentary rocks:

Clastic (aka Fragmental or Detrital) - composed of pieces of previously-existing rocks (sediment)

Non-clastic (aka Chemical) - composed of crystals or organic debris

See Figure 1 (page 10) & Sedimentary Rock Chart (page 9)

Clues present in Clastic Sedimentary Rocks

GRAIN SIZE: The longer a rock fragment is transported, the smaller it becomes. So a rock with large fragments has undergone very little transportation, and can be considered as having been deposited close to the source. On the other hand, rocks composed of small fragments have undergone extensive transportation — often as a result of multiple trips through the rock cycle. See Figure 2 on page 10.

JUNE MEETING: NEW FORMAT

Gather your spare mineral specimens, lapidary rough, equipment, wire-wrapped jewelry, or any other hobby-related item that you want to SWAP or SELL!

AGENDA:

(1) Year-in-review by Ed Winbourne,
(2) Open discussion (comments, commendations, suggestions, criticisms),
(3) 10-minute break,
(4) Raffle,
(5) Swap and Sale w/soft drinks and pastry

PRESIDENT’S VIEW

We are coming to the end of our rockhounding year, and it has been a very good one. I want to give special thanks to all our members for the effort, enthusiasm, and willingness to step forward whenever the situation called for it. Jennifer Gecho is one member all of us should take note of. Jennifer has done an outstanding job of leading our wire wrapping class. No small feat as Jennifer is a single mother with a full time job who has never seen a task she wouldn’t volunteer for. She is a member of our Executive Board, having been elected a Trustee at our last election. Our club is lucky to have members like her. I offer a salute to her, and her son Joey, for all they do.

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Presidents’ View continued on page 3......
Board Meeting Minutes — May 2, 2017

The meeting was called to order at 5:15 pm by Victoria Peterson. Those present were: Victoria, Bob S., Whit, Cynthia, Tiffany and Bill Smardo of Education Committee. A quorum was established. Stan and Susan Celestian arrived at 5:40.

Financial Report:

Cynthia reported she has filed the necessary Arizona Corporation Commission and Federal filings. She is waiting for the invoice for the $1900 in equipment purchases made by Ed Winbourne. She has ordered new Club checks, and has paid the $2530 to Boulder Creek High School for rental of facility for the Gem and Mineral Show.

Whit mentioned the cost of rental of the school is much higher than last year. The Prescott Annual show admittance costs are higher than ours. He felt we should compile statistics showing what other shows are charging for admittance and our admittance costs might be raised to be in line with others. This would mitigate the increased costs of the school rental. There was group agreement on this.

Discussion ensued regarding costs associated with the wire wrapping class, including monthly payment for the room rental. Possibly we could ask class members to provide a donation each month as the Civic Center does not allow us to charge class members. This issue to be carried forward to the next Board Meeting.

Full Financial Report is available for viewing upon request.

Membership Report:

Victoria reported that we now have 128 members with 6 children. Eighteen new members have come from the Show. Tiffany suggested we do a survey of members on what they would like to have the club provide. Tiffany will research Survey Monkey to determine their costs to do such a survey. Victoria will provide a draft of a survey document for the Board to go over.

Education Committee Report:

Bill S. discussed the education of students and teachers. We will be continuing with the STEAM presentations and talks at schools. There was general discussion of providing in-service information for teachers relative to geology. The $1,000 scholarship will be presented May 15. Bill discussed having guidelines on the recipients of scholarship monies being students who are financially needy as well as students who are interested in pursuing the sciences. Whit felt it would be difficult to ascertain the neediness of potential students. Discussion on this subject will continue.

Field Trip Report:

We have not received emails from the Coalition on their trips. We need someone to be a Coalition contact. This will be discussed with Ed.

Stan will finalize the Coalition trip June 3rd to Lynx Creek in Prescott.

Items to be carried forward to June Meeting:

1. Invoice for $1900 equipment purchase – Ed Winbourne/Cynthia
2. Information on admittance costs for other shows – Board members
3. Costs associated with wire-wrapping classes
4. Survey of members wishes – Tiffany/Victoria
5. Discussion on providing guidelines for recipients of scholarship monies
6. Discussion on Education Committee and training for teachers
7. Establishing a Coalition contact person – Ed W.

There being no further business, the meeting adjourned at 6:05 pm.

Respectfully submitted,

Victoria Peterson, Secretary

Minutes continued on page 3.....
General Meeting Minutes — May 24, 2017

The meeting was called to order at 6:30 pm by Stan Celestian, Vice President. He introduced the speaker Harold Linder, Ph.D. Exploration Geologist. Dr. Linder spoke on exploration for copper and gold in Canada and Alaska and provided an interesting video presentation on the sites he worked at over the years. He has written a book entitled, “Wild Places: The Adventures of an Exploration Geologist”, and provided same for sale.

Stan provided an overview of the Board Meeting (minutes attached).

Financial Report:

Cynthia, Treasurer, reported on the attached financial report.

Field Trip Report:

Stan spoke about the trip to the Planet Mine where lots of malachite samples were collected. He talked about the necessity of having folks who plan on attending the trips to be sure to contact the trip coordinator to let them know of their attendance. This will help in making sure no one is left behind.

Dave Haneline reported on the Reserve Bank Mine trip this Saturday.

Stan will be coordinating the Field Trip to Lynx Creek in Prescott June 3 where there will be gold panning. Those attending should email Stan of their attendance and bring a pan, shovel, and crescent tool as well as the regular equipment, clothing, etc. for field trips.

Tiffany said she has two metal detectors she will loan.

Raffle:

Raffle items were donated by club members and won by several people who then gave their winning tickets to newly joining members (nice job folks!)

Facebook and Website:

Jonathan Mitchell discussed establishing a new address for our Facebook page: The Daisy Mountain Rock and Mineral Club. Much appreciation to Jonathan for his taking on the Facebook page!! The Club Website is: www.DMRMC.com . Thanks also to Nancy Gallagher for putting the site together!!

There being no further business, the meeting adjourned at 8 pm.

Respectfully submitted,
Victoria Peterson, Secretary

I want to thank Stan Celestian, Bob Salter, Dave Haneline, Jim Reed, and Howard Roose for their work of establishing a truly functioning field trip committee. This past year’s trips have been terrific. I especially enjoyed the Las Vegas sojourn. It was well thought out and planned for, with a true sense of camaraderie developed among all who attended. An annual overnight trip should be part of next year’s field trip plans.

One area of our club that has been evolving is our presence on social media. Rick Jackson got us started in the social media area, and for that we owe him a debt of thanks. Our website is now looked after by Nancy Gallagher, our Facebook page, is under the steady hand of Jonathan Mitchell, and Meetup overseen by Dalia. Meetup alone has been a big reason for the club’s growth. Social media as a whole has played an important part in the growth of the club, as well as the success of our Fourth Annual Rock and Gem Show. It would be in our interest to establish a committee on social media to explore other avenues that would be beneficial to us.

When I look at our newsletter each month I see a tool that could be used far beyond educating and enriching our membership, a role that it has played to everyone’s delight. Susan Celestian has performed an amazing job, well beyond anything that I am sure any of us imaged when it was agreed to start a Newsletter. Her efforts are another example of the strength that lies within our membership. Thank you Susan for giving us this wonderful addition to our rockhounding lives. The newsletter is another reason to say that we have a great deal to offer rockhounds in the North Valley, something that an increasing number of people have become aware of.

On a personal note I have missed out on the last two field trips, as well as the general membership and Executive Board meeting, due to illness. A particularly nasty bug has kept me down and aggravated my asthma. I am coming around and look forward to seeing all of you at our June Meeting.

Yours truly, Ed Winbourne
On the evening of May 15, 2017 President Ed Winbourne, Secretary Victoria Peterson, and Treasurer Cynthia Buckner attended an awards ceremony at Boulder Creek High School, and presented the DMRMC’s $1000 scholarship to graduating senior Jacqueline Shea. She is a distinguished Boulder Creek student, also receiving the school’s Top Ten Medallion Award. After high school, she will be pursuing a degree in Sustainability at ASU.

CONGRATULATIONS TO
CLUB MEMBER
JOSEPH GECHO
HIGH SCHOOL GRADUATE
Best Wishes for Your Future, from the Daisy Mountain Rock and Mineral Club
FIELD TRIP TO RESERVE BANK MINE

Gary Hueston and Joyce Ramage own and operate Arizona’s smallest full production mine — a copper mine, not far from Vulture Peak. They have been rehabilitating the working the mine since 1999. The original mine was opened in 1899, and was called the Angel Mine.

Gary and Joyce’s operation is really amazing. They have ladders going down about 75 feet, in 10-foot segments. The ore is brought to the surface in an ore bucket. Joyce hand-sorts out the chalcocite-rich ore, which is crushed to about the size of a quarter. Ore is placed in a crucible, and fired in a small furnace to about 2200 degrees F. Once the copper has been released from the rock, it is poured off. Then it is re-fired and poured into rod or bar molds. The bars are stamped with the mine name and sold online. Joyce draws the rod out into wire, which she uses to create beautiful jewelry. You can buy some 100% Arizona copper jewelry or bars by going to http://huetrammining.wix.com/reserve-bank-mine

Below, and on pages 6-7, are some pictures from the adventure.

For a nice toasty Spring day, it was a good-sized group that gathered in Anthem to caravan to the mine. Photo by Nancy Gallagher

Mine co-owner, Joyce Ramage gives a bit of orientation at the meet site near the mine, before heading off the main road. And then she introduced the group to the mine and its history.

Club members fill their buckets with chrysocolla and other interesting rocks

Photos by Nancy Gallagher
Reserve Bank Mine continued from page 5

Five intrepid club members descend into the Reserve Bank Mine  
*Photo by Nancy Gallagher*

Close-up of ore: chrysocolla (blue) around chalcocite (dark in center). It is the chalcocite that is richest in copper and easily smelted.  
*Photo by Anne Sailer*

Miner, Gary Hueston, near a vein or ore.  
*Photo by Anne Sailer*

It’s a tight fit down there!  
*Photo by Anne Sailer*

Here is a view of the mine headframe. Note the ore bucket poised at the head of a chute, ending at the wheelbarrow. Ventilation conduits caterpillar across the base of the photo.  
*Photo by Nancy Gallagher*
Crucibles full of crushed ore go into the table-top furnace (large round container, with prominent handles). The high-grade ore is chalcocite, that is generally surrounded by chrysocolla. (Chrysocolla is about 38-45% copper; while Chalcocite is 80% copper) In the furnace, the ore is fired at about 2200°F. Liquid copper will flow out of the rocks, and the melted copper is poured off into a crucible. Then it is re-fired, and poured either into a bar mold (seen atop the furnace, in the photo below), or into a rod mold. The bars are stamped with the mine name, and sold as artifacts. Rods are fed into a device that draws it into wire, which Joyce uses to make jewelry.
The speaker at the May 2nd meeting was club member Harold Linder. He is a retired exploration geologist, and has written a book, based on his diary: *Wild Places: The Adventures of an Exploration Geologist*, now available on Amazon, for $40.

Harold has had an interesting career, which has taken him to the wilds of almost every continent. He worked in swampy, bug-infested Canada, shivered in -30º weather in Antarctica, lived in a plane-accessible-only valley in Alaska, slept under trees on an African plain, and discovered the Castle Mountain gold deposit in California (a mine that has produced over 1.25 million ounces of gold).

And he shared some of his adventures with us.

Roughing it -- the life of an exploration geologist! The book gets 5 stars on Amazon.

I have some space to fill, so thought I would share a bit of the May adventure Stan and I embarked upon in Great Salt Plains State Park, near Jet, Oklahoma. This site is famous for hourglass gypsum crystals, collecting is free, and crystals are abundant (although the first 3 or 4 holes Stan dug produced no crystals --- and then he struck the mother lode! We probably got 300-400 crystals in an hour.). Very fortunately, storm clouds kept the temperatures and sun glare down, although it was very windy!!! I know the pictures are a bit small -- just increase the magnification of your view!
### CLASTIC SEDIMENTARY ROCKS

<table>
<thead>
<tr>
<th>Coarse-grained (pebbles, cobbles, boulders)</th>
<th>Medium-grained (sand)</th>
<th>Fine-grained (silt, clay)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BRECCIA</strong> - large, angular fragments, with fine matrix</td>
<td><strong>QUARTZ SANDSTONE</strong> - mostly quartz sand; looks sandy; may shed loose grains of sand</td>
<td><strong>SILTSTONE</strong> - composed of fine particles of quartz and feldspar; massive; gritty feel</td>
</tr>
<tr>
<td><strong>CONGLOMERATE</strong> - large, rounded fragments, with fine matrix</td>
<td><strong>ARKOSE</strong> - assorted sizes, with visible feldspar; often reddish</td>
<td><strong>SHALE</strong> - composed of clays, which lead to fine layers; dull luster; soft</td>
</tr>
<tr>
<td></td>
<td><strong>GRAYWACKE</strong> - assorted sizes, with mica and rock fragments; dark gray or greenish-gray</td>
<td></td>
</tr>
</tbody>
</table>

### NON-CLASTIC SEDIMENTARY ROCKS

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>LIMESTONE</strong> - composed of precipitated crystals of calcite; will fizz in acid</td>
<td>* <strong>Crystalline Limestone</strong> - fine to sugary calcite crystals, without fossils</td>
</tr>
<tr>
<td></td>
<td>* <strong>Fossiliferous Limestone</strong> - fine calcite crystals, usually marine fossils</td>
</tr>
<tr>
<td></td>
<td>* <strong>Oolitic Limestone</strong> - composed of small spheres of calcite</td>
</tr>
<tr>
<td></td>
<td>* <strong>Coquina</strong> - composed of nearly only shells and shell fragments</td>
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<tr>
<td></td>
<td>* <strong>Chert</strong> - composed of the microscopic calcite shells of planktonic animals (coccoliths, foraminifera)</td>
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<tr>
<td></td>
<td>* <strong>Travertine</strong> - coarsely crystalline calcite (very sugary), often banded in various colors (browns, reds, blacks)</td>
</tr>
<tr>
<td><strong>DOLOSTONE</strong> - similar to limestone, but composed of dolomite; will fizz weakly after powdered; generally devoid of fossils</td>
<td></td>
</tr>
<tr>
<td><strong>CHERT</strong> - microcrystalline quartz; conchoidal fracture; waxy luster; any color</td>
<td>* varieties include flint, chert, jasper, chaledony, agate, opal (although chaledony, agate, opal do differ a bit from flint, chert, jasper)</td>
</tr>
<tr>
<td><strong>ROCK SALT</strong> - composed of halite; cubic cleavage; salty taste</td>
<td></td>
</tr>
<tr>
<td><strong>GYPSUM</strong> - composed of gypsum; easily scratched by fingernail</td>
<td>* varieties include: alabaster (massive, sugary); selenite (generally clear); satin spar (fibrous)</td>
</tr>
<tr>
<td><strong>DIATOMITE</strong> (aka diatomaceous earth) - composed of the microscopic silica shells of diatoms; similar to chert, but will scratch glass will not fizz in acid, and is less dense.</td>
<td></td>
</tr>
<tr>
<td><strong>COAL</strong> - composed of the carbonized remains of plant debris; brown-black; low density</td>
<td>* varieties include: peat (loose visible plant debris), lignite (brown, with some visible plant remains), bituminous (&quot;soft coal&quot;, black)</td>
</tr>
</tbody>
</table>
GRAIN SHAPE: This is defined as a grain’s roundness. The longer a rock fragment is transported, the rounder it becomes. See Figure 3.

MIX OF GRAIN SIZES: This is called sorting. A poorly sorted sediment has a wide range of sizes; while a well-sorted sediment will be composed of uniformly-sized particles. Sorting is accomplished as the transporting medium(s) winnow out fine particles, and leave the larger particles behind. See Figure 4.

MINERALOGY ASSORTMENT: The longer a sediment is transported, the “cleaner” it becomes. Some minerals (such as mica, feldspars, and ferromagnesians) are readily broken down in the weathering environment; while quartz is highly resistant and persistent. So, as time passes, the vulnerable minerals will weather away, leaving behind an increasing percentage of quartz.

The grain shape, sorting, and mineralogy assortment characteristics of any given sediment contribute to the definition of a sediment’s maturity. Referring back to Figure 4, the San Pedro River sediment is immature — angular grains, wide range of sizes, and abundant feldspar and rock fragments; while the Coral Pink sediment is mature — small, rounded, uniformly-sized quartz grains, with almost no other minerals.
FIGURE 1  Rock Cycle  All Earth materials cycle through and are re-cycled via the Rock Cycle. The mechanisms of melting, weathering/erosion/lithification, and changes in the temperature/pressure/chemistry, within the various environments upon and within the planet, result in the re-arrangement and/or recrystallization of rocks. In other words, all the rocks of Earth have their origins with previously-existing rocks. There is no specific route that rocks take through the cycle. As the arrows in the diagram indicate, there are many possible pathways through the Rock Cycle.  Illustration by Susan Celestian

COLOR  There is a general correlation between the oxygen levels of the environment of deposition, and the color of a rock.

The source of the color is also frequently due to the presence of small amounts of iron. Sedimentary rocks that form in well-oxygenated environments (in particular, terrestrial environments such as alluvial fans, deltas, and floodplains), are often red, brown, purple, or orange. This is due to the iron being oxidized to hematite. On the other hand, oxygen-deficient environments cause the iron to be reduced, or to combine with sulfur (forming pyrite), to produce black, gray, or green colors. These conditions exist in environments such as lagoons, deep lakes, estuaries, offshore marine.

Sed Rocks continued on page 12...
Black color may also be the result of the presence of organic carbon, such as in swampy or marshy environments, where organic debris accumulates at a rate that exceeds the capacity of the environment to facilitate its decay/oxidation. See Figure 5.

The principle of lateral continuity states that most sedimentary rocks are deposited over broad geographic areas, and taper off or blend into another rock type. If they are found truncated, they may be assumed to have once been more laterally continuous.

The principle of superposition states that sedimentary strata are deposited in layer-cake fashion, one atop the other. Thus, the oldest rocks are on the bottom, and they become progressively younger toward the top. See Figure 6.

SEDIMENTARY STRUCTURES Sedimentary structures are features of sedimentary rocks that reflect the rocks’ modes and environments of deposition. These structures, along with the other physical characteristics already described herein, are used to draw visual interpretations of the comings and goings at, and beneath, the Earth’s surface. Where were the streams, swamps, coastlines, various marine environments, dunes/deserts, glaciers, and so on? In what sequence did these environments occur in any given area? In what direction did the wind blow? Were water currents slow or rapid? Who/what lived here? What was the climate like, and how did it change over time?

These I will discuss in a future newsletter.

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SEDIMENTARY PRINCIPLES There are three overriding principles that aid in the interpretation of the sedimentary rock record.

The one feature that is exhibited consistently in sedimentary rocks is stratification or layering. Sedimentary rocks are laid down by water, wind, or gravity in beds arranged in layers. Most of the time these beds are horizontal, reflecting the principle of original horizontality. See Figure 6. Sometimes, strata (layers) will be originally inclined; however, wet sediments cannot support much of an inclination. Other instances in which strata are not originally horizontal, will be discussed with sedimentary structures, in a future edition of the newsletter.
UPCOMING FIELD TRIPS

WHEN: Saturday June 3, 2017
WHERE: Lynx Creek  We will be approaching the creek on Bannie Mine Road, which at last visit is useable by street vehicles.
WHAT: Gold
MEET: Parking lot of Anthem Civic Building, 3701 W Anthem Way, Anthem, AZ 85086
LEAVE: 8:00 a.m.
LEADER: Stan Celestian 602-319-0224
BRING: Lunch/water, gold pan, small shovel, screwdriver (or other implement to clean crevices), bucket, tweezers or eye dropper, small vial for the gold. If you have it, a bin in which to pan, and extra water.
OTHER: Also in the area is a very nice beehive kiln. Bannie Mine Road is off of Walker road, so you will already be almost there. Continue on Walker Road to Big Bug Mesa Road, turn left and go .5 mi or less to Charcoal Kiln Road, and turn right. Watch carefully, and you will see a sign on the right side of the road, indicating the short trail to the kiln. This is in a housing subdivision, so avoid driveways when parking along the road. 34°27’27.04” N; 112°22’23.25” W

WHEN: TBD August? 4 days, at least
WHERE: Royal Peacock Opal Mine, Denio, NV
WHAT: Opal, Black Opal, Opalized fossils
MEET: TBD
OTHER: Fee: $190/person; Go to the mine website for more information about the site: http://royalpeacock.com/feedingging

UPCOMING FIELD TRIPS CONTINUED:

WHEN: October 14 & 15
WHERE: Gem-o-rama, Trona, CA
WHAT: Pink Halite, Hanksite, Sulfohalite, Tincalconite after Borax, others
MEET: TBD
LEADER: Stan Celestian
OTHER: There is a dry campground of sorts in Trona ($8/night), or motels in Ridgecrest, 24 miles away.

Other field trips are being considered and information will be posted in the monthly newsletter and described at meetings, or via email. And if you have somewhere to which you would like to see a field trip scheduled, let your Field Trip Committee know.

DATES SUBJECT TO CHANGE

Stan Celestian has created a page in Flickr where he is posting photos from club field trips. Currently, the Planet Mine trip is the only album there, but he will be adding more soon.

If you have some photos that could be added to the albums, send them to stancelestian@gmail.com.

The site can be found at https://www.flickr.com/photos/149654042@N02/albums/with/72157682683515735
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=page_internal](https://www.facebook.com/pg/gallerytcr/events/?ref=page_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.

**October 21-22 - Sedona, AZ**  
Sedona Gem and Mineral Club; Sedona Red Rock High School, Hwy 89A & Red Rock Loop Rd; Sat 10-5, Sun 10-4; Admission: $3; children under 12 free.

**November 3-5 - Black Canyon City, AZ**  
High Desert Helpers Rock-a-Rama Gem and Mineral Show; High Desert Park, 19001 E Jacie Ln; Fri 9-4, Sat 9-5, Sun 9-4; Admission: free.

If you are travelling, a good source AND clubs is [http://www.the-vug.com/vug/vugshows.html](http://www.the-vug.com/vug/vugshows.html) or [http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ](http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ)  
For out-of-the-country shows:  
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)

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 website periodically. See what is happening, and boost our visibility on the web.

Go to: [The Daisy Mountain Rock and Mineral Club](http://www.dmrmc.com)  
It is set up so you can post photos of outings or related items.

This is a new site.  
**Join The Daisy Mountain Rock and Mineral Club.**  
To **Unjoin**, go to [The Daisy Mountain Rock and Mineral Club](http://www.dmrmc.com), click on Groups (in bar at page top). Both the new and old sites should come up with option to Join and Unjoin.

Officers and Chairpersons

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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.

The purpose of Daisy Mountain Rock & Mineral Club is to promote and further an interest in geology, mineralogy, and lapidary arts, through education, field experiences, public service, and friendship.

**Membership Dues:**  
$20.00 Adults per Person  
$25.00 Family

**Meeting Dates for 2017**

Jan 3, Feb 7, Mar 7, Apr 4, May 2, June 6, Sept 5, Oct 3, Nov 7, Dec 5
WHAT IS IN CONCRETE?

The basic components of Portland cement are sedimentary rocks — limestone, shale & sand, plus slate, slag, and iron ore.

The above materials are crushed, and baked at about 2700°F, in huge kilns. The final product is marble-sized gray balls, called clinker.

For concrete, add sand and gravel — both sedimentary particles.

Before bagging, clinker is ground super fine. At this time, another sedimentary material — gypsum (hydrous calcium sulfate) — is added to slow the hardening time, and strength-accelerator in the early hydration stages. Without gypsum, Portland cement will set up immediately.