

THE PICK & SHOVEL



In association with

The Official Publication of the
**Lincoln Gem &
Mineral Club, Inc.**



The Midwest Federation
of Mineralogical and
Geological Societies



The American
Federation of
Mineralogical Societies

The purpose of this corporation shall be to study, promote an interest in, and disseminate knowledge of lapidary and various Earth Sciences including but not necessarily limited to Geology, Paleontology and Mineralogy. It shall be a particular purpose of the corporation to provide education in these fields to its members and the general public, especially to youth and student groups.

Check upcoming issues of the Pick & Shovel, the website, and the LGMC Facebook Group for news about upcoming meetings and activities.

GENERAL MEETINGS:

THERE WILL NOT BE ANY IN-PERSON MEETINGS UNTIL FURTHER NOTICE. LINCOLN PARKS & RECREATION HAS CLOSED DOWN BETHANY PARK SHELTER HOUSE FOR THE REMAINDER OF THE YEAR DUE TO COVID-19.

BOARD MEETINGS:

**Next Board Meeting:
December 2, 2020 at 6:30 p.m.
(via Zoom)**

Meetings are open to all members. If you are interested in attending via Zoom, contact Jim Marburger for the log-in information.



November: Patricia Gritit
Gene Mulinex
Nick Lytle

FIELD TRIPS, ROCK PARTIES, OTHER ACTIVITIES:

The Christmas Party and Awards Ceremony has been cancelled.

The January Mid-Winter Swap has been cancelled due to the pandemic and closure of Lincoln Parks and Recreation facilities.

In lieu of this cancellation, the Board of Directors is looking into holding a Summer Swap in June 2021. Stay tuned for more information.

It is unknown at this time if the Annual Show will be held. Again, stay tuned.

If you missed it, you can still view the recorded Facebook Live presentation by Jim Marburger on How to Drill a Hole in a Rock.

<https://www.facebook.com/groups/223555904325876/permalink/3835912216423542/>

NOMINATIONS AND ELECTION

Due to COVID logistics and a lack of nominations to date, the Board decided, at the October meeting, that the 2020 Board will continue on as the 2021 Board. However, it was also determined that anyone wishing to be on the Board in 2021 may notify Jayne Beer or Charles Wooldridge no later than November 19, which would normally be the annual meeting and elections. This is a one-time only situation. The election by-laws were temporarily suspended to accommodate any interest and change of procedure. Attendance percentage for quorum will apply, no matter how many are on the Board.

As of date of this publication, no requests to be on the Board have been received. This is your chance to participate in the decision-making process for directing the club.

.....
: All articles, tidbits, and photos not individually :
: identified as being contributed to this publication are :
: provided by the Editor. :
:.....

2020 BOARD OF DIRECTORS**President**

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2nd Vice-President

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Treasurer

Vera Lyman, 402.464.6089

Secretary

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Corey Beer, 402.466.6628

Board Member

Jeff Kubitz, 402.540.9395, jkubitz@neb.rr.com

Board Member

Sharon Marburger, 402.429.3323, lgmc.editor@outlook.com

Board Member

Ed Ridge, 402.805.8248

LONG RANGE PLANNING & BY-LAWS COMMITTEE

Jayne Beer, Chairman

- 1 year: Pat Dvorak
Robert Gruit
- 2 years: Charles Wooldridge
Sharon Marburger
- 3 years: Vera Lyman
Jim Marburger

NOMINATING COMMITTEE

Jayne Beer, Chairman

- 1 year: Linda Guenter
Vera Lyman
- 2 years: Brett Jurgens
Sharon Marburger
- 3 years: Jim Atkins
Open

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402.429.3323

DEADLINE:

Date of Board Meeting, usually 1st Wednesday of the month.

STANDING COMMITTEES**Audio/Visual:**

Jayne Beer

Audit:

Ed Dvorak, Jayne Beer
James Marburger

Christmas Party:

Edward Ridge

Door Prizes:

Corey Beer, Brett Jurgens, Charles Wooldridge

Facebook:

James Marburger, Jayne Beer

Field Trips:

James Marburger

Historian:

Sharon Marburger

Legislative Liaison:

Susy McMahan

Membership Record:

Edward Ridge

MWF Liaison:

Vera Lyman

Programs:

Charles Wooldridge, Brett Jurgens

Property:

James Marburger

Recognition/Awards:

Ed Dvorak, Jayne Beer, Charles Wooldridge

Refreshments:

Vera Lyman

Show—2021:**Swap—June 2021:**

Corey Beer

Website:

Jim & Sharon Marburger

Youth Activities:

Brett Jurgens, Corey Beer, Sampson Bayer

ADVERTISING INFORMATION

Advertising by rock / hobby business or interest is permitted with the approval of the Board of Directors. Contact the Editor with your proposed ad. The rate is set at \$20.00 per full page; \$10.00 per 1/2 page; \$5.00 per 1/4 page (minimum) per issue, paid in advance to the Club treasurer. Ads will be placed throughout the newsletter as space permits.

MEMBERSHIP INFORMATION

Membership dues for the Lincoln Gem & Mineral Club are as follows:

- Adults (age 16 and over) - \$20 per year or \$30 per couple (within the same household)
- Juniors - \$3 per year (with a responsible adult)

All new memberships must be accompanied by a written application. Prospective members must gain Board approval and attend one regular meeting before paying dues. Applications are available on the website: <https://www.lincolngemmineralclub.org/about/membership>, or you may contact Treasurer Vera Lyman for a printed copy.

PRESIDENT'S MESSAGE

by Charles Wooldridge

It looks like November is starting out like a lamb. I hope you all have the opportunity to take advantage of the warm temperatures and sunshine.



Jackie and I just purchased our first camping trailer. After many years of sleeping in tents, I decided it was time. A couple of weeks ago we drove to the Rapid City area in search of a bargain but after exploring half a dozen RV dealers, we decided the best deal was in Omaha.

We really enjoyed our time in the Black Hills. It snowed frequently while we were there, which made the trees that much more striking. The black pines with boughs covered with snow interspersed with white birch trees were like a John Muir painting.

Some rock shops did not open this year because of the Covid-19 virus, but the Rock Shed in Keystone was open. I have received mail order tumbling supplies in the past but had never visited their shop. They have a small storefront with beautiful displays, and a large rock yard and basement for mail order business and supplies. The owners were very friendly and helpful. I bought quantities of silicon carbide grit, rough rock, and polish. By doing so, I was able to avoid shipping costs, which can be as much as the materials alone. It was nice to explore with a "silver pick" even though we couldn't rockhound in the out of doors due to the weather.

I discovered that the Black Hills are the oldest mountain range in the United States. There is so much to do in that area! There are caves, hot springs, national forests, paleontological and archeological sites, the Badlands, Devil's Tower, and, of course, Mount Rushmore. We will be going back soon.

The Board voted to cancel the Mid-Winter Swap. Hopefully, we will soon be able to get more definitive answers about the Annual Show and a summer swap in June. Until then, stay safe and Rock On!

Silversmithing classes 2020 Schedule

Tuesday Evenings
7:00 p.m. - 10:00 p.m.

**The Jewelry Connection Ltd.
Indian Village Shopping Ctr.
13th & Arapahoe, Lincoln**

Tuition: \$150 plus \$30 supply deposit

~~Session 1: Jan 8 - Feb 26~~

~~Session 2: Mar 5 - Apr 23~~

~~Session 3: Apr 30 - Jun 18~~

~~Session 4: Aug 13 - Oct 1~~

Session 5: Oct 8 - Nov 26

Contact: Jayne Beer 402-890-3307
Judith Bay 402-423-7058
jbeer60070@aol.com

J J & L Rocks & Minerals

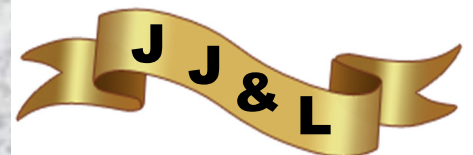
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Proudly serving
the hobby for
44 years

BOARD MEETING MINUTES:

Lincoln Gem and Mineral Club, Inc. Board of Directors Meeting October 7, 2020. Meeting held via Zoom teleconferencing.
Minutes recorded by Sharon Marburger, Asst. Secretary.

Meeting called to order by President Charles Wooldridge. The rules of meeting conduct continue to be suspended, due to COVID-19.

ROLL CALL

Charles Wooldridge	President	Present
Jayne Beer	1 VP	Present
Brett Jurgens	2VP	Absent
Vera Lyman	Treasurer	Absent
James Marburger	Secretary	Present
Corey Beer	Board	Present
Jeff Kubitz	Board	Present
Sharon Marburger	Board	Present
Ed Ridge	Board	Present

The Minutes were sent electronically. Motion by Jim to accept the minutes, 2nd by Corey. Passed.

The Treasurer's Report was sent electronically. The report for February 29 through August 31 was approved via a motion by Jim, 2nd by Eddie. Sharon passed along Vera's note that there was no September Treasurer's report because "nothing happened", but Sharon pointed out that there was activity with the cost of publishing and mailing the Pick & Shovel. Wooly suggested we table the September report until next meeting so a written or oral report could be submitted by Vera.

OLD BUSINESS

The Audit has been submitted to the Audit Committee.

There is no change in the status of the lapidary class equipment.

Discussion of the 2021 Mid-Winter Swap and the 2021 Show was tabled until November.

A big thank you to Jim for providing the Facebook Live presentation on how to drill a rock.

NEW BUSINESS

Jim moved that all 2020 paid club memberships be carried over through 2021, providing a free year of membership, 2nd by Jeff. Passed.

Jim moved to suspend the election by-laws for November 2020 since we cannot hold in-person elections, 2nd by Eddie. Passed.

With the election by-laws suspended, Sharon moved that the 2020 Board be continued through 2021 adding a Board seat be available to anyone wanting an active seat in 2021, 2nd by Jeff. This means that anyone contacting Wooly or Jayne by November 19, requesting to be on the Board of Directors, be given a seat on the Board. As this will change the quorum number for those in attendance, anyone joining the Board must understand that their presence is required during meetings, either in person or telephonically, however each meeting is held, in order to make quorum.

Jayne moved to reimburse Jim for the Zoom Account fees, Jeff 2nd. Passed.

Wooly is working on a recorded program on fossil preparation. He hopes to enlist the help of Brett and/or Corey.

Wooly will have an outside Rock Party at his residence on Sunday, October 11.

There was brief discussion of having a Summer Swap in 2021. Corey agreed to chair the committee. Possible venue – Beer Farm in Ashland.

Jim moved to adjourn the meeting, Corey 2nd. Passed.

OCTOBER ROCK PARTY (PHOTOS BY JAYNE BEER)

Wooly hosted a social distanced Rock Party at his home on October 11. There were 12 attendees. Wooly served root beer floats. The attendees talked rocks and had a good time.



JUNIORS

By Brett Jurgens, Junior Co-Leader

Hello Juniors! I look forward to the day we can again gather for a meeting and learn about rocks together.

For December, we typically have our Christmas Party, with an optional gift exchange, as well as some gifts for you. I have asked club members to round up some specimens to donate so you may add to your collection. Because we are unable to gather, I am planning to deliver these to you. (Parents - please email me at quartz89@aol.com so we can verify we have the correct contact and address so I can coordinate a time when the kits are ready.)

I am also wondering if any junior members are interested in trying out rock tumbling. Some parental guidance would be required. More info in the "Rock Tumbling" article.

PARENTS OF JUNIORS

by Sharon Marburger, Editor

The American Federation Juniors Program Chairman, Jim Brace-Thompson, published an article in the November issue of the MWF News that contained some great advice during this trying time of the pandemic. Below is an excerpt of his article.

The leader of the Ventura, California club found a website of fun things to do. www.teachjunkie.com/sciences/rocks-for-kids-15-fun-activities.

Families can go to www.amfed.org/fra/fra_badge.htm to access the Future Rockhounds of America ("FRA") teaching manual. Juniors can do many of the activities with their families. To obtain credit for a badge, an adult must certify that the required tasks are completed.

An easy badge to be earned from home is "Rocking on the Computer". Another is to organize the collection, which would earn the "Collecting" badge.

So, take a look at the FRA manual, see what activities can be easily completed within your family, and let one of your Junior leaders know what has been done. Once we are able to gather again at meetings, we can have an awards program to distribute those coveted FRA badges!

Look what Ja-zeil found!

A 1 pound Laker!

ROCK TUMBLING

By Brett Jurgens, Junior Co-Leader

With my job, I get to meet a lot of people while working on repairs in their homes. While my in-home interactions have changed with the virus, I have always enjoyed getting to converse with people in their home surroundings. One can gather a lot of information about someone with what they surround themselves with. If I see rocks or minerals in their home, I always bring up the rock club.

While conversing with one client, I found out that her children had an interest in rocks. I keep a small stash of giveaway rocks in my work truck so I went out and grabbed some pieces of petrified wood and a show card. Further discussion led to finding out that they were part of a home schooling group that had a small rock tumbler. Students could check out the tumbler; this family had been waiting their turn for over a year.

A couple of months later, we had our 2019 show, and while I was manning the club booth, the client came up to say hi. They were finally getting their turn at the tumbler!

Their enthusiasm got me to thinking - what if others were given the chance to try out the hobby? I currently have two tumblers loaned out. I gave a printed instruction sheet with the tumbler, stones to tumble, and pre-measured grits and polish.

If anyone in the club has any tumblers laying around they would like to sell, reach out to me. Also, any club member who would like to try their hand at tumbling, holler at me. I also have a small vibrating flat lap that is currently loaned out but I can put you on the waiting list. With limits on gathering as a group, we need to find ways to engage others and spark interest in the hobby.

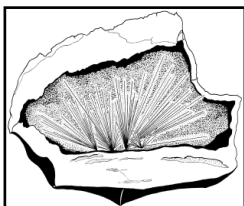


Photos by Jayne Beer

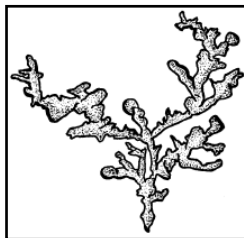
FROM DIAMOND DAN: MINERAL ODDITIES; A DICTIONARY OF MINERAL PRANKS

From June 2020 Mini Miners Monthly (Used with written permission)

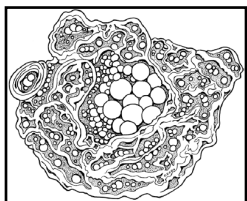
- ◆ **Acicular:** The word acicular is from a Latin word *acicula* that literally means a little needle. Acicular crystals are minerals that crystallize as long, thin, hair-like needles. The list of minerals that form acicular crystals include aurichalcite, artinite, and millerite. You can see the acicular crystals in this specimen of millerite from the Sterling Mine, Antwerp, New York. The needles are brass-yellow and are extremely fragile. Even a light touch can break them off. In this specimen from a very famous mineral locality, the millerite crystal sprays grow in holes (mineralogists call these holes vugs) in massive hematite (iron ore).



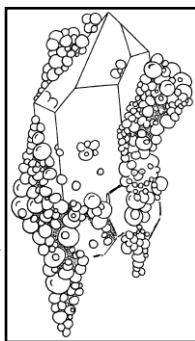
- ◆ **Arborescent:** The Latin word for tree is *arbore*. Some minerals, like these copper specimens from Itauz, Djezkazgan, Central Kazakhstan, grow in forms that resemble tree branches and so are described as arborescent.



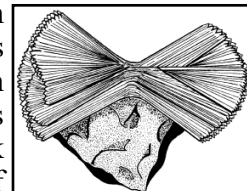
- ◆ **Bird's Nest:** Mineralogists often use fancy words that come from languages like Latin or Greek to describe the shape of a mineral. Sometimes mineralogists describe a mineral form simply based on what it looks like. Here are some balls of calcite that formed and hardened in a depression in limestone. Limestone and calcite are made of the same material - they are both calcium carbonate (CaCO_3). The very serious mineralogists call this formation pisolitic. The word pisolitic comes from the Latin word *pisos* which means pea because the specimen looks like a bowl of peas. Other mineralogists looked at this specimen and said, "Hey, that looks like a bird's nest filled with eggs." So, specimens like this one are commonly called "Bird's Nest Calcite." This specimen was found in Bisbee, Arizona.



- ◆ **Botryoidal:** Under the right conditions, some minerals form clusters of round balls that look like bunches of grapes. Mineralogists call this form botryoidal. Botryoidal comes from the Greek word *botrys* which means bunch of grapes.



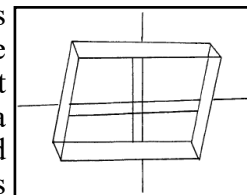
- ◆ **Bow-Tie Crystals:** A single stilbite crystal looks like a thin blade. But when thousands of stilbite crystals grow together, they can form groupings of crystals, like this specimen from India, that look like an old-fashioned bow tie. If you look carefully you can see how a number of crystal groups have grown over each other to create the bow-tie shape.



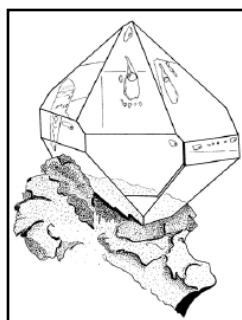
- ◆ **Dendritic:** Some minerals form growths that look like branches on a bush or small tree. They are described as looking like plants. Dendritic is from the Greek word *dendron* which means tree. (Notice that this is similar to arborescent.)



- ◆ **Double Refraction:** Double Refraction is an optical property that is very strong in colorless rhombs of calcite. Colorless calcite is called Iceland Spar. When a ray of light passes through the crystal, the light is split into two separate rays. You can see this effect when a piece of Iceland Spar is placed on a single line, like the piece in this picture. Notice that the single line is seen as a double line when viewed through the crystal. This specimen is from Durango, Mexico. A famous deposit of Iceland Spar was first discovered in . . . Iceland!



- ◆ **Enhydro:** There are a number of minerals in which water plays a part in their formation and sometimes a little water gets trapped inside a crystal as it grows. In igneous rocks the water is super hot. In sedimentary rocks the water is cooler. In this picture you can see the quartz crystals contain water-filled pockets, and in these pockets are small bubbles of gas. As the crystals are tilted and moved, the bubbles move back and forth, like a bubble in a carpenter's level. The bubble is included inside the crystal. When anything is inside a crystal, it is called an inclusion. The crystal shown is a doubly terminated colorless quartz specimen popularly known as a Herkimer Diamond from Herkimer County, New York. Both have water bubbles trapped inside.



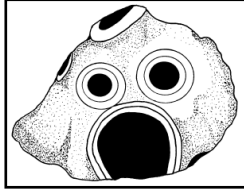
(Note: "Herkimer Diamonds" are not diamonds. Diamonds are crystallized carbon and a Herkimer Diamond is crystallized quartz.)

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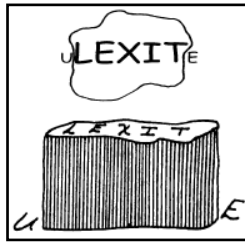
FROM DIAMOND DAN: MINERAL ODDITIES - CONTINUED

(Continued from page 7)

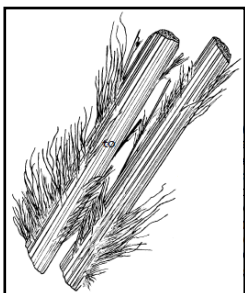
- ◆ **Eye Agate:** Agate is a form of quartz that has bands of different colors. Some agate specimens, when cut and polished properly, reveal circular bands that look like eyes. Here is an outstanding example from Brazil. The outer ring of the eye (and the “mouth,” too) is light brown. The next band is white. Eye agates are rare. Some experts believe that about 5 out of every 100 agates has an eye formation. Eye agates are also from Idar-Oberstein, Germany.



- ◆ **Fiber Optics:** Large veins of the mineral ulexite are found in Boron, California. These veins are composed of millions of fibers that are all lined up, parallel to one another. When these specimens are cut and polished across the fibers and the specimen is placed on a picture, the image appears to be on the top of the ulexite specimen! The image is actually transmitted (that is, moved) from the bottom of the fibers to the top. Collectors call this type of ulexite “Television Stone”. Television Stone is found only in Boron, California. Scientists use long, thin plastic fibers to transmit or move information from one place to another. This technology is called “Fiber Optics.”



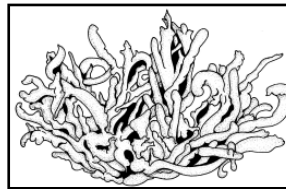
- ◆ **Fibrous:** Some minerals can break into very thin, flexible fibers. These fibers can be short or very long. Mineralogists describe these minerals as fibrous. Chrysotile is a mineral that has this fibrous, asbestos-like texture. Asbestos minerals can withstand extremely high temperatures without melting. Because of this property, asbestos fibers were used to make everything from insulation for hot pipes, to brakes on cars and trucks, to fireproof clothing for firefighters. It was discovered, however, that very tiny asbestos fibers can get into a person’s lungs and can cause cancer. Today scientists are trying to find or invent materials that are as resistant to heat and flame as asbestos but do not cause health problems. Here is a specimen of green chrysotile asbestos from the Jeffrey Quarry, Asbestos, Quebec, Canada. Crocidolite asbestos is deep blue.



- ◆ **Filiform:** The word filiform comes from the Latin word *filum* which means a thread. When a mineral is described as filiform it looks like fibers or filaments. This silver specimen that grew in the shape of fibers is from Batopilas, Chihuahua, Mexico.

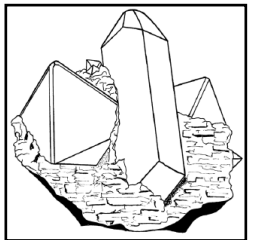


- ◆ **Flos Ferri:** This mineral is aragonite. The form you see here was first discovered with iron ore minerals in Austria. The miners thought the specimens look a lot like branches or flowers so they named them “Flowers of Iron.” *Flos Ferri* is a Latin phrase that means, literally, Flowers of Iron. Specimens like the one pictured here are from mines near Salzburg, Austria and Schwaz in Tyrol, Austria.



Mineralogists use the scientific word coralloidal to describe this mineral shape. This means that the aragonite looks like the branches of white coral that are found in warm oceans.

- ◆ **Fluorescence:** Fluorescence is a special color property of some minerals. In order to see fluorescence, a special light is used that creates ultraviolet light (also called UV light). UV light cannot be seen by the human eye. (Warning: never look directly into an ultraviolet lamp or you will damage your eyes.) The process that causes fluorescence in minerals is pretty complicated to describe because it involves light energy, electrons, and more. So here is a very simplified explanation. When UV light shines on some minerals, it causes electrons in the minerals to jump around. This “jumping around” creates light that you see as fluorescent colors on the minerals. Fluorescence is a special color property of some, but not all, minerals. Here is a long, light tan willemite crystal with two black franklinite crystals all of which are sitting on white to gray calcite. The specimen was found at Sterling Hill mine, Ogdensburg, Sussex County, New Jersey. When the UV light shines on it, the willemite shines bright green and the calcite shines bright orange-red. The black franklinite crystals remain black.



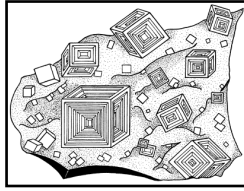
- ◆ **Hopper Crystals:** A “hopper” is a funnel-shaped box that is used to store and pour out things like coal and grain. A hopper crystal is a crystal where

(Continued on page 9)

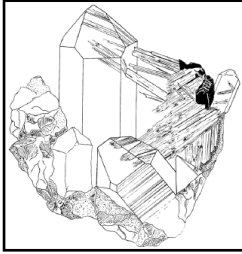
FROM DIAMOND DAN: MINERAL ODDITIES - CONTINUED

(Continued from page 8)

the edges of the crystal have grown faster than the faces. This creates a hollow space that makes the crystal look like a funnel-shaped box. Here are pink halite crystals from Searles Lake, California that grew together on a matrix of halite (salt).



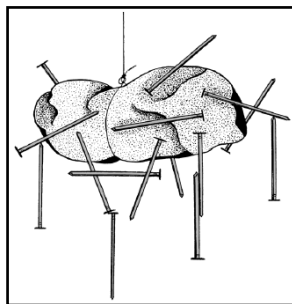
◆ **Inclusions:** When crystals form, they can trap other minerals or objects inside. When something is trapped inside a crystal, it is said to be “included” in that crystal. Mineralogists call this an inclusion. Here is a fine specimen of clear quartz crystals that have needles of rutile included in them. In this specimen, the rutile formed first and then quartz formed later. It looks like the rutile has been pushed into the quartz like needles pushed into Jello. Other objects can be included in crystals.



◆ **Incredible Crystals:** You are probably used to seeing crystals that are about as tiny as a fingernail up to specimens that are about as big as your head. However, some minerals, when allowed to grow in very special conditions, can be bigger than a car! Here are gypsum crystals that were discovered in 2000, deep underground at Naica, Chihuahua, Mexico. Some of the crystals are up to 40 feet long and are estimated to weigh up to 55 tons . . . each! These crystals are easily the largest gypsum crystals found anywhere in the world. They may very well be the largest crystals of any mineral ever found!

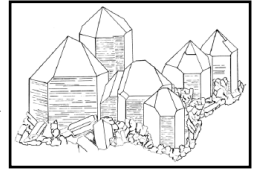


◆ **Magnetism:** The ancient Roman author and naturalist, Pliny the Elder, recorded a story about a shepherd named Magnes. One day Magnes was out keeping watch over his flock of sheep when the nails in his shoes and the iron tip of his shepherd’s staff stuck to the rocks in the ground. Whether this story is a true account or not we can never know. What we do know is that items made out of iron, like nails, are attracted to and stick to some iron minerals. This is called

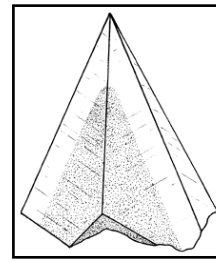
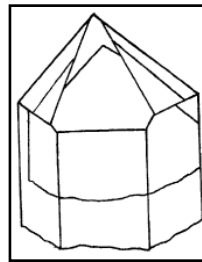


magnetism and materials that attract iron objects are called magnets. Massive magnetite is called lodestone. Here is a chunk of lodestone with a bunch of nails held in place by the mineral’s magnetism!

◆ **Parallel Growth:** In most situations, crystals grow in random directions. However, when the conditions are just right, crystals can grow parallel to one another. They look like marchers in a parade, all lined up next to each other. Mineralogists simply call this parallel growth. Here are some glassy, black smoky quartz crystals from the White Mountains of New Hampshire. They are “standing” on a bed of small feldspar crystals.



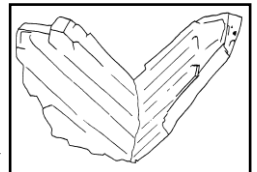
◆ **Phantom:** Sometimes a crystal will grow to a certain size and then stop growing. At a later time, the crystal growth can start again, but the new material can be a different color, or the first crystal may have some other material attached to it. When the growth is all complete, the larger crystal



will look like it has a smaller crystal trapped inside. As you can see in these two pictures, the original, smaller crystal is the same shape as the larger, later crystal.

Mineralogists call this situation a phantom crystal. The quartz crystal to the left is from China. It is a clear quartz with a smaller orange quartz crystal inside. To the right is a calcite crystal with a phantom from near Joplin, Missouri.

◆ **Pseudomorph:** The word pseudomorph is made up of two Greek words: *pseudo* means false and *morphe* means form. A pseudomorph starts off as a particular mineral. But when the chemical environment changes, the chemistry of the mineral changes. The original mineral becomes a new mineral with a different chemical formula.



However, the specimen keeps the shape or crystal form of the original mineral. For example, the crystals pictured here were originally dark blue azurite crystals. But due to chemical changes, the azurite turned into malachite and the specimen is now dark green. Mineralogists would describe this specimen as “Malachite after Azurite.” Wonderful specimens of malachite after azurite were found at

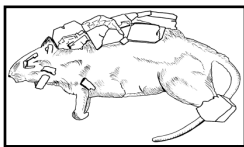
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FROM DIAMOND DAN: MINERAL ODDITIES - CONTINUED

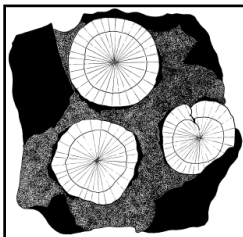
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the Copper Queen mine, Bisbee, Cochise County, Arizona.

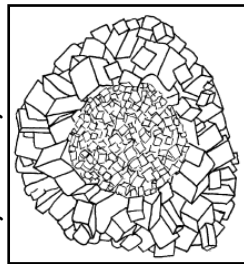
- ◆ **“The Atacamouse”:** This is the weirdest pseudomorph you will ever see! Yes, it is a mouse. It died in a copper mine in Russia. After the poor little mouse died, it didn’t decay. It was replaced with the copper mineral, atacamite. Atacamite crystals also grew on its back and tail.



- ◆ **Pyrite Dollars:** Among the most unusual and popular mineral specimens are the “Pyrite Dollars” from Sparta, Illinois. In Sparta the pyrite crystals are found in coal deposits, forming between layers of black shale. There is no room for the crystals to grow as they normally would into cubes and octahedra. So, the pyrite grows out from a center point like rays of light moving out from the sun. The pyrite forms into thin, flat discs that are called “Dollars.” They really do look like big coins!



- ◆ **Pyrite Suns:** Some beautiful groups of pyrite cubes were discovered in China in recent years. They are made of hundreds of pyrite cubes that formed a ring around hundreds of smaller cubes in the center of the specimen. Dealers and collectors have called these specimens “Pyrite Suns” because of their round, disc-like shape and bright, metallic yellow color.

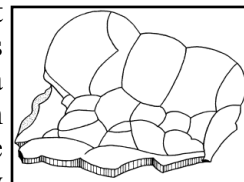


- ◆ **Ram’s Horn Selenite:** Ram’s Horn Selenite is a popular name given to gypsum specimens that form in curved growths that look like rams’ horns. These beautiful and delicate specimens grow in caves where the air is very dry and where they will not be disturbed or damaged. Water that is carrying dissolved gypsum seeps out of the cave walls. When the water hits the dry cave air, the water evaporates and gypsum solidifies on the cave wall. As more water seeps out and evaporates, more gypsum is deposited on the cave wall. This new gypsum pushes the older gypsum away from the cave wall. This process continues, making the gypsum deposit longer and longer and longer. The gypsum curves because more gypsum is deposited on one

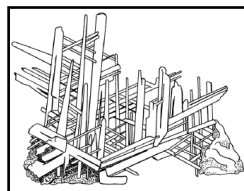


side than the other, causing one side to grow faster than the other. This is a Ram’s Horn Selenite specimen from the mines in the Santa Eulalia District, Chihuahua, Mexico. Specimens like this one have also been found in Kentucky and Texas in the United States, and also in Morocco.

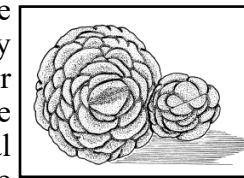
- ◆ **Reniform:** The word reniform is from the Latin words *renes* which means kidney and *formis* which means form. In other words, it describes a mineral that looks like a kidney. Here is a specimen of hematite from Cumberland, England. The miners called this shape kidney ore because the dark, blood red, rounded masses of hematite look like kidneys. Notice that the hematite is rounded, but not in individual balls that look like grapes. Do you remember what mineralogists call specimens that look like bunches of grapes?



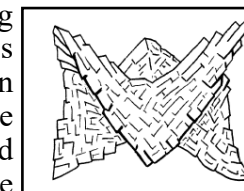
- ◆ **Reticulated:** Anything that is described as “reticulated” is built in a way that forms a pattern or network. Some minerals, like rutile and cerussite, can crystallize and form long, thin crystals that grow in crisscross patterns. Here is a fine sample of a reticulated cerussite specimen from Tsumeb, Namibia (Africa).



- ◆ **Rosettes:** There are some minerals in which many individual crystals grow together in such a way that they resemble a flower. Any rose-like crystal groups are called rosettes. The minerals that typically form rosettes are gypsum, barite and hematite. Here is a “rose” made of intergrown barite crystals. The barite grew in red sandstone and in the process, grains of red sand were trapped in the crystals.



- ◆ **Saddle-Shaped Crystals:** Under the right conditions, groups of dolomite crystals grow together and form a curving shape that looks like a horse’s saddle. Other minerals that can form saddle-shaped crystals are calcite, ankerite, siderite and rhodochrosite. All of these minerals have similar chemical compositions and crystallize in the same crystal system. Excellent saddle-shaped specimens have

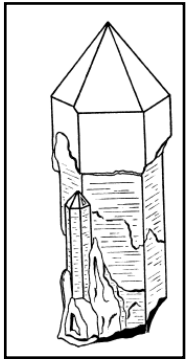


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FROM DIAMOND DAN: MINERAL ODDITIES - CONTINUED

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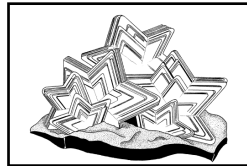
recently been discovered in Shangbao, Leiyang, Hunan Province, China.



◆ **Scepter Crystals:** A scepter is a long stick that is held by a King as a sign of the King’s power and authority. The end of the King’s scepter is topped with a large ornament that is covered with beautiful jewels. A scepter crystal is one in which there is a long, lower portion that is topped with a larger, wider crystal termination. Mineralogists call the lower portion of the scepter crystal the prism of the crystal. Here is a scepter crystal

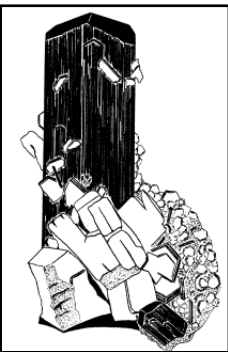
from Namibia (Africa) with a white, milky quartz prism and a purple, amethyst termination.

◆ **Star Mica:** When mica crystals grow together, they can form crystal groups that look like stars. You would not be surprised to learn that collectors call these specimens “Star Mica.” This specimen is similar to the star mica found in the State of Minas Gerais, Brazil. In this specimen you can see not only the star shape, but also the many layers of mica that formed one upon another. Remember that mica splits into very thin sheets, a type of cleavage that mineralogists call

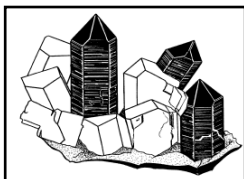


micaceous cleavage. Do you know the special name for two crystals that grow together? Star mica is a twinned crystal (oops, we gave away the answer!). It is actually five crystals arranged on a circle, a combination that results in a star.

◆ **Striated Crystals:** Lines that form on crystal faces that are parallel to each other are not scratches. They are called striations. A “striation” is a line that runs across the face of a crystal. Striations are created by small changes that occur over and over again as the crystal grows. They are often formed when one crystal face grows faster than another, but then slows down and the other face grows

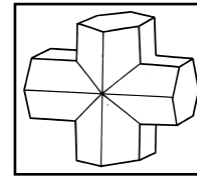


faster. Many different minerals can be found with striations. The left specimen are striated pyrite crystals that are formed when the dodecahedral crystal shape alternates with the cubic crystal shape. The right specimen are striated smoky quartz crystals from New Hampshire. Other minerals that form

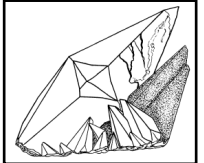


striations are feldspars, apophyllite and phalerite.

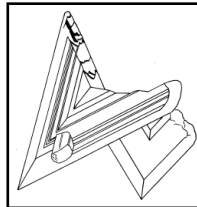
◆ **Twinned Crystals:** Most often, minerals form single crystals or groups of single crystals. There are times, though, when two or more crystals grow



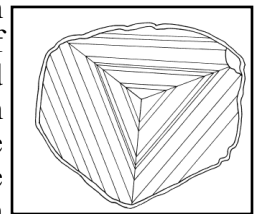
together. When two crystals grow together, at a specific angle, a twinned crystal is formed. To the left is a staurolite twin. In this specimen two individual crystals have



grown together in a cross formation. The crystal on the right is a large twin crystal of calcite surrounded by a number of smaller individual calcite crystals. The diamond-shaped portion in the center indicates where the two individual crystals connect to each other. The crystal to the left is a twin crystal of the lead mineral called cerussite. The individual crystals attach to one another creating a V-shape.



◆ **Zoned Crystals:** It is possible that there can be changes in chemistry as a crystal grows. These changes can create different color zones in the crystal. These zones are best seen when the mineral is cut across the crystal (called a cross section). This zoning occurs often in amethyst crystals. It also occurs in tourmaline crystals. The state of Maine has produced zoned tourmalines that are green on the outside and red on the inside. These specimens have been called “Watermelon Tourmalines” because they resemble ripe watermelon with a green rind. To the right is a zoned mineral species in the tourmaline group known as Liddicoatite.



Corey found a mammoth tooth on October 13 (Nemaha River)



Mammoth tooth in situ

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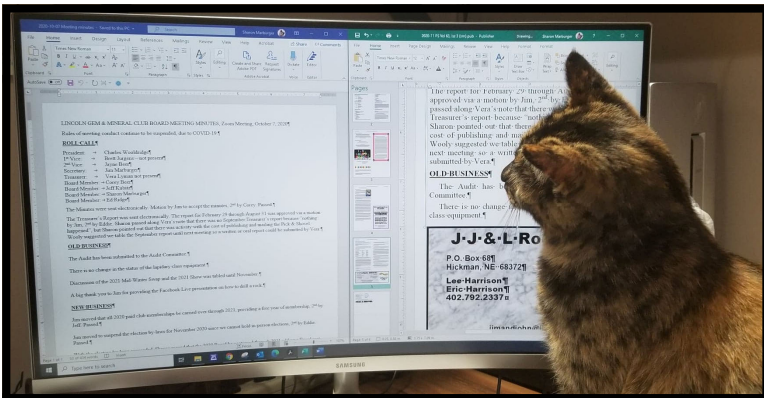
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PICK & SHOVEL



Beer Family field trip to Nemaha River. Photos by Jayne Beer.

Editor's Pick: I love this photo! We can still go rock hunting with family. An adult's love of collecting shared with a child. Corey and Ja-ziel. Photo by Jayne Beer.



Assistant Editor, Petra Fied Wood, proofreading. Photo by Editor.

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