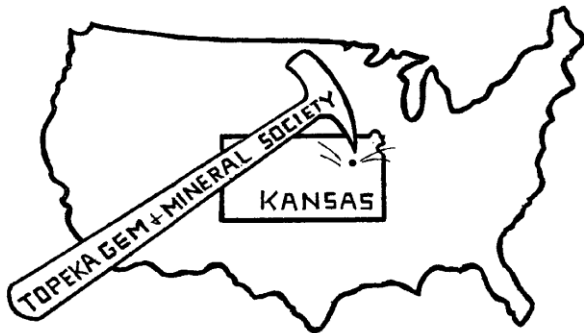


The Topeka Gem and Mineral Society, Inc.
 1934 SW 30th St. Topeka, KS 66611
 Rock2Plate@aol.com

THE GLACIAL DRIFTER



www.TopekaGMS.org 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. 06,
 June 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	Cab of the Month	Debra Frantz/Fred Zeferjohn	862-8876
1 st Vice Pres.	Dave Dillon	272-7804	Field Trip Coord.	Will Gilliland	286-0905
2 nd Vice Pres.	Cinda Kunkler	286-1790	Publicity	TGMS Board	
Secretary	Carolyn Brady	233-8305	Welcome/Registration	Harold Merrifield	633-9745
Treasurer	Millie Mowry	267-2849	Property	M. Cote/D. Dillon	220-3272
Directors	Brad Davenport	379-8700	AFMS Scholarship	Cinda Kunkler	286-1790
	Will Gilliland	286-0905	Editor/Exchange Editor	Millie Mowry	267-2849
	Chuck Curtis	286-1790	Show Chairman	Dave Dillon	272-7804
Historian	Open		Show Dealer Chairman	Dave Dillon	272-7804
Federation Rep	Harold Merrifield	633-9745	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 .
Permission is granted to reprint articles only if proper credit is given to the author, Glacial Drifter and the date.

Words from Our Top Rock!



Lessons at the Barn are open on Tuesday Nights as long as the weather is favorable...if not watch for an email.

As a reminder in the months of June, July and August, there will not be our regular club meetings, but, we will have pot-luck picnics at Millie's house on the 4th Friday of the month at 6:30 p.m.

The Survey Questionnaires are in & are being tallied. For those who did not send theirs back, we cannot improve things for everyone if you do not respond and let us know what you think & would like. A big THANK YOU to those who did respond and you will be hearing from us soon.

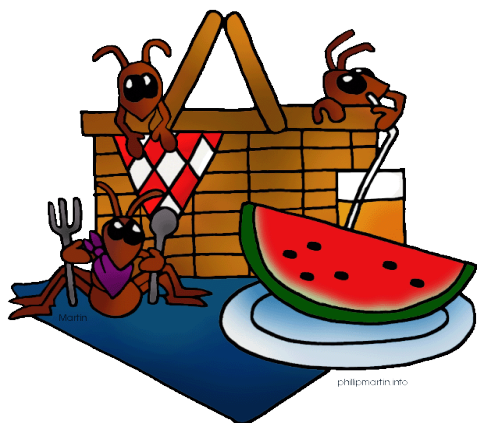
The Shawnee County 4-H Fair is being held at the Kansas Expocentre main building will be held on July 25 – 28, 2019. We need volunteers to help pass out brochures to work a 2 hour shift during those dates. Call Millie to sign up or sign up at the picnic in June.

Mike Cote`



Welcome Our New Member
Zoey Haug --- Junior Rockhound

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



POTLUCK PICNIC AT Millie's

1934 SW 30th St. 6:30 p.m.

June 28, 2019

Bring your own table service & favorite picnic food to share. We eat inside where it is cool unless you want to eat on the patio. I will furnish ice tea and coffee.

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...



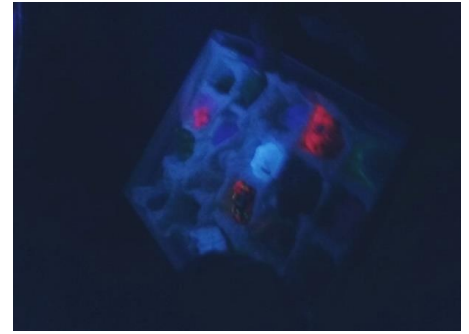
<https://www.facebook.com/TopekaGMSJuniorRockhounds>

To register for the Junior Rockhounds or any of the classes, email:

Jason Schulz at: Fleetcommander@att.net

- July 11, 6 - 8:45 p.m. Menninger Room 206, World of Miniatures, with Cinda Kunkler/Brad Davenport
- Aug 1, 6 - 8:45 p.m., Marvin Auditorium Room 101A, Stone Age Tools & Art, Brad Davenport
- Sep. 5, 6 - 8:45 p.m., Marvin Auditorium Room 101A, Showmanship, Pat Gilliland

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



Will Gilliland teaching Fluorescent Materials



Summer is here! Meetings are now our Summer Picnic's! For the months of June, July & August, we meet at Millie's home around 6:00, eating at 6:30. This gives us all a chance to get acquainted. Her address is 1934 SW 30th St, Topeka. Please bring a dish to share, place setting and yourself, guests are welcome (that includes grandchildren if you are watching them). Bring a rock if you want help identifying, surely someone can help with that! Millie provides coffee & tea. I would like suggestions for upcoming programs for next year – bring ideas, I hope to have a list of videos' available as well as the schedule for the fall meetings. Hope to see you all there!

TGMS Event Calendar

JUNE 2019		JULY 2019	
1S		1M	
2S		2T	Barn Open Tonight 6 p.m. – 9 p.m.
3M		3W	
4T		4T	TGMS Jr RHD's, Marvin Auditorium 101C 6 PM Wire Wrap Class @ Millie's 1-3 p.m.
5W		5F	
6T		6S	
7F		7S	
8S		8M	
9S		9T	Barn Open Tonight 6 p.m. – 9 p.m.
10M		10W	
11T	Barn Open Tonight 6 p.m. – 9 p.m.	11T	Wire Wrap Class @ Millie's 1-3 p.m.
12W		12F	
13T	Wire Wrap Class @ Millie's 1-3 p.m.	13S	
14F		14S	
15S		15M	
16S		16T	Barn Open Tonight 6 p.m. – 9 p.m.
17M		17W	
18T	Barn Open Tonight 6 p.m. – 9 p.m.	18T	Wire Wrap Class @ Millie's 1-3 p.m.
19W		19F	
20T	Wire Wrap Class @ Millie's 1-3 p.m.	20S	
21F		21S	
22S		22M	
23S		23T	Barn Open Tonight 6 p.m. – 9 p.m.
24M		24W	
25T	Barn Open Tonight 6 p.m. – 9 p.m.	25T	NO Wire Wrap Class @ Millie's SN CO 4-H Fair KS Expo 25 th -28th
26W		26F	No Meeting at Washburn—Club Picnic @ Millie's 6:30 P.M. Potluck SN CO 4-H Fair KS Expo 25 th -28th
27T	Wire Wrap Class @ Millie's 1-3 p.m.	27S	SN CO 4-H Fair KS Expo 25 th -28th
28F	CLUB PICNIC-NO GENERAL MEETING Millie's house 6:30 p.m. see page 2,	28S	SN CO 4-H Fair KS Expo 25 th -28th
29S		29M	
30S		30T	Barn Open Tonight 6 p.m. – 9 p.m.
		31W	

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

No general meeting at Washburn Univ. during months of June, July and August.
See you at the potluck picnics at Millie's house. See page 2.



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

Minutes of TGMS General Meeting

TGMS Meeting was held May 24, 2019 at Washburn.

Mike Cote' called the meeting to order. Chuck Curtis announced we had 11 members in attendance. Door prizes were awarded.

Fred Zeferjohn reported we have two-member jewelry and two member cabs in the 'cab of the month' contest. Minutes from the last meeting in April were printed in The Drifter.

Millie Mowry gave the treasurer's report. No bills were presented.

Correspondence – Mille had been contacted by a former member, Shirley Baxley, she must sell all her collection due to a move.

New Business: We are missing lots of members tonight due to weather, holiday weekend, road conditions, and illness. Mike reported that Dave is still working on dealers for our show. Jason reported that in the fall, unless Washburn gives us a password, we will not be able to access the audio-visual equipment. We are to follow up on getting this remedied.

Junior Rockhounds – Jason reported Brad presented the Special Effects badge this month and in June Will Gilliland will have Florescent Minerals.

Web Master – Jason had nothing new to report. Field Trip – Will has nothing scheduled at this time. AFMS – Cinda had nothing to report.

Survey's, Millie has gotten some back and still receiving them in the mail. The next meeting will be June 28th – starting our summer picnic's at Millie's home. Plan to come and bring something to share to eat – gathering around 6:00, we eat at 6:30.

Meeting was adjourned to our program – U-tube video – Rockhounding USA Episode 11 'Stunning Petrified Wood From Holbrook AZ (DoBell Ranch).

Cab of the month winner: Member Jewelry – Millie Mowry Seraphinite & Bronze, Member Cab – Brad Davenport Owyhee Jasper.

Respectfully submitted from the 'current acting' secretary.

Cinda Kunkler



Colorado Resources on Rockhounding Listed in Tips & Chips June 2019

Rockhounding Colorado: A Guide to the State's Best Rockhounding Sites (Rockhounding Series) by William A. Kappeler and Gary Warren | Third Edition, Mar 31, 2017 https://www.amazon.com/Rockhounding-Colorado-Guide-States-Sites-dp-149301739X/dp/149301739X/ref=mt_paperback ("Look Inside" link gives access to table of contents AND the first 20 sites in the book.)

In this 3rd edition they have dropped the number of sites from 96 to 83 due to changes in accessibility for some sites.

Gem Trails of Colorado by James R. Mitchell | January 1, 2008

Features over 90 locations to collect over 80 different minerals and numerous fossils.

Colorado Rockhounding: A Guide to Minerals, Gemstones, and Fossils by Stephen M. Voynick | February 1, 1995

Collecting sites both major and minor are listed by county.

The Rockhound's Guide to Colorado by William A. Kappeler | Second Edition 1995

Covers 78 of Colorado's premier rockhounding sites.

Gold Panning and Placering in Colorado--How and Where (Information Series Number 33) 1st Edition by Ben H., Jr. Parker, Colorado Geological Survey | 1992

Colorado Gem Trails: And Mineral Guide by Richard M. Pearl | 1972 <https://www.amazon.com/Colorado-Gem-Trails-Mineral-Guide/dp/0804009562>

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.

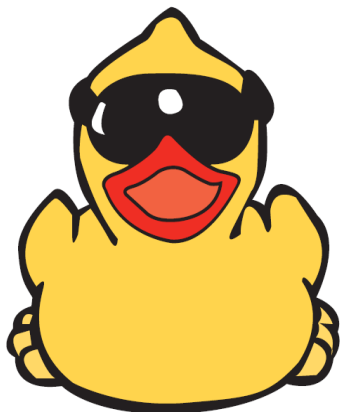


Because fluorite produces well-formed crystals in several different habits, interesting specimens are very popular with collectors. Cubic crystals are the most recognized, followed by the octahedral. Fluorite has perfect octahedral cleavage with 4 identical directions of cleavage, and cleaved fluorite 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 **The Rockhouser June 2019**



Topeka Gem & Mineral Society

Has joined the Sertoma Great Topeka Duck Race for 2019

Go to www.topekaduckrace.org or see Millie for an envelope.

To adopt a duck for \$5.00 each.

A family of 5 for \$20,

A flock or 12 for \$50 and

An 'oodle' of ducks (27ducks) for \$100.00



The race is September 14, 2019 at Lake Shawnee

Check out all the Great Prizes you can win.

Our Team name is **"Topeka Gem & Mineral Society"**

Dinosaur Dental Discoveries

Looking at an animal's teeth can provide a lot of information on how the animal lived. This is particularly useful when the animal is extinct, or no longer exists in the world we live in. Dinosaur teeth can tell you many things about it, such as the type of food that it ate, how it got its food, and how it digested its food (did it chew food, crush or grind food, or just eat it whole?).

Teeth are much harder than bone, and so they fossilize more readily. Countless fossilized dinosaur teeth have been uncovered. Some dinosaur species such as *Cardiodon*, *Trachodon* and *Deinodon* are only known to have existed because of their fossilized teeth.

By looking at the shape of the dinosaurs teeth we can figure out what they ate when they were alive. *Allosaurus* had long teeth with sharp edges that were pointed and curved back towards its throat. Even today, every reptile that has this type of teeth is a meat-eater. Reptiles that browse for food, such as the iguana, have low and tiny leaf-shaped teeth used for shredding plants, much like dinosaurs before them did (*Stegosaurus*, *Ankylosaurus* and *Hypsilophodon*-tids). Animals that graze today, like sheep and horses, have grinding teeth with flat tops to mash tough and fibrous, low-growing plants like grass. The *Hadrosaurus* family of duck-billed dinosaurs had teeth similar to this.

The number of teeth dinosaurs had varied dramatically, depending on the type of dinosaur. Some dinosaurs, like *Ornithomimus* and *Gallimimus*, did not have teeth. On the other end of the spectrum, *Tyrannosaurus rex* had 50 to 60 solid cone-shaped teeth as big as bananas. *Hadrosaurus*, or duck-billed dinosaurs, had the most teeth: up to 960 cheek teeth!

Dinosaur teeth were replaceable. If a dinosaur broke or lost a tooth, another grew in to take the place, behaving much like sharks teeth do today.

Saurischians

Plant-eating sauropod dinosaurs (*Apatosaurus*, *Diplodocus*, *Brachiosaurus*, *Supersaurus* and many more) were equipped with peg-like or spoon-shaped teeth they used for stripping leaves off of plants. These teeth were not used for chewing, however, because of their shape. The plant material that these dinosaurs ate was swallowed and digested in their guts, maybe in fermentation chambers where the materials would break down, often with the help of gastro-liths, or stones that the dinosaur swallowed to help break up the leaves and twigs in its gut.

Meat-eating theropods (*Tyrannosaurus rex*, *Carcharodontosaurus*, *Allosaurus*, *Gigantosaurus*, *Spinosaurus* and many more) had sharp, pointed teeth they used to tear flesh and sometimes even crush bones. Recently, a *Tyrannosaurus rex* coprolite (fossilized feces) was discovered containing bits of crushed bone, which tells scientists that the dinosaur did in fact crush its food with his powerful teeth and strong jaws.

Ornithischians

Plant-eating Ornithischians, as well as some prosauropods had varying teeth but many had horny beaks and many leaf-like cheek teeth for nipping and chewing through tough foliage.

Stegosaurids (*Kentrosaurus* and *Stegosaurus* as well as others) had leaf-shaped teeth that were built for slicing at weeds that grew close to the ground.

Hadrosaurus (*Edmontosaurus*, *Maiasaura*, *Lambeosaurus*, *Parasaurolophus* and many more) were duck-billed dinosaurs and had around 960 self-sharpening cheek teeth; the most teeth of all of the dinosaurs.

Iguanodontids (*Iguanodon*, *Probactrosaurus*, and *Ouranosaurus* among others) had teeth that look similar to today's iguanas. They were rounded outward, notched on top and curved, indicating that perhaps today's iguanas originated as *iguanodontids*.

Heterodontosaurus was a small dinosaur that had three different types of teeth in addition to a beak. It had sharp upper teeth which it used with its beak to bite and cheek teeth for grinding its food and two pairs of long canine-type teeth that fit into sockets when *Heterodontosaurus* closed its mouth.

Ceratopsians (*Triceratops*, *Monoclonius* and *Styracosaurus* belonged to this group) had toothless beaks they used to gather food and lots of flat cheek teeth they used to grind and chew tough plant material.

Ankylosaurus (such as *Euoplocephalus*, *Sauropelta* and *Ankylosaurus*) were unable to chew their food so they may have had large fermentation chambers where they were able to digest the tough plant fibers. *Ankylosaurus* had teeth shaped like a hand with the fingers together. *Ornithomimids* (like *Ansermimus*, *Gallimimus*, *Ornithomimus* and *Struthiomimus*) did not have teeth, but they had beaks with which they ate plants and insects and small animals.

<http://www.towncaredental.com/dinosaur-dental-discoveries/>, via The Rockhounder June 2019



Buy us at www.topekaduckrace.org under Topeka Gem and Mineral Society

About Obsidian, an Intrusive, Igneous Rock

By Ed Peterson

Igneous rocks are often divided into two groups, intrusive and extrusive rocks. Intrusive rocks are those that form as a result of molten rock, called magma, intruding between masses of rock below the earth's surface and then solidifying. The rock that cools below the earth's surface cools relatively slowly, giving time for different minerals to separate and form crystals of particular minerals. The slower the rock cools the larger the crystals. Examples are granite, diabase and gabbro.

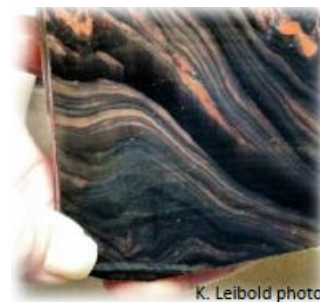


Extrusive rocks are a result of molten rock (magma) forcing itself above the earth's surface and then cooling and solidifying. This can be by volcanic eruption or through fissures in the earth's crust. Examples of extrusive rocks are pumice, obsidian, basalt, and rhyolite.

Extrusive magma cools fast forming rocks having tiny crystals, generally too small to be seen without magnification or rock having extremely small or a near absence of crystals. Examples of extrusive rock with typically tiny crystals are pumice, scoria, rhyolite and basalt. Obsidian results when volcanic rock cools especially rapidly resulting in a near-absence of crystals (If magma cools so rapidly that open spaces required for crystal growth does not occur, molecules of minerals cannot combine to form crystals.)

When magma reaches the surface through volcanic action, pressure inside the volcano decreases rapidly and water in the magma escapes as steam. The magma, minus water, becomes very viscous and cools rapidly, resulting in very limited crystal growth. This kind of lava flows very slowly and is called obsidian. On the surface of the volcano obsidian generally picks up impurities. If the obsidian results from flowing in volcanic vents the obsidian is often free from impurities.

Because of obsidian's high viscosity minimal mixing of magmas having different minerals occurs. It can form streaks and patterns of different colors, though, because of some mixing of various layer colors. Slow movement and mixing of obsidian layers can form varieties of obsidian such as "midnight lace." Colors are due to the variety minerals in the obsidian. The black or brown color, for example, is due to the presence of hematite or limonite. Trapped gas and crystal orientation affects the reflected light and thus the appearance. "Rainbow obsidian is a result of the orientation of tiny crystals of feldspar or mica in flow layers. Gold and silver sheen obsidian results from the reflectance of tiny gas bubbles that have been trapped and stretched along flow layers. Over extended time obsidian gradually



changes from glass to rock. This is called "devitrification." Devitrification occurs when the silica molecules in the rock slowly orient themselves to form crystals. "Snowflake" obsidian is a result. As a result of devitrification snowflake obsidian is not as conchoidal and glassy.



Obsidian has a glassy texture. It is roughly 70 percent silica which is chemically rather similar to granite and rhyolite. It has a hardness that varies between 5 and 5.5. It has a conchoidal fracture and is brittle with sharp edges due to the near absence of crystals.

(Source: CIMS News Nuggets May 2019)



See all of us at www.topekaduckrace.org under Topeka Gem & Mineral Society
Help us win the Race!