



Tulip City Gem & Mineral Club **Conglomerate**

Monthly Newsletter of the TCG&MC, PO Box 2082, Holland, Michigan

July 2020

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Off the Desk of the President

Hello members,

I hoped you were able to join us for our annual picnic on the 18th of this month. The weather was forecasted sunny, sizzling hot and humid, but we lucked out and enjoyed an afternoon of clouds and very comfortable temperatures. This led to great times by those attending be it sitting around and socializing, cracking geodes, enjoying their picnic basket, or just getting outside for a few hours. THANK YOU to all who attended.



Now I don't need to tell you that the COVID-19 pandemic has caused quite a disruption to our daily routines. We've been informed by the Howard Miller Library that they will enforce a 25-person limit for the meeting room till the end of the year. This means that we must find alternative accommodations to hold our general meetings. While the board members are searching, should you know of a facility that would be open to hold our monthly meeting, please let me know by e-mail immediately.

While we continue to find a location for the August meeting, please keep your eyes open for updates on time and place as we get them. From the indications I've been told by those involved in the program for the August meeting, it should be engaging and educational for both juniors and adults.



I appreciate that everyone has been flexible with us in our navigation through these challenging and stressful times. I hope you feel that our communications to you during this time has been timely and interesting. The newsletter is always looking for articles and ideas to include. Have you and the family been out collecting yet ?? If so, please share the adventure with us and don't forget to include a couple photos.

Continue to follow good practices to minimize the possible contact to the virus. Reach out to neighbors and friends to assist them through these days. Keep a positive and energetic attitude, together we will cope and survive till we return to normal life.

All the Best,

Michael B. Larson

Keep Current with the club: www.tulipcity.org or www.facebook.com/tulipcityclub/



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Scenes from the Picnic



My Decade With the Club by Dakota Riemersma

When I joined Tulip City as a curious eight year old that liked rocks, I could never have guessed the journey the next ten years would have in store for me. Now, as a curious eighteen year old that likes rocks, I can reflect on my years of experiences with the club and confidently say that it has been a wonderful ride.

My first ever club field trip was to the Alpena Fossil Quarry. Alpena was a great place for my child self to be introduced to rockhounding, as it offered interesting fossils, easy collecting, and most importantly, big mounds of rock to climb up and down. After Alpena, my Dad and I began to delve more deeply into rock collecting, starting our annual summer rock trip tradition.

I've been very lucky to get a chance to collect all over the country, from upstate New York to Washington State and (seemingly) everywhere in between.



Some of these rock collecting trips have actually been through the club, including the aforementioned upstate New York mineral trip, the Flint Ridge Flint trip, and the Kevin Ponzio led Wisconsin trip. If I had to choose a favorite, it would be our upstate New York field trip led by Steve Chamberlain. Thanks to Steve's extensive knowledge of minerals and his handyman Donny's excessive ability to find outcrops, we were able to collect a large variety of rare, exciting minerals at a number of locations. I will never forget pulling a perfect diopside crystal out of the mud in the middle of a dense New York forest. It was a truly remarkable experience.

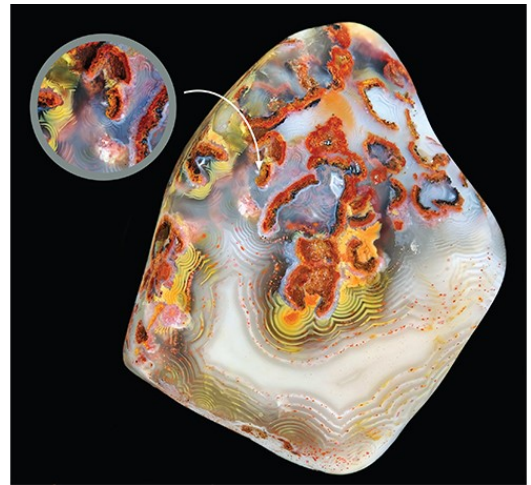


Moving forward, I will unfortunately be splitting ways with the club as I will be attending college in California at Stanford University. I'm currently planning on majoring in geology, which is in part inspired by the opportunities and experiences I've had through the club. Whether it was listening to an educational lesson at the juniors meeting, or winning a particularly nice specimen at the silent auction, this club has always found a way to facilitate my interest in rocks, and for that I am very grateful.



This specimen of Lake Superior agate is a favorite of Lane Baguss. Baguss, the owner of LSAgates Photography, discovered the stone along the shore of the Mississippi River in Anoka, Minnesota.

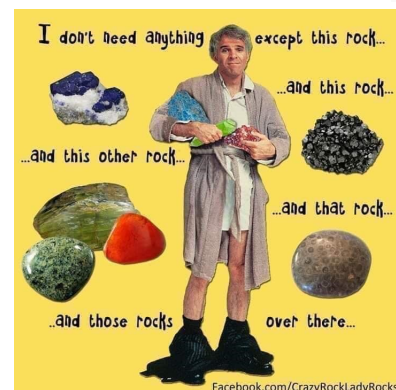
Baguss was a child at the time of the discovery and chose to put the piece through the tumbler, and many years later photographed the specimen. The stone is about as large as an adult's thumbnail, but as Baguss demonstrates with his photograph and explains, it is packed with incredible beauty.



"Coming in so many variations, I am always finding new specimens (of agate) to photograph," Baguss said. "What is neat about this particular stone is at an early stage of this agate's formation, membrane-like layers of mineral deposits came off the walls of the cavity, broke and were deposited in a colloidal silica solution exhibiting blue banding and yellow limonite."

On the Calendar:

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|---------|------------------------------|
| 8/12/20 | TCG&MC Board Meeting |
| 8/26/20 | TCG&MC General Meeting @ TBD |
| 9/16/20 | TCG&MC Board Meeting |
| 9/26/20 | TCG&MC Annual Tailgate @ TBD |
| 9/30/20 | TCG&MC General Meeting @ TBD |



Petoskey Stones

By Amber Wallace

Story by Bill Vossler

At 350 million years of age, Petoskey stones are older than the dinosaurs, which roamed the earth beginning 165 million years ago. Like dinosaurs, Petoskey stones are rocks *and* fossils (***The Complete Guide to Petoskey Stones***, Bruce Mueller and William H. Wilde, 2004). Though evidence of dinosaurs can be found almost everywhere around the world, it is not so with Petoskey stones. Mostly, they are found in Michigan, though some show up in Illinois, Indiana and Iowa.

Petoskey stones began life as coral planulae, free-swimming larva that propel themselves around in the warm waters of tropical seas with tiny hairlike projections. Eventually, they drop to the bottom of the sea. There, they anchor onto something solid and progress into the polyp stage, growing and dividing, making exact copies. To protect themselves, they secrete calcite to make a hard, cuplike outer covering, or exoskeleton, say Mueller and Wilde. Like a snail, the soft bodied coral lives inside the hard exoskeleton and uses its tentacles to snatch food that drifts by.



A wide variety of looks can be garnered from different Petoskey stones. (Kathy Miling photo)

During the ancient Devonian Period of the Paleozoic Era (ca. 350 million years ago), these living coral existed in a warm, shallow, saltwater sea filled with other marine life. At that time, today's Michigan was actually located far south, near the earth's equator.

These *hexagonaria percarinata* corals—the only variety that forms Petoskey stones—thrived in tropical reefs, according to www.petoskeyarea.com, until “the earth's tectonic plates moved, pushing Michigan northward and above sea level, until it reached today's 45th parallel, creating dry land formations.”

In the process, skeletons of these tightly packed, six-sided corallites became fossilized, forming Petoskey stones. Their distinctive dark centers, called “eyes”, were actually the mouths of the coral. The distinctive lines surrounding the eyes that make the stones so attractive were once tentacles that brought food into the mouth (Petoskeychamber.com).

The movement of the tectonic plates buried the fossils deeply. Subsequent weathering wore down the overburden and helped bring them closer to the surface. Some 70,000 years ago, The Laurentide Ice Sheet, two miles thick in places, ground pieces off the original coral formation (c. 90,000 and 20,000 years ago) and spread them around lower Michigan. According to *The Complete*

Guide, “The glacier picked up the coral colonies that had weathered to the surface, froze to them, and incorporated them within its body, and carried them south. In the northern quarter of the state the glacier gouged out and freed billions or trillions more from the calcareous shales in which they were entombed. As the glacier moved across the state, it left tremendous numbers of coral colonies scattered across Michigan and undoubtedly carried some into Illinois, Indiana and Iowa. When the ice melted, the Petoskeys were left behind as glacial erratics, stones carried by the glacier to places where they don't belong.”

During the process of being dug out and carried over bedrock by the glaciers, many of the Petoskey stones became rounded off. The enormous weight of the ice also scratched some and completely crushed others. Today, wave action continues to round their contours, often to the size and shape of an oval bar of soap. Those that are not found in or near water, and therefore haven't been subjected to the tumbling action of the waves, are less rounded and come in much more irregular shapes (*The Complete Guide*).

Petoskey Lore

Legend has it that, in 1787, an Ottawa Indian chief named Neatooshing and his pregnant wife were camping out near the Kalamazoo River in southwestern Michigan. During the night, the cry of a newborn baby was heard, and in the morning, the rising sun's rays reflected off the new son's eyes, causing the chief to say, “His name shall be Petosegay. He shall become an important person.”

“Bedosegay” and “Pet-O-Sega” are variants of the same name, which in English means “rising sun”, “rays of dawn”, or “sunbeams of promise”, which the chief saw reflected off his newborn son's eyes. Eventually, Pet-O-Sega became anglicized to “Petoskey”.

The baby did live up to his father's prediction that he would become important in at least four different ways, first, as a wealthy fur trader. Second, just before his death in 1873, a city in the northwestern part of the Lower Peninsula was named after him.

At some unknown time, a third distinction was bestowed upon the subject of the long-ago prophecy when stony fossils became named “Petoskey stones”. The six-sided coral formations filled with radiating lines may be reminiscent of the sun shining off the newborn's eyes, but they were probably named because they are found in quantity near Petoskey, Michigan.

Fourth, the child-man became important because these Petoskey stones were declared the official state stone. Governor George Romney signed the single-sentence Act 89 of 1965 on June 28, 1965, in the presence of Ella Jane Petoskey, the only living grandchild of Chief Petosegay.

It was not until 1969 that geologist Dr. Edwin C. Stumm established that this “stone” was actually fossilized colonial coral of the genus and species *Hexagonaria percarinata*, in which organic components had been replaced by calcite, silica, and other minerals.



This Petoskey stone is in its natural state. It was found in the ground and was not tumbled much in the water and sand. (Kathy Miling photo)

Kathy Miling, of Nature's Treasures (www.getpetoskeystones.com), says, "The Petoskey stone is loved by all, whether they're 2 or 80, because of the fascinating and striking honeycomb pattern that varies in shades of browns and blacks, with dividing lines of white. Each one is uniquely different, with imperfections that give them some character. I have hunted them for years. It is exciting every time you find one on the beaches of Lake Michigan or on the river banks."

Miling says she started her website with information and photos about the fossil rocks because she loved Petoskey stones. But she received so many hits, she decided to start buying and selling them. Many people who buy Petoskey stones from her do so to have a souvenir from their trip to Michigan or because they moved away and want one to remind them of their days of hunting the Petoskey stone when they were young.



**A close-up shows how the rays move out from the ancient coral.
(Bill Vossler photo)**

Official White House photos show that President Barack Obama had a Petoskey stone on his desk in the Oval Office that was given to him as a gift. He often tapped it with a finger.

Average Petoskey stones can be collected for their beauty, says Miling. "Because the coral was red when it was a live plant, today you can still see red in a few of them, which adds to their beauty. Maybe one in every 100."

Their beauty can also be enhanced by polishing them with sandpaper, starting with a coarse grade, then moving to finer ones, and eventually using very fine steel wool or wet/dry sandpaper to smooth out the larger sanding marks.

According to wmich.edu, the stone should be finished with leather or cloth soaked in oil. Despite its silica content, Petoskey stone is too soft to be put in a rock tumbler; it will be damaged.

In addition to self-collecting specimens, Olson says Petoskey stones can be purchased all over the city of Petoskey and on the Internet.

Miling adds, "The Petoskey stone is very soft, with a Mohs hardness of 5. However, it has been cut, shaped, carved and polished by lapidary artists into many items, from jewelry to paperweights, door stops, book ends and chimes. There are also artists that carve them into shapes of all kinds."

Though Miling's site does not make any claims for different powers that Petoskey stones might have, some sites say they prevent naughty spirits from interfering in one's life, enhance awareness of emotions, clear negative energies, bring hope, and aid creativity and healthiness, among many other claims. The most obvious benefit they bestow is the joy in their unique, collectible beauty.

Where to Collect

This fossil coral is found only in the Alpena Limestone rock strata, a mixture of limestones and shales that is part of the Traverse Group of Devonian Age. That makes them distinctive, as the outcrops of these rocks that contain Petoskey stones are restricted to the Little Traverse Bay near Petoskey.

Petoskey stones can be found in many places in the area, but first the collector has to know what to look for. Dry Petoskey stones often are light- to dark-gray and look like ordinary limestone. Not until the stone is wet does the distinctive, six-sided “rays of the rising sun” pattern pop out. That means it’s easier to find Petoskey stones along the wave-washed stretches of beach or by wading in the water and searching for them. A spray bottle of water serves the same purpose when you’re hunting in dry areas.

Michigan collectors have a number of collecting spots for Petoskey stones. Not surprisingly, one of them is Petoskey State Park, with easy access to two miles of shoreline on Little Traverse Bay and Lake Michigan where they can be hunted and found. A recreation passport is required for entry to this 303-acre park, located between Petoskey and Harbor Springs, off state Route 119.



Pixabay.com

Other collecting areas in Petoskey include Magnus City Park Beach, a 1,000-foot-long beach that is easily accessed at the waterfront, and Bay Front & Sunset Park, which is within walking distance from downtown, and near the marina.

While the lakeshore is the most popular hunting ground for Petoskey stones, don’t forget the glacial action that carried them from their place of origin, spreading them around the local area. They can also be found in road cuts, gravel pits, and fields. Collectors *must* get permission from landowners and quarry operators before attempting to collect on private land.

Some claim that Petoskey stones can be found on some Lake Huron beaches, on the east side of the peninsula. Outside of Michigan, Petoskey stones can be found in Midwest states such as Indiana, Illinois and Iowa. Falls of the Ohio State Park, located in Clarksville, Indiana, has 220 acres of exposed Devonian-age fossil beds.

Other varieties of corals also flourished in that Devonian sea and were similarly preserved. These “fake” Petoskey stones are deceiving, as most people would not be able to identify these other types of corals. **True Petoskey stones, however, consist only of the fossils of *hexagonaria percarinata* corals.** False Petoskey stones found in Indonesia can be differentiated from the real thing because the eyes are much smaller, almost like baby Petoskey stones. The rays in the center of the hexagons are also lighter, and don’t always attach to the center.



HOW is a Charlevoix stone different than a Petoskey Stone ?

The Charlevoix stone is fossilized pre-historic coral known as Favosite and looks a lot like its cousin, the petoskey stone. It’s smaller in total size, but is especially distinguished by its smaller honeycomb like corallite patterns.



There is a current opening for a Newsletter Editor. Responsibilities include the creation of a monthly newsletter, attendance of club meetings, and a point of communications for the club.

Anyone interested in the position or in assisting in the duties, please speak with Michael B. Larson or Shari Luttikhuizen.

Open Position



Flint Rock and Gem Club Annual Rock, Craft and Rummage Sale.

August 8th and 9th 2020. 9 am till 4 pm.

The sale will include the life long collection of Gearald & Christine Smith.

Face mask are required and gloves are suggested.

11350 N. Saginaw Rd. Clio, Mi. 48420

flintrockandgem.org

Q: Where do geologists like to relax?

A: In a rocking chair

Metamorphic rocks are formed by rocks coming under great pressure and high temperatures. These temperatures and pressures are found under mountains and volcanoes, especially when continental plates move together. These conditions change the make-up of the original minerals.

Examples of metamorphic rock:

- ◇ Marble is a metamorphic rock formed from limestone.
- ◇ Slate is a metamorphic mudstone or shale.
- ◇ Quartzite is a metamorphic sandstone.

The recrystallisation of minerals after heating generally causes the destruction of any fossils the rocks might have contained.

Did you Know?