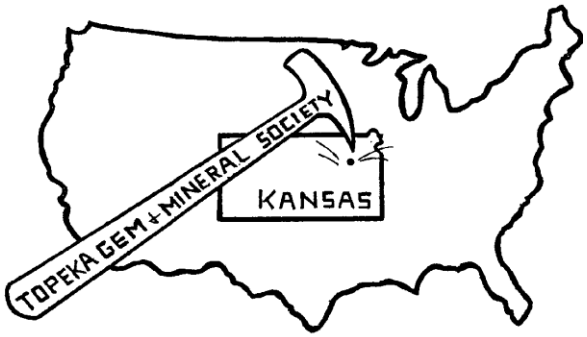
The Topeka Gem and Mineral Society, Inc.
1934 SW 30th St. Topeka, KS 66611
Rock2Plate@aol.com

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. 62, No. 10,
Oct. 2019

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, Stoffer Science Hall, Room 138, Washburn University. 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

2019 OFFICERS AND CHAIRS

President	Mike Cote	220-3272
1st Vice Pres.	Dave Dillon	272-7804
2nd Vice Pres.	Cinda Kunkler	286-1790
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Federation Rep	Harold Merrifield	633-9745
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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

Words from Our Top Rock!

I hear that all went well at the show this year without me. Sorry I just could not make it. The nomination committee has turned in their list of candidates for the next years slate of Officers and they are:
Pres: Brad Davenport; Vice Pres: Will Gilliland; Secretary: Stacy Haug; Directors: Frances Stockton & George Reed. Ballots will be available at next month's meeting.
Lessons at the Barn need to be postponed for a while yet because Vicky might be coming home this Friday.
We learned that Fred Zepherjohn did not have a stroke, but a seizure. They are both home now and doing well even thou Fred cannot drive for 6 months.

Mike Cote`

Program for the Meeting on October 25th.

We will finally get to present Dr Matthew E Brueseke his AFMS 2018 Honorary Award from the Rocky Mountain Federation of Mineralogical Societies, for distinguished achievement in the field of earth sciences. The AFMS Scholarship recipients for 2018 selected by Matthew are: Emily Fenner and KayLeigh Rogers. Both of the recipients were able to attend our 2019 Annual TGMS Show on Saturday October 12, 2019.

Dr. Matthew E. Brueseke, Associate Professor and Director of Graduate Studies, will give a presentation on:

Miocene epithermal gold and silver deposits in the northern Great Basin (U.S.A.): bonanza ores linked to the Yellowstone hotspot

Emily Fenner, one of the scholarship recipients, may talk a bit about her project and how it relates to gold and silver deposits. They may also bring over samples of the high-grade ore that has been historically mined in that region (of ID and NV also) - Gold and Silver in the Owyhee mountains region overview of what they have been doing in Idaho.

Cinda K.

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

Welcome our new members.

Dorethy Hancock
Nancy G. Grago
Terry & Barbara Stearman
Dennis & Dort. Goodman
Adam & Tiffany Dougan,
w/*Larry & *Samuel Dougan
Chris Hamilton
Cheryl Molter

JR ROCKHOUND Classes & Reminders

Here are reminders of the next few months of classes: Topeka Shawnee CO Public Library sign in starting at 6:00pm 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

- Nov. 7, 6 – 8:45 p.m., Marvin Auditorium 101C, TBA
- Dec, 5, 6 - 8:45 p.m., Marvin Auditorium 101C, TBA

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

Winners from our Cab of the Month Contest for September.

A special thanks to all the hard working people that worked at the 63rd annual TGMS Show. It has been a very trying year for all of us with all the health issues that not only our spouses have as well as ourselves. The show would not of ben a great success without your help. You all deserve a big pat on the back. THANK YOU!

TGMS Event Calendar

OCT. 2019		NOV. 2019	
1T		1F	
2W		2S	
3T		3S	
4F		4M	
5S		5T	NO LESSONS AT THE BARN
6S		6W	
7M		7T	Jr Rockhounds TSCPL rm 101C NO-Wire Wrap Class @ Millie's
8T		8F	
9W		9S	
10T		10S	
11F		11M	
12S		12T	NO LESSONS AT THE BARN
13S		13W	
14M		14T	Wire Wrap Class @ Millie's 1-3 p.m.
15T		15F	
16W		16S	
17T	Wire Wrap Class @ Millie's 1-3 p.m.	17S	
18F		18M	
19S		19T	NO LESSONS AT THE BARN
20S		20W	
21M		21T	Wire Wrap Class @ Millie's 1-3 p.m.
22T		22F	General Meeting Washburn Stauffer Hall rm 138, 7:30 p.m
23W		23S	
24T	Wire Wrap Class @ Millie's 1-3 p.m.	24S	
25F	General Meeting Washburn Stauffer Hall rm 138, 7:30 p.m	25M	
26S		26T	
27S		27W	
28M		28T	Thanksgiving Day - NO Classes
29T		29F	
30W		30S	
31T	HALLOWEEN---NO WIRE CLASSES		

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

LESSONS AT THE BARN ARE WEATHER PERMITTING – Watch for emails

FIELD TRIP COMING UP IN OCTOBER.

Check out the calendar on our web site
www.TopekaGMS.org

TOURMALINE

Wikipedia

Tourmaline (/ˈtʊərməliːn/ ***TOOR-mə-leen***) is a crystalline boron silicate mineral compounded with elements such as aluminium, iron, magnesium, sodium, lithium, or potassium. Tourmaline is classified as a semi-precious stone and the gemstone comes in a wide variety of colors. According to the Madras Tamil Lexion, the name comes from the Sinhalese word "Thoramalli" (තෝරමාලි) or "tōra- molli", which is applied to a group of gemstones found in Sri Lanka. According to the Madras Tamil Lexicon, the Tamil "tuvara-malli" (□□□□□□□□□□) and Toramalli are also derived from the Sinhalese root word. This etymology is also given in other standard dictionaries including the Oxford dictionary.

History

Brightly colored Sri Lankan gem tourmalines were brought to Europe in great quantities by the Dutch East India Company to satisfy a demand for curiosities and gems. At the time it was not realised that schorl and tourmaline were the same mineral (it was only about 1703 that it was discovered that some colored gems were not zircons. Tourmaline was sometimes called the "Ceylonese [Sri Lankan] Magnet" because it could attract and then repel hot ashes due to its pyroelectric properties.

Tourmalines were used by chemists in the 19th century to polarize light by shining rays onto a cut and polished surface of the gem.

Species and varieties

Commonly encountered species and varieties:

- Schorl species:
  - Brownish black to black—schorl
- Dravite species: from the Drave district of Carinthia
  - Dark yellow to brownish black—dravite
- Elbaite species: named after the island of Elba, Italy
  - Red or pinkish-red—rubellite variety
  - Light blue to bluish green—Brazilian indicolite variety (from indigo)
  - Green—verdelite or Brazilian emerald variety
  - Colorless—achroite variety (from the Greek "άχρωμος" meaning "colorless")

The most common species of tourmaline is **schorl**, the sodium iron (divalent) endmember of the group. It may account for 95% or more of all tourmaline in nature. The early history of the mineral schorl shows that the name "schorl" was in use prior to 1400 because a village known today as Zschorlau (in Saxony, Germany) was then named "Schorl" (or minor variants of this name). This village had a nearby tin mine where, in addition to cassiterite, black tourmaline was found. The first description of schorl with the name "schürl" and its occurrence (various tin mines in the Saxony Ore Mountains) was written by Johannes Mathesius (1504–1565) in 1562 under the title "Sarepta oder Bergpostill". Up to about 1600, additional names used in the German language were "Schurel", "Schörle", and "Schurl". Beginning in the 18th century, the name *Schörl* was mainly used in the German-speaking area. In English, the names *shorl* and *shirl* were used in the 18th century. In the 19th century the names *common schorl*, *schörl*, *schorl* and *iron tourmaline* were the English words used for this mineral.

Continued on next page:

Dravite, also called brown tourmaline, is the sodium magnesium rich tourmaline endmember. Uvite, in comparison, is a calcium magnesium tourmaline. Dravite forms multiple series, with other tourmaline members, including schorl and elbaite.
The name **dravite** was used for the first time by Gustav Tschermak (1836–1927), Professor of Mineralogy and Petrography at the University of Vienna, in his book *Lehrbuch der Mineralogie* (published in 1884) for magnesium-rich (and sodium-rich) tourmaline from village Dobrova near Unterdrauburg in the Drava river area, Carinthia, Austro-Hungarian Empire. Today this tourmaline locality (type locality for dravite) at Dobrova (near Dravograd), is a part of the Republic of Slovenia.[7] Tschermak gave this tourmaline the name dravite, for the Drava river area, which is the district along the Drava River (in German: *Drau*, in Latin: *Drave*) in Austria and Slovenia. The chemical composition which was given by Tschermak in 1884 for this dravite approximately corresponds to the formula NaMg3(Al,Mg)6B3Si6O27(OH), which is in good agreement (except for the OH content) with the endmember formula of dravite as known today.
Dravite varieties include the deep green chromium dravite and the vanadium dravite.

A lithium-tourmaline elbaite was one of three pegmatitic minerals from Utö, Sweden, in which the new alkali element lithium (Li) was determined in 1818 by Johan August Arfwedson for the first time.[8] Elba Island, Italy, was one of the first localities where colored and colorless Li-tourmalines were extensively chemically analysed. In 1850 Karl Friedrich August Rammelsberg described fluorine (F) in tourmaline for the first time. In 1870 he proved that all varieties of tourmaline contain chemically bound water. In 1889 Scharitzer proposed the substitution of (OH) by F in red Li-tourmaline from Sušice, Czech Republic. In 1914 Vladimir Vernadsky proposed the name *Elbait* for lithium-, sodium-, and aluminum-rich tourmaline from Elba Island, Italy, with the simplified formula (Li,Na)HAl6B2Si4O21.[8] Most likely the type material for elbaite was found at Fonte del Prete, San Piero in Campo, Campo nell'Elba, Elba Island, Province of Livorno, Tuscany, Italy.[8] In 1933 Winchell published an updated formula for elbaite, H8Na2Li3Al3B6Al12Si12O62, which is commonly used to date written as Na(Li1.5Al1.5)Al6(BO3)3[Si6O18](OH)3(OH).[8] The first crystal structure determination of a Li-rich tourmaline was published in 1972 by Donnay and Barton, performed on a pink elbaite from San Diego County, California, United States.

(Source Stoney Statements, Dec 2017)

CITRINE

Citrine /ˈsɪtriːn/ is a colour, the most common reference for which is certain coloured varieties of quartz which are a medium deep shade of golden yellow. Citrine has been summarized at various times as yellow, greenish-yellow, brownish yellow or orange.

The original reference point for the citrine colour was the citron fruit. The first recorded use of *citrine* as a colour in English was in 1386. It was borrowed from a medieval Latin and classical Latin word with the same meaning. In late medieval and early modern English the citrine colour-name was applied in a wider variety of contexts than it is today and could be "reddish or brownish yellow; or orange; or amber (distinguished from yellow)". In today's English citrine as a colour is mostly confined to the contexts of (1) gemstones, including quartz, and (2) some animal and plant names. E.g., the citrine wagtail (*Motacilla citreola*), an Asian bird species with golden-yellow plumage. "Citrine" is used in the names of birds and other lifeforms with such colouring to describe their appearance, including the citrine wagtail, citrine warbler, citrine canary-flycatcher and citrine forktail.

(Source Stoney Statements, Dec 2017)

Minerals that Glow
September 6, 2019 Golden Diggers Meeting

At our upcoming September 6, 2019 Golden Diggers meeting, we will learn about minerals that glow or FLOURESCENT MINERALS (Section 18 AFMS Future Rockhounds of America Handbook). We learn what "fluorescence" is and why some fluoresce (18.1), Famous fluorescent mineral localities will be discussed. (18.2), Specimens of fluorescent minerals will be given away for your collection. (18.3)

What is "fluorescence" and why do some minerals fluoresce? From AFMS Rockhounds of America Handbook

Light moves in waves and comes in different forms depending on the wavelength. Some of these forms are infrared, visible, and ultraviolet (UV). We humans are most familiar with visible light. UV light moves in waves too short for human eyes to de-tect, but we can see the effects with certain minerals. What appears to be a gray rock in visible light may glow orange or green under UV light. Or a mineral of one bright color under visible light may appear a different color under UV; for instance, purple fluorite may turn green or blue. Still other minerals may stay the same color but appear more vivid, as with red ruby. In all these cases, under UV light the minerals seem to glow from within.

The first person to describe this phenomenon was English scientist Sir George Stokes in 1852. He worked with fluorite, so he called the effect fluorescence. Some minerals containing impurities called activators will absorb UV light, then emit longer, visible light waves which we see as colors. At the atomic level, UV light causes electrons in some molecules from the "activators" to jump to a higher energy level. In falling back to their normal level, they give off the extra energy in the form of visible light. UV light is usually divided into short wave (SW) and long wave (LW). Most fluorescent minerals are sensitive to SW. Some will change color as you switch from SW to LW. Fluorescent lamps, especially SW, are very expensive, but you can use a less expensive alternative for LW with a black-light tube readily available at hardware stores—the kind of light tubes gardeners use as grow-lamps for plants and that teenagers use to make posters of their favorite rock stars glow.

Famous fluorescent mineral localities: (Schneider and Robbins' books provide information about fluorescent mineral localities around the world.) Here are just a few famous spots:

1) The Franklin & Sterling Hill zinc mines of northern New Jersey are probably the most famous localities in the U.S. with brilliant yellow-green willemite, calcite in shades of pink and orange-red, pectolite that glows purple, and many more minerals and vivid colors. Most fluorescent mineral collectors started with minerals from these areas. (COME TO THE ADULT MEETING ON SEPTEMBER 6th TO LEARN MORE!)

2) St. Lawrence County, north-central New York, once hosted major mines, many now closed with the land being reclaimed, but you can occasionally still go on club-organized trips to mine dumps for sphalerite, calcite, diopside, fluorapatite, norbergite, and more.

3) Arizona has more mines than can be succinctly listed that have been prime producers of fluorescent minerals of all sorts.

4) The Terlingua area of Texas is home to mercury mines famous for "Terlingua calcite," which glows blue in SW and pink in LW UV, with a high degree of phosphorescence.

5) Sweetwater County, Wyoming, yields gray Sweetwater agates speckled with black dots. While drab in regular lighting, they glow vivid apple-green under UV.

6) Mont Saint-Hilaire in the province of Quebec, Canada, is an important mining and mineral locality where over 270 minerals have been collected. One authority has catalogued over 60 fluorescent minerals from this region.

7) The Bancroft District of Ontario is another important Canadian mineral area, featuring a mineral museum, an annual mineral show, and dig sites yielding such fluorescents as feldspar, scapolite, calcite, zircon, sodalite, hackmanite, fluorite, scheelite, apatite, etc.

8) Mexican mines have produced some great fluorescent minerals from such places as Mapimi in Durango County and Cerro del Mercado.

9) Durham, England, has mines with some of the most spectacularly fluorescent fluorite.

10) Greenland may be a bit out of the way for most of us but is making a name for itself as a source of fluorescent minerals from what's known as the Ilimaussaq Complex.

11) Afghanistan, particularly the Sar-e-Sang district along the Kokcha River in Badakhshan Province, is well known for tenebrescent sodalite known as hackmanite, which shows up at a lot of gem shows. It also has fluorescent fluorapatite, calcite, scapolite, etc.

12) Northern Pakistan is a great source of fluorescent minerals, along with a wonderful variety of gemstone minerals.

(Source: Tips & Chips Sept 2019)

Oddities of Obsidian

Obsidian is an extrusive igneous rock formed when the magma of an erupting volcano reaches the earth's surface and cools rapidly. It is an extrusive rock because it was pushed out onto the surface. The cooling of the extrusive rock occurs so rapidly that the magma doesn't form minerals at all, but a volcanic glass.

It derives its name according to Pliny, an ancient Roman naturalist, from a fellow named Obsius, who found it in Ethiopia. Originally, it was named "obsianus", but the spelling was changed over the centuries to its modern form.

Obsidian occurs in many colors, black being the most common. It can also be red, brown or even green. It can contain inclusions of magnetite, ilmenite, iron oxide, potassium oxide, sodium, oxide, lime and magnesium. It is composed of 66-77% silica, with about 13-18% alumina. Magnetite most likely gives obsidian its black color, and oxidized magnetite or hematite the reds and browns.

With slow cooling, silica crystals Cristobalite form, giving the "snowflake" obsidian or "flowering" obsidian. Iridescence reflected from minute inclusions arranged in layers is known as "rainbow obsidian". Another kind with gold inclusions with a strong metallic luster is called "gold sheen obsidian", and if the inclusions are grayish silver in color, it's called "silver sheen".

Obsidian is interesting in many ways, but mainly, for all practical purposes, it is a true glass. It has a hardness of 5-5.5 on the Mohs hardness scale. It represents a quickly congealed mass of molten rock, for if it had time to cool slowly, it would have crystallized into a rock similar to granite or rhyolite.

It shows no trace of crystalline structure nor possesses any established composition and must be considered a rock instead of a mineral. It is amorphous, having no regular internal arrangement of atoms as in crystals. The word amorphous is taken from the Greek and means "no form" because there is no pattern to amorphous materials. The atoms are jumbled together in small groups like particles in a pile of sand. It is extremely brittle and breaks easily with shiny, black conchoidal fractures – a feature so perfectly developed that it is easily identifiable in the field. It is translucent and will not soften when heated to a bright red.

Obsidian is found throughout the western United States, mostly in Alaska, Colorado, Utah, New Mexico, Arizona, Wyoming, Oregon, Nevada and California. It is also found in B. C. and throughout Mexico. American Indians valued obsidian highly. Its perfect texture and easy fracture made it a prize possession for chipping into arrowheads and large ceremonial spear points.

The Aztecs called obsidian "iztli", "teotal" or "divine stone" because of its usefulness in carving ceremonial blades. Even one of their gods was named "Itzoppziotl", meaning "obsidian butterfly".

Obsidian is also used to make attractive jewelry as cabochons or faceted. Thin slabs can be cut with a common glass cutter. Due to its extreme heat sensitivity, great care must be taken in working obsidian. Industries use obsidian as a raw material to make rock wool. Surgeons have even used thinly chipped obsidian knives in surgery because of the fine exact cut an obsidian knife makes.

By Dolores E. Rose, from Stoney Statements, 4/2001; via WGMS Sept 2019