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. 57, No. 09, Sept. 2014

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
1st Vice Pres.	Dave Dillon	272-7804	Field Trip Coord.	Larry Henderson	----------
2nd 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	George Reed	836-9277	AFMS Scholarship	Cinda Kunkler	286-1790
	Harold Merrifield	286-3548	Editor/Exchange Editor	Millie Mowry	267-2849
	Chuck Curtis	286-1790	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.

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We still need **300** Best Choice UPS Labels before Cinda can turn them in.
Bring them in at the next meeting or picnic.

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CLUB VESTS / BADGES

I need to know now if you want vests or club badges before the show. It does take time to get them!

Any one that is interested in ordering the blue club vests at a reasonable cost contact Millie at rock2plate@aol.com or 267-2849. We need 7 or more orders to get the better price of $14.31 plus Shipping.

They are high quality twill fabric, 65% Polyester/35% cotton with wrinkle resistant and soil releasing finish and 2 pockets.

Small	30-32
Medium	34-36
Large	38-40
XL	42-44
2XL	46-48 add $3
3XL	50-52 add $5

For club name badges they run less than $9 if you want one contact me also.

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Make Welcome!

Lettie Thomas and Zach Smith (a Jr. Member)

Address & Phone Change:
John Hawkins, 10216 West 50th Terr., Merriam, KS. 66203 913-962-1863
John has moved to KC to be closer to his daughter and I know he would appreciate any calls or cards for his rock collecting friends.

Words From the President…..

This month starts the rush of activity before the show and the end of the year activities. First of all is the Junior Rockhound Roundup that Larry is putting together. He needs help with it, so if you have a couple of hours to spare on Sept. 20th let him know. The monthly meeting will be on the 26nd at 7:30 p.m. at Stauffer Science Hall. This will be our "Silent Auction" night. Bring your rock related items to be donated to the club for this event. October brings our annual show on the 2nd weekend. Sign-up sheets will be at the meeting so that you can choose when and where you want to work at the show. Those who work the show get in free. Elections of Club Officers will be held in November. The committee will be making calls to see if you are interested in holding an office. We need your input, it is your club.

Mike and His Rock Stash!

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Words from our V. P.

Anyone who can help out at the Junior Rockhound roundup at the Topeka Public Library on September 20th please let Larry Henderson know asap so he can line up folks at certain tables. He is needing someone to man the membership and signup sheets at the front table. Also anyone who can help with some of the tables that will be set up for classes. It will be from 8:30 to 11:00 just inside of the main floor of the library. Contact Larry to let him know.

Our yearly show is coming just around the corner. October 11 & 12 with setup on the 10th from 8:00-12:00. On Friday we will be setting up the tables and cases and all the club tables. Sunday we take all that down and put it all back into storage. Please see our signup sheets at our September meeting and if you can't make it please let one of the show committee members know what you can help with. We are needing, Friday setup help and Sunday takedown help. Also can use help during the show manning some of our club tables. So we have several events coming up and plan your calendars around our events!!!

Dave

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Three Rocks and Their Minerals

Each of these rocks—granite, gneiss, and sandstone—is made mostly of these three common mineral types: mica, quartz, and feldspar. How can three rocks made of the same basic ingredients look so different? The minerals came together in varied ways. By studying a rock's minerals, scientists uncover clues to its origins and history. In this exhibit, so can you.

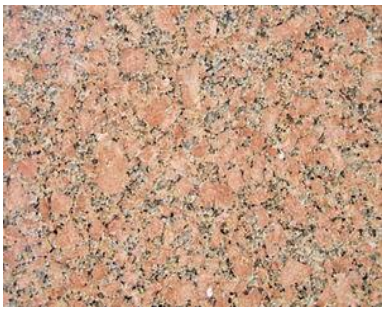
Gneiss. Gneiss is a metamorphic rock—one that was transformed from older rocks by heat and pressure within the Earth. Two continents collided 1.7 billion years ago, burying and heating a sandstone. Its minerals recrystallized and separated into alternating layers. Molten granite invaded this gneiss, forming a vein that was later deformed into a zigzag shape.

Granite. Granite is an igneous rock—one that solidified from a hot, molten state. The crystals in this granite formed when molten rock cooled underground 1.1 billion years ago. They grew until they bumped into neighboring crystals. As the granite slowly cooled, the crystals grew fairly large.

Sandstone. Sandstone is a sedimentary rock—one that formed from sediments deposited at Earth's surface by water, ice, or wind. The sand and pebbles that make up this sandstone are fragments that came from older rocks. The fragments were carried downhill by rivers and streams 300 million years ago, deposited in layers, then bound together by natural cement.

(SourceFrom the Smithsonian Education Web Sight. Via The Rock Rattler Dec. 2003)

Sandstone



Granite

Gneiss

Pictures from Wikipedida

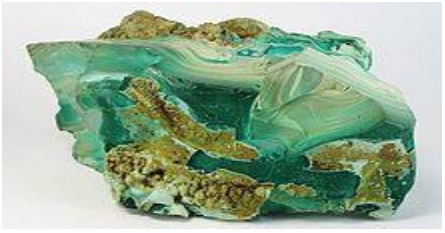
Chrysocolla

By Bruce Siegfried; Curator for The Franklin Gem and Mineral Museum

In a perfect world. It's the color of the sky everyday. Chrysocolla flirts with rockhounds and mineral collectors, flashing a charming blue smile, with just a hint of green. A cheerful color few could dislike. Chrysocolla deserves a two-fold description, for its two distinct forms.

1. By itself it's an average material, useless as a gemstone, although pretty enough to the eye. For not only is it dull in luster, but even worse, it's brittle and fragile, even crumbly and soft. The hardness hovers around 2.

2. However when chrysocolla is found residing in quartz, it becomes a highly appealing material, sought after for its gem quality. It is the only chrysocolla of lapidary interest. Now you have a respectable hardness of 7 or so, and you have added a tasteful shiny surface. Most of the known material of this type originated in the Arizona copper district. Certainly this is the loveliest chalcedony material there is, (in my opinion anyway). Beautiful, intense, translucent, with an inner glowing color, everyone would be wearing chrysocolla jewelry, if not for the fact that it is very scarce. Chrysocolla facts...



(Banded white to blue green chrysocolla from Bisbee, Arizona picture from Wikipedia)

1) Its mineral form can dry out and crumble, or absorb water and shatter itself.
2) The traditional test for it is to stick your tongue on it; it will tend to stick, as it rapidly absorbs moisture.
3) The name comes from the ancient Greeks, chrysocolla means .'gold glue". This term was likely used for the other copper minerals used in a jewelry making process called granulation (where gold grains are attached to gold jewelry). Much later the name was applied to the mineral we know today.
4) The mineral form is much like clay; in fact it is related to kaolin.
5) There is a lovely drusy type that is chrysocolla coated with sparkling clear quartz crystals.
6) Chrysocolla often mixes with other copper minerals-for instance malachite, as in the Eliatstone of Israel.
7) In material called .'parrot wing" from Mexico, chrysocolla contributes to and mixes with malachite, turquoise, and jasper. What a vivid splash of colors, just like a parrot's wing!
8) When found in quartz, the names are varied and many. From just plain chrysocolla, all the way to chrysocolla stained gem chalcedony. (Whew, what a mouthful!) The host of names in between range from: chrysocolla, gem chrysocolla, chrysocolla quartz, chrysocolla in quartz, even gem chrysocolla chalcedony. BY ANY NAME, IT'S STILL THE SAME. And we can appreciate its attractiveness, without worrying over the details. Anyway, keep looking for that "perfect sky", a chrysocolla sky .

(Source: Rocket City Rocks and Gems March 2004)

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PSEUDOMORPHS

by Tony Gricius

The Earth is a dynamic place. Everything in it is subject to the universal forces of environmental change. These changes are recorded in the rocks, minerals, and fossils that we collect and study. Nowhere is change more evident than in a category of minerals called pseudomorphs.

Minerals are stable in the environment in which they form. If there is a change in some physical or chemical condition such as temperature, pressure, pH, or the composition of circulating fluids, a mineral may become unstable and be replaced by a substance more suited to the new conditions.

A mineral that has been altered or replaced by another without substantial change in its external form is called a pseudomorph. The name is derived from the Greek words meaning false form. The relationship between the new and the original mineral is referred in mineralogical jargon as "one mineral after another." Examples are pseudomorphs of goethite after pyrite or quartz after aragonite.

There are several types of pseudomorphs. These groups are based on different processes of formation.

(Paramorphs cont.)
Paramorphs are found only amongst a class of minerals that are polymorphs. Polymorphs are minerals that have the same chemical composition but different atomic structures. Examples of polymorphs are graphite and diamond, calcite and aragonite, and pyrite and marcasite. When crystals of one polymorph change to another, there may be little external evidence. Only laboratory techniques that use a petrographic microscope or X-ray diffraction may show the existence of paramorphism. Calcite is much more stable than aragonite, so paramorphs of calcite after aragonite are common. Other paramorphs than may be encountered are alpha-quartz (common quartz) after beta-quartz or rutile after brookite.
Alteration pseudomorphs are the most common type of pseudomorph. They are formed by a change in the chemical composition of a mineral. Oxidation and weathering often propel these changes. Possible types of alteration pseudomorphs are :
A) Pseudomorphs caused by the gain of an ingredient, gypsum after anhydrite.
B) Pseudomorphs caused by loss of ingredients, native copper after cuprite or azurite.
C) Pseudomorphs formed by the partial exchange of components,
goethite after pyrite or siderite
kaolin after orthoclase
pyromorphite after galena.
Replacement pseudomorphs have little or no chemical relationship with the original mineral. They might be formed in several ways. A cast is formed when a mineral fills a cavity that was created by the removal of an earlier mineral. An example might be a tree buried by pyroclastic debris. The debris cools and the wood is destroyed leaving a cavity in the ash. Silica-bearing water enters the cavity and deposits layers of colored chalcedony and a druse of lavender crystals. Millions of years later the ash is eroded away exposing the replaced wood. The external features of the wood and the texture of the bark are preserved, but inside is a geode-like structure of agate and amethyst with no hint of fossil wood.
Petrification or permineralization is a type of replacement where empty pores or cells are filled with minerals deposited by solutions, usually percolating ground water. In contrast to cast replacements, here delicate cellular structures are faithfully preserved. Such petrified wood is common and familiar. In Florida we can find wood replaced by quartz, calcite, and apatite. Agatized dinosaur bone is another example.
Substitution pseudomorphs are another form of replacement. It is thought there is a gradual removal of the original substance, and a molecule-by-molecule replacement with a new substance. The gemstone "tiger-eye" from southwest Africa may be a pseudomorph of this type: veins of crocidolite asbestos have been replaced by quartz.
Epimorphs are also known as encrustation pseudomorphs. They are formed by one mineral forming a coating or crust on a crystal of another mineral. This may be followed by the complete dissolution of the original mineral leaving a hollow shell that replicates the external shape of the original crystal.
Perimorph is a term synonomous with epimorph. Since it sounds so much like paramorph, I much prefer epimorph. (Epi, from the Greek, meaning on, upon, on the outside.) Common examples of epimorphs are quartz after anhydrite from the trap rock quarries around Paterson, New Jersey, and goethite after gypsum from Naica, Chihuahua, Mexico.
Crystal pseudomorphs are prized by mineral collectors because they may tell an interesting and complicated geological story. However, they are not common, and collectors usually have to search for good specimens. While only a small percentage of minerals are pseudomorphs, many fossils can be regarded as such. Organic substances such as shell, coral, bone, and wood are replaced by quartz, opal, and pyrite. The replacement may make the fossil more durable, more likely to be preserved through the millennia. If the fossil is replaced by a harder mineral while the surrounding rock is unaltered, then the fossil is easily eroded or leached from the matrix producing fabulous specimens like the agatized corals of Florida's Tampa Bay.
Anyone in the lapidary arts frequently encounters cutting materials that are in fact, replacements. Besides the tigereye and the seemingly ubiquitous petrified wood, many of the raw materials for cutting and polishing are siliceous replacements of sedimentary or volcanic rocks that have been given fanciful names. Turritella agate and several "jaspers" fall into this category. Precious opal replacing fossil wood occurs at Virgin Valley, Nevada, and in Australia opal replaces not only wood, but shells, coral, crinoids, belemnites, and reptile bone, including plesiosaur and dinosaur. Also in Australia opal pseudomorphs replacing dog-tooth calcite have been reported, and at White Cliffs are found the "pineapples", opal replacing clusters of glauberite crystals.
In summary, pseudomorphs are formed by a variety of processes, simple to complex. They reveal geological history because they show significant change. If we can interpret this evidence, we can deduce the nature of the environmental changes that shaped our specimen and the surrounding rock. This makes pseudomorphs interesting to study and fun to collect.

(Source: Stones and Bones April 2005)

More Humor in Mineralogy.

Almosthadite – refers to a specimen of which the major portion remains on public display in a remote quarry.
Cantrememberite – one of the more common specimens typically from locations generally unknown at the present time.
Droppedite – a collection of cleavage fragments representing a high quality cabinet specimen formerly on display.
Nolabelite – one of a class of minerals or fossils of relatively little value appearing in most private collections.
Cantquitespellite – resembles a specimen in the University collection with an even longer and more complex name.
Oncehadite – used in reference to extremely unusual specimens traded at rock shows before true identity was realized.
Usedtohavite – a secondary form of specimens including marcasite, best recognized by the permanent brown ring where the specimens formerly sat on the shelf.

(Source: From Rochy Mountain Federation News, March 2003)

Field Trip Calendar - September 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

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Additional Show Dates:

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

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Feel free to make copies of our show coupon

58th Annual Topeka Gem & Mineral Show
TGMS presents

BLING * ROCKS * FOSSILS

Agricultural Hall, Kansas Expocentre

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Admission
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Hours
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12th - 10 am - 5 pm

One Coupon Good For All Adults In Group
email: rock2plate@aol.com

See You At the Show ! ! !

TOPEKA JUNIOR ROCKHOUNDS

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

September 20, 2014 the Topeka Junior Rockhounds will host their Annual Roundup from 8:30 a.m. till 11 a.m. at the Topeka & Shawnee County Public Library, 1515 SW 10th St., Topeka, KS.

Top 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.

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Make Your Own Glow Stick

For camping at night while on a rockhound trip. Leave 1/4 Mountain Dew in the bottle (just don't drink it all), add a tiny bit of baking soda and 3 caps of peroxide. Put the lid on and shake - Walla!! Homemade glow stick (bottle) solution. Super cool!!!! (Via CMS Tumbler, 8/13; Quarry Quips, 6/13; from Shawnee Slate, 6/13; via Clackamette Gem Oct 2013)

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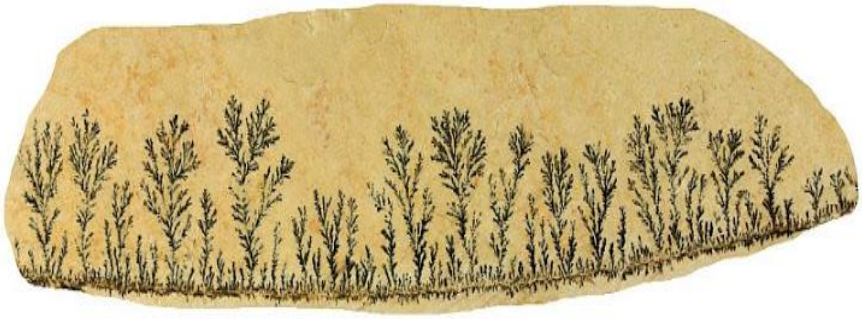
JUST FOR FUN

Q: If H2O is the formula for water, what is the formula for ice?
A: H2O cubed.
Q: Did you hear about the geologist who was reading a book about Helium?
A: He just couldn't put it down.
Q: What do you do with dead geologists?
A: Barium
Q: What weapon can you make from the elements potassium, nickel and iron?
A: A KNiFe.
Q: What fruit contains Barium and double Sodium?
A: BaNaNa!
Q: What is the chemical formula for the molecules in candy?
A: Carbon-Holmium-Cobalt-Lanthanum-Tellurium or CHoCoLaTe
Q: What do you call a can of pop found in a conglomerate?
A: Coca-Cola Clastic
Q: Why do Earth Science professors like to teach about ammonia?
A: Because it's basic material.
Q: How did the geology student drown?
A: His grades were below C-level.
Watson: Holmes! What kind of rock is this!
Holmes: Sedimentary, my dear Watson.
Q: Anyone know any jokes about sodium deposits?
A: Na
Q: Why wasn't the geologist hungry?
A: He lost his apatite.
Q: Why shouldn't you lend a geologist money?
A: They consider a million years ago to be Recent.
Q: Why was the Geologist expelled from Reform School?
A: He was a dirty layer!
Q: Where do geologists like to relax?
A: In a rocking chair
(Via Carny Hound 4/14; Via Clackamette Gem Sep 2014)

In the Field: Dendrites



Dendritic growth is a very common phenomenon in nature. We are all familiar with the way how trees grow by spreading branches and roots from the main trunk (that's why we call this mode of growth "dendritic"). The term "dendrite" itself is used to describe branched projections of neurons.

The same applies to inorganic world as well. Window frost is a beautiful dendritic phenomenon, albeit somewhat annoying. Rivers often form a dendritic drainage pattern as well although in this case we cannot talk about dendritic growth in the narrow sense of the term.

Manganese oxides are well-known to form nice dendritic patterns on the surface of rocks in veins. Manganese oxides (there are several manganese-bearing minerals that grow this way) precipitate out of hydrous solutions in veins separating rocks. This (or sometimes also branchingly grown inclusions within other crystals) is what the term "dendrite" means in geology. Dendrites are common on the surface of sedimentary rocks, especially limestone.

Such dendrites are sometimes mistaken for fossils and are therefore often used as an example of a pseudo fossil. Pseudo fossils are natural object that may be mistaken for fossils. Not to be confused with fake fossils which are man-made rubbish produced to cheat us.

Dendritic growth commences when the material is well below its crystallization temperature. In this case, regular growth which forms crystals with well-developed crystal faces, is re-placed with a crystallization mode which favors the formation of protrusions near the corners of crystals. Hence, new branches develop instead of regular crystal faces. This happens to snowflakes which form out of water vapor in air which is usually much colder than the normal crystallization temperature of ice. New branches do not occur all the time. This process goes on in an orderly fashion because we are talking about crystals here. These protrusions grow larger until they reach a point when the formation of new protrusions becomes favorable again and new branches start to develop. Such a branching network forms a natural fractal-like pattern. Such patterns repeat themselves in smaller scale, they look similar no matter what is the zoom or scale of view.

(http://www.sandatlas.org/2012/09/dendritic-growth-in-crystals/; Via Searchers Rock Slab News 9/14; Via The Rockhounder Sept 2014)

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RULES OF CHOCOLATE
THE PROBLEM: How to get 3 pounds
of chocolate home from the store
in a hot car.
THE SOLUTION: Eat it in the
Parking lot
Author unknown
Via Mountain Gem Sep 2003