The Topeka Gem and Mineral Society, Inc.
1934 SW 30th St. Topeka, KS 66611
Rock2Plate@aol.com

THE GLACIAL DRIFTER

www.TopekaGMS or
Facebook: Topeka Gem and Mineral Society Field Trips

The Topeka Gem & Mineral Society, Inc.
Organized December 3, 1948

Member of Rocky Mountain Federation of Mineralogical Societies American Federation of Mineralogical Societies

The Glacial Drifter, Vol. 64, No. 3,
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The Purpose of the Topeka Gem & Mineral Society shall be exclusively educational and scientific: (1) to promote interest in geology and the lapidary arts; (2) to encourage the collection and display of rocks, gems, and minerals; (3) to encourage field trips and excursions of a geological, or lapidary nature; and (4) to encourage greater public interest and education in gems and minerals, cooperating with the established institutions in such matters.

Meetings: 4th Friday of each month, September to May, 7:30 pm, University United Methodist Church, 1621 SW College, Topeka, KS 66604. No meeting in December unless notified of a change. Picnic meetings are held, June, July and August.

Dues: Individual, $15.00; Couple, $20.00; Junior (under 18 years of age), $5.00. Dues are collected in December for the following year. Send dues to: **Millie Mowry, Treasurer, 1934 SW 30th St, Topeka, KS 66611.**

www.TopekaGMS.org

2021 OFFICERS AND CHAIRS

President	Brad Davenport	379-8700	Cab of the Month	Debra Frantz/Fred Zeferjohn	862-8876
1st Vice Pres.	Will Gilliland	286-0905	Field Trip Coord.	Will Gilliland	286-0905
2nd Vice Pres.	Cinda Kunkler	286-1790	Publicity	TGMS Board	
Secretary	Stacy Haug	1-857-3350	Welcome/Registration	Harold Merrifield	633-9745
Treasurer	Millie Mowry	267-2849	Property	M. Cote/D. Dillon	220-3272
Directors	Chuck Curtis	286-1790	AFMS Scholarship	Cinda Kunkler	286-1790
	Francis Stockton	913-645-7677	Editor/Exchange Editor	Millie Mowry	267-2849
	Dave Dillon	272-7804	Show Chairman	Dave Dillon	272-7804
Historian	Open		Show Dealer Chairman	Dave Dillon	272-7804
Federation Rep	Chuck Curtis	286-1790	Show Secretary	Cinda Kunkler	286-1790
Corporation Agent	Millie Mowry	267-2849	Jr. Rockhound Leader	Jason Schulz	640-6617
Librarian	Millie Mowry	267-2849	Show Case Coordinator	Cinda Kunkler	286-1790
Web Master	Jason Schulz	640-6617			

Area Code for all numbers is (785).

EXCHANGE BULLETINS WELCOME

For exchange newsletters contact the club via mailing address listed above or email at rock2plate@aol.com .

Ramblings from your President.

Howdy Rocks!

Just as the Flint Hills are being burned off to renew fresh growth for the new season at hand, I am fired up to begin a new season and chapter in the life of the TGMS.

We will begin general meetings again on March 26th. We will also offer up the first Junior Rockhounds class on April 1st. Let's get the word out and kindle some excitement to all members and any new folks you may want to share this information with.

I also am trying to figure out how and when the Rock Crib and Silversmith shop will be open for use. The spaces are somewhat tight for all that want to be involved. We will have a discussion on the 26th as to how we might accomplish our goals of access and safety.

Potatoes and Peas should be planted next week and you have probably wandered through your seed catalogues with great excitement making plans. Make some plans to get excited about your club and what you would like to see it grow into in the next few months.

See ya on the 26th

Brad

We need your **BEST CHOICE UPC Labels** -- Bring them to the monthly meeting, and give them to Cinda Kunkler.

March 26 TGMS meeting program will be our Silent Auction. Please bring your extra rocks, jewelry, books, and any rock and gem related items for the silent auction. Proceeds will go to TGMS general fund. Please be thinking about what you might like to have for programs in the future, I look forward to hearing your thoughts! Hope to see you in March.
Cinda Kunkler

TGMS Event Calendar

Mar 2021			APR 2021		
1	M		1	T	Jr RHDs pending @ UUMC 6 p.m. sign in Class 6:30 p.m.
2	T		2	F	
3	W		3	S	
4	T		4	S	
5	F		5	M	
6	S		6	T	
7	S		7	W	
8	M		8	T	
9	T		9	F	
10	W		10	S	
11	T		11	S	
12	F		12	M	
13	S		13	T	
14	S		14	W	
15	M		15	T	
16	T		16	F	
17	W		17	S	
18	T		18	S	
19	F		19	M	
20	S		20	T	
21	S		21	W	
22	M		22	T	
23	T		23	F	
24	W		24	S	
25	T		25	S	
26	F	General Meeting 7:30 P.M. UUMC Program- Silent Auction	26	M	
27	S		27	T	
28	S		28	W	
29	M		29	T	
30	T		30	F	
31	W				

All Lapidary Classes are cancelled until Brad lets us know when the shop is safe to open.

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If you are interested in Wire Wrap Classes, contact Millie, 267-2849 or rock2plate@aol.com

Check out the calendar on our web site

www.TopekaGMS.org

JR ROCKHOUND Classes & Reminders

Here are reminders of the next few months of classes: **University United Methodist Church, 1621 SW College Ave., Topeka, KS.** Sign in starting at 6:00 pm and classes starting at 6:30pm. 1st Thursday of each month.

https://www.facebook.com/TopekaGMSJuniorRockhounds
To register for the Junior Rockhounds or any of the classes, email:
Jason Schulz at: Fleetcommander@att.net

---Everyone must wear masks!
Next Class: This will be pending……..
April 1, Brad Davenport, Instructor

Reminder: If you want to earn the patches from the classes that you have attended you need to turn in your homework assignments.

Rock & Mineral Quiz

1. What kind of gem was the "Star of South Africa"?
2. From which zone of the earth do most rocks and minerals come?
3. Amethyst is a purple variety of which mineral?
4. Why is granite a "rock"?
5. How does halite taste?
6. How do igneous rocks form?
7. Which is the most common Volcanic rock?
8. What is natural volcanic glass called?
9. Which kind of rock contains the largest crystals?
10. Which kind of rock comes from outer space?
11. Which large American river is known as "old Muddy"?
12. Which is the most common mineral found in sand?
13. What is the coloring matter in most sandstone?
14. Why is itacolumite a peculiar rock?
15. Which gem is sometimes found in itacolumite?
16. Which sedimentary rock is used to make plaster?
17. Which sedimentary rock is used to make cement?
18. Which grows from the ceiling of a cave, a stalactite or a stalagmite?
19. What is the scientific name for "hard coal"?
20. Where is the best known petrified forest?

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(Answers are on page: 8)

2021 National Youth Poster Contest: "Rockin' Around the USA"

By Michelle Cauley & Jim Brace-Thompson, AFMS Junior Programs Chair

Calling all artists! The North Lakes Academy Rockhounds of the Midwest Federation of Mineralogical and Geological Societies is hosting a National Youth Poster Contest. It is open to any kids in 1st through 8th grade across all seven AFMS regional federations and beyond. The theme is "Rockin' Around the USA." Participating kids should pick a rock or mineral found in the USA that they are passionate about, create a poster about it, and provide a brief explanation of why they like that particular rock so much. OR they can pick a location in the USA where they LOVE to go rockhounding and craft a poster around that while providing a brief write-up about where it is, what they have found, and why others should go there.

Posters will be judged by grade level with ribbons and prizes awarded for 1st through 5th place in each grade. Overall Champions will also be selected and will receive a prize.

Here are the rules:

- All entries must be presented on 12"X18" paper.
- Include name, address, and school grade of participant on BACK of the poster.
- A title should be on the FRONT of the poster.
- Artwork can be done by pen, ink, crayons, magic markers, paint, print, photography or any other artist's medium, but no three dimensional posters will be accepted.
- Accompany the poster with the background information requested in the 1st paragraph above.
- Posters will not be able to be returned.
- Posters postmarked after the deadline will not be accepted. (Please allow a week for mailing.)
- All entries become property of the North Lakes Academy Rockhounds and AFMS.

Judges will award points as follows

- 30 points for originality and art work
- 10 points for title (including theme organization, design, spelling, grammar)
- 20 points for background information, facts, and details provided.

Posters and accompanying background info should be sent to

Michelle Cauley
c/o North Lakes Academy Rockhounds
4576 232nd Street North
Forest Lake, Minnesota 55025

Entries must be postmarked by May 1, 2021. Direct any questions to Michelle by email at mcauley@northlakesacademy.org and see further contest information on the AFMS website at http://www.amfed.org/kids.htm

Pseudomorphs

by Shannon Phillips

Since I became aware of them, I have been curious about pseudomorphs. The idea that minerals can be so tricky - changing from one substance to another without a change in form - perplexes me. Through my own experiments of dissolving alum and borax to grow crystals and melting bismuth to grow them as well, I understand how minerals in solution can form when they leave the water and how minerals in anamorphous form can rearrange their structure as a result of introducing heat. From baking I have a general idea of how crystals of sugar dissolve and become part of a conglomeration. In fact, the only 'A' I ever earned in high school chemistry was in the lab experiment where we made fudge. What I don't understand is how a mineral can essentially become another mineral while retaining the shape of the original instead of growing into its own.

Some of the easiest pseudomorphs to understand are those created by replacement. Petrified wood, for example, is formed when silica-rich water permeates the structure of the wood, replacing the organic plant cells with silicates that retain the cellular structure of the plant. Pseudomorphs created by this method closely resemble the form of the original. When an existing mineral becomes flooded with a mineral in solution, the original mineral is gradually removed and replaced through exposure to the material in the solution.

What's more difficult to comprehend is how some elements of an existing mineral are removed, exchanged, and replaced to produce a new mineral in the original's form. In an attempt to understand this process of alteration, I found myself entangled in a thicket of scientific journals. From this reading, I gathered that alteration can occur as a result of the introduction of water, heat, and pressure. In the ordinary cycling of water through our atmosphere, it is exposed to atmospheric agents, such as carbonic acid, and to any number of contaminates on the Earth's surface that imbue it with the power to cause chemical reactions. Repeated exposure to water can change even the most stable substances over long periods of time as they are exposed to minerals in solution. Metamorphosis can also be caused by the heat and pressure from the Earth's core. Based on my reading, I believe that water is nearly always involved in this process, too. The combination of heat and water hastens the chemical reaction, as does pressure. The combination of the three makes replacement even faster.

Infiltration and incrustation are easier to comprehend. Infiltration occurs when a mineral trapped in a host substance such as rock or clay dissolves and another mineral fills in the space, thus retaining the shape of the original mineral. An example of this type of replacement occurs close to home when hopper-form (sometimes called elestial) clay crystals were discovered where salt crystals had been removed by solution from the red marl of the Onondaga salt region. Incrustation is the coating of one mineral by another. The surface of the original is covered with a new mineral and may erode over time, which creates some very strange and interesting shapes. In Essex County, New Jersey, there are fine examples of quartz after glauberite. Glauberite is a very soft mineral that is easily dissolved, creating conditions that allow the quartz that coated it to retain its characteristic bipyramidal shape.

Pseudomorphs are sometimes they are so similar to the original that it takes a trained eye to tell them apart. More often, they have marked differences in color. As crystal systems change with replacement, so do hardness and cleavage. The internal structure of the mineral changes although the external structure remains the same. Some common pseudomorphs are malachite after azurite, in which the number of copper atoms is changed and hematite after pyrite, which is caused by atmospheric heat. There is no simple answer in determining how the many pseudomorphs found world-wide were formed. Each one contains clues to its particular formation, but there are few general assumptions to be made about these transformations. I have as many questions now as I did when I started, but have a clearer understanding of the generalities of pseudomorphism, and I hope I have elucidated the topic for others.

References

• Blum, D. Reinhard (1845). On Pseudomorphous Minerals. In J. Dana (Ed.), American Journal of Science (Vol. 48). New Haven, CT: B.L. Hamlen.

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• Holt, A. (2006, November 26). Pseudomorphs: The False Form Minerals. Retrieved October 8, 2015.

• The Mineral Glauberite. Retrieved October 8, 2015from Minerals.net

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Via Crack 'N Cab, 10/15; via WGMS April 2020

Barite

Barite from Rosh Pinah, Namibia.
± 20 cm X 13 cm X 13 cm Specimen and photos – J de Jongh

Crystal system: Orthorhombic Hardness: 2.5 - 3.5
Density: 4.5 average Cleavage: very good
Streak: white
Colour: Colourless, white, blue, red, yellow, orange, pink, purple, brown gray, black and green. May also be multi-coloured and banded.
Occurrence: It most often occurs in hydrothermal veins, lead-zinc veins in limestones and with hematite ore.
Habitat: It is usually found as colourless or massive mineral, but may form prismatic or tabular crystals as well as fibrous masses and granular aggregates.
Composition: sulfate $BaSO_4$

There is a well-known song of which the lyrics go something like “He ain’t heavy he’s my brother”. The mineral of the month, however, is in fact very heavy and it is my barite.

The barite group consists of barite, celestine, anglesite and anhydrite. Barite itself is generally white or colourless, and is the main source of barium. The name barite is derived from the Greek word “baryos” meaning heavy. It fluoresces in a variety of colours and sometimes it is also phosphorescent.

Barite is the main ore of the element barium. It is used in the manufacturing of paints, paper and rubber and also as added-value an immensely popular mineral among collectors. Barite is easily identified by its heavy weight, since most similar minerals are much lighter. It often replaces other minerals, and may even replace organic materials such as wood, shells and fossils. It sometimes even forms mounds from deposition of hot, barium-rich springs. It has also been identified in meteorites.

Barite specimens from certain localities are brown from sand inclusions and may occur in beautiful rosette aggregates that strikingly resemble a flower. These are known as barite “desert roses”. The mineral gypsum also forms similar desert roses, but they are much lighter in weight, and are more brittle and thin.

Barite is a very common mineral and is found in thousands of localities in too many countries to mention. Southern Africa localities include South Africa, Namibia, Zimbabwe, Botswana, and Swaziland.

The largest barite crystals in the world came from the Elandsrand gold mine near Carletonville in Gauteng. These attractive, amber-coloured crystals were discovered in 1997 in a cavity 2600 m below the surface, associated with quartz, galena, carbon and pyrite. The largest known crystal from this locality and, therefore, most probably also in the world, is 70 cm x 30 cm and weighs 64 kg and is on display in the mine office. A picture of this huge crystal can be seen on page 45 of Bruce Cairncross’s book, “Field Guide to Rocks & Minerals of Southern Africa”. Barite has also been found in other Witwatersrand gold mines such as the Kopanong mine.

Barite is also relatively common mineral in the Kalahari manganese fields. The barite is white or colourless, but may be pale yellow. Finds of large barite crystals up to 16 cm long have been reported from the Wessels mine.

The famous Tsumeb mine also produced chocolate-brown tabular crystals, some up to 10 cm long.

In my opinion the premier locality for aesthetic barite crystals are strangely enough not from either of the latter two world famous localities, but from the Rosh Pinah mine in the Luderitz district, 20 km north of the Orange River, Namibia. The sulfate deposit has been mined since 1969. The colour of the best specimens is a rich golden orange and large crystals over 4 cm long are arranged in radiating sprays up to 30 cm in diameter and were found in 1989. Some "floater" specimens are composed of complete 3600 discs resembling Aztec suns. The finest specimens have the barites crystals on matrix - JDJ.

References

Cairncross, Bruce, (2004) – Field Guide to Rocks & Minerals of Southern Africa.
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http://www.geology.com/
http://www.minerals.net/
http://www.webmineral.com/
http://www.wikipedia.org/
http://ctminsoc.org.za/articles.php; via WGMS Jan 2014

……Answere to the Quiz……..

1. **A large diamond.**
2. **The outer zone, called the crust.**
3. **Quartz.**
4. **Because it consists of several different minerals.**
5. **Salty. It is the mineral used as common table salt.**
6. **By the cooling of molten rock.**
7. **Basalt.**
8. **Obsidian.**
9. **Pegmatite.**
10. **Meteorites.**
11. **The Missouri River.**
12. **Quartz.**
13. **Iron.**
14. **Because it bends.**
15. **Diamond.**
16. **Gypsum.**
17. **Limestone.**
18. **A Stalactite.**
19. **Anthracite.**
20. **Arizona.**