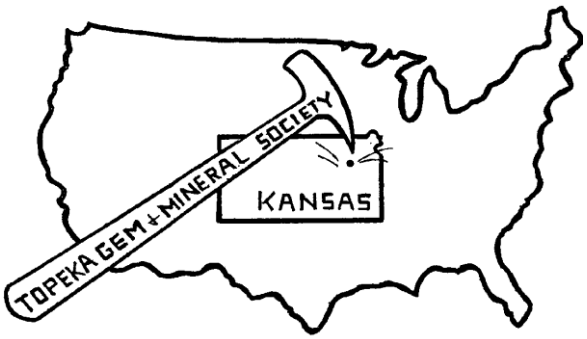
The Topeka Gem and Mineral Society, Inc.
1934 SW 30th St. Topeka, KS 66611
Rock2Plate@aol.com

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. 4,
April 2021

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
1st Vice Pres.	Will Gilliland	286-0905
2nd Vice Pres.	Cinda Kunkler	286-1790
Secretary	Stacy Haug	1-857-3350
Treasurer	Millie Mowry	267-2849
Directors	Chuck Curtis	286-1790
	Francis Stockton	913-645-7677
	Dave Dillon	272-7804
Historian	Open	
Federation Rep	Chuck Curtis	286-1790
Corporation Agent	Millie Mowry	267-2849
Librarian	Millie Mowry	267-2849
Web Master	Jason Schulz	640-6617

Cab of the Month	Debra Frantz/Fred Zeferjohn	862-8876
Field Trip Coord.	Will Gilliland	286-0905
Publicity	TGMS Board	
Welcome/Registration	Harold Merrifield	633-9745
Property	M. Cote/D. Dillon	220-3272
AFMS Scholarship	Cinda Kunkler	286-1790
Editor/Exchange Editor	Millie Mowry	267-2849
Show Chairman	Dave Dillon	272-7804
Show Dealer Chairman	Dave Dillon	272-7804
Show Secretary	Cinda Kunkler	286-1790
Jr. Rockhound Leader	Jason Schulz	640-6617
Show Case Coordinator	Cinda Kunkler	286-1790

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.

Good day one and all. I hope everyone is enjoying this spring. I see farmers out preparing and planting their fields. I need to start mowing out here but my mower is still in the shop. I am going to start spraying the ever-present weeds. Burning is done and the multiple shades of green are a pleasant site.

Also pleasant, is seeing club members getting out and involved in the TGMS activities. We had about 27 members attend our general meeting on the 26th of March. We had 5 juniors show up for our first class on April 1st. Last Tuesday we had 8 folks show up for shop time last Tuesday. I hope to see at least that many here tonight.

Come the first of June we are going to start charging everyone a set fee for the use of the shop facilities. We have many items we use out here that have to be replaced on a regular basis. Some of these items would include Acetylene for soldering, jewelry saw blades, files, assorted chemicals, rock saw blades, grinding wheels, polishing pads and papers, paper towels and so on.

Rather than charging every member a set fee, we will only be charging those who actually are using the shops. For now, subject to change, there will be a $5.00 fee for everyone that shows up on Tuesday nights. If you still just want to come out for our bull sessions feel free for free.

Some clubs I see have some pretty steep fees for using their facilities. One club I see is charging $125 for their silversmithing classes. Your board doesn't see this as reasonable and we want to see this as a fair and equitable offering to all involved. If your name is still in the jar for silversmithing classes you will be grandfathered in.

Our membership numbers are down considerably over last year and our financial bottom line is in poor shape. We are doing the best we can to keep offering each and every one of you what you have been accustomed to. We are looking at other ideas for funding as we discussed at last month's meeting. If you have ideas, please offer them up.

We intend to start setting up at some events for recruiting and some type of sales. Such things as farmers markets, first Friday walks and days in NOTO. This will require some involvement from members to man tables or booths. Please help us. Details are in the works. Don't be shy. Step up and volunteer beforehand so we know our ideas can be implemented without waiting till the last moment. The same few people have been doing the heavy lifting for a long time and we need help.

Please support your club.

Brad

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

TGMS Event Calendar

Apr 2021			MAY 2021		
1	T		1	S	
2	F		2	S	
3	S		3	M	
4	S		4	T	Brad's Shop OPEN 6 PM Wear Masks, have shots
5	M		5	W	
6	T		6	T	Jr RHDs pending @ UUMC 6 p.m. sign in Class 6:30 p.m.
7	W		7	F	
8	T		8	S	
9	F		9	S	**MOTHR'S DAY**
10	S		10	M	
11	S		11	T	Brad's Shop OPEN 6 PM Wear Masks, have shots
12	M		12	W	
13	T	Brad's Shop OPEN 6 PM Wear Masks, have shots	13	T	
14	W		14	F	
15	T		15	S	
16	F		16	S	
17	S		17	M	
18	S		18	T	Brad's Shop OPEN 6 PM Wear Masks, have shots
19	M		19	W	
20	T	Brad's Shop OPEN 6 PM Wear Masks, have shots	20	T	
21	W		21	F	
22	T		22	S	
23	F	General Meeting 7:30 P.M. UUMC Program- Jason Shulz- TBA	23	S	
24	S		24	M	
25	S		25	T	Brad's Shop OPEN 6 PM Wear Masks, have shots
26	M		26	W	
27	T	Brad's Shop OPEN 6 PM Wear Masks, have shots	27	T	
28	W		28	F	General Meeting 7:30 P.M. UUMC Program-TBA
29	T		29	S	
30	F		30	S	
31			31	M	MEMORIAL DAY

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……..
MAY 6, 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.

April 23rd TGMS meeting program will be presented by Jason Schulz. The subject is to be announced. The March Silent auction brought in $203.75, thanks to all who participated! Hope to see you all there! Please continue to wear your masks. Just a reminder, please let me know if you have any suggestions for what type of program you would like for us to have

Cinda Kunkler cindakunkler@att.net

New Member & Renewal

Mary McCoy marymccoy2000@att.net
Roger Petefish roger_petefish@yahoo.com

Marlekor or Imatra Stones
By Lawrence H. Skelton, Geologist
Wichita, Kansas

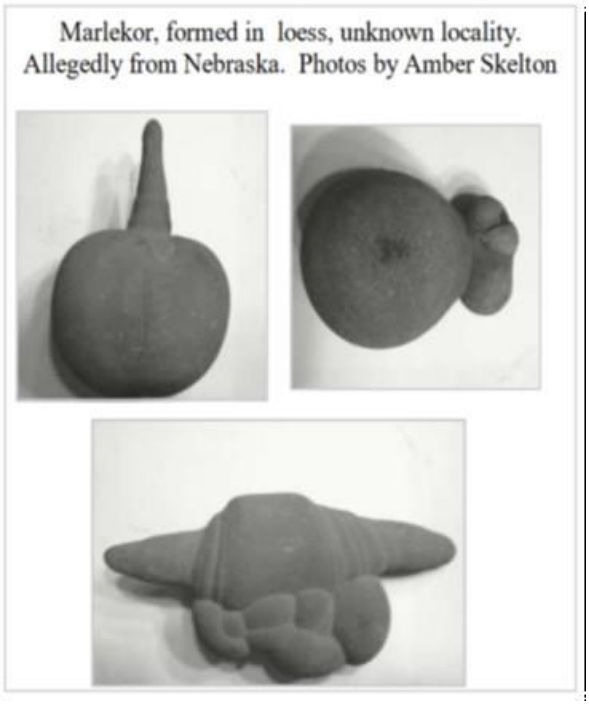
Imatra stones, which owe their name to the Imatra cascade on the Vuoska River in Finland, are unique concretions which exhibit bizarre shapes. They inevitably occur within glacially deposited sediments including marl, loess, and clay deposits. Depending on location, the name varies: nackebrod in Sweden, fairy stones (Scotland), lossmannchen, losskindel, or losspuppen (Germany) and mud babies or clay dogs in Connecticut. A name often found in geology texts is marlekor stones, a Swedish term meaning "marl cows." Marlekor were first noted in the United States in 1670 in clay beds along the Kennebunk River in Maine. John Winthrop, Jr. then Governor of the Connecticut Colony and elected Fellow of the Royal Society described what may be the Maine marlecor and sent specimens to Lord William Brereton in England.

A concretion as defined in the AGI ***Dictionary of Geological Terms*** is: "A nodular or irregular concentration of certain authigenic [generated on the spot] constituents of sedimentary rocks; developed by the localized deposition of material from solution, generally about a central nucleus. Harder than the enclosing rock." Marlekor seem to differ from the definition in that they generally lack a central nucleus, a finding first reported by Raphael Liesegang, a German colloid chemist. However, marlecor formed around fish remains have been found in glacially deposited clays in Greenland and Norway and the late W. C. Palmer, an amateur mineralogist of Milford, Connecticut told the author that marlekor collected from the Connecticut River Valley occasionally have organic particles in their centers.

Chemical analyses of Connecticut River Valley marlekor show them to range from 42% to 57% calcium carbonate (calcite), figures which correspond to earlier German analyses which ranged from 40% to 66% calcite. These figures agree with findings of W. A. Tarr and W. H. Twenhofel that calcite is the chief material composing those concretions found in shale, claystone, loess and sandstone. The remainder of the concretion consists of silt and clay or sand particles cemented by the calcite.

Marlekor are found throughout the world; in North America in addition to the Connecticut River Valley, they occur in selected clay pits in northern New Jersey, along the shores of the Harricane River at Abitibi, Quebec, along the Skykomish River, Washington and on the south shores of Lake Superior. They are said to occur in some location in Nebraska although this has not been confirmed. In Asia, marlekor have been reported in loess deposits in China and in glacial lake sediments along the Chukotka River in northeastern Siberia. In Europe, they occur in glacial polar sea clays in harbors of Greenland and Norway. Interestingly, these marlekor contain an organic core, remains of the fish Mallotus. Marlekor occur at several sites in Argentina: Pleistocene age concretions are found at Lago Ghio in Patagonia and in the Caluhaqui Valley in Salta, northwestern Argentina where they occur in clays deposited in intermontane lakes. The clays probably were formed by mountain glaciers abrading bedrock.

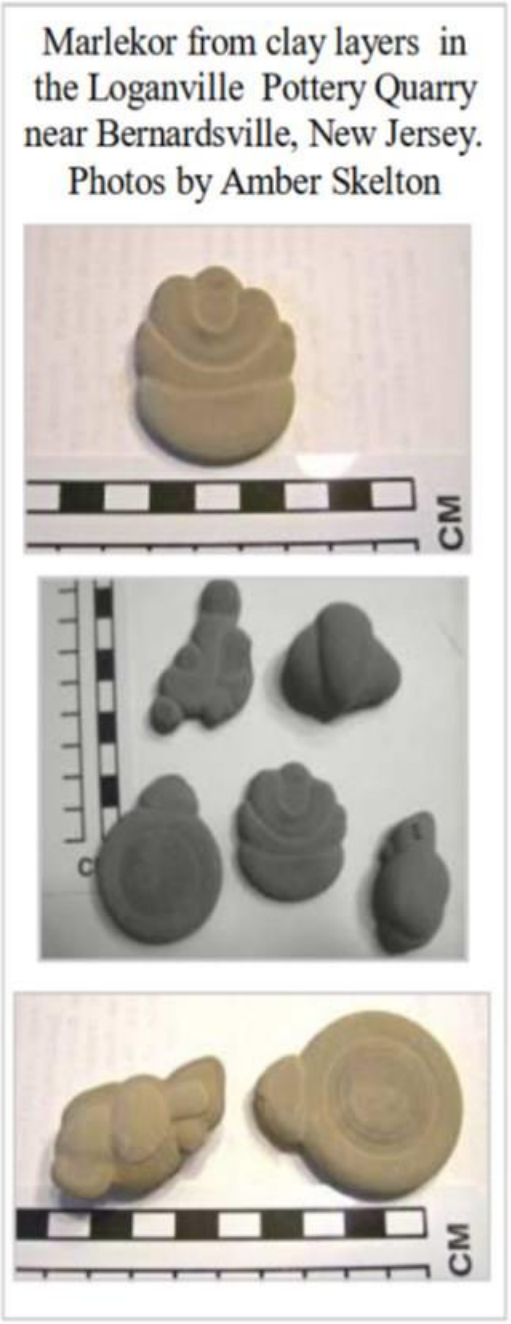
An interesting and unusual marlekor-bearing site is in north-western San Luis province in west-central Argentina. As elsewhere in the world, the marlekor concretions are in glacio-lacustrine clay and silt beds (Pullero member of the Bajo de Veliz Formation) but in this location, the beds are of Permian (Samarkian) age, about 282 million to 269 million years old, a time range confirmed by fossil pollen and spore analysis. (Strata of the same age are present in Kansas: the Wellington and Ninnescah Formations in Sedgwick County being local examples. The Permian sea was shrinking locally (as shown by the presence of the Hutchinson Salt and red beds of south-central Kansas) because of continental glaciation in southern Gondwana (which included present South America.) Marlekor have been reported also in India (another site for Permian glaciers) and in loess deposits in China. The German-language names (above) indicate that they occur in Germany. Marlecor may be found in the glacial clay deposits along the Rakaia River on the South Island of New Zealand. Indeed, they may be expected to occur in any glacier-sourced, fresh-water deposited clay or silt.



Marlekor, formed in loess, unknown locality. Allegedly from Nebraska. Photos by Amber Skelton

How are these oddly-shaped concretions formed? A vast majority of marlekor are cemented by crystallization of calcite

(CaCO3) but a few are cemented by oxides of iron, aluminum or manganese. The calcite originates in glacial debris gathered from bedrock scoured by moving ice. The marlekor concretions are distinctive according to their locality. They are concentrated in random varves (seasonal layers) and W.A. Tarr considered that varves deposited in warmer weather (summer) would contain a greater abundance of concretions than their winter counterparts. Cold winter water holds greater amounts of carbon dioxide (CO2) than warmer water. When summer arrived, the warmer waters lost CO2 which, reacting with calcium, caused precipitation of the calcite. In summer, the upper layers of water reach the saturation point of calcite and crystallization and concretion formation takes place in the shallow upper layers where silt and sand particles of sediment are coarser. Quirke compared contents in the zone of concretion formation to "slip," the fluid clay used by ceramicists. That would explain the sometimes flowing shapes of the marlekor. Evidence for shallow water is present in the form of ripple marks where marlekor often are concentrated.



During winter, the smallest suspended particles settle out and form a fine-grained varve which seals the summer layer. This process continues annually and provides a method of dating such lake sediments by counting the seasonal varves. Whether concretions form depends on water temperature and CO2 concentration. Since weather is not a constant, marlekor presence is not confined to regular warm-weather varves but is random in vertical extant.

Dissolved calcite is carried by groundwater through the coarser sediments. The flow is not constant but waxes and wanes which explains the concentric forms of many marlekor. Since the porous summer varves sit on impervious winter sediments, the concretions are flat on the bottom. Depending on the distance between adjacent concretions and the concentration of dissolved calcite in the groundwater, the concretions may grow toward each other and coalesce making ovals or dumbbell shapes or forms with various projections. Any projections are usually in the same plane as the rest of the concretion although occasionally, "warts" are formed on the upper surface but remain within the surrounding sediment. Since the concretions form in each year's top layer, they are contemporaneous with the forming of that layer and stratification lines continue from the surrounding sediment through the concretion which forms in the more porous spots.

The similar isolated concretions occurring in loess form in a similar manner. Loess is non-stratified, formed principally of silt-sized particles and may occur in quite thick beds. Groundwater moving downward from the surface toward the water table, becomes saturated with CaCO3 from the silt particles. As it passes thru more porous zones within the loess, the calcite precipitates and cements loess particles together into rounded or very irregularly shaped concretions. The descending water, less some calcite content, continues downward to the water table. Such concretions are referred to in China as "stone ginger" (from the shape of a ginger root) in and as "muñequitas de tosca" or "tosquillas" in Argentina respectively meaning "clumsy little dolls" or "little clumsies."

Concretions in general are fascinating artifacts of nature. Marlekor are in many aspects the most intriguing of all and have interested people of all callings. The Russian composer, Peter Tchaikovsky, kept a handful on top of his desk. Who knows what chords were inspired by his viewing of them?

Recommended reading

• Bassler, R. L., 1935. "**Concretions – Freaks in Stone**" in Smithsonian Report for 1935, pp. 321 – 326.
• Quirke, T. T., 1917. **Espanola District, Ontario**: PhD dissertation, University of Chicago, reprinted by Canadian Department of Mines, Geological Survey, Memoir 102.
• Sheldon, J. M. A., 1900. **Concretions from the Champlain Clay of the ConnecticutValley: Boston**, The University Press, John Wilson & Sons.
• Tarr, W. A., 1935. "**Concretions in the Champlain Valley Formation of the Connecticut River Valley**": Geological Society of America, Bulletin Vol. 46, pp. 1493 – 1534.
• Twenhofel, W. H., 1932. **Treatise on Sedimentation: Baltimore**, Williams & Wilkins Company, 926p.

Via Quarry Quips, 12/10; via WGMS Apr 2020

Fluorite Gemstones and Minerals

Fluorite is one of the most fascinating minerals in the world, with many intriguing properties. It is a material with important industrial applications, as well as a great favorite of mineral collectors. It is also popular as a gemstone, though it has to be cut, set and worn with care.

In fact fluorite is such a special mineral that it was the official theme of the Tucson Gem & Mineral Society at the Tucson gem show in 2013.

By chemical composition, fluorite is calcium fluoride. It is an isometric mineral that usually forms in cubic crystals, though octahedral and more complex isometric forms are seen as well.

Because fluorite produces well-formed crystals in several different habits, interesting specimens are very popular with collectors. Cubic crystals are the most recognized, followed by the octahedral.

Fluorite has perfect octahedral cleavage with 4 identical directions of cleavage, and cleaved fluorite octahedrons can be found in many mineral shops.

Another distinctive characteristic of fluorite is the fluorescence that it displays under ultraviolet light. In fact fluorite was one of the first fluorescent minerals studied, and the very term *fluorescence* comes from "fluorite." The visible light emitted is most commonly blue, but red, purple, yellow, green and white also occur. The fluorescence of fluorite is thought to be due to mineral impurities in the crystal lattice.

Fluorite has generated interest as a gemstone because of its wide range of colors and its attractive luster. Fluorite is found in nearly every color, ranging from purple and blue to green, yellow, orange, red, pink and brown. Banded multicolored specimens are common, and a color-change variety is rare but known. The color-change can be well-defined, typically showing a change from blue under natural light to purple under incandescent light.

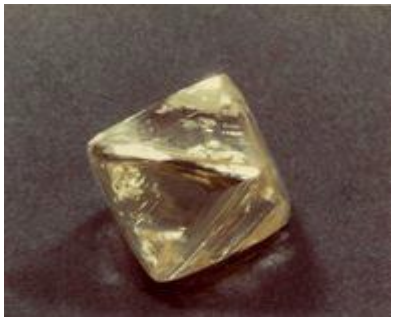
Because fluorite is a relatively soft material -- rating on 4 on the Mohs scale -- it is suitable mainly for earring and pendants. It can be challenging to cut because of its perfect cleavage and it has to be handled carefully when set in jewelry.

http://www.ajsgem.com/articles/fluorite-gemstones-and-minerals.html; via WGMS June 2019

Working together works!

THE COLENSO DIAMOND

Fred Plesner, Curator Emeritus



The story of the Colenso Diamond begins with tragedy and ends in a mystery. The Colenso diamond was one of the earliest diamonds of note to be found in South Africa. The Colenso diamond is an uncut octahedral crystal that weights 133.145 carats and is a pale yellow in color.

The story begins with a storekeeper and two partners, all unnamed, who invested 2,000 pounds for a mining claim in 1883. The three partners began digging on their claim and after having very little success the store owner and one of the partners left the diggings. The third partner remained and continued digging. Unfortunately, the workings collapsed and the third partner was buried alive.

After several months the store owner returned to the mine to retrieve the body. During the retrieval process he found several loose diamonds, among them was the Colenso diamond. He brought the diamonds to London, England and sold the Colenso diamond to R. C. Nockold, a well known precious stone dealer, with a good reputation.

John Ruskin was an author, art critic, social reformer and voice for good taste in Victorian England. He was also a friend and frequent visitor to Mr. Nockold's shop. Mr. Nockold sent a note to Mr. Ruskin informing him of the recent arrival of an important piece of stock. John Ruskin mis-read the note and was expecting to see a 13 carat diamond not a 133 carat stone. Ruskin had been advising people to wear their diamonds uncut. He was captivated by this large stone and purchased it for 1,000 pounds.

John Ruskin founded and was a member of the Guild of Saint George. Fanny Colenso was and early member of the Guild and the diamond was named after her. John Ruskin was also friends with the Keeper of Minerals in the British Museum. In 1887 he presented the Colenso diamond to the British Museum with the conditions that it remain uncut and be placed on public display with the following inscription:

The Colenso diamond remained on public view for 78 years until the night of 25 April 1965 when it was stolen when intruders broke into the Natural History Museum and made off with it. Some six months later David John Knight was arrested for the crime. David Knight lived in the residence of the Victoria and Albert Museum with his stepfather who was the head warder of that institution. He claimed to be watching "Tamla Motown" on television when the robbery occurred.

He was eventually convicted on evidence presented by Detective-Sergeant G. Harris who testified that Knight had confessed "All right, I nicked the diamond, the Colenso diamond, it is called for your information." Knight later said that the diamond had been shipped to Denmark. He was sentenced to three years in jail and later claimed that he had been framed by the police,

So, the mystery. Where is the diamond, Who has it, Has it been cut and who paid for this nefarious deed?

(The Mountain Gem June 2019)