

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 11

NOVEMBER 2020



Photo by Stan Celestian

PYRITE

This aesthetic pyrite duo is from the Mina Ampliación a Victoria, in Navajún, La Rioja Province, Spain. They are razor sharp, almost exclusively cubic -- and highly lustrous. The pyrite crystals occur in the marls of the Cretaceous Weald Formation. Cubes from 1mm up to almost 20mm (7.5") are found, with most in the .75" to 2.5" range (the 7.5+" crystal is the largest found, thus far); and commonly intergrown groups occur. The interesting chronicles of two mineral collectors who have visited this mine can be found at <https://www.treasuremountainmining.com/index.php?route=pavblog/blog&id=73> and <https://www.mcdougallminerals.com/blog/the-pyrite-of-navajun-spain/>.

Amazing views of the quarry walls are in both the blogs.



PYRITE

By Susan Celestian

The most common sulfide mineral on Earth, pyrite is also referred to as “fool’s gold”, as many a crusty prospector has whooped it up, thinking they have a pan full of gold. The name, pyrite, derives from the Greek (pyritēs lithos), meaning “mineral that strikes fire”, as when struck it can produce sparks. It occurs in igneous, sedimentary and metamorphic rocks.

Chemical Formula - FeS₂

Crystal System - Isometric (3 axes of unequal length and all 90° angles). Go to <https://www.mindat.org/min-3314.html>, scroll down to interactive graphic.

Growth Forms/Habits - Cubic, **octahedral**, **pyritohedral**, combinations, radiating, massive

Hardness - 6-6.5

Color - Pale brass-yellow (See Figure A)

Luster - Metallic (See Figure A)

Streak - Greenish-black

Specific Gravity - 4.8-5

Cleavage - Poor

Fracture - Conchoidal, irregular (See Figure A)

Uses of pyrite include:

- ◆ Manufacture of sulfur dioxide (used in paper industry & sulfuric acid)
- ◆ *Historic*: spark source in firearms during 16th & 17th centuries
- ◆ Cathode in Energizer re-chargeable lithium batteries
- ◆ *Historic* (although some still used): mineral detector in crystal radios
- ◆ “Marcasite” in marcasite jewelry
- ◆ Photovoltaic material in solar cells
- ◆ Mineral specimens

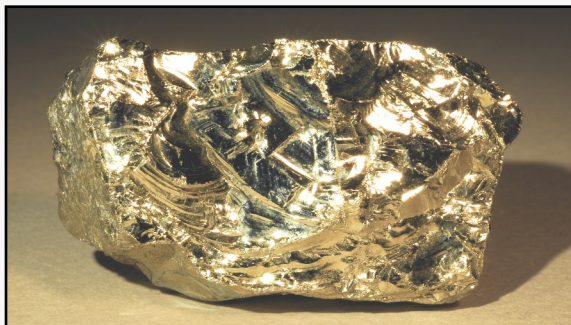


FIGURE A CONCHOIDAL FRACTURE

This is a broken chunk of massive pyrite, and it exhibits great conchoidal fracture, characterized by scooped, shell-like concavities. *Photo by Stan Celestian*

[Pyrite continued on page 13...](#)

WIRE-WRAPPING AND IN-PERSON DMRMC MEETING

Tuesday, December 1, 2020
Anthem Civic Center

Wire Wrapping CANCELLED

General Meeting 6:30-8:30
Limit 30; Masks required

Dues are due now

PLEASE PAY SOON.

WE NEED YOUR DUES BEFORE SOON, SO CYNTHIA CAN PAY THE FEDERATION DUES ON TIME.

IN-PERSON: Tiffany or Cynthia will be at the December 1 in-person meeting

MAIL: Daisy Mountain Rock & Mineral Club,
P.O. Box 74215, Anthem, AZ 85087

Single Renewal: \$20; Couple/Family: \$25

CHARGE:

Single Renewal: \$20.62 (\$20.00 + Processing Fee)

<https://checkout.square.site/buy/7EEGK4KWPY7J7MV5IYMSGT3P>

Couple/Family Renewal: \$25.75 (\$25.00 + Processing Fee)

<https://checkout.square.site/buy/>



Thank You Card - Thank You

INSIDE THIS ISSUE

Each item is now hyperlinked to the page on which it is found

Pyrite	2, 13-16
November Board Minutes	3
Holiday Picnic Announcement	4
Fossils: Part XIII Kingdom Animalia, Phylum Arthropoda, Class Chelicerata	1,5, 17-19
Field Trips: Chilito Mine , Dave Haneline Memorial Mine	6-9
Things Looking Up by Stan Celestian	10-12
Anderson Mill	16
Club Information, Field Trip Schedule	20-21
Announcements, Show list, Words of Wisdom	21

Zoom Board Member Meeting Minutes November 5, 2020

- In attendance: Bill F., Claudia M., Deanne G. (on phone), Ed W., Howard R. (on phone), Rebecca S., Stan C., Sue C., and Tiffany P.
- The financial report was sent to board
 - ◇ Club still in good standing
- Tiffany P. discussed the dues
 - ◇ Some had sent checks, or completed online
 - ◇ Can be done through cash, check, or square
 - * Can be done online through email, at meetings or field trips, or send check by mail
 - ◇ Will be due by Dec. 15th
 - * **YOU CANNOT ATTEND FIELD TRIPS IF YOUR DUES ARE NOT PAID**
 - This is for insurance purposes
- The claims committee updated the group
 - ◇ Howard R. will call BLM to check on specifics of claim
 - * Can we use equipment, how much land can we disturb?
 - ◇ A sign will be put up at mine stating that it is an active claim
 - ◇ An environmental assessment has already been completed
 - ◇ We will have first field trip on November 21 & 22
 - ◇ Name change will be voted on in general meeting
 - ◇ **STAN C. IS CLAIM SUPERVISOR**
 - * Email him if you would like to go to site, \$10 fee
 - * Can pay over email or bring cash with you
 - stancelestian@gmail.com
- Wire wrapping classes commence
 - ◇ Jennifer G. will send out emails
 - ◇ Will continue with classes from 430-6 before general meetings
- Bill F. discussed previous field trips
 - ◇ Bronzesmith tour went well
 - ◇ Mingus trip was successful, lots of stuff found
 - ◇ Chelito mine will be Nov 14th
 - ◇ Stoneworld onyx trip put on hold by company
- Our Christmas party was discussed
 - ◇ December 12th at 1 pm at our claim
 - ◇ Email will be sent out with map of location
 - * High clearance vehicle needed after Constellation Road
 - ◇ Burgers, veggie burgers, soda, buns, and condiments will be supplied
 - * Please bring your own side dish

Respectfully submitted, Rebecca Slosarik, secretary

General Meeting Minutes November 10, 2020

- Bill F. (Vice President) called to order the meeting since Ed W. (President) was unable to attend
- Cynthia B. updated the club on the financials
 - ◇ Got some income this month
- Stan C. did a lovely presentation on our claim
 - ◇ Barite, galena, cerussite, quartz opal, quartz, fluorite, willemite, chrysocolla, malachite, calcite, amethyst, copper, and silver minerals can all be found at site
 - ◇ Stan C. is the mine supervisor
- Bill F. discussed field trips
 - ◇ Trips are going well, easy to social distance on them
 - ◇ Look for emails with upcoming trips
 - ◇ Do not forget to bring your name tag when attending
- Yearly voting for board member elections were done at the meeting
 - ◇ All board members volunteered to stay in positions for another year
 - ◇ One general board seat available
 - * Bob S. volunteered to be added to board
 - * All positions approved at meeting
 - Blue Owl mine claim name change was voted on
 - ◇ Won by majority vote of 15/28
 - * New name will be "Dave Haneline Memorial Mine"
 - There will be another general meeting in December
 - ◇ Look for email to sign up since covid-19 restrictions are still in place
 - ◇ Do not forget to wear your mask and name tag

Respectfully submitted, Rebecca Slosarik, secretary



Cementless concrete? Or how to use fly ash and rice hulls..... Click [here](#) for more information.

DING DONG! DING DONG!

HEAR YE, HEAR YE!!!

HOLIDAY PICNIC!!

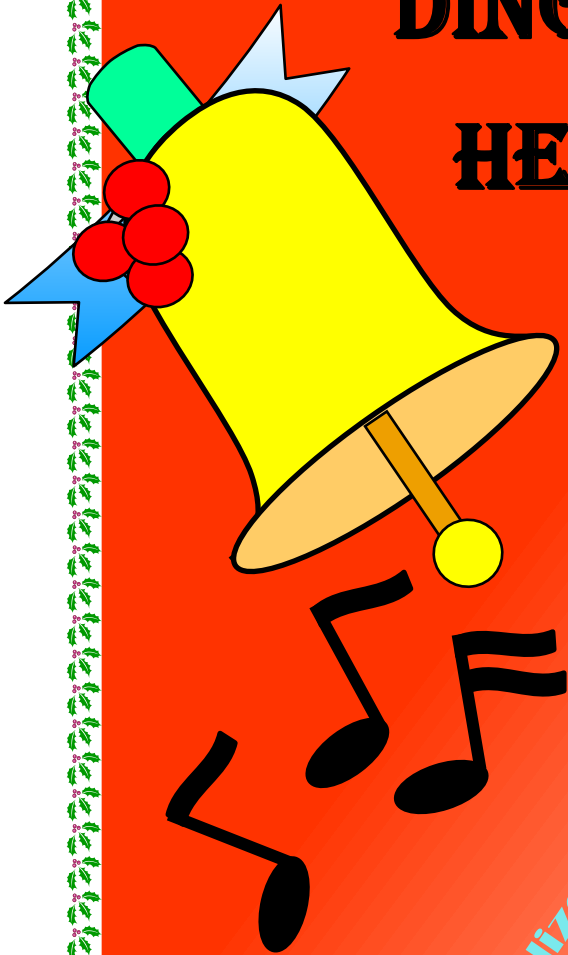
DECEMBER 12, 2020

1:00 PM

NEAR DAVE HANELINE

MEMORIAL MINE

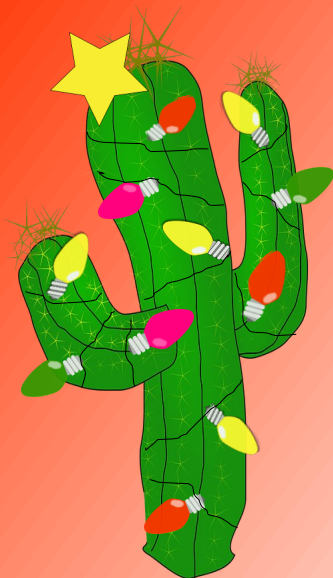
(Directions will be emailed to all)



Socialize

**To Facilitate
Social
Distancing --
BRING YOUR
OWN FOOD**

Wear a Mask



Collect a few ROCKS



**DRINKS
PROVIDED BY
CLUB**

FOSSILS: PART XIII

Kingdom: Animalia
 Phylum: Arthropoda,
 Sub-Phylum - Chelicerata
By Susan Celestian

Chelicerata includes spiders, whip spiders, mites, ticks, scorpions, whip scorpions, harvestmen, horseshoe crabs, sea spiders, and eurypterids. For the purposes of this fossil article, I'm concentrating on horseshoe crabs and eurypterids.

General chelicerate characteristics are as follows:

- ▶ The geologic record of the group extends from the Middle Cambrian (508 mya) to Recent.
 - ◇ Eurypterids are extinct, with a range of Ordovician-Permian, but were most abundant between Middle Silurian-Early Devonian.
 - ◇ Horseshoe crabs are also known as "living fossils" and they exist today not much changed from their appearance 450 mya (Ordovician).
- ▶ Chelicerate bodies are segmented -- into cephalothorax and abdomen. Each has 6 pairs of appendages -- 4 pairs for walking or swimming, and 2 pairs that have evolved for various functions. There are no antennae. [See Figures 1 & 2.](#)
 - Like modern arthropods and trilobites, chelicerates have a chitinous exoskeleton that cannot expand, so they must molt periodically during their lives, as they outgrow their exoskeleton. So once again, most fossils are probably molts.
 - Those two non-walking pairs of appendages that serve various functions:
 - ◇ Frequently one pair is claws; although in spiders they are poison fangs, and in scorpions they are mouth parts.
 - ◇ The other pair can go many different ways: large claws (in scorpions), copulatory organs (in male spiders), walking legs (in horseshoe crabs), mouth parts or sensory organs in most others.

- ◇ Most have a pair of compound eyes, although some (such as spiders) have additional simple eyes -- spiders have 8 eyes!
- * Eurypterids had 2 additional simple eyes, for a total of 4.
- * Horseshoe crabs have 10 eyes -- 2 on the cephalothorax, and 8 simple "eyes" (photo-receptors) along the tail.

▶ Chelicerate habitat:

- Modern chelicerates are marine and terrestrial, although the earliest ones were marine. Both eurypterids and horseshoe crabs are marine.
- Eurypterids primarily occupied shallow brackish-fresh water.
- Horseshoe Crabs occupy marine and brackish shallow coastal water, where sandy or muddy bottoms exist. One species lives along the east coast of North America (Maine to Mexico) and the other 3 species are found in SE Asia.

▶ Chelicerate habit: .

- Feeding habits:
 - ◇ Many fossil and extant species are predatory, although numerous species are parasitic, herbivorous, and scavengers.
- Mobility:
 - ◇ For the most part, chelicerates -- both fossil and recent -- walk on those 8 legs.
- Reproduction: Universally, there are separate sexes. All living chelicerates - - EXCEPT Horseshoe Crabs -- reproduce with internal fertilization, although in many cases the sperm are in bundles that females pick up.
 - ◇ Evidence suggests that the latter process was utilized by Eurypterids.
 - ◇ [Horseshoe Crabs](#) utilize external fertilization. The female lays between 60,000 and 120,000 eggs (4000 at a time), and they are then sprinkled with sperm, by the smaller males.

FIELD TRIP TO THE CHILITO MINE

Saturday, November 14, 2020

The Chilito Mine (near Hayden, Gila County, Arizona) is a copper, now-open-pit, mine, that lies between two major faults. The porphyry copper ore emplacement is associated with the intrusion of a Laramide-aged (about 65 mya) Quartz Diorite. In addition, the Troy Quartzite was mined for silica flux, used in smelting copper concentrates. For rockhounds, it is a great source of rocks full of chrysocolla, malachite, and azurite -- and occasionally cuprite. Sixteen enthusiastic DMRMC souls (including leader Bill Freese) parked in the Velasco Pit, and loaded up their buckets!



Velasco Pit Photo by Susan Celestian



Dynamite Shed?
Photo by Susan Celestian

In this Google Earth image, you can see the spiderweb of roads wandering around the mine. The orange lines are the approximate positions of the faults flanking the mine (Keystone Fault on the left, O'Carroll Fault on the right).



A fault in the rocks across the canyon.
Photo by Susan Celestian



These could perk up your rock garden!
Photo by Susan Celestian



One of Bill's favorite finds
Photo by Bill Freese



Field trips continued on page 7....

...Field Trips continued from page 6

Photos by Bill Freese



Making little rocks out of a big one -- oh, for a crane and a flat-bed truck!

SMILES ALL AROUND



Field trips continued on page 8....

...Field Trips continued from page 7

FIELD TRIP TO DAVE HANELINE MEMORIAL MINE

Saturday/Sunday, November 21-22, 2020

Photos by Susan Celestian

The first official club outing to the club's new acquisition, the newly-dubbed Dave Haneline Memorial Mine, occurred on a beautiful weekend. I think everyone found something to take home!

REMEMBER: Club field trips to the mine are free; however, club members may visit and work the mine at any time. Just be sure to reserve your time there by contacting Mine Steward, Stan Celestian (stancelestian@gmail.com). And there is a charge of \$10/day per person. A link to pay online will be available soon.



Bill S. found a really nice cerussite crystal!



Amethyst -- And there are crystals out there, too!

...Field Trips continued from page 8



VIEWS FROM ABOVE



THINGS LOOKING UP

by Stan Celestian

As a rockhound I also consider myself a “naturalist”, i.e., one who enjoys looking at and studying natural phenomena of all types. It could be rocks, minerals, fossils, and all things Geology. It could also be biological in nature such as the wildflowers, cacti, lichen, fungus and animals we see while out in the field.

All of these observations are downward-looking. I would like to introduce you to what is in the other direction: **UP!**

On November 22, 2020, the Daisy Mountain Rock and Mineral Club put together a small outing to our new acquisition, the Dave Haneline Memorial Mine. It was a great day to be out doing one of our favorite activities -- collecting rocks. I happened to look skyward, and to my great pleasure found a host of halos, in the direction of the Sun. The view consisted of more halos than I had ever seen at one time before. I took several pictures with my phone and lamented the fact I did not bring my normal camera to get better pictures (that will never happen again). But the pictures were good enough to identify the halos (also called glories). Image 1a shows the sky above the mine. The Sun is just below the high point of the ground in this image (1a) and in Image 1b, on the next page.



IMAGE 1a

Photo by Stan Celestian

...Looking Up continued from page 10

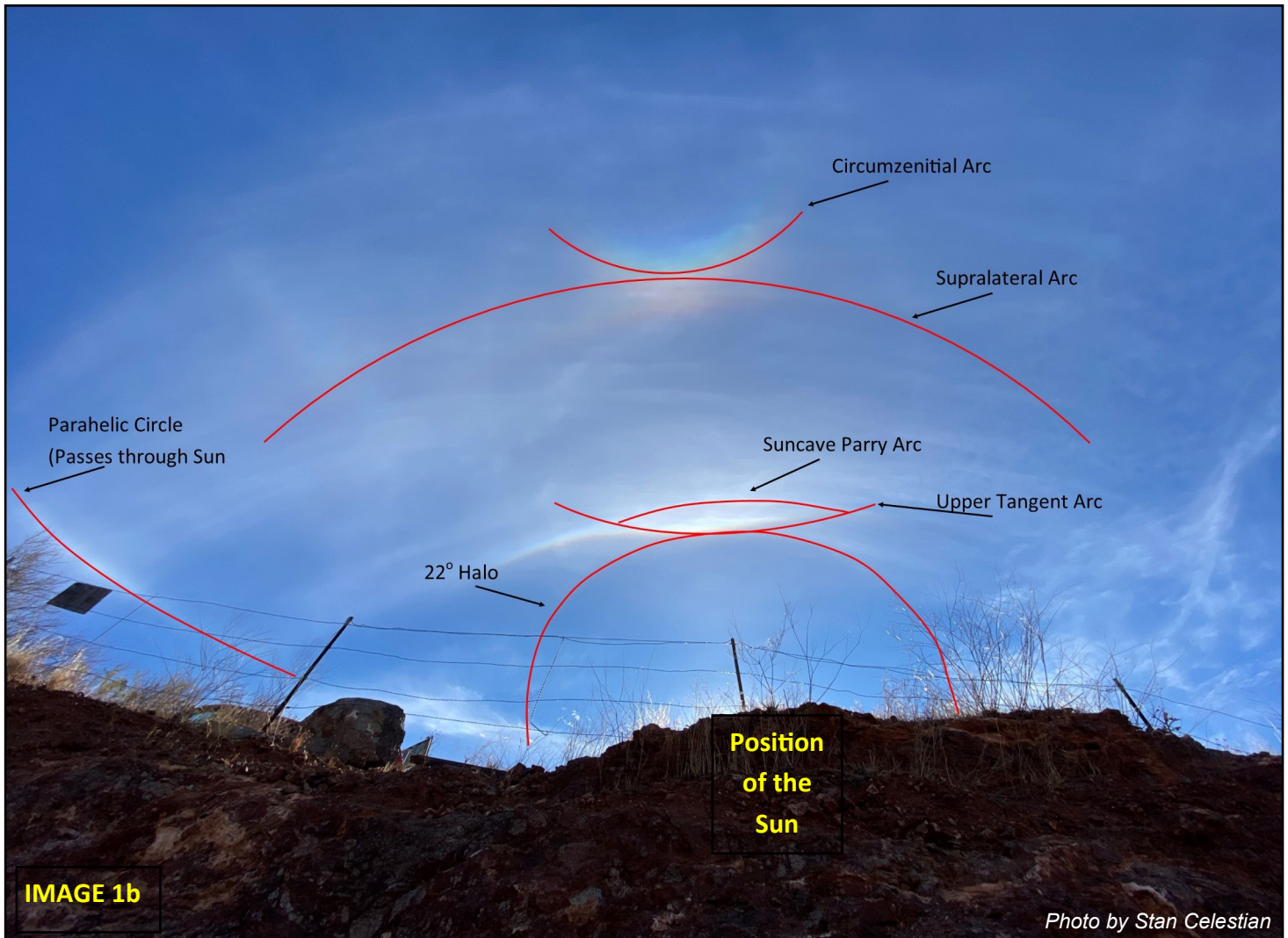


IMAGE 1b

Photo by Stan Celestian

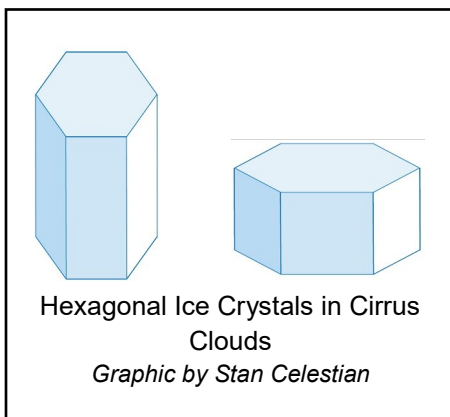
Image 1b (this page) is the same as 1a, but with labels identifying the halos.

How common are these halos? Why do they form? Are they the same as rainbows? Good questions. Let's explore.

How common are the halos? Fairly common, but it depends on the cloud types. The clouds must be ice crystal cirrus clouds. They must also be thin clouds, as in thin cirrostratus. These are the types of clouds that are more common in the late fall, through winter and early spring in Arizona. So, right now is a good time of the year to see them.

Why do they form? The halos, and even the rings around the Sun and Moon, are created when light passes

through ice crystal clouds (or in some cases the crystals act as mirrors to simply reflect the light at certain angles). When the ice crystals act as tiny prisms, they separate the light into the various colors of the rainbow (spectral colors). Ice crystals take many forms, but those that create halos are typically prisms, either long rod-shaped prisms or flat tabular prisms.



When light passes through the ice prisms it is refracted at specific angles that are dependent upon the orientation of the crystal. If we, at the surface of the Earth, are in the right place, we will see colors from billions of ice crystals refracting colors to our eyes.

...Looking Up continued from page 11

It is also possible for these prismatic ice crystals to become oriented. This is especially true of the long prisms, that begin to settle out of the atmosphere. They tend to fall with their long axes up and down. This orientation can give rise to specific types of halos. Another consideration, for our observation of halos, is that these thin clouds are not flat; rather, they are curved and more or less parallel to the curvature of the Earth. This can produce arc angles, and positions of the arcs, that are not intuitively obvious. There is a lot of physics associated with the formation of halos.

Rainbows, on the other hand, are seen with the Sun to your back. Light enters into the tiny raindrops, and is separated into its spectral colors. These colors are then reflected off the back of the raindrop to our eyes and we see the rainbow. Halos and glories are seen looking toward the Sun.



Image 2a



Image 2b

IMAGE 2a and 2b This is a closer look of the Suncave Parry Arc and the Upper Tangent Arc. As bright as these halos are, they are not often seen. *Photos by Stan Celestian*



Image 3

A specific type of halo is the Sun Dog, officially called a **parahelion**. It is a bright area produced by the intersection of the 22° halo and the parahelic circle. In many cases, as in Image 3, the 22° halo and the parahelic circle are not visible, but their intersection is marked by these bright, colorful areas.

In this Sun Dog, note the separation of the Sun's colors. Red is closest to the Sun and orange, yellow and bluish are further away.

I encourage you to pause every now and then to direct your gaze upward. There is more to life than being a rockhound. You can also be a..... I am going to create a new term - **Skyhound!**

...Pyrite continued from page 2

Photos of Pyrite crystals follow in Figures B-K:

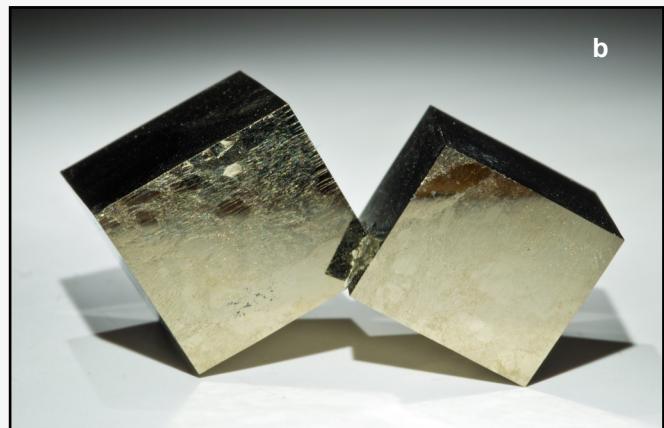


FIGURE B CUBIC PYRITE The simplest (and most common) crystal form of pyrite is the cube. These are very sharp, unstriated cubes from Navajun, La Roca District, Spain.

Photos by Stan Celestian

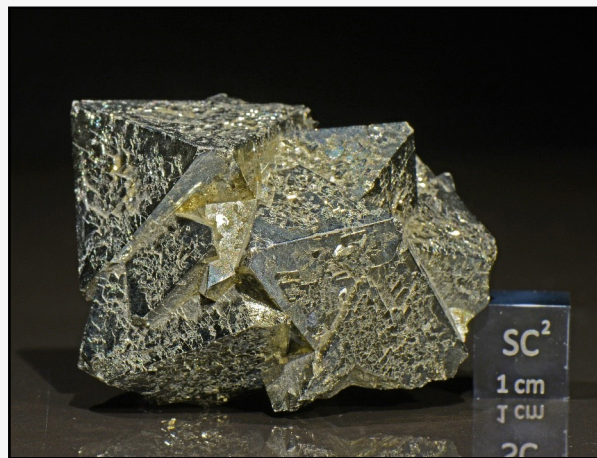
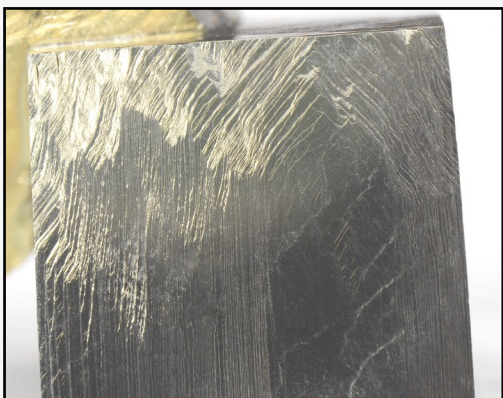


FIGURE D OCTAHEDRON Another basic crystal form, seen in pyrite, is the [octahedron](#). The faces are heavily pocked by growth hillocks. Locality: Peru.

Photo by Stan Celestian



Photo by Stan Celestian



FIGURE E CUBO-OCTAHEDRONS Notice that these octahedrons have truncated points. Those truncations are cube faces -- and the form is called a cubo-octahedron. Localities: a - Morococha Mine, Department Junin, Peru; b - Huanzala Mine, Huallanca District, Dos de Mayo Province, Huánuco Department Peru. *Photos by Stan Celestian*

Pyrite continued on page 14....

...Pyrite continued from page 13

**FIGURE F
CUBO-
OCTAHEDRON**

Here is another cubo-octahedron, but one more cube than octahedron. The triangular faces at the corners of the cube are octahedral faces. *Photo by Stan Celestian*



Photo by Stan Celestian

Photo by Stan Celestian



FIGURE G DODECAHEDRON The second most common form for pyrite is the **pyritohedron**. This is a 12-sided form, with pentagonal faces. *Photo by Stan Celestian*

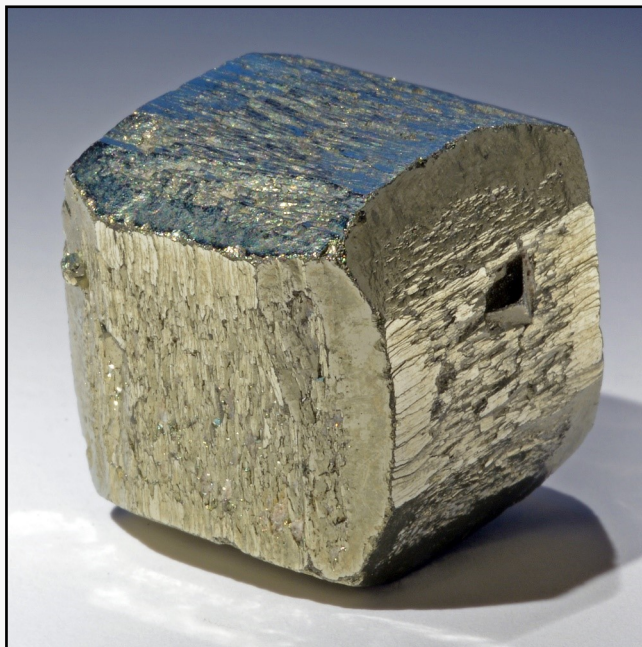
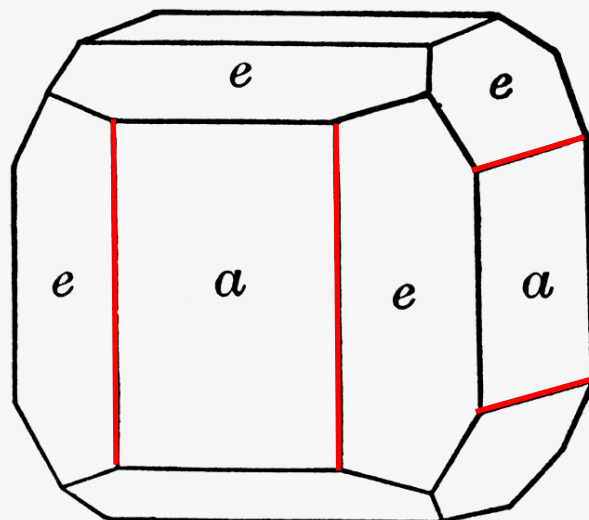
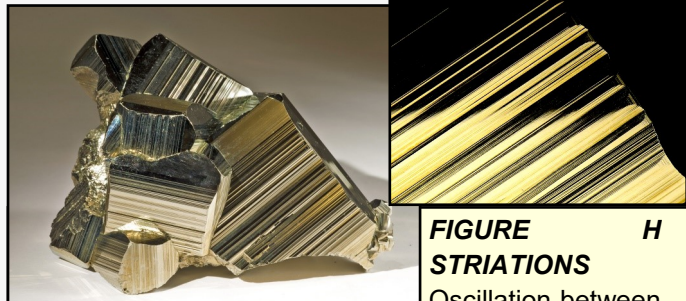


FIGURE I MODIFIED CUBE Often the cube is modified by faces of a different form. In this case, the edges are beveled by the expression of **pyritohedron** faces. *Photo by Stan Celestian*

The diagram below, more clearly illustrates the combination. e-faces are pyritohedral, and a-faces are cube. *Graphic from Dana's Manual of Mineralogy (1912), and found at https://etc.usf.edu/clipart/20200/20205/cubepyrity_20205.htm*



Using the graphic above, you can begin to visualize the formation of the striations on pyrite faces. The diagram is of a simple combination of cube and pyritohedron. However, imagine that, as the crystal grew, it repeatedly oscillated between the two forms. The red lines (created at the intersection of the two forms) would be repeated over and over, resulting in the striations, typical of pyrite.



**FIGURE H
STRIATIONS**

Oscillation between crystal forms can create step-like striations. In this case, the coarse striae are created by cube and **pyritohedron** faces. Note that striae on adjacent faces are perpendicular to each other. (Refer to note under graphic in Figure E) *Locality: Peru.*

Photos by Stan Celestian

...Pyrite continued from page 14

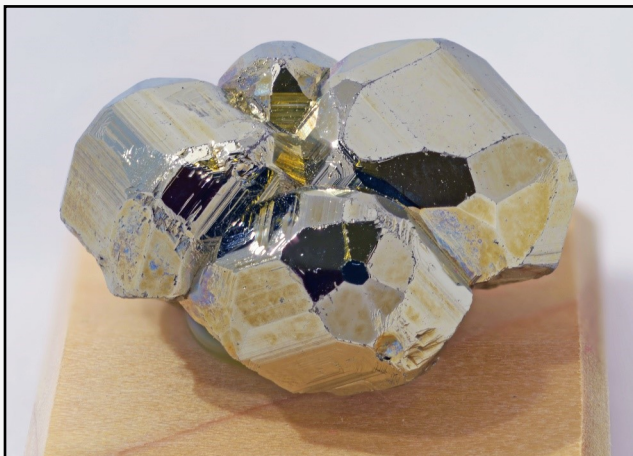


FIGURE J "PYRITO-OCTO-CUBE" Here is a cluster exhibiting a complex combination of pyritohedral, octahedral, and cubic faces. Wow!
 Photo by Stan Celestian



FIGURE K NODULE This nearly-two-inch nodule formed in the Hengyang Baifang coal mines, Hunan Province, China. It is a radial aggregate of essentially nail-

head crystals.
 Photo by Stan Celestian



FIGURE L PYRITE SUN Also called pyrite dollar, and unique to Illinois, these flat disks of pyrite grow in layers of 300 myo shale, associated with coal. Under high compression (at depth), radial aggregates of crystals grow to 2-5" in diameter.
 Photo by Stan Celestian



FIGURE M PYRITE SUN This is the "sun" aggregate more typical of those from China. They are more nodular, with finer crystals in the center, and very coarse crystals around the outer edge. Locality: Liuzhou Prefecture, Guangxi Zhuang Autonomous Region, China
 Photo by Stan Celestian



FIGURE N PSEUDOMORPH This is a pyrite cube that has been replaced by limonite (a generic term for various iron oxides). Note that there are subtle striations preserved on the faces. This is an exceptional example, but it is quite common in the rock record. Locality: Trinity County, California.
 Photo by Stan Celestian

...Pyrite continued from page 15



FIGURE O PYRITE TWIN This is THE twin that pyrite exhibits on occasion. It is called the Iron Cross, and forms as a penetration twin -- two pyritohedrons intergrown. Locality: Gachala, Cundinamarca, Columbia. Photo by Stan Celestian

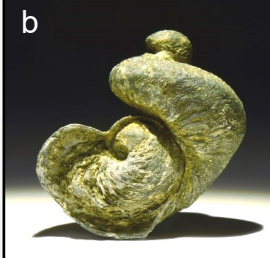


FIGURE P REPLACEMENT
 Images a-c are fossils that have been completely replaced by pyrite. Image d is of snails, out of Indiana's Waldron Shale, that have pyrite crystals growing on/in them. Pyrite in fossils (especially vertebrate remains) may lead to "pyrite

disease" -- disintegration/decrepitation due to the chemical breakdown of pyrite into sulfuric acid.

Photos by Stan Celestian

GENERAL RESOURCES FOR PYRITE

<https://www.flickr.com/photos/usageology/albums/with/72157632386377289>

<https://www.mindat.org/min-3314.html>

<https://geology.com/minerals/pyrite.shtml#:~:text=Pyrite%20is%20a%20brass%20yellow,metamorphic%2C%20and%20sedimentary%20rocks%20worldwide.>

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

<https://www.minerals.net/mineral/pyrite.aspx>



HISTORIC ANDERSON MILL

This picturesque mill, situated on the banks of San Domingo Wash, NE of Morristown,. The mill was run by 2 brothers, extracting mica from rocks of nearby pegmatite mines. As mica is an essential industrial mineral, the mill and surrounding mines were allowed to operate during WWII. The mill last operated in 1951.



...Chelicerata continued from page 5

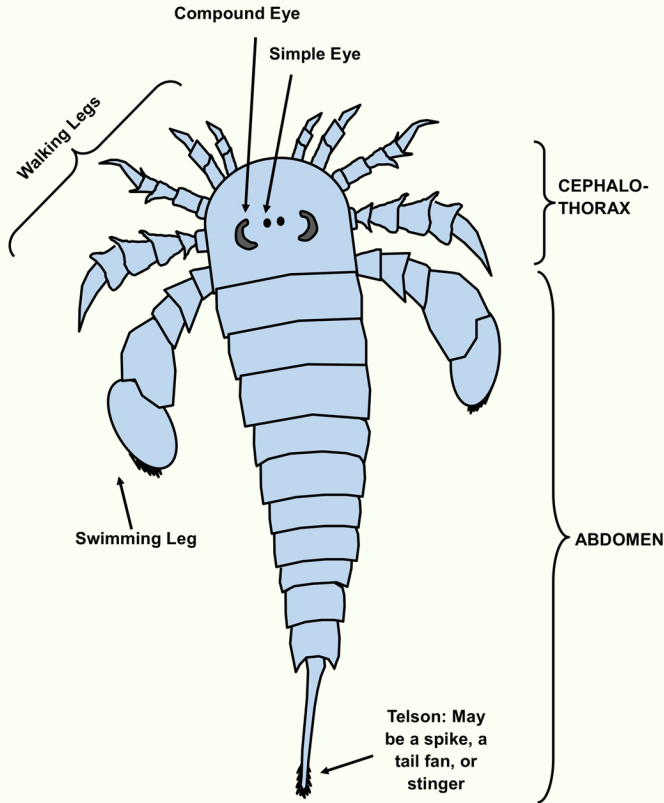
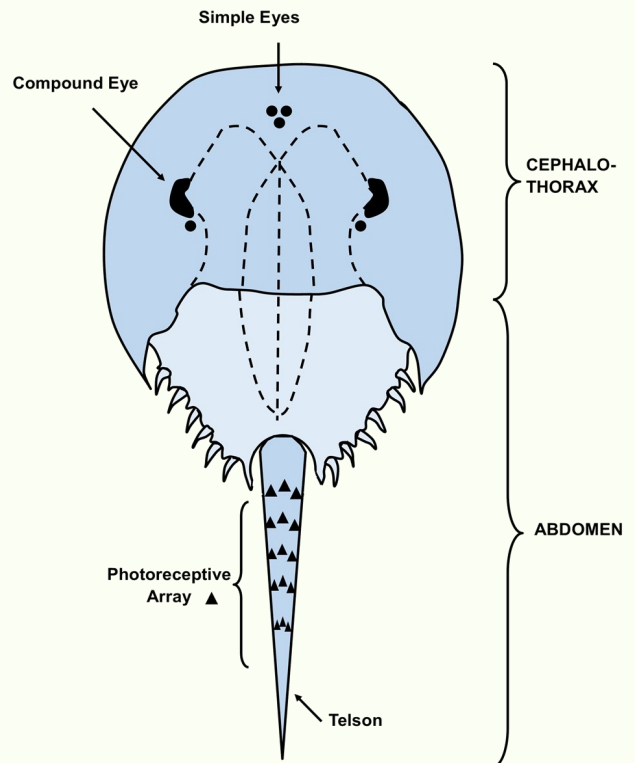


FIGURE 1 EURYPTERID This diagram illustrates the basic body plan of a generalized eurypterid. Specific eurypterids will look a bit different. (For example, the large swimming paddles in this diagram might be walking legs; or a pair of walking legs in this diagram might be adapted as large pincers.) Not shown is the 6th pair of appendages, that are on the underside, adapted as mouth parts, genital appendages, or other. *Image by Susan Celestian*

[BACK TO PAGE 5](#)

FIGURE 2 HORSESHOE CRAB This is a diagram of a generalized horseshoe crab. Not shown are body parts on the underside: pair of simple eyes on 6 pairs of clawed appendages, and gills. *Image by Susan Celestian*

[BACK TO PAGE 5](#)



(Considered 1 eye)

GENERAL RESOURCES FOR CHELICERATA

- https://en.wikipedia.org/wiki/Chelicerata#Feeding_and_digestion
- <https://ucmp.berkeley.edu/arthropoda/chelicerata/cheliceramm.html>
- <https://en.wikipedia.org/wiki/Eurypterid>
- https://en.wikipedia.org/wiki/Horseshoe_crab
- <https://www.fws.gov/northeast/pdf/horseshoe.fs.pdf>
- <https://keys.lucidcentral.org/keys/v3/TFI/start%20key/key/Starting%20key/Media/HTML/Arthropoda%20Chelicerata.html>
- <https://www.nature.com/articles/s41598-019-53590-8>

...Chelicerata continued from page 17

- **Respiration:** Marine chelicerates (modern and fossil) have gills. Spiders and scorpions have book lungs (air-filled respiratory organs within their abdomen, and that are connected by tubes to the outside. From the “lung”, oxygen is distributed throughout the body by a tube.

► **Interesting facts:**

- As chelicerates, horseshoe crabs are neither crabs, nor crustaceans.
- Female horseshoe crabs are 20%-30% larger than males.
- Horseshoe crab blood uses hemocyanin (copper-bearing) to carry oxygen in their blood. Consequently, they are true blue-bloods.
- Components of horseshoe crab blood are used in medical applications. Limulus Amebocyte Lysate (LAL) is used to determine the sterility of medical equipment and injectable drugs. (Alternatives are being developed, to protect horseshoe crabs. They are not killed for this substance, but bleeding can put them at risk.)
- Eurypterids are commonly over 3 feet long. The shortest was under 1 inch long. The longest was 8.2 feet long. Imagine that chasing after you! Another species was about 26” wide (and 6.5’ long) -- a hefty one. See Figure 3.

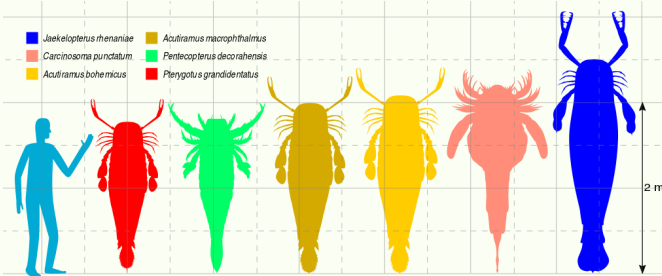


FIGURE 3 EURYPTERID SIZE In this diagram, the sizes of the 6 largest eurypterids are compared to that of a 6-foot man. *Image Source: Public Domain, Author - User: Slate Weasel*

- Eurypterids are also known as “sea scorpions”, due to their resemblance to scorpions.
- The state fossil of New York is *Eurypterus remipes*.

Images of chelicerate fossils and special features follow, in Figures 4-7.

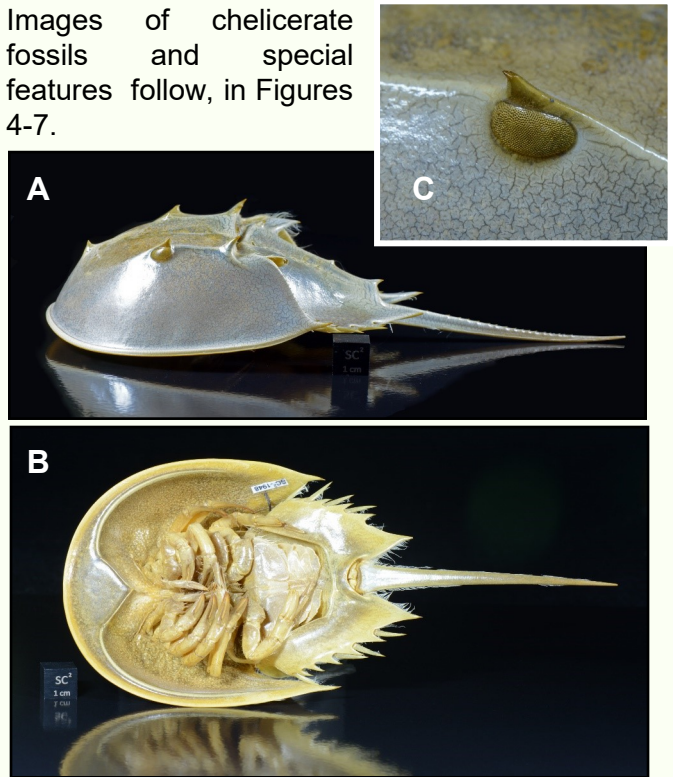


FIGURE 4 HORSESHOE CRAB This is the molt of a horseshoe crab, collected by Stan and I off a beach on Cape Hatteras. The beach was littered with the molts! This the only species known in North America (and only along the east coast) - *Limulus polyphemus*. Inset C is a closeup view of the compound eye. This individual is 6.5” long from head to tip of tail. *Photo by Stan Celestian*

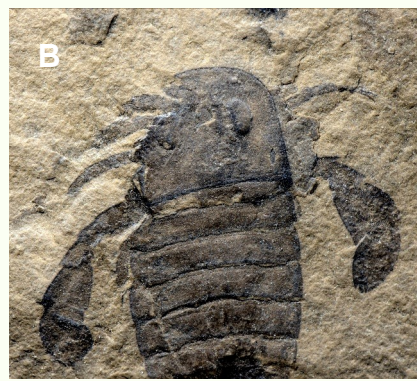


FIGURE 5 FOSSIL EURYPTERID This is *Eurypterus remipes*, the state fossil of New York. This eurypterid is 2.5” long. *Photo by Stan Celestian*

...Chelicerata continued from page 18

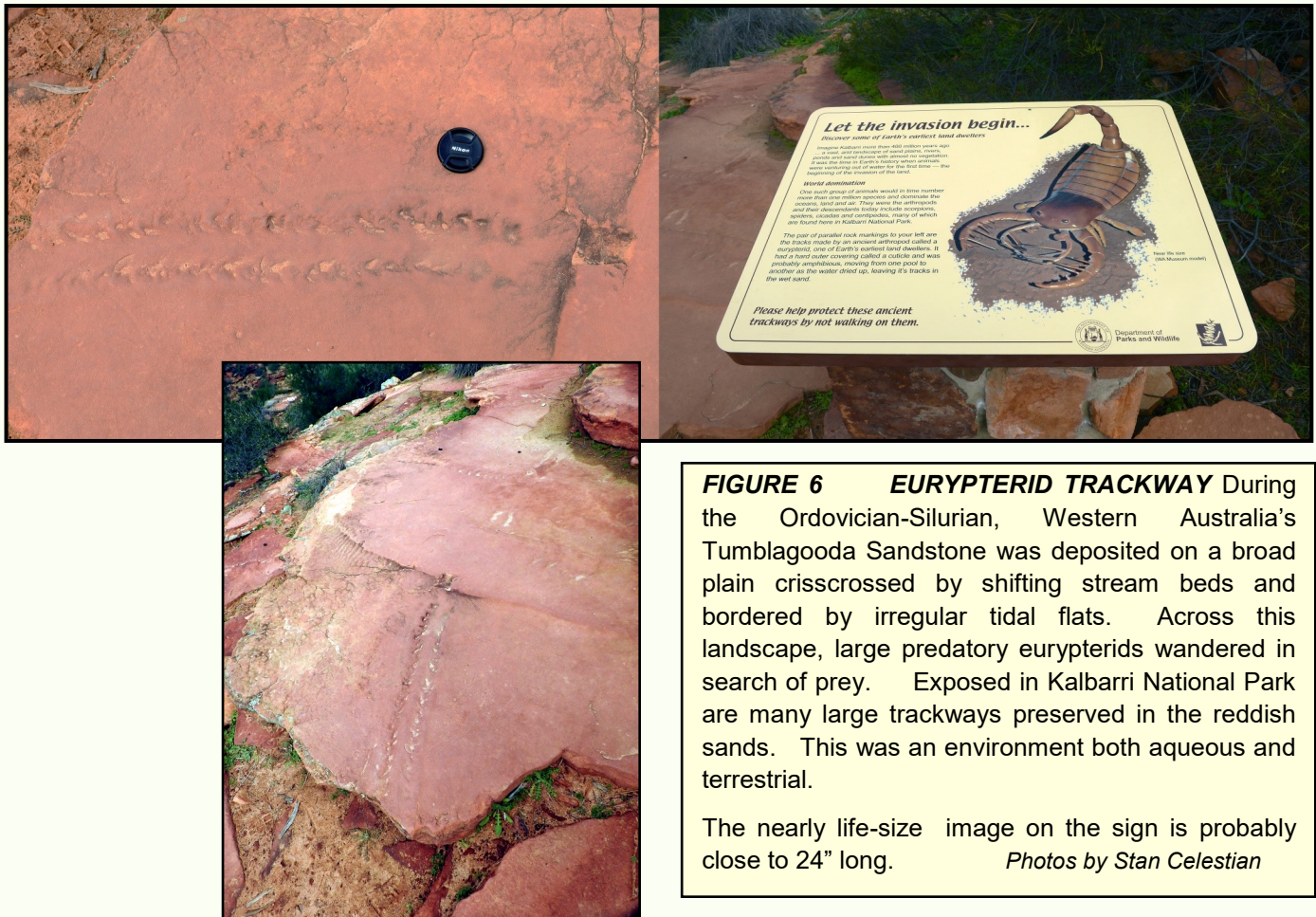


FIGURE 6 EURYPTERID TRACKWAY During the Ordovician-Silurian, Western Australia’s Tumblagooda Sandstone was deposited on a broad plain crisscrossed by shifting stream beds and bordered by irregular tidal flats. Across this landscape, large predatory eurypterids wandered in search of prey. Exposed in Kalbarri National Park are many large trackways preserved in the reddish sands. This was an environment both aqueous and terrestrial.

The nearly life-size image on the sign is probably close to 24” long. *Photos by Stan Celestian*



FIGURE 7 FOSSIL EURYPTERID *Mixopterus kiaeri* was a large (nearly 30” long) eurypterid found in Norway’s Late Silurian (426-412 mya) rocks. *M. kiaeri* is a very scorpion-like creature, showing how the nickname “sea scorpion” came to be. Very likely it wandered a freshwater stream floodplain environment, adapted to aquatic and terrestrial lifestyle.

This image is of a fossil on display in the Museum of Natural History of the University of Oslo, Norway. *Photo used with permission of Richard Droker (Flickr).*

UPCOMING FIELD TRIPS & MEETINGS

WHERE: Red Cloud Mine
WHEN: Friday/Saturday, December 4/5, 2020
WHAT: Wulfenite

WHERE: Cave Creek area
WHEN: TBA
WHAT: Jasper

**PICNIC/HOLIDAY PARTY
 DECEMBER 12, 2020
 DETAILS WILL BE EMAILED TO MEMBERSHIP**

WHERE: Blue Cube & Prism Mines
WHEN: Saturday, December 19, 2020
WHAT: Fluorite

WHERE: Burro Creek
WHEN: Saturday, January 9, 2021
WHAT: Jasper, Agate

WHERE: Purple Passion
WHEN: Saturday, January 16 (evening), 2021
WHAT: Fluorescents

WHERE: Quartzsite
WHEN: Saturday, January 23, 2021
WHAT: Mineral Show

WHERE: Tucson Show
WHEN: Saturday, February 6, 2021
WHAT: Show & Shopping!

WHERE: Dobell Ranch & Grand Falls
WHEN: Saturday, February 13, 2021
WHAT: Petrified Wood

WHERE: Brenda area
WHEN: Saturday, February 20, 2021
WHAT: Jasper

WHERE: Safford/Black Hills Rockhound Area
WHEN: Fri-Sun, February 26-28, 2021
WHAT: Desert Roses & Fire Agate

WHERE: Harquahala Mine
WHEN: Saturday, March 13, 2021
WHAT: Misc Minerals

WHERE: Bullard Mine
WHEN: Saturday, March 20, 2021
WHAT: Copper Minerals, Slag

WHERE: Camp Verde
WHEN: Saturday, March 27, 2021
WHAT: Glauberite Pseudomorphs

Field Trips continued on page 21..

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
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Editors: Susan & Stan Celestian..... azrocklady@gmail.com
Field Trip: Bill Freese ... bfreese77@cox.net
Show Chair: Ed Winbourne
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- | | |
|------------|-----------|
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| Jennifer G | Witt R |
| Don R | Howard R |
| Jessica C. | Rebecca S |
| Johnaton M | Joe G |
| Clark L | Bob S. |

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 10, Dec 1

MEETINGS CANCELLED OR BY RESERVATION UNTIL FURTHER NOTICE, DUE TO COVID-19 RESTRICTIONS

Words of Wisdom

passed along by our own

Bob Evans



I always say that having a woman around is like having an extra hard drive. (They remember everything!)

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

UPCOMING AZ MINERAL SHOWS

November 28-29 - Wickenburg, AZ Wickenburg Gem & Mineral Society; Hassayampa Elementary School, 251 S Tegner St; Sat 9-5, Sun 10-4; Admission: Free.

CANCELLED

January 1-3 - Mesa, AZ Flaggs Mineral Foundation; Mesa Community College, Mesa, AZ

CANCELLED

February 13-16 - Tucson, AZ Tucson Gem & Mineral Society; Tucson Convention Center, 260 S Church St; Admission Fee.

CANCELLED

While the club show in Tucson is cancelled for 2020, many satellite shows will probably still go on.

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>

Show schedules 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.



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.

...Field Trips continued from page 20

WHERE: Date Creek
WHEN: Saturday, April 10, 2021
WHAT: Quartz Crystals, Hematite ps Pyrite

WHERE: Sycamore Creek
WHEN: Saturday, April 24, 2021
WHAT: Red Jasper

WHERE: Christopher Creek area & Fossil Site
WHEN: Saturday, May 15, 2021
WHAT: Zebra Chert, Naco Fm. Fossils

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