



PICK & SHOVEL

February 2019, Volume 61, Issue 6

Editor: Sharon Marburger

MEETINGS AND ACTIVITIES

General Meetings:

Monthly meetings are held on the **third Thursday** of the month during February, March, April, May, September, October, and November. The January meeting is held on the **fourth Saturday** and also includes the Mid-Winter Rock Swap followed by a Club Supper. The December meeting is held on the **first Sunday** and includes the annual Awards Presentations and Potluck Christmas Party.

Youth activities begin at 6:00 p.m. and adult meetings begin at 7:00 p.m. at the Bethany Park Shelter House.

Next General Meeting

**February 21, 2019: Program by Eric Fritzsch:
"Why We Collect"**

Board Meetings:

Most Board Meetings are on the first Wednesday of the month at the home of Vera Lyman, beginning at 6:30 p.m.

Exceptions: If the first day of a month falls on Thursday, the meetings will be changed to the **last Wednesday** of the **previous** month. This allows a minimum of 10-days public notice of the meetings, per Corporation rules.

Next Board Meeting: March 6, 2019

Dues are past due!

See page 2 for rates

**All dues paid now will be assessed a
\$5.00 late fee**



**Ed Dvorak
Allan Gossman
Charles Wooldridge**

Community Outreach Project:

The Club relinquished Roadside Clean-up because the increased speed limit makes it too dangerous to walk the shoulders and ditches of the highway. The Board voted to instead serve a meal one day a month at the Matt Talbot Kitchen and Outreach. Information for this project should be available at the February meeting.



2019 Zoetis-LPS-GSK Science Fair

February 28 from 5:00-7:30 p.m. at the Lancaster County Event Center. This is the event's 24th year. The Fair will showcase all the wonderful science experiments and demonstrations from 5th – 8th graders in Lincoln Public Schools. Enter through the blue awnings.



Go to <https://home.lps.org/science/science-fair/> for more information, then see Carolyn Ashmore if you are interested in volunteering.



Wild Adventures Day

Sponsored by Lincoln Parks & Recreation
Saturday, March 30, 2019
12 - 4 p.m.
Pioneers Park Nature Center
Learn about fun and wild things about nature.

Club Members:

Setup is at 11:30 and tear-down is 4:00-4:45.
See Carolyn Ashmore for more information or to sign up.



LGMC's 61st Annual Gem and Mineral Show

April 6, 2019 - 9 a.m. to 5 p.m.
April 7, 2019 - 10 a.m. to 5 p.m.
Lancaster Event Center, Lincoln Room
Admission: \$6 per adult, children 11 and under free
Bring a donation for the Food Bank to receive \$1 off admission

BOARD OF DIRECTORS

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Board Member

Brett Jurgens, 402.850.3256
quartz89@aol.com

Board Member

Ed Ridge, 402.805.8248

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.

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.

2019 SHOW COMMITTEE

Chairman:.....Jayne Beer
 Dealers: Vera Lyman
 Demonstrators: Vera Lyman
 Displays:Jayne Beer
 Ed Ridge
 Event Center Liaison..... Vera Lyman
 Finance & Ticket Sales:Jim Atkins
 Vera Lyman
 Floor Chairman:Ed Dvorak
Jayne Beer
 Fluorescent Booth: Ed Dvorak
 Forms Sharon Marburger
 LGMC Club Booth: Charles Wooldridge
 Nebraska Gem Dig:..... Charles Wooldridge
 Plants:..... Ed Ridge
 Printed Program:Sharon Marburger
 Publicity & Promotion: Jim Marburger
 Ribbons & Recognitions: .Sharon Marburger
 Security: Vera Lyman
 Show FlyerJayne Beer,
 Sharon Marburger
 Silent Auction: Sharon Marburger
 Special Features:
 Web Master:..... Jim Marburger
 Sharon Marburger
 Youth Activities: Carolyn Ashmore,
 Cindy Ramey

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:

Andrew Tiedje, James Marburger,
Brett Jurgens

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:

James Marburger, Ed Dvorak,
Jayne Beer

Refreshments:

Vera Lyman

Scholarship:

Vera Lyman

Show—2019:

Jayne Beer

Swap—2019:

Sharon Marburger

Website:

Jim & Sharon Marburger

Youth Activities:

Carolyn Ashmore, Cindy Ramey

LONG RANGE PLANNING & BY-LAWS COMMITTEE

Jayne Beer, Chairman

1 year: Vera Lyman
Jim Marburger

2 years: Pat Dvorak
Robert Gruit

3 years: Charles Wooldridge
Sharon Marburger

NOMINATING COMMITTEE

Jayne Beer, Chairman

1 year: Jim Atkins
Andrew Tiedje

2 years: Linda Guenter
Vera Lyman

3 years: Brett Jurgens
Sharon Marburger

PICK & SHOVEL STAFF

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REPORTERS:

All members are encouraged to submit features, articles, poetry, or drawings.

PRESIDENT'S MESSAGE

by Charles "Wooly" Wooldridge

It is cold and dismal outdoors as I write this, appropriate for some of the news I have to share. Last month we lost two important figures in the history of our rockhound community.

Fred Holbert was a past LGMC President and knowledgeable collector. He enjoyed going on field trips to Southeast Nebraska with Roger Pabian. Once Fred bought an impressive four pound clear topaz at our show. He was very proud of it and liked to put it on display. What I remember most was Fred's sense of humor. He always had a new joke to share.



Aulden Stewart was a former Marine and long time member who had a huge heart. He was always present at Lincoln Parks and Recreation Grinding Parties at the Chet Ager Nature Center, the annual LGMS Show and LPS Science Fair, where he would demonstrate lapidary. He loved showing kids what could be done with a rock to make it a shiny gem. Al certainly was a shiny gem of a man!

On a brighter note, I would like to thank Jayne, Vera, Sharon, Carolyn, Paul, Brian, and all the others for another great Mid-Winter Swap. It was a lot of fun and we had a huge turnout.

Looking toward the future, we are starting to plan for this year's President's Field Trip. Tentative plans are to leave the morning of Saturday, June 15th for the "Blue Forest" area in western Wyoming to collect petrified wood. We might also hit Kemmerer, Wyoming for fossil fish. We may then go to Delta, Utah to dig for Trilobite fossils. The last leg of the trip may be Plush, Oregon for sunstone. There are many other places we could go and participants can choose how long or far they want to travel. For instance, you may want to go to just one or two of the areas. We will continue to use your feedback to plan the trip.

The program at this month's meeting will be presented by Eric Fritsch, called "Why We Collect". You won't want to miss this one! See you there...

AUDIT OF ACCOUNTS

The Treasure's books are ready for audit. This will be done as soon as the Audit Committee can meet to review the books.

MONTHLY ROCK PARTIES

The monthly Rock Parties will be on hold until such time as someone volunteers to host.

The Marburgers will host a Rock Party on March 16. Details in the March Pick & Shovel.

MINERAL MONKEYS

By Carolyn Ashmore

Hello Juniors! Wow! What an awesome Swap last month, wasn't it? I was pleased to see a lot of you there and I hope you had a chance to look around and add to your collections, using your monkey bucks.

We had a couple awards to give out at the meeting. Logan Guenter is the ninth junior member of our club to have completed six units and be awarded the Rockhound badge. Congratulation Logan!!!!



At the February meeting, we will be looking at Unit #3 - Fossils. We will begin with the "Geological Time Chart", which I will be handing out. You will pick out one particular fossil from the chart to write about, just a paragraph or two. Your paper will be due at the March meeting, so that gives you plenty of time to research and put something together to share with the group. Some of the things you may want to have in your article is what period or timeframe your fossil lived (Jurassic, Triassic, etc.); and was your fossil a carnivore or plant eater? Be prepared to answer any questions the group may have. You can always bring a picture, or draw one yourself, to show what your fossil looked like. I'm looking forward to seeing what favorite fossil you choose. Rock On!

Silversmithing classes

**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**

JANUARY GENERAL MEETING MINUTES

By James Marburger, Secretary

Lincoln Gem and Mineral Club, Inc. General Meeting, January 26, 2019. Meeting held at Bethany Park Shelter House.

Meeting called to order by President Charles Wooldridge at 7:00 p.m. Members present: 25. Visitor Jarod Kinner from the Northeast Kansas Rock Club. Juniors: 5.

Minutes of the November meeting were published in the Pick & Shovel. Motion to accept by Vera, second by Jayne. Passed. No minutes from the December meeting as there was not a quorum, therefore, no business was had.

Treasurer Report given by Vera. Motion to accept by Brett Jurgens, second by Pat Dvorak. Passed.

Announcements:

Omaha Swap is in February and swap flyers are available.

This is the 63rd anniversary of the club. 1955 organized. HAPPY anniversary.

Old Business:

Christmas Party no business was conducted because of no quorum. Those who attended had a great time. Many prizes for the BINGO winners.

Field trips being planned for this summer include a Presidential trip to Wyoming for fossil fish and petrified wood, then on to Utah for trilobites and such. More to come. June 15 start date.

Fall trip to Kentucky for agate and Arkansas for quartz.

New Business:

Please work on articles for the Pick and Shovel.

Matt Talbot Kitchen was brought up and more information is needed for next meeting.

Remember food for the Food Bank.

Motion to adjourn by Jim M. and second by Vera. Passed.

TEN DEADLY MINERALS

Excerpted from <http://www.geologyin.com/2015/01/killer-minerals-worlds-10-most-deadly.html>

Chalcanthite is a hydrated water-soluble copper sulfate. The mineral is used to ore copper, however it's necessary to keep the environment dry as the mineral can easily dissolve and recrystallize in a wet environment. The copper in this mineral is very bio-available and is toxic to plants and in high quantities toxic to humans.

Stibnite is a toxic antimony sulfide mineral with an orthorhombic crystal lattice and a source of metalloid antimony. The mineral was used to make eating utensils, causing poisoning from antimony ingestion.

Asbestos is not one mineral but six defined separate minerals. This silicate mineral grows thin fibers crystals that can easily break off and form dust particles. The fibers can cause lung cancer, mesothelioma, and asbestosis.

Torbernite is a dangerous mineral composed of hydrated green copper, phosphate, and uranyl. The mineral is often found in granites that contain uranium and is dangerous due to its radioactive nature. The mineral releases radon naturally and can cause lung cancer if exposure is long enough.

Cinnabar is a deep red mercury sulphide mineral that provides much of the world's elemental mercury. When oxidized, this element will produce methyl mercury and dimethyl mercury, two toxic compounds that cause irreparable harm to the nervous systems of children. It is deadly in small concentrations and can be absorbed through the respiratory tract, intestines, or skin.

Galena is one of the most abundant and widely distributed sulfide minerals. Galena is the principle ore of lead, and forms glistening silver cubes with almost

unnaturally perfect shapes. Although lead is normally extremely flexible, the sulfur content of galena makes it extraordinarily brittle and reactive to chemical treatment. Lead doesn't get flushed out of your system. Lead toxicity is carcinogenic to you and causes severe birth defects.

Hutchinsonite is a form of arsenic sulfide with thallium and lead that can be found in hydrothermal vents. Thallium salts are nearly tasteless and highly toxic and have been used in rat poison and insecticides. The thallium inclusion in this arsenic sulfide combines two extremely dangerous and deadly minerals. Exposure to this mineral can potentially lead to death.

Orpiment is another arsenic sulfide mineral with a stunning orange-yellow color. The mineral is found naturally in hydrothermal vents, hot springs, and fumaroles. The arsenic, especially if it is allowed to oxidize, will lead to arsenic poisoning if handled incorrectly.

Crocidolite usually originates from altered metamorphic rocks. It was once widely used for a variety of commercial and industrial applications thanks to its strong, fire-resistant, and flexible nature—from ceiling tiles and roofing materials to flooring and thermal insulation. The fibers can cause lung cancer, mesothelioma, and asbestosis.

Arsenopyrite is an iron arsenic sulfide with a brilliant steel metallic color often found in hydrothermal vents and pegmatites. The arsenic leads to a number of environmental and human damages and can sometimes be associated with gold deposits. Oxidation of arsenopyrite leads to soluble arsenic in water and subsequent acid mine drainage.

FROM THE ARCHIVES

FROM THE ARCHIVES is for entertainment and educational purposes. Always check current laws and changeable information. The following article was taken from the February 1980 PICK & SHOVEL, with minor editing.



Rock of the Month—FIRE AGATE

By Marilyn R. Smits, Education Chairman

Fire agate may have been discovered as early as the late 1930s in southeastern Arizona, but the first documented find was in 1945-46 in southeastern California near the Arizona border at Wiley's Well (Coon Hollow). The stone is indigenous to the Sonoran Desert of Arizona, California, and northern Mexico, and to the Central Basin of Mexico. In the United States, five claim groups are operating the Deer Creek fire agate beds, located on the northern slopes of the Galiuros Mountains, 40 miles west of Safford, Arizona, at an elevation of 5,500 feet. These fields are not open to the public and are snowbound in winter. Currently, the One Track Mine is the most active of these open pit mines.

The first step in the mining endeavor is to remove topsoil with earthmoving equipment to expose the country rock which consists of flows of basalt and rhyolite and contains the fire agate. Five-foot deep holes are then drilled and dynamite in small amounts is used to loosen the fine-grained igneous rock. The broken down material is then carefully inspected by hand. The depth of the Deer Creek mines can go up to 40 feet. Primary deposits of fire agate are found in fissures and veins of rhyolite and more frequently in the pockets and cavities. Secondary deposits are found in the topsoil where agates have "weathered out" of their original locations and the weather effects on the iron oxides yield material that can come apart along its layers.

Sweaney (1979) presents a possible scenario of the formation of the Deer Creek fire agates.

Hot waters saturated with colloidal silica and iron oxide invaded cavities and spaces in the country rock and began to cool. Chalcedony with iron oxide imparting brown color began to grow on any surface available. These solutions had to be highly saturated for chalcedony to form, and growth could have been rather rapid. As the solutions lost silica through growth, too much iron oxide remained in suspension, so periodic adjustments restabilized the solutions. When conditions were right, iron oxide precipitated onto the growth surface of the chalcedony, creating an extremely thin layer of very tiny regularly arranged crystals. Once restabilized, the solution continued the growth of chalcedony. The cycle repeated, creating regularly sediments of iron oxide, known as Schiller layers, within the chalcedony. These layers cause the brilliant interference color we see as "fire". The solutions were probably replenished periodically with silica,

but at some point, the source of iron ran out. The chalcedony continued to grow, but was now colorless.

Page 134. The shapes of the fire agates include mammillary forms and iridescent spikes called "sagenite".

Color is naturally one of the major criteria for selecting a fire agate. Sweaney suggests looking for "pure spectral hues which stand out from the brown body color." p. 137. He considers blue, yellow, and red more preferable than the violet, green, and orange colors, with metallic bronzy appearances as poor. Other characteristics to look for include the number of distinctly different colors ("very best stones radiate color which can be seen from thirty or forty feet away") p. 137, and amount of color coverage over the face of the stones ("best" have 90% or more, and "fine" have 70-89% coverage) p. 139. Any unique color pattern such as one found giving a spider web effect would add to the value of the coloring. Mexican fire agates require inspection of their orientation of cut, as how well the color shows is dependent upon this. However, the Deer Creek agates do not need this directioning of cut.

Positive assets for a stone are polished backs with good fire and unusually baroque forms such as one fashioned of bright green agate that elicit animal-like images to the observer. Negative characteristics include cutting flaws and inherent flaws in the stone, e.g., pits, cracks, and matrix on the stone face. The size of the stones from Deer Creek range mainly from 1 to 20 carats.

The fire agate is a cryptocrystalline quartz with a hardness of about 7 on the Mohs scale. It is not brittle. Selecting rough material is a gamble and the buyer cannot always identify the value of even wet material. Mexican rough can be sold only in Mexico itself, unless that law has been changed since 1973.

Sweaney believes that lapidarists find agate one of the most difficult gems to cut. The secret is in understanding how the layered structure and botryoidal form influence the cutting technique. We have seen how extremely thin layers of iridescent iron oxide are deposited onto the growing surface of the chalcedony bubbles, only to be covered, in turn, by a layer of chalcedony. The cutting process is essentially a reversal of this growth pattern. After careful study to determine the structure, the lapidary carefully grinds away all the excess chalcedony, leaving only a thin clear window which exposes, yet protects, the fire layer. By following the natural contour of the material, by "peeling the onion", the cutter can create a gem with fire glistening from the entire surface, pp. 134-135. This cutting procedure known as "contour cutting" used by the One Track Mining Group is described in more detail on pages 135-136 of Sweaney's article.

One special point about carving fire agates is that forcing rough material into a specific pre-selected shape may cause the fire layer to be lost. Mexican material is flatter with more layers than Deer Creek agates and, thus,

(Continued on page 6)

FROM THE ARCHIVES—CONTINUED

(Continued from page 5)

may lend itself to more traditional symmetrical forms. The quality of the cutting is an important factor in the pricing of stones. One of the greatest difficulties in cutting the Mexican agates is orientation of the stone so the color shows most intensely and dead directions are avoided. As noted above, this is not a problem with Deer Creek agates.

Mallory (1974) recommends a variation on the usual cutting: a baroque faceted stone of Mexican fire agate with a large table, only narrow mains, and corners cut as desired (p. 1530). He also suggests a remedy for any defect or small open space in the stone; just fill the spot with epoxy and continue when dried (p. 1530).

The popularity of the fire agate is increasing as the stone becomes better known and understood. Simultaneously, prices are rising also. Currently, Sweaney reports that prices are moving toward per carat assessments rather than per stone. Top quality agates sell for \$10-25 per carat wholesale, "good to better" quality for \$2-10 per carat, and poorer stones for \$1-10 per specimen (p. 140).

I highly recommend Sweaney's article to you, especially for its good list of references on deposits, formation, color, grading, cutting, polishing, and research on fire agates and its excellent color photographs showing brilliant green-only and red-only stones as well as outstanding specimens of multi-colored gems. It will be on display at the February Club meeting along with the beautiful fire agate specimens of you Club members.

Primary Reference:

Sweaney, James L. "Fire Agates of Deer Creek", *Gems and Gemology*, 1979 (Spring), pp. 140-141.

Secondary Reference:

Mallory, L.D. "The Fire Agate Mines of Calvillo", *Lapidary Journal*, 1974 (January), p. 1500f.

MID-WINTER SWAP

By Sharon Marburger; Photo by Paul Ashmore

The 2019 Mid-Winter Swap is now behind us. It was another spectacular and successful event. We had the pleasant worry of not having enough tables for all the Swappers, but we managed to squeeze everyone in. I think most of the Swappers were pleased with the outcome of the event.

There were 14 Swappers utilizing 17 tables. Two of the Swappers were new this year, offering beautiful specimens of petrified wood, Montana agates, eye amethyst, and other items. All of the Swappers had great specimens and the public had some wonderful purchases.

An estimated 200 to 300 visitors attended. It was quite crowded for awhile. Those in attendance appeared to be enjoying themselves, and seemed to be very happy with their purchases.

The Silent Auction was one of the best ones the Swap has had. There were some very nice specimens up for auction. I was surprised and pleased that one of the visitors brought a lovely prairie agate for the Silent Auction. That agate sold immediately.

A huge thank you to the Swappers and the club members who helped to make the Swap a success. We look forward to the next Mid-Winter Swap on January 25, 2020.



J J & L Rocks & Minerals

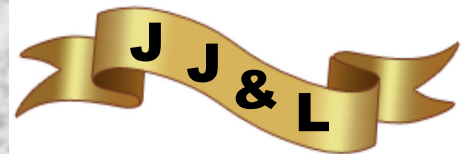
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Proudly serving
the hobby for
43 years

Lincoln Gem & Mineral Club's 61st Annual Show!

April 6 & 7, 2019

Lancaster Event Center

Lincoln Room

84th & Havelock

Lincoln, Nebraska

Saturday, 9 a.m. to 5 p.m.

Sunday, 10 a.m. to 5 p.m.

Nebraska's Hidden Treasures



**Youth Booth
Dealers
Exhibits
Demonstrators
Nebraska Gem Dig
Fluorescent Display**

FUN FOR THE WHOLE FAMILY

Admission:



\$6 per adult



\$11 2-day pass

Children 11 and under free with paid adult

Get \$1 off paid admission with a
can donation to the Food Bank!



<http://www.lincolngemmineralclub.org>

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P.O. Box 5342
Lincoln, NE 68505-0342



Or e-mail newsletters to:
lgmc.editor@outlook.com

A color version of the Pick & Shovel is available at:
<http://www.lincolngemmineralclub.org/index.php/newsletters/current>

PICK & SHOVEL

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**This Editor is
a member of
Special Congress
Representing Involved
Bulletin Editors**

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

61st Annual Show Nebraska's Hidden Treasures April 6-7, 2019 (Show postcards are now available)



Logan completed the units needed to graduate to **Rockhound** in the Future Rockhounds of America program



Mia graduated to the status of **Rockhound**. She also has graduated from a Junior to an Adult.

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.