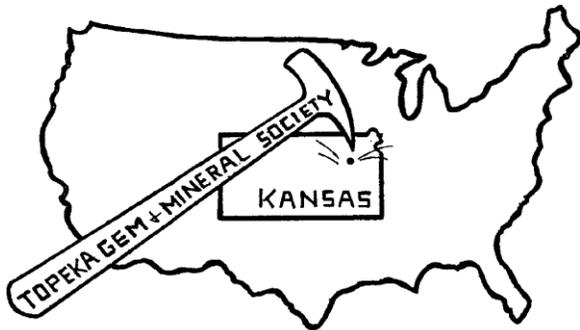


The Topeka Gem and Mineral Society, Inc.
 1934 SW 30th St. Topeka, KS 66611
 Rock2Plate@aol.com

THE GLACIAL DRIFTER



www.topekagemandmineral.org
 Facebook: Topeka Gem and Mineral Society Field Trip

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. 58, No. 01, Jan. 2015

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.**

2014 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.	Larry Henderson	-----
2 nd Vice Pres.	Carolyn Brady	233-8305	Publicity	Donna Stockton	913-645-7677
Secretary	Cinda Kunkler	286-1790	Welcome/Registration	Jason Schulz	379-5538
Treasurer	Millie Mowry	267-2849	Property	M. Cote/D. Dillon	379-5538
Directors	Harold Merrifield	286-3548	AFMS Scholarship	Cinda Kunkler	286-1790
	Chuck Curtis	286-1790	Editor/Exchange Editor	Millie Mowry	267-2849
	George Reed	836-9277	Show Chairman	Harold Merrifield	286-3548
Historian	Deborah Scanland	273-3034	Show Dealer Chairman	Dave Dillon	272-7804
Federation Rep	Harold Merrifield	286-3548	Show Secretary	Cinda Kunkler	286-1790
Corporation Agent	Millie Mowry	267-2849	Jr. Rockhound Leader	Larry Henderson	-----
Librarian	Lucy Hrenchir	267-3325	Show Case Coordinator	Francis Stockton	913-645-7677
Web Master	Jason Schulz	379-5538			

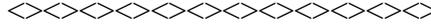
Area Code for all numbers is (785).

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.

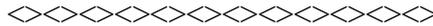


We still need Best Choice UPS Labels before Cinda can turn them in.
Bring them in at the next meeting.



Make Welcome Our New Members!

LeAnn & Doug Petrie, & William Sevy (a Jr. member)

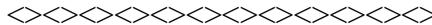


Words From the President.....

I hope everyone has had a good start for the New Year. Can you believe this 60 degree weather in January--in Kansas? It will make it easier to clean out the rock pile for the Silent Auction at the January Meeting or find a rock that you need to be identified. The officers have some good ideas for this next year so we hope that you will join us when asked to volunteer to help out. See you at the January meeting.

V♥lunteering is the heart beat of ♥ur club.

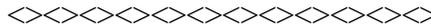
Mike and his Rock Stash!



Words from our V. P.

I do not have much at all since nothing is going on at the moment. But I will tell everyone that we are looking forward to the New Year and want to make it a very good year for our members. Hope that everyone starts out the new year by being at our first meeting which will be the silent auction! Everyone please bring your cabs and Jewelry to the meeting for our club contest. See you then!

Dave!



TLC

Word has it that Francis Stockton spent some time in the hospital over Christmas, and now his wife Donna is not doing so well.

Our Sympathy goes out to the families of Cinda Kunkler and Deborah Scanland who had an uncle pass away January 2, 2015. Also, Millie Mowry's brother passed away on January 2, 2015.

Field Trip Calendar - October 2014

The first and third Tuesday night the Fossil Special Interest Group will meet at 7:00 p.m. at Baker's Dozen, 4310 SW 21st St, Topeka, KS. We will discuss fossils and other collections. Come join us with show and tell.

An up-to-date Calendar can be found on the Topeka Gem and Mineral Society Website:

<http://topekagemandmineral.org/calendar.html>

Public Facebook Page:

<http://www.facebook.com/pages/Topeka-Gem-and-Mineral-Society-Field-Trips/92795058262>

Trips dates are tentative and subject to additions and change. E-mail Larry if you have an interest in any of these trips LHenderson85@gmail.com Larry Henderson, Field Trip Chairman

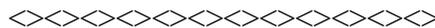
- January 20, 7:00 p.m. Fossil Special Interest Group, Show & Tell, at Baker's Dozen,
- January 24, Field Trip TBA
- February 3, 7:00 p.m. Fossil Special Interest Group, Show & Tell, at Baker's Dozen,
- February 28, Field Trip TBA
- March, Arkansas Diamond Mine

Additional Show Dates:

Jan 24, 2015 Lincoln Gem & Mineral Club's 36th Annual Rock Swap 1 p.m. to 5 p.m., Bethany Park Enclosed Shelter, 64th & Vine Streets, Lincoln, NE., contact Jayne Beer 402-890-3307.

April 4-5, 2015 57th Annual Lincoln Gem & Mineral Club Show, Lancaster Event Center, 84th & Havelock, Lincoln, NE. Sat. 9 a.m. to 6 p.m. Sun. 10 a.m. to 5 p.m. www.lincolngemmineralclub.org

For additional listings of gem shows see www.rockngem.com

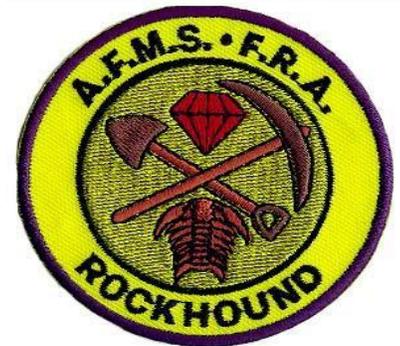


TOPEKA JUNIOR ROCKHOUNDS

Facebook: <http://www.facebook.com/TopekaJuniorRockhounds>

To register for the Junior Rockhounds or any of the classes, email Shirley Schulz, Program Secretary sschulz@kdheks.gov.

Call Dave Dillon 272-7804, or email davidd5124@aol.com for information on lapidary classes.



Classes start at 6:30pm at the Town & Country Christian Church, 4925 SW 29th Street. The Topeka Junior Rockhound Advisors will meet at 6:30 pm.

Junior Rockhounds are encouraged to attend the club meetings to receive Patches and Badges.

- February 5th class will be World of Miniatures by Brad Davenport
- March 5th class will be Fossils by Larry Henderson

The Junior Rockhounds Activities Center

The Junior Rockhounds activities center will be open at the January 23rd general meeting. It will begin at 7:00 pm and run through the meeting preceding the program. Door prizes and patch/badge presentations will be given out at that time. Last time Barbara Smith and Brad Davenport worked with the youth on dinosaurs.



YOUR DUES ARE DUE!

As of December 31st all members that joined before October of 2014, your dues are now due. If you have any questions---call me at 267-2849 or email me at rock2plate@aol.com. Each of you should have a membership card with the due date on it.

Millie Mowry, Treasurer



PECTEN FOSSILS

SCALLOPS

Fossil: Giant Pecten

Pecten propratulus



Scallops (or pectens) have flat shells and distinct flat extensions to the hinge line called "wings" In western Washington, giant fossil scallops are generally more than 85 mm wide and are found in rocks that are 35 million to 5 million years old.

The very large family Pectinidae contains thousands of fossil species and hundreds of living species. Scallops first appeared in the Triassic (about 230 million years ago) and have always been more numerous in warm shallow seas. *Pecten propratulus* can be 100 mm wide and is found in rocks around Clallam Bay that are approximately 20 million years old.

This species has shells ornamented with 27 or 28 flat ribs, and the wings on the hinge line have a distinct notch. The ribbing on the right valve (or shell) looks different from that on the left valve and these have often been mistaken for two different species.

Much smaller scallops are found in older rocks in western Washington. The oldest is *Pecten landesi* from 40-million-year-old rocks in Cowlitz County; it measures only about 30 mm in width.





Fossil Skull NPS Photo/Big Bend National Park

BIG BEND NATIONAL PARK – A PALEONTOLOGICAL PARADISE

The Ruling Reptiles

Early in the Triassic Period, some 248 million years ago, the ruling reptiles appeared. They included dinosaurs, pterosaurs, and crocodiles. These reptiles dominated life on land throughout the Mesozoic Era. Although mammals appeared later in the Triassic Period, the mammals did not achieve dominance until the ruling reptiles became extinct at the end of the Cretaceous Period. The fossilized remains of many kinds of ruling reptiles have been found in Big Bend National Park.

Remember: All resources are protected by federal law in Big Bend National Park; it is illegal to collect fossils or rocks in the park.

Paleontological Paradise

Big Bend is one of the true jewels for paleontological research in the world. Unique among U.S. National Parks, Big Bend exhibits dinosaur remains from the last 35 million years of the dinosaurs' existence. Furthermore, the fossil record here continues uninterrupted from the Age of Reptiles into the Age of Mammals. Over 90 dinosaur species, nearly 100 plant species, and more than two dozen fish, frogs, salamanders, turtles, crocodiles, lizards, and even early mammals have been discovered here, giving us one of the most complete pictures of a prehistoric ecosystem known anywhere on earth. The fossil record here spans a rich history of 35 million years within the Cretaceous Period. Beginning about 100 million years ago, when a huge sea covered what is today most of the midwestern U.S., the first of the ruling reptiles appeared in Big Bend's fossil record. The sea layers of limestone known as the *Boquillas Formation* (100-95 million years ago) preserve numerous marine fossils, including a 30-foot long sea-dwelling reptile known as *Mosasaurus*.

The most exciting finds have occurred in strata that chronicle Big Bend's emergence from this sea. Nearly 70 dinosaur species have been discovered in the *Aguja Formation* (80-75 million years ago) where we find evidence of a humid and swampy land. At this time, Big Bend was closer to the equator, and this tropical coastal swamp had palms, ferns, and diverse dinosaur life, including duck-billed Hadrosaurs.

By 75-60 million years ago, plant fossils suggest that the sea had retreated and Big Bend had become a drier floodplain environment. The sediments from these times, the *Javelina Formation*, have yielded over 80 species of plants, including cypress, laurel, conifers, and mangroves. While these plant finds are remarkable in their own right, they are usually overshadowed by several unique and spectacular dinosaur finds. Over 20 dinosaur species have been found in the Javelina Formation, giving us a rich glimpse into the last days of the ruling reptiles. These were the giants who ruled the earth at the time of the great extinction. These finds, and the possibility of future discoveries, make these sediments worth their weight in gold for paleontologists.



Fossil NPS Photo/Cookie Ballou

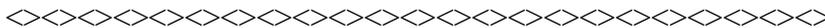
FOSSILS – BIG BEND NATIONAL PARK

There isn't a single region on the planet that has an all-inclusive fossil history of life on Earth. This is why places like Big Bend National Park, which have an emphasis on one time frame, can contribute so much to our knowledge base. Big Bend National Park's geologic history is not only complex and diverse, but also contains an amazing fossil record of the late Cretaceous and early Tertiary periods.

Some of Big Bend's fossil finds include bones of a pterosaur, the second largest known flying creature of all time with a 36-foot wingspan, as well as the skull of the triceratopslike *Chasmosaurus*, the largest known skull of any land animal. In addition to numerous dinosaurs, giant crocodiles, and other reptiles, the park has abundant fossilized wood, early mammals, and a wide variety of marine vertebrates and invertebrates.

Information on fossil site locations are often kept confidential to protect these valuable resources.

(Source: <http://www.nps.gov/bibe/index.htm> Via Stoney Statements Jan 2015)



WISCONSIN'S MOONSTONE

by Dr. William S. Cordua
Emeritus professor of Geology
University of Wisconsin – River Falls
(As published in the MWF News January 2015)

Imagine an October full moon in Wisconsin glowing ghostly blue to yellow as it seems to float over the newly harvested farm fields. Or is this captured in the rock? In Wisconsin's own moonstone?

Wisconsin moonstone has been known for decades, but only recently have skilled lapidarists learned to work it to bring out its full beauty. This find surprises non-residents, who at generally associate Wisconsin gemstones with Lake Superior agates and nothing else. What is this material? How did it form? What causes its optical effect?

The moonstone localities are on private land in central Wisconsin, not far from Wausau in Marathon County. The mineral is a type of feldspar known as anorthoclase. This formed as a rock-forming mineral within the Wausau Igneous Complex, a series of plutons intruded between 1.52-1.48 billion years ago. There are at least 4 major intrusive pulses within the complex.

The anorthoclase is in the Stettin pluton, the earliest, least silicic and most alkalic of the plutons of the Wausau complex. This body is complexly zoned, largely circular in outcrop and has a diameter of about 4 miles. It is mostly made of syenite, an igneous rock resembling granite, but lower in silica and higher in alkali elements such as potassium and sodium.

As such, it lacks quartz, but does contain a lot of alkali feldspar. Further complicating the geology is the intrusion of later pegmatite dikes. Some especially silicapoor varieties sport such odd minerals as nepheline, sodalite, fayalite, and sodium rich amphiboles and pyroxenes Zircon, thorium, and various rare earth element minerals can be found in this pluton. Large prismatic crystals of arfvedsonite and nice green radiating groups of aegirine (acmite) crystals have been collected for years from these rocks. It is also the pegmatite dikes that contain the anorthoclase showing the moonstone effect.

The moonstone has been found in small pits and quarries and also in farm fields where masses weather out and get frost-heaved to the surface. The weathered masses of coarse cleavable feldspar may at first not look too interesting, but at the right angle the moonstone effect can be seen. The feldspar has two cleavages. The most prominent cleavage surfaces ($\{001\}$ for you crystallography buffs) do not show the moonstone effect – it is on the slightly less developed cleavage surface, $\{010\}$, that the effect appears. cursory glances at samples can cause good material to be carelessly discarded.

To understand what anorthoclase is and why it shows a moonstone effect, we need to describe a bit about the feldspar group of minerals. All feldspars are aluminum silicates that commonly contain varying amounts of calcium, sodium and potassium. At room temperature, the common feldspars break down into two basic groups. First we have the plagioclase group, which range from a pure sodium-rich feldspar called albite to a pure calcium-rich feldspar called anorthite. The minerals in this group, called a solid solution series, are related by progressive changes in the proportion of sodium and silicon to calcium and aluminum. Most plagioclase feldspars are somewhere between albite and anorthite, containing both calcium and sodium. A familiar example of an intermediate plagioclase feldspar is labradorite. Second we have the potassium feldspar (also called K spar for short), which, depending on the internal structure, could be any of the three polymorphs microcline, orthoclase, or sanidine. These feldspars may contain some sodium, also in solid solution, but at room temperature do not make a complete series with albite. Ah, but things are different at high temperatures.

At magmatic temperatures an alkali feldspar can form that contains much sodium and potassium in solid solution with each other. That is anorthoclase, which formed in the pegmatites of the Stettin pluton. Sodium and potassium ions have about the same size, charge and bounding capacity, so fit readily in the same niches in the feldspar. But sodium and potassium aren't enough alike. If the feldspar cools down slowly, to below 400 degrees C, the feldspar structure contracts in size, and sodium and potassium are no longer good interchangeable fits. The homogenous anorthoclase splits on a fine scale into intergrown potassium feldspar and albite. Sometimes the bands of alternating minerals are coarse enough to see. Other times they are microscopic. If they are just the right size and spacing, they scatter the light that penetrates the various layers in the mineral – producing the moonstone effect, or schiller. The only anorthoclase that is truly not a mixture is that which cools very rapidly, such as in lava flows, so the separation cannot occur, and the mineral is frozen into its high temperature form. The material at Wausau cooled slowly, so isn't, strictly speaking, anorthoclase anymore, but an exsolved mixture.

The crystalline structure controls the orientation of these exsolution bands, hence the effect is seen better on some surfaces (the $\{010\}$ cleavage for example) than at others. This is one reason why shaping the rough stone takes such skill. Other challenges are the weathered nature of some of the stone, and exploiting the cleavage directions inherent in the feldspar. The master of processing these stones is Bill Schoenfuss of Wausau, Wisconsin. Bill often exhibits and sells his beautifully prepared moonstone at shows in the upper midwest. He can be contacted at wismoonstonewgs@gmail.com.

Moonstone has been prized as a gem since antiquity, often characterized as being like solidified moonbeams. The Greeks and Romans both related the gem to their moon gods and goddesses. The American Gem Society considers moonstone an alternate birthstone for June.

PURPURINE -- An Ancient Man-made Stone

Some time ago on Antiques Road Show on PBS a gem expert identified a red stone, set in jewelry, as *purpurine*. He said it was a stone invented by the Romans. After a Google search, this is the information that was found: Purpurin or purpurine: 1,2,4-Trihydroxyanthraquinone, a natural red/yellow dye found in the madder plant. There were images of an egg-shape "stone" mounted on a gold pedestal; an acorn-shaped pendant, the nut part being the red purpurine, the cap in gold with granulation (tiny beads); a photo of a movie star wearing a pendant, a roundish stone with gold cap; and a carved rabbit. The stone looks like a very red jasper. No explanation of what the dye was mixed with to form a stone hard enough to be used in jewelry. Perhaps someone else can do a more thorough search. The purpurine stone seems to show up in antique jewelry. -- information via Google

P.S. Madder dye plants make one of the most light-fast natural dyes that has been used for thousands of years. The plant's roots contain an organic compound called Alizarin, that give its red color to a textile dye known as Rose Madder. Also used to color paint. It is a native of the Old World. --- (via Google & The Rear Trunk Jan 2015)



Irish Mail Order Catalogue

**Two IRISH MEN were looking at a
Mail order catalogue and admiring the models.**

One says to the other, 'Have you seen the beautiful girls in this catalogue?'

The second one replies, 'Yes, they are very beautiful. And look at the price!'

**The first one says, with wide eyes, 'Wow, they aren't very expensive.
At this price, I'm buying one.'**

**The second one smiles and pats him on the back. 'Good idea! Order one and if she's as beautiful As she
is in the catalog, I will get one too.'**

**Three weeks later, The youngest redneck IRISHMAN asks his friend,
'Did you ever receive the girl you ordered From the catalog?'**

The second IRISHMAN replies.....

SCROLL DOWN ... YOU'LL LOVE IT!

*
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*

**'No, but it shouldn't be long now.
She sent all her clothes yesterday!**

(Internet Humor)

