

DAISY MOUNTAIN ROCKCHIPS

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.

VOLUME 5, ISSUE 6

JUNE 2020



A Classic Bivalve -- the *Pecten* or Scallop. The scallop has been a symbol of fertility, the rising Sun, and as resurrection. After St. James the Great carried a scallop shell during a journey from the Middle East to Spain, the shell has been a symbol of pilgrimage or journey. And of course, it is the iconic symbol of the Shell Oil Company. Photo by Stan Celestian



CONGRATULATIONS
TO
NANCY GALLAGHER
for winning 3rd place for the DMRMC website, at the Rocky Mt Federation of Mineral Societies convention in Big Piney, WY this month.

CONGRATULATIONS
TO
STAN CELESTIAN
for winning 4th place, for a MSA (S DMRMC) newsletter article he wrote, at the Rocky Mt Federation of Mineral Societies convention in Big Piney, WY this month.



FOSSILS: PART VIII

Kingdom: Animalia
Phylum: Mollusca Class: Bivalvia
By Susan Celestian

Mollusca encompasses 7 classes;

Class: Bivalvia
Class: Gastropoda
Class: Cephalopoda
Class: Scaphopoda
Class: Polyplacophora
Class: Monoplacophora
Class: Aplacophora

However, only the first 5 classes have any meaningful fossil record. This newsletter issue will address the Class - Bivalvia. Formerly known as Pelecypoda, the class includes the clams, scallops, oysters, mussels, rudists (extinct), shipworms, and others.

The name Pelecypoda means "axe-foot", in reference to the shape of the foot once it is extended outside the shell. With this foot, organisms can dig quite swiftly down into the sediment. Have you ever chased a clam? They are fast!

The name Bivalvia refers to the fact that the organisms are housed within two hinged shells (valves). Now, as you may recall, Brachiopods also live within two shells -- but their symmetries differ -- and of course their anatomies differ also, but anatomy is largely lost to fossilization.

Bivalve characteristics are as follows:

- ▶ Their geologic record extends from Early Cambrian to Recent. Bivalves appeared during the Cambrian explosion, when many shelled organisms appeared in the fossil record.
- ▶ The body plan is complex with nervous system (no brain), photo-sensitive cells, strong muscles, circulatory system with 3-chambered heart, respiring gills, digestive tract and excretory system, and largely separate sexes for reproduction.
 - The style of the hinge teeth of the shells is often used to identify genera and species.

Bivalvia continued on page 6....



KYANITE

By Susan Celestian

Kyanite's name is based on its usual color of blue. It is derived from the Greek *kyanos* or *kuanos* (dark blue). It occurs in high temperature/pressure metamorphic rocks. In fact, kyanite is an index mineral: a mineral whose presence is used to infer the temperatures and pressures at which a rock forms.

One of kyanite's characteristic physical properties is its variable hardness (5.5 when scratched along the long axis, 7 when scratched across the long axis). In fact, it once was known as Disthene ("two strengths").

Chemical Formula - $Al_2(SiO_4)O$

[polymorphic with andalusite & sillimanite: same chemical compositions, different crystal structures]

Crystal System - Triclinic (3 of unequal length, and no 90° angles). Go to <https://www.mindat.org/min-2303.html>, and scroll down to an interactive graphic of crystalline kyanite.

Growth Forms/Habits - Bladed, tabular

Hardness - 5.5-7

[4.5 when scratched parallel to the long axis; 7 when scratched across the long axis]

Color - Blue -- also white, gray (black with included graphite), green, pink, orange, yellow, colorless

Luster - Vitreous, Pearly, Greasy

Streak - Colorless

Specific Gravity - 3.53-3.67

Cleavage - perfect in one plane, good in another

Fracture - splintery

Other - May exhibit cat's eye chatoyancy.

Uses - See page 13.

Kyanite continued on page 12....

INSIDE THIS ISSUE

Fossils: Part VIII Kingdom Animalia, Phylum Mollusca, Class Bivalvia	2, 6-11
Kyanite	2, 12-13
Field Trip Report:	3-5
Words of Wisdom from Bob Evans	14
Club Information, Field Trip Schedule	14
Announcements (inc. Wire Wrapping)	1, 15
Show list & posters	16

FIELD TRIP REPORT

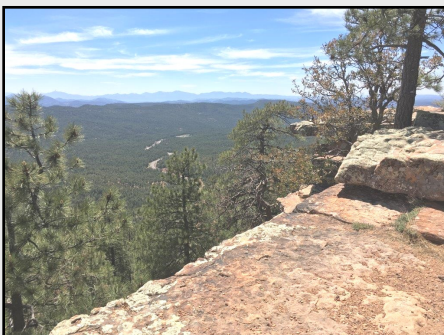
Zebra Jasper

Saturday, June 13, 2020

By Bill Freese

We had 10 people, including me. We met up at McDonald's in Payson, then headed east about 24 miles on AZ-260, to the turnoff for the jasper. The road has not been maintained the last couple years, and is getting kinda rough, but everyone was prepared. We got back to the collecting area and everyone was very excited about the specimens they were finding. Everyone got more than a bucketful, including many interesting fossils, as well. A few of us headed up to the Mogollon Rim Road to relax and take in the cool views at the overlooks (they had never been).

Yesterday we went to Christopher Creek with the intention of collecting zebra jasper. It was a great day had by all. We met in Payson at 8:45. A short trip later we were at CC. JoAnn and I had a great time collecting wonderful specimens of zebra jasper. We ended up with two milk crates full of beautiful and interesting specimens. We hope to be able to make jewelry with some of it. The highlight of the day was when my wife found two fossils! Bill did a great job as leader of the trip. We even went to the Mogollon Rim afterwards for some wonderful views. Can't wait for the next trip! Mike Speciale



...Field Trip continued from page 3

FIELD TRIP REPORT

Glauberite Pseudos, Paleo Site, Zebra Jasper, Petrified Wood Friday/Saturday, June 5/6 & Monday, June 8, 2020

By Bill Freese

Just a little summary of the weekend with the folks from the Dallas Gem & Mineral Society - Debi & Ken Lindsey. They had to take some stuff their daughter in San Diego and figured they would do some rockhounding on the return trip. I offered to host them in AZ as a gesture from our club.

They arrived in AZ on Thursday June 4th and got checked in. We met for dinner that night at Abuelo's Mexican restaurant and I gave them the plan for Friday. (we met several times for dinner on the days after) Friday morning June 5th, we met at my house then went up to Camp Verde, when we met up with some more (probably new members) friends of mine that were interested in rocks. (Kristen Brown & husband Doug Galle, along with her youngest daughter Remi and Remi's friend Karis) We tried to go down the road to one of the areas for the pseudomorphs but discovered the creek area was extremely muddy. Everyone got a few samples anyhow. Next we took the beautiful trip across AZ -260 into Payson and then to the Paleo site just to the east. Everyone found tons of fossils. Among other pics was a great "Selfie" of the group. Then we moved on to the site by Christopher Creek for Zebra jasper and again everyone found tons of stuff and had a great time. We finished the day by driving up to the Mogollon rim road and enjoyed the overlook views.

Saturday June 6th, I took them (Debi & Ken, with Cynthia) up to Flagstaff (the long way through Prescott as there was a brush fire that closed I-17) along a scenic route through Wickenburg and up AZ-89 then through Prescott and eventually making it to Sunset Crater, for the awe inspiring views of the mountains and lava fields. There again everyone was impressed and many pics were taken and we had a great hike and dinner in Flagstaff.

Sunday I had to work so they took the opportunity to drive up to Holbrook and stopping at the Meteor Crater on the way, then staying overnight in Holbrook.

Monday morning, June 8th, a group of us (Me, Debi & Ken plus their friends that came to AZ just for DoBell, and Scott Marks with friend) met up at Jim Gray's Petrified Wood shop in Holbrook before we headed down to Rhonda DoBell's ranch for petrified wood. Scott Marks and friend filled up the back of their Chevy PU with huge pieces of petrified wood and then headed back to Phoenix. The rest of us took our time and found many treasures and had lunch with the DoBell family. Ken & Debi left AZ with FULL truck of goodies collected in AZ. We said our goodbyes and knew that we made some great new friends. I think I have them talked into coming back in February for Tucson show and more collecting.

I would like to say a big thank you to Bill and Cynthia Freese of the Daisy Mountain Rock & Mineral Club. My husband and I were traveling through AZ from Texas. We are members of the Dallas Gem and Mineral Society. I sent out messages to Rock Clubs in AZ for recommendations and Bill responded right away. He said he would give us directions of where to go or he would take us out himself. We met with Bill and he had a whole day set aside for rock hunting. First stop was Camp Verde to hunt for pseudomorphs. We met up with a few others and off we went. We all headed down into a wash with our homer buckets. After walking a short way Bill stops and tells us all to turn back, he is sinking up to his ankles in mud. We were able to find some pseudomorphs but not like what was on the other side of the mud pit. My husband actually climbed up and over the mud pit and came back with a bunch of nice specimens. Next, we were off to hunt fossils at the Indian Gardens Paleo Site. Bill showed us what to look for and off we went. We collected a lot of nice specimens at this site. Next stop was to hunt for Zebra Jasper in the Payson area. This is a beautiful area with beautiful pieces of jasper and also found some agate. We ended the day with a beautiful view from the rim and then back to Glendale for a nice dinner. Bill planned a field trip to the Dobell Ranch for Petrified Wood a few days later. A few of our friends from our club in Dallas came up to join us, and a few from the DMRMC came also. Rhonda Dobell was so warm and welcoming. She and her family served us lunch of burgers and dogs. We collected as much as our vehicles could hold. We had a great and last day of collecting. We said good bye to Bill but we will be back. We have made new friendships and look forward to visiting again...Tucson Gem & Mineral Show !!!

Ken & Debi Lindsey

Field Trip continued on page 5....

...Field Trip continued from page 4

THANKS BILL FOR SHARING WITH FELLOW ROCKHOOUNDS!!!



*Glauberite
Pseudomorphs*



A BEAUTIFUL DAY FOR HUNTING PETRIFIED WOOD



FOSSIL HUNTERS make new friends

...*Bivalvia* continued from page 2

- Many species have 2 siphons -- one inhalant and one exhalant. They are most often able to retract and extend them, to shelter or maintain contact with open water. In this way, a burrowing bivalve can access nutrient-rich water without emerging from its haven below the surface. In general, the larger the siphons, the deeper the animal burrows.

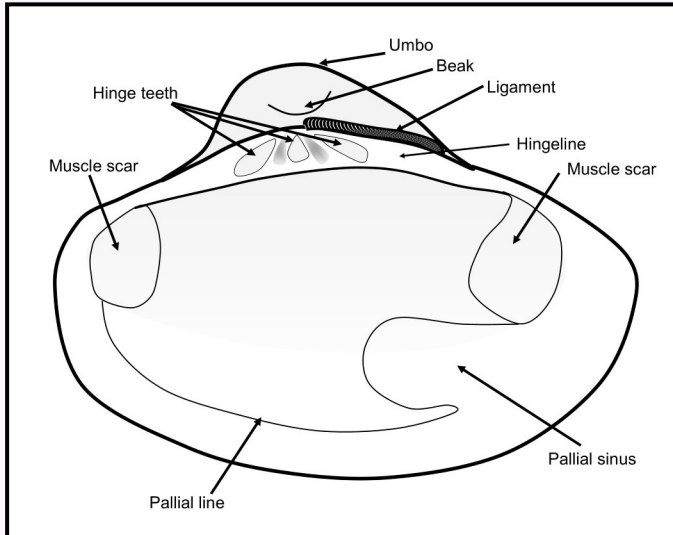


FIGURE 1 BIVALVE SHELL FEATURES Depicted above is composite bivalve shell with identifiable features, seen in recent and fossil shells.

- ◆ *Umbo* - the rounded knob at the shell apex
- ◆ *Beak* - often the peak of the umbo. This is the oldest part of a shell, as the shell is expanded along the outer edges.
- ◆ *Ligament* - A rough and flexible tendon that holds the two shells together
- ◆ *Hinge teeth* - Tooth and socket pairings that articulate the bivalve shells
- ◆ *Muscle scar* - Formed by the attachment of the adductor muscles, strong ligaments that contract to close the shell.
- ◆ *Pallial line* - A line demarking the attachment of the mantle, a muscular 'sac' that encloses the bivalve.
- ◆ *Pallial sinus* - An indentation in the pallial line, that marks the presence of the siphons. The larger the sinus, the larger the siphons.

Illustration by Susan Celestian

- ▶ As mentioned before, there are two valves (shells). Unlike brachiopod valves, which was described in the May newsletter, bivalve shells are usually mirror images of each other (there are exceptions, of course). See Figure 2.

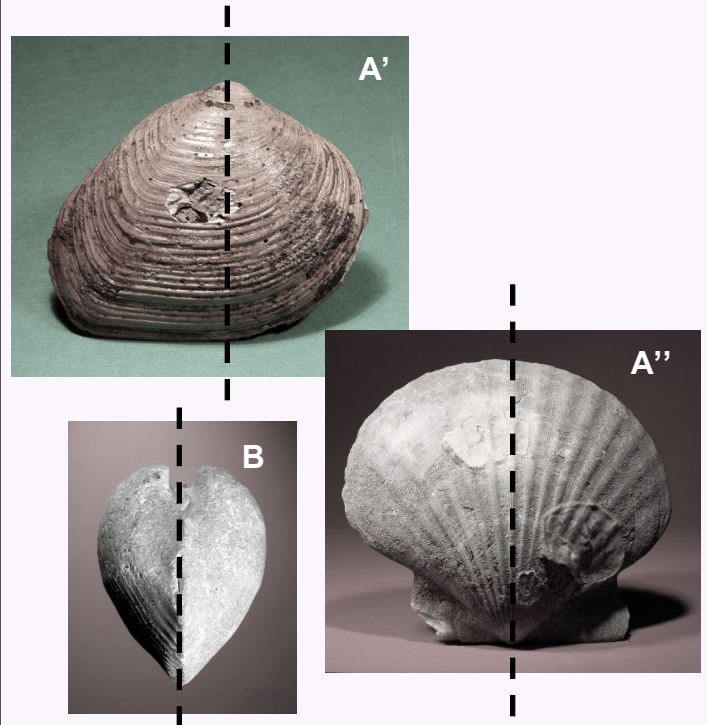


FIGURE 2 BIVALVE VALVE SYMMETRY

Bivalves are, like brachiopods, bilaterally symmetrical -- however, in a different orientation to the body. Bivalve shells are generally mirror images of each other, as illustrated in "B" above.¹ "B" is a photo of the internal mold of a bivalve from a young limestone in North Carolina. The individual shells cannot be divided so that one side mirrors the other, as is illustrated in A' & A'' above.

Illustration by Susan Celestian

¹ I should mention at this point, that the scallop (A'') is one exception to the rule. While the individual shell is usually not bilaterally symmetrical; neither are the two shells usually mirror images of each other -- often one shell is convex, while the opposing shell is relatively flat.

...Bivalvia continued from page 6

- ▶ Bivalves open their shells by relaxing their muscles. When muscles relax, the valves open. As a result, they are more often found as single shells than are brachiopods, whose shells close when the muscles relax (i.e. when the bivalve dies, with death and relaxation, the shells open, and over time the ligament deteriorates, allowing the shells to separate.)
- ▶ Bivalve habitat:
 - There are both marine and freshwater species.
 - They occupy many environments: intertidal (land exposed at low tide) to the deepest depths of the ocean, hyper-saline bodies of water, freshwater lakes and streams, polar to tropical; quiet to turbulent water -- and one species (*Enigmonia aenigmatica*), lives on mangrove trees in the splash zone (in other words, where it is not enveloped by water).
- ▶ Bivalve habit:
 - Most are filter feeders. They either open their shells and let currents carry phytoplankton across their gills, or they inhale water to their gills, through their incurrent siphon.
 - ◇ One group actually scrapes detritus from the substrate, and trap it in mucous-covered structures that move it to the mouth. This is thought to be the "original" way bivalves fed, before the gills evolved.
 - ◇ A very few bivalves are carnivorous, in that they suck up worms and small crustaceans, rather than micro-creatures/algae.
 - They are shallow to deep burrowers; rock borers; wood borers; bottom-sitters; cemented to rock, shell or other; and attached by filaments (*byssa*)
 - ◇ Most are sessile/sedentary. Most are *infauna* (live within some substrate) to be afforded protection from waves, heat, dehydration, and predators.

- ◇ In fact, the lifestyle can often be inferred from the morphology. For example: deep burrowers tend to be streamlined and narrow -- a shape that facilitates moving through the sediment. See [youtube.com/watch?v=hsBVvIjJNtc](https://www.youtube.com/watch?v=hsBVvIjJNtc) to watch a razor clam burrow.
- ◇ As already mentioned, deep burrowers have large siphons, and thus large pallial sinus.
- ◇ Borers usually have a raspy shell. They abrade the wood or rock by rotating their shell. Some augment this abrasion by secreting a weak acid.
- Mobility:
 - ◇ Some bivalves use their foot to dig into the substrate, where they can hunker in safety.
 - ◇ Scallops can "swim" by jet propulsion: by flapping their shells, they squirt out water, and move in the opposite direction. See them at: <https://www.youtube.com/watch?v=kw6wGwKEdT8>
- ▶ Reproduction: Most have separate sexes, although there are no morphological differences between the sexes. Some are hermaphroditic (one organism is both male and female), with most starting out as male, becoming female as they age.
- ▶ Interesting fact:
 - The largest bivalve ever was a now-extinct species of *Platycerus*, that was up to 118" (9.84' !) long; the largest living bivalve is *Tridacna gigas*, a giant clam that gets up to 47" long. This organism may live up to 40 years!
 - The smallest bivalve is 0.04" (1 mm), *Condylonucula maya*.
 - Scallops have eyes -- up to 200 per individual. They are arranged along the outer edge of the shell, and are often a beautiful bright blue. They are composed of many flat "mirrors" made of guanine, a retina, and ganglia. Once

Bivalvia continued on page 8...

...Bivalvia continued from page 7

thought to only sense light and dark, it is now thought that they may see images. See Figure 3.



FIGURE 3 SCALLOP EYES In this image, you can see the many bright blue eyes peeking out at the edge of the mantle. Image by [Kevin Bryant, DMD](#) and used via permission in [Creative Commons](#)

Images of some selected Bivalves follow, in Figures 4-15.



FIGURE 4 YOUNG FOSSILS

These bivalves were stranded in the desert surrounding the shrinking Salton Sea. I'm not certain of their age, but it must be hundreds of years (so technically not fossils, but to me it doesn't take 10,000 years to a fossil make). These clams probably lived when the sea was more fresh than salty. Their shape, smooth exterior, and thin shell may indicate that they were shallow burrowers.

Photo by Stan Celestian



FIGURE 5 GLYCIMERIS

The dentition of this genus is distinctive -- with numerous small teeth across the hingeline. From the Kenneth P. Rice Fossil Pit, in Hampton, Virginia; Miocene (20 mya).

Photo by Stan Celestian



FIGURE 6 RAZOR CLAM This razor clam from the Miocene Monterey Formation in San Pedro, Los Angeles County, California was a fairly deep burrower. Note that there is a *gape*, when the shells are closed. That is because the siphons were so large, that they could not be fully retracted.

Photo by Stan Celestian

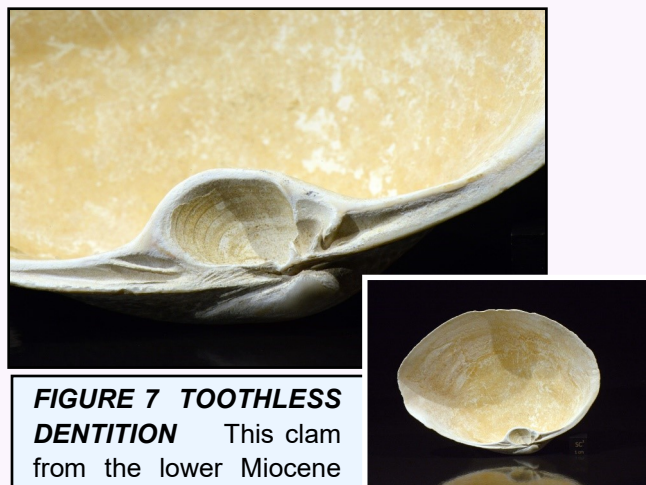


FIGURE 7 TOOTHLESS DENTITION

This clam from the lower Miocene Clallam Formation, Pillar Point, Clallam Bay, Clallam County, Washington, really has no significant teeth. Instead, the hinge ligament is supported by a spoon-like platform (*chondrophore*). Extant species with this dentition type are all shallow burrowers.

Photo by Stan Celestian

...Bivalvia continued from page 8



FIGURE 8 MAZON CREEK The mid-Pennsylvanian Mazon Creek fossils of the Francis Creek Shale are famous for plant fossils -- ferns and leaves. But there are other creatures, including this bivalve. Preserved in a concretion, the fossil is on the left, and its external mold is on the right. *Photo by Stan Celestian*

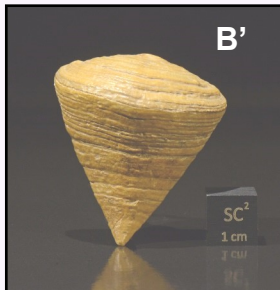


FIGURE 9 RUDISTIDS A unique group of now-extinct bivalves are the rudistids. They arose during the late Jurassic, and went extinct by the end of the Cretaceous -- about 75 million years, a relatively short time geologically. Some became quite large, and existed attached to each other or to a substrate. Many species evolved into a form that mimicked horn corals. In fact, in some area, rudists became the dominant reef-building organisms. And in Mexico, Venezuela, and the Middle East, Cretaceous rudist reefs serve as reservoir rocks for oil.

A - From the Maurens Formation, Upper Cretaceous, SW France, and by permission of Mark A. Wilson (Department of Geology, The College of Wooster)_CC0 1.0 Universal Public Domain Dedication

B - Photo by Stan Celestian

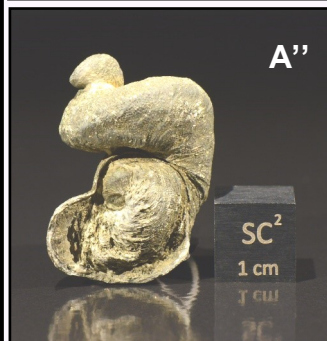


FIGURE 10 OYSTERS

This is an assortment of fossil oysters -- a bivalve group that spurns the "rules". Their shells are asymmetrical, and they tend to be irregularly-shaped, knobby, and have prominent growth lines. Many oysters -- extant and

fossil -- are gregarious, cemented to each other in dense beds.

A - *Ilmatogyra arietina* (Jurassic-Cretaceous), that is often confused with gastropods (snails). Probably from Texas Co., Texas, this specimen is replaced by pyrite. *Photo by Stan Celestian*

B - *Rastelum carinatum* (Cretaceous) from Madagascar. Looking closely at the left image in B', you can see that the shell in the back is cemented to the one in the foreground. As in brachiopods, the zig zagged commissure may exclude large particles from entering the mantle, and clogging up the works. *Photo by Stan Celestian*

C - *Gryphaea* sp (Cretaceous) from Montana. *Photo by Stan Celestian*

...Bivalvia continued from page 9

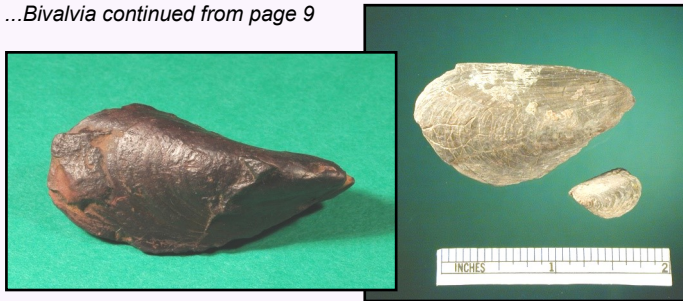


FIGURE 11 MUSSELS Here are two mussel species, the one on the left replaced by limonite, and the one on the right, from Arizona's Pennsylvanian Naco Formation. If their habit was the same as modern mussels, they more than likely were attached to rocks by *byssa* (hair-like fibers).

Photo by Stan Celestian

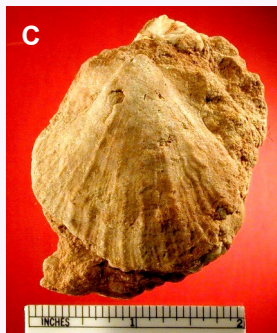
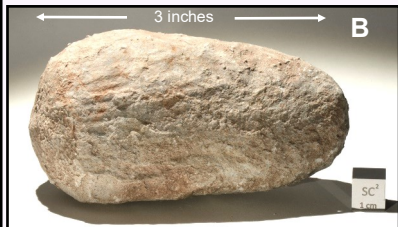


FIGURE 12 NACO FORMATION Here is a sampling of more bivalves from the Naco Formation. Note the many streamlined forms -- ideal for burrowing. The form of C suggests attachment by *byssa*. Quite the variety!

Photos by Stan Celestian

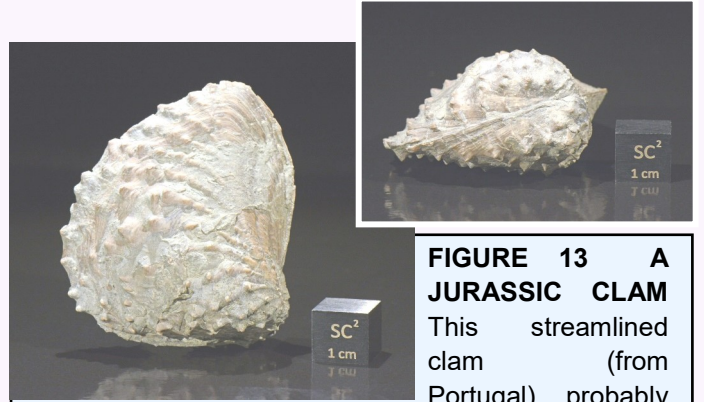


FIGURE 13 A JURASSIC CLAM

This streamlined clam (from Portugal) probably was a shallow burrower, as the exterior ornamentation would be an obstacle to deep burrowing.

Photo by Stan Celestian

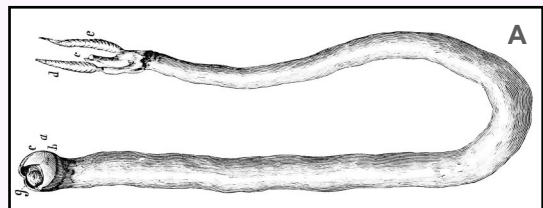


FIGURE 13 SHIPWORMS A very specialized bivalve group are the ship "worms". They have evolved to be long and worm-like, with an extremely reduced shell. They digest wood cellulose, and line their boring with calcite. Much damage can be attributed to them. A - *Teredo navalis* by unknown author in *Popular Science* 1878; Public Domain B - Wood riddled by *Teredo navalis*, Stevenston Beach, North Ayrshire, Scotland, by Rosser 1954, [Creative Commons](https://creativecommons.org/licenses/by/4.0/) C - Failing shorefront pilings and buildings in San Francisco are part of \$3.1 billion (in 2007 dollars) in shipworm damages during 1919-1921 (after introduction in 1913). Image courtesy of USGS

Bivalvia continued on page 11....

...*Bivalvia* continued from page 10



FIGURE 14 BORING BIVALVES Some bivalves are capable of boring into rock, creating a bore hole in which they live their lives, protected from predators and waves. When they die, other organism will move into the voids and take advantage of the shelter.

In this upper photo, you see a rock riddled with borings, some occupied by the piddock clam, *Penitella penita*. These clams can live up to 8 years. Photo by and used with permission of Kris H. Light.

The piddock clam in the lower photo is *Pholas dactylus*, from Sicily (displayed at the Museo Civico di Storia Naturale de Milano). As with most boring clams, the shell has spiky ridges, which facilitates their boring. By twisting and rotating their shell, they abrade and erode the rock to fit their form. Photo by Hectonichus and used under [Creative Commons license](#).

GENERAL RESOURCES FOR BIVALVES

<https://ucmp.berkeley.edu/taxa/inverts/mollusca/bivalvia.php>

<https://en.wikipedia.org/wiki/Bivalvia>

<https://animaldiversity.org/accounts/Bivalvia/>

<https://www.britannica.com/animal/bivalve>

<https://www.thoughtco.com/bivalve-definition-2291639#:~:text=Smallest%20and%20Largest%20Bivalves,bivalve%20is%20the%20giant%20clam.>

<https://www.britannica.com/science/Cretaceous-Period/Paleoclimate#ref586030>

<https://animaldiversity.org/accounts/Bivalvia/>

<https://www.nobanis.org/marine-identification-key/introduction-to-bivalves/introduction-to-boring-bivalves/>

<https://reinkat.wordpress.com/2013/01/29/symbolic-scallops/>

<https://www.museum.zoo.cam.ac.uk/ddf-bivalve-mollusc-project/lifestyle-bivalve-mollusc/bivalves-bore#:~:text=Some%20bivalves%20are%20able%20to,been%20bored%20into%20by%20Lithophaga.>

<https://www.nytimes.com/2017/11/30/science/scallops-eyes.html>

<https://www.theverge.com/2017/11/30/16719146/king-scallop-eyes-mirror-lens-optics-biomimicry>

https://archive.usgs.gov/archive/sites/sfbay.wr.usgs.gov/benthic_eco/exotic_species/what_shipworm.html

FIGURE 15 COQUINA Species of *Donax*, a small triangular clam that lives within the surf zone, often in dense populations. Their common name is coquina. Some rocks in Florida are composed of mostly coquina shells -- and that lent the name *coquina* to all rocks composed of mostly shells. Coquina get up to 1-inch long, and population densities of at least 1000/meter² (93/ft²)! For some views of these cuties, go to <https://www.youtube.com/watch?v=hRboGYyBPvU> & https://www.youtube.com/watch?v=H7c8K_WY5pw; & <https://www.youtube.com/watch?v=UhtQnyH5MU0> & <https://www.youtube.com/watch?v=sGlxdhNM7fk>

Photos by Stan Celestian



...Kyanite continued from page 2

Kyanite occurs in several places in Arizona, notably Piestewa Peak in the Phoenix Mountains. Other occurrences are found in Cochise, La Paz, Yuma, Gila, Yavapai, and Mohave counties. Go to <https://www.mindat.org/locentries.php?p=3293&m=2303> for a list, and http://repository.azgs.az.gov/sites/default/files/dlio/files/nid1378/map_5_non-metallic_minerals_red.pdf for a map that shows non-metallic mineral occurrences in Arizona, including kyanite.

Photos of kyanite follow.



Kyanite in quartz from St Gotthard, Ticino, Switzerland.
Photo by Stan Celestian and used with permission of the Natural History Museum of Los Angeles County.



Kyanite from Barra do Salinas, Coronel Murta, Minas Gerais, Brazil. *Photo by Stan Celestian*



Kyanite and quartz from Barra do Salinas, Coronel Murta, Minas Gerais, Brazil.
Photo by Stan Celestian

MINERALS IN OUR EVERYDAY LIVES

USES OF KYANITE

Since kyanite is stable at high temperatures, there are many uses for which it is ideal:

- ◆ Porcelain - bathroom sinks, tubs, toilets



Image by DRosenbach and released as Public Domain

- ◆ Porcelain - dentures
- ◆ Porcelain, high refractory strength - ceramic end of spark plug



Clearmpg.com



Clearmpg.com

- ◆ Mullite - a calcined (reduced at temperatures over 1100°C) kyanite -- is used for brake shoes and clutch facing (automotive & railroad)



Image by Maly L OLeK and used by permission of the [Creative Commons](#)

- ◆ Molds for casting high temperature metals
- ◆ Manufacture of bricks, mortars, and kiln furniture
- ◆ Temp resistant binding material that holds abrasive together in grinding wheels

- ◆ As it expands 2x when heated, is added to raw material that shrinks during heating, to maintain volume of finished product



Image by Johan and used by permission of the [Creative Commons](#)

- ◆ Jewelry



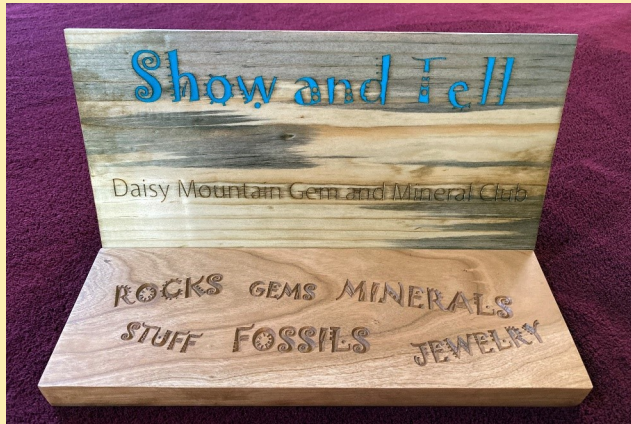
By Stan Celestian

UPCOMING FIELD TRIPS & MEETINGS

Nothing planned for sure at press time, but watch your email for announcements.

DATES SUBJECT TO CHANGE

Bill and the field trip committee will be actively looking for productive spots for field trips. If you have any suggestions, you are encouraged to contact him at bfreese77@cox.net



Share!

Part of the fun of being in a rock club is sharing with members. Have you found a cool rock -- recently or in the past? Have you made something out of a rock or mineral?

Bring an item in to the monthly and tell its story.

Everyone who brings in something for Show & Tell will get an extra ticket for the attendance/nametag raffle.

Words of Wisdom

from our very own

Bob Evans



When I get bored I go to the mall. I drive around until I find a great, shady parking spot. Then I get out a good book to read and sit in my car with the backup lights on.

FACEBOOK



Visit and join the club page periodically. See what is happening, and boost our visibility on the web. Go to: [The Daisy Mountain Rock and Mineral Club.](https://www.facebook.com/DaisyMountainRockandMineralClub/) It is set up so you can post photos of outings or related items. Share with friends!

AWARD-WINNING WEBSITE

<http://www.dmrmc.com/>

If you have comments, contact Nancy Gallagher.

INSTAGRAM



Follow the club on Instagram. Go to <https://www.instagram.com/daisymountainrockclub/> and follow today. Share with friends!

Officers, Chairpersons, & Trustees

- President:** Ed Winbourne.... ewinbourne@gmail.com
- Vice President:** Bill Freese..... bfreese77@cox.net
- Secretary:** Rebecca Slosarik .. rslosarik1@gmail.com
- Treasurer:** Cynthia Buckner.... Cbuckrun1@q.com
- Publicity:** Jessie Redmond...
- Membership:** Tiffany Poetsch tnpoetsch@gmail.com
- Editors:** Susan & Stan Celestian..... azrocklady@gmail.com
- Field Trip:** Bill Freese ... bfreese77@cox.net
- Show Chair:** Ed Winbourne
- Trustees:**

- | | |
|------------|-----------|
| Cynthia V | Claudia M |
| Susan C | Tiffany P |
| Bob E | Jim R |
| Jennifer G | Witt R |
| Don R | Howard R |
| Jessica C. | Rebecca S |
| Johnaton M | Joe G |
| Clark L | |

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

DMRMCLUB@GMAIL.COM

Membership Dues:
 First year \$30, then \$20.00 Adults per Person
 First year \$45, then \$25.00 Family (2 people)

Meeting Dates for 2020

Jan 7, Feb 4, Mar 3, Apr 7, May 5, June 2, Sept 1, Oct 6, Nov 3, Dec 1

MEETINGS CANCELLED UNTIL FURTHER NOTICE DUE TO COVID-19 RESTRICTIONS

WIRE-WRAPPING CLASS

4:30-6:30 pm

Prior to the meeting

Bring: cab or stone, about quarter-sized or larger; 26 and 18 or 20 gauge copper-based wire; round nose pliers and flush wire cutter, beads (optional), little clamps, masking tape, E6000 jewelry glue.

Free, but donations are appreciated.

Questions? Contact Jennifer at
Jennifer@eliteshuttersandblinds.com

MEETINGS ARE ON HIATUS FOR THE
SUMMER NOW. HOPEFULLY, WE WILL BE
ABLE TO RESUME IN THE FALL >

BRING PAPER & A PEN TOO!

Looking or something to practice while you
hunker down at home? Browse YouTube and
Pinterest for tutorials. They are great
resources -- no substitute for the personal
attention of Jennifer, of course.

NEEDED: QUALITY MINERAL (or OTHER)
DONATIONS WITH LABELS -- for monthly raffle
prizes; and for raffle, door prizes, and sales tables
at the annual show. If you have specimens to
donate, please see Robin Shannon. The Daisy
Mountain Rock and Mineral Club is a 501(c)(3)
non-profit organization, and will gratefully
acknowledge your donation with a Tax Deduction
Letter. Thank You!

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).

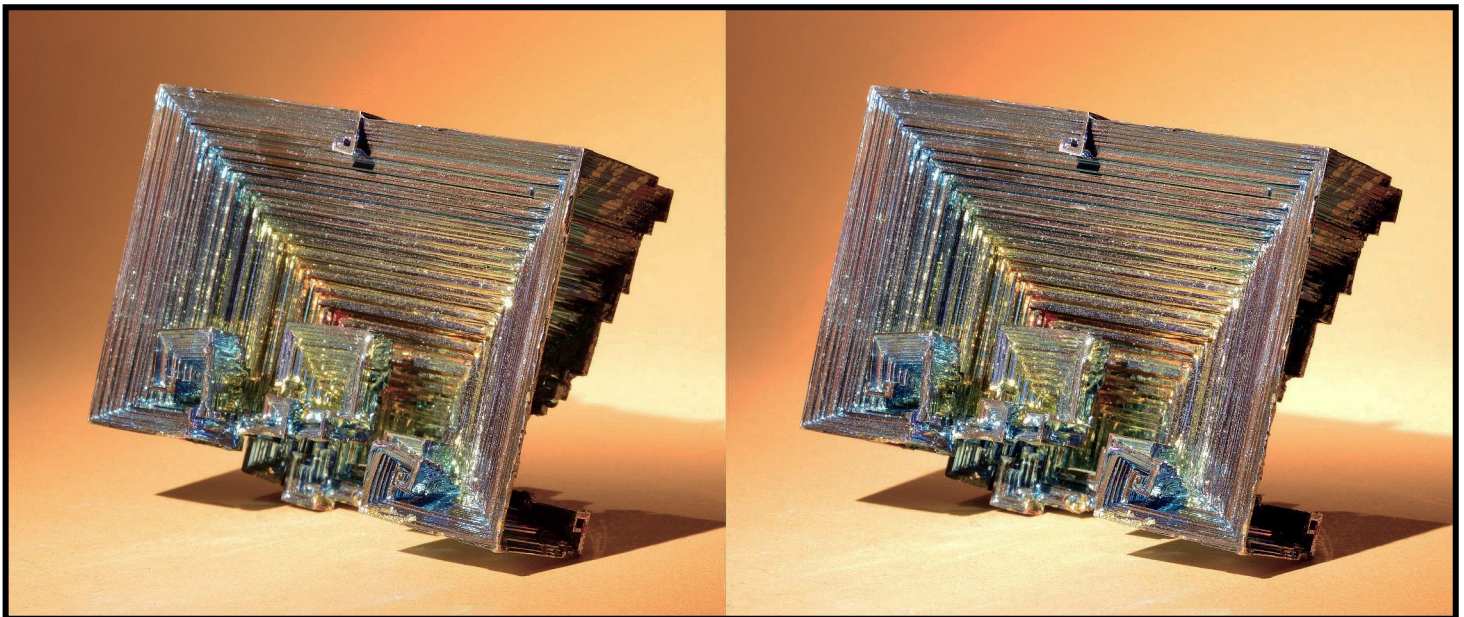
Deadline for the newsletter is the 22nd of the month.

Mail or Email submissions to:

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



Visit <http://rmfms.org/> for news about
conventions, events, and associated clubs.
If you are travelling, you might want to
contact a club local to your destination.
Maybe they have a field trip you could join,
while in town.



Here's an opportunity to practice seeing images in 3-D. Point each eye at the corresponding image, and let your eyes cross. The images will begin to merge in the middle, and then you can focus on that central image. It should pop into 3-D.

Bismuth crystals, lab grown in England. Photos by Stan Celestian

UPCOMING AZ MINERAL SHOWS

July 11-12 - Lakeside, AZ White Mountain Gem & Mineral Club; NEW VENUE Country Court Event Hall, 3369 W White Mountain Blvd.; Sat 9-6, Sun 10-4; Admission: adults \$2, children under 16 free.

July 31-August 2 - Prescott Valley, AZ Prescott Gem & Mineral Club; Findley Toyota Center, 3201 N Main St; Fri-Sat 9-5, Sun 9-4; Admission: adults \$5, seniors, vets, students \$4, children under 12 free.

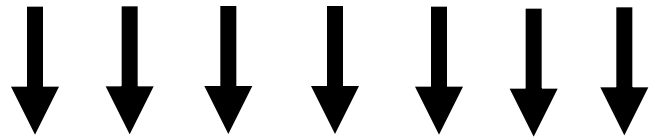
September 25-27 - Clarkdale, AZ Mingus Gem & Mineral Club; Clark Memorial Clubhouse Auditorium, 19 North St; Fri-Sat 9-5, Sun 10-5; Admission: free.

October 9-11 - Buckeye, AZ West Valley Rock & Mineral Club; Buckeye Arena, 802 N 1st St; Fri-Sat 9-5, Sun 9-2; Admission: adults \$3, children under 13 free.

October 10-11 - Sierra Vista, AZ Huachuca Mineral & 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://the-vug.com/educate-and-inform/mineral-shows/> or <http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ> For out-of-the-country shows: <http://www.mindat.org/shows.php?current=1>

This schedule could change due to pandemic-driven policies. Check The Vug (URL above) for announcements, phone numbers, or club websites to confirm that a show will go on.



West Valley
Rock & Mineral Club

Buckeye's 7th Annual

HELZAROCKIN' GEM & MINERAL SHOW

October 9 * 10 * 11 2020

9 a.m. - 5 p.m. Fri-Sat

9 a.m. - 2 p.m. Sun

Adults \$3 kids under 13 free

Open Air Event

Buckeye Arena

802 N 1st Street (Miller Road)

Buckeye, Arizona

Rocks, Gems, Jewelry, Minerals,

Fossils, Beads, Slabs, Cabs,

Gold Panning & Scavenger Hunt

Rock Painting

Snacks and Beverages Available

Information contact:

show@westvalleyrockandmineralclub.com

website: westvalleyrockandmineralclub.com

Lara: (602) 405-2926

Alice: (602) 329-2519