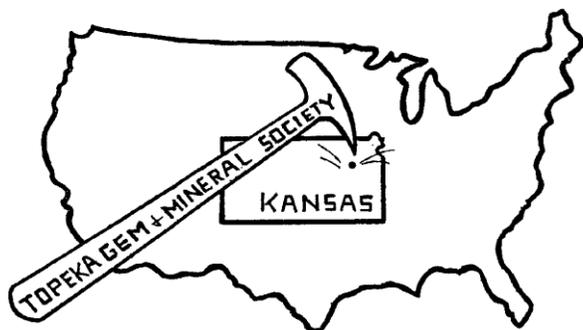


The Topeka Gem and Mineral Society, Inc.  
 1934 SW 30<sup>th</sup> St. Topeka, KS 66611  
 Rock2Plate@aol.com

# THE GLACIAL DRIFTER



[www.topekagemandmineral.org](http://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. 06, June, 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: 4<sup>th</sup> 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 30<sup>th</sup> St, Topeka, KS 66611.**

## 2014 OFFICERS AND CHAIRS

President	Mike Cote	220-3272	Cab of the Month	Debra Frantz/Fred Zeferjohn	862-8876
1 <sup>st</sup> Vice Pres.	Dave Dillon	272-7804	Field Trip Coord.	Larry Henderson	-----
2 <sup>nd</sup> 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).





## Field Trip Calendar - June 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 on

June 20, 7:00 p.m. Fossil Special Interest Group, Show & Tell, at Baker's Dozen, 4310 SW 21st St, Topeka, KS

June 28, Field Trip TBA Meet at McDonalds, 11<sup>th</sup> & Kansas Ave., 7:30 am, leave at 8:00 am.

July 1, 7:00 p.m. Fossil Special Interest Group, Show & Tell, at Baker's Dozen, 4310 SW 21st St, Topeka, KS

July 15, 7:00 p.m. Fossil Special Interest Group, Show & Tell, at Baker's Dozen, 4310 SW 21st St, Topeka, KS

July 19, Field trip to the Flint Hills Discovery Center, See The *Ice Age Imperials* exhibition. Meet at McDonalds, leave at 9:00 am. See below.

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

An up-to-date Calendar can be found on the Topeka Gem and Mineral Society Website: <http://topekagemandmineral.org/calendar.html>

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](mailto:LHenderson85@gmail.com) Larry Henderson, Field Trip Chairman

## Ice Age Imperials

At Flint Hills Discovery Center  
June 14 to September 14, 2014

The *Ice Age Imperials* exhibition provides a rare opportunity for visitors to "touch" the Ice Age. Interacting with real fossils from ancient animals like the saber-toothed cat, woolly mammoth, giant sloth, dire wolf, giant beaver and teeth from a huge prehistoric bear makes the Ice Age come alive for visitors like never before.

Lessons of the Ice Age abound. How did glaciers form and move? During the Ice Age, was there ice where you live now? Discover the answers within graphic displays about glacial size and ice depth. Try assembling the 3-D Mastodon puzzle, or immerse yourself in the History of Earth timeline where you can touch a variety of fossils from more than 500 million years ago to less than one million years ago. <http://www.flinthillsdiscovery.org/exhibits/temporary-exhibits>

TGMS Field trip to the Flint Hills Discovery Center, Saturday, July 19, 2014 Meet at McDonalds, leave at 9:00 am. Will eat lunch in Manhattan.

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## Up Coming Show Dates

June 22 – Omaha, NE. Rock Swap Sunday 10-4 pm, Seymour Smith Park, 72nd & Washington – Enter off 72nd St (2 blocks north of Harrison on 72nd Street) Buy Sell or Swap, contact Richard Farlow 402-332-4960 Nebraska Mineral & Gem Club. 10% of sales donated to the club by the seller. Rain or shine.

June 27-29 – Eldon, MO. Osage Rock & Mineral Club, Eldon Community Center 309 E 2<sup>nd</sup> St, free adm., [ormc2014show@centurylink.net](mailto:ormc2014show@centurylink.net) 417-532-4367.

July 11-13 – Tulsa, OK AFMS/RMFMS & Tulsa Rock & Mineral Show, Tulsa Fairgrounds, Central Park Hall, 4800 E 15<sup>th</sup> St S. 918-486-3788 [bthomas630@cox.net](mailto:bthomas630@cox.net); [www.ttownrockhound.org](http://www.ttownrockhound.org).

For additional listings of gem shows see [www.rockngem.com](http://www.rockngem.com)

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## THE MINERAL CHALCEDONY



Chalcedony is not scientifically its own mineral species, but rather a form of Quartz in microcrystalline form. However, the name is an old name, and almost all mineral reference guides and collectors distinguish Chalcedony separately from Quartz. In the gem trade, the name Chalcedony usually describes only white or blue Chalcedony, to distinguish it from the multicolored banded variety Agate and other unique varieties of this mineral.

Chalcedony is quite varied in its formation habits. It sometimes occurs in geodes, lining the cavity with mammillary blobs. Its Agate variety is also found in geodes, commonly lining the outer layer underneath the larger Quartz crystals. Chalcedony also forms pseudomorphs after organic material. A well-known example is petrified wood, in which the wood has been completely transformed into Chalcedony. In the Petrified Forest National

Monument in Arizona, an entire forest was transformed into petrified wood. Remains of this ancient forest can be seen in the huge silicified logs that are found in the area.

Another well-known pseudomorph is Chalcedony after coral. In the Tampa Bay in Florida, coral has been chemically replaced by Chalcedony, and its original form is preserved. Another famous Chalcedony pseudomorph is Tiger's Eye. This popular variety has very unique optical properties in the form of a bronze sheen that is caused by the fibrous mineral Crocidolite that was chemically replaced into Chalcedony through pseudomorphism.

Impurities are frequently present in Chalcedony. They may form a moss like growth in the mineral, forming what is known as Moss Agate. Another example is Dendritic Agate, a variety of Chalcedony containing manganese oxide impurities that form fabrications resembling trees. These forms of Agate are not true Agates, since they lack the banding.

From Minerals.Net, via Stony Statements June 2014

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## GEOLOGY OF THE TEXAS HILL COUNTRY

Geological forces have determined the look of the Texas Hill Country. There was a time when continents were together. When bumping into each other, mountain ranges were pushed up and folded. The area of today's southern United States had a huge mountain range, the Ouachita Mountains. They were pushed up by the African plate pushing against the North American plate. During the Triassic Period about 240 million years ago, the continental plates of North and South America and Africa were together and started drifting apart.

Texas and the southern part of the American plate was pushed up and folded by the African plate, the Ouachita Mountain range was built. The name Cretaceous period comes from the Latin language for "chalky" and is usually abbreviated K for its German translation Kreide = chalk. At the beginning of the Cretaceous period, about 145 million years ago, the ancestral Gulf lapped upon the edge of the Texas continent. The Bear Springs Blossom Nature preserve was covered by a warm shallow ocean about 120-125 million years ago.

Much later nearly all of Texas was covered by the sea. Multitudes of sea life deposited their calcium carbonate sediment – the origin of limestone or "lime" shells and skeletons. The Cow Creek, Glen Rose, and Edwards were derived largely from skeletal calcium carbonate sediment.



Glen Rose Gastropod

The Glen Rose is the oldest of these limestone layers on our Nature preserve. In the subsurface under our preserve lies the Cow Creek limestone. The Glen Rose in Central Texas was deposited from about 113-108 million years ago and consists of layers of yellowish limestone, compacted clay, compacted silt, and soft lime mud. The "soft lime mud" usually is a mixture of lime mud and clay, which is called marl. You can see the Glen Rose formation in stream valleys and road cuts throughout Bandera County.

The sea that deposited the Glen Rose progressively advanced onto the continent. After the sea level was driven about to the middle of Texas, pure carbonate sediment was deposited in this area. This deposition is now called the Edwards Group of formations, which overly the Glen Rose formation. The Edwards was deposited from about 108 to 100 million years ago. Remnants of the Edwards are on the high hills in Bandera County. You all heard about the Balcone's fault zone. The Balcones faulting occurred around 20 million years ago.



Far below the limestone layers, a thick salt layer was deposited by evaporating sea water. The northwestern margin of the Gulf of Mexico subsiding caused enormous tension and movements far beneath the layer-cake surface. A huge part of Texas surface bulged, and a huge section was sliding on the thick salt layer downward toward the Gulf Basin.

Texas Echinoid Fossil

Because of all the movement of this huge weight, the region was lifted up, building the Edwards Plateau.



The "hinge" of that uplift or downwarp runs parallel to Interstate 35 between Austin and San Antonio along what we call the Balcone's Escarpment. The Balcone's Fault Zone forms the eastern edge of the Edwards Plateau and the southern edge from San Antonio nearly to Del Rio.

Ammonite (Cretaceous)

The increased elevation of the Edwards Plateau area increased the gradient of streams, thereby increasing the ability of the streams to downcut and erode. Since that time natural processes of weathering and erosion have carved the limestone into hills and canyons that you see today in Bandera County. You can also say that the streams cut the canyons and what is left between the canyons are our Texas Hill Country hills. Stone is hard and water is soft, but water is powerful and persistent and wears away stone. Water penetrates pores and cracks - when it freezes it expands, sometimes breaking the stones. Rainwater picks up carbon dioxide from the air and soil and forms a dilute solution of carbonic acid, which can easily dissolve limestone. Caverns, sinkholes, and fantastically shaped pieces of limestone result.

From KeepBanderaBeautiful.org, via Stoney Statements June 2014

## WHAT IS AN ECHINOID?



Despite their alien appearance, echinoids, or sea-urchins as they are better known, are very common in the seas and oceans of today and are common fossils too. Their name derives from the Greek 'echin' ('spiny'), referring to their protective spines and presumably 'oid' (egg-like) in reference to their globular shell, or test as it is known. Echinoids are part of a much larger group of animals known as the Echinoderms ('spiny-skins'), which also includes the Asteroids (starfish), Holothurians (sea cucumbers), Crinoids (sea lilies and feather stars) and the *Ophiuroids* (brittle stars).

Though their body plans are varied, all echinoderms possess key features which unite the group:

- A complex skeleton of calcareous plates, with a unique spongy structure known as stereom.
- Five planes of symmetry, referred to as penta-radial.
- An internal hydrostatic (water-vascular) system, external extensions of which are used for locomotion, respiration and feeding.
- All live in marine waters.

(Via Stoney Statements June 2014)

# Vesuvianite

By Layna Palmer, Wire-Sculpture.com, September 27th, 2013

I think you know by now that volcanos can be numbered among my favorite things, though I don't think they would fit well with raindrops on roses or whiskers on kittens.

My favorite volcanic process is that of metamorphism and this week we will be taking a look at a mineral and gemstone that is made through contact metamorphism of high silicon-bearing limestone; Vesuvianite, or Idocrase.

## What is Vesuvianite?

Vesuvianite is generally green, a similar color to olivine, it has been found in yellow, brown, blue, purple (rare) and white. It is often found with other rare minerals and the transparent form can be faceted for gems.

Vesuvianite can be in a massive form or in crystal form with the crystals being faceted for gems.

Vesuvianite crystals form in transparent four-sided prisms with a pyramid termination. Massive forms are often difficult to distinguish from grossular garnet which is why Vesuvianite has been mistaken for grossular garnet in the past. Californite, a massive form of opaque Vesuvianite, has also been called California Jade and American Jade.



## Where is it found?

Vesuvianite was first discovered in 1795 by Abraham Gottlob Werner as he was studying the minerals around Mount Vesuvius in Italy, hence the name. Several years later another mineralogist, Rene Just Huay, suggested the name Idocrase after more of the stone was found in other parts of the world.

The two names are fairly interchangeable with some regional names like **Californite** distinguishing the massive form found in that state and **Cyprine** which denotes blue Idocrase that has trace elements of copper and is named after Cyprium, the ancient name for copper. A note here; though the names are areas that have been subjected to contact metamorphism with significant veins being found in Italy (Mt Vesuvius), Canada (Asbestos), California (Siskiyou County), the Ural Mountains of Russia, and Vesuvianite, has been found in New Jersey (Franklin), Sweden (Jakobsberg Mine), Sri Lanka and Pakistan.

## A little history of Mount Vesuvius:

Mount Vesuvius is a stratovolcano located in the Gulf of Naples, Italy. It is one of the several volcanoes which form the Campanian Volcanic arc. Vesuvius consists of a large cone partially encircled by the steep rim of a summit caldera caused by the collapse of an earlier and much higher structure.

Mount Vesuvius is best known for its eruption in AD 79, which led to the burying of the Roman city of Pompei.

Vesuvius has erupted many times since and is the only volcano on the European mainland to have erupted in the last hundred years. The last major eruption of Mount Vesuvius in March of 1944, destroying the villages of San Sebastiano al Vesuvio, Massa di Somma, Ottaviano and part of San Geroigio a Cremano.

## How to use Vesuvianite:

Vesuvianite ranks at about a 6.5 on the MOHS scale making it ideal for cabochons when cut from opaque material and the transparent variety takes a nice facet to show the beautiful green color and fire of the stone.

It is best worn in necklaces or earrings, but can also be set for a ring. Care for the stone as you would a garnet or quartz and if it is set in a ring, be careful not to be too rough as the stone can fracture with a lot of wear and tear.

## Other interesting properties of Vesuvianite:

Vesuvianite is a very "energetic" stone that can release negativity, align ones will with the heart and can help the wearer find the courage to change paths when needed. It also helps release hidden fear, and is one of the stones considered beneficial for overall health of the wearer.

## Resources:

- Vesuvianite & Idocrase
- Mineralogy of Vesuvianite
- Gemology of Vesuvianite
- Vesuvianite crystals

## TOPEKA JUNIOR ROCKHOUNDS

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



Topeka Junior Rockhounds

Class Calendar as of June 12, 2014

July 3, Special Effects

August 7, Gemstone Lore & Legend

Classes are held the first Thursday of each month at Town & Country Christian Church, 4925 S.W. 29th Street, Topeka, KS. starting at 6:30pm. Please let us know if you plan to attend the above classes.

To register for Junior Rockhounds or any of the classes, email Shirley Schulz, Program Secretary [sschulz@kdheks.gov](mailto:sschulz@kdheks.gov)

Call Dave Dillon 272-7804, for information on lapidary classes.

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## ROCK AND MINERAL QUIZ

1. What does limestone become when it is changed by heat & pressure?
2. What is the strongest kind of rock?
3. Which sedimentary rock may turn to slate?
4. What kind of magnetite acts like a magnet?
5. What is Christmas tree "snow" made of?
6. What is Iceland spar?
7. What is pencil lead made of?
8. Where do most opals come from?
9. Why is turquoise an important American gem?
10. How many rays does a star sapphire show?
11. Which are the three precious metals?
12. Where is most native copper mined?
13. Which is the main ore of iron?
14. Which is the ore of Mercury?
15. Why is pitchblende valuable?
16. What is another name for density?
17. Which property does Mohs' scale test?
18. Which is the softest of all minerals?
19. Which kind of mineral or rock fracture looks like a shell?
20. Which minerals effervesce in acid?

(reprint from the Drifter Sept. 1989—answers on page 3)