Tulip City Gem & Mineral Club
Conglomerate

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

September 2020 ***Volume 53, Edition 9***

From my Rockpile

Last weekend I was part of a large showing of TCG&MC selling at the tailgate in Kalamazoo. WOW ! It was wonderful to be out interacting with fellow rockhounds. Despite the need for a mask, I believe all in attendance were equally needing to get out and participate.

As we were driving home, the hints of fall was becoming evident. Though it wasn't many, trees are displaying their golds and reds. Geez, if you are interested in viewing the colors, jump in the car with a picnic basket and a camera and get out there. The local region can fulfill your visual thrill, but truly there are amazing locales just north to bring out the oohs and aahs. If your need help on where to go, check out:

- www.tripsavvy.com/color-change-and-michigan-fall-foliage-1084722
- www.mlive.com/travel/2016/10/michigans_best_scenic_fall_dri.html

Since this weekend is open to you with the cancelation of our show, you don't have a reason not to get out there and explore. Had we held our show, I cannot feel how there would have been a deep emptiness present from the loss of Chet Smith; he has greatly contributed to our club. Please keep his family in your thoughts.

Stay healthy, be safe, and register to vote ! ! !

M.B. Larson

2020 TCG&M Board

President - Michael B. Larson
mblarson300@yahoo.com

Vice President - Shari Luttikhuizen
sluttikh@oaisd.org

Secretary - Brenda Olson
brendaolson01@gmail.com

Treasurer - Kurt Brinks
kbrinks@hollandpublicschools.org

Field Trip Coordinator - Jon Mull
solace247@yahoo.com

Field Trip Coordinator - Bob Sinke
bobsinke@comcast.net

Historian - Betty Hoekstra
kbhoek@att.net

Jr. Club Coord. - Rick Smith
Hollandrsmith@gmail.com

Jr. Club Coord. - Linda Winkelmann
lindawinkelmann@att.net

Liaison - Rhonda Gehringer
rgehringer@homeoftheshamrocks.org

Membership - Christine Silich
CSDS77@icloud.com

Newsletter Ed. - < open >

Social Media Coord. - Julia Sherwood
bobandjulia@accn.org

Show Coord. - Sue Goedert
sonbeams2000@yahoo.com

Social Coord. - Linda Plumert
rlplumert@gmail.com

Dir. at Large - Mary Johnson
maryjohnson299@gmail.com

Dir. at Large - Randy Wake
rgwake@charter.net

Past President - C.H. Falstad
cfalstad@ameritech.net

In Memorium

Chester Alvin Smith

12/27/1923 – 09/10/2020

Chet passed away in the early morning of Thursday September 10 at home surrounded by family. The oldest of 6 children, he was born at home in Auburn, Indiana to Ashton and Mary (Goe) Smith. An Army veteran of WWII, and a Purdue University graduate in Electrical Engineering.

He married Betty Mae Brinkman on August 22, 1948. His 30 plus year career with General Electric had them making their home in Ohio, Michigan, Pennsylvania, and Indiana. Along the way he received 5 patent awards and was very active in local service activities such as a church building fund, Kiwanis Clubs, Boy Scouts, and GE management clubs. They finally landed in Holland, MI for the fourth and final time in 1993.

Starting as a hobby in 1967, Chet and Betty eventually joined the Tulip City Gem and Mineral Club and "Rocks" became a lifelong passion for both of them. They traveled around the world for some of their most prized specimens. After retirement they spent many winters in Quartzite, AZ.

Chet, Dad and loving grandpa, thoroughly enjoyed the outdoors and 28 yearly family camping trips with his children and theirs.

He was preceded in death by his wife Betty in 2010, parents, brothers Estelle and Betty Smith and Homer and Gloria Smith, in-law's John Stebing, Eston Rohm and Larry Hansche, Charles and Margaret Brinkman, Paul Brinkman, Juanita and Kenneth Rhodes and Ruth and Keith Culler.

He is survived by sisters, Lois Stebing and Ramona Rohm of Auburn, IN and Violet Hansche of South Carolina, four children Fred and Jackie Smith of South Lyon, MI, Dottie

Smith (Hardy Hoffmann) of Byhalia, MS, Barbara and Dean (Perry) Balgoyen of Allegan, MI and Jeffrey and Kenlyn Smith of Holland, MI. 10 grandchildren, 18 great grandchildren and 5 great, great grandchildren.

As requested, there will be no services. If considering a memorial, please consider giving to Hospice of Holland, MI or to the Norman and Helen Gibson Geology Field Study Scholarship at Grand Valley State University, Allendale, MI.

MAKING A CONTRIBUTION in Chet's Memory

GVSU has set up a special URL to use in making an online contribution as Chet requested to the Norman & Helen Gibson Geology Field Study Scholarship.

https://www.gvsu.edu/giving/gibson

If your preference is to write a check, you may do that and mail to:

University Development
Grand Valley State University
LV Eberhard Center 9th Floor
301 Fulton Street W
PO Box 200s
Grand Rapids, MI 49501-2005

For both methods, you may request that notification be sent to the family:

236 Park Street, Holland, MI 49424

In Memoriam
My Memories of Chet Smith: 1923 - 2020

Chet and Bette joined the Tulip City Club in 1968 and soon became very involved in its activities both social and serving on the board. In those earlier years, they lived on the outskirts of Zeeland with a spacious yard. This provided ample space for club picnics and ice cream socials. Board meetings were then held in members' homes that offered an intimate setting and Smith's frequently offered to host.

Over time, Chet served in numerous offices. As Show Co-Chair with Joe Moran for the first show in 1970 and in 1971; later, singly, in 1982 and 1997. Chet was elected President in 1972, 1981, 1996 and 2000, and also later served as Secretary.

Chet and Bette had friends from St. Louis, MO, who came to visit in Michigan and multiple club members were invited to meet them. In Spring of 1976, the club was invited to go to St. Louis in conjunction with the big McDonald-Douglas Club's Gem & Mineral Show and those who went stayed in their home. This was a good show with numerous vendors and exhibits. What stood out were a couple of dealers who had extensive displays of Union Road Agates that were collected while the Union Road was being constructed. These sedimentary nodules were a first for us. On later trips to the area we visited some of these same dealers and purchased specimens.

In 1979, it was decided to construct a club project. What better than a scale model of Holland's windmill "De Zwaan" built on Smith's large driveway? Consisting of carefully cut stone intarsia, the details are discussed in the club website (under Community Involvement) and in further detail in the May,1980 issue of Lapidary Journal in an article written and submitted by Chet. Quoting from Chet who wrote the article, "It was a proud moment for some 40 club members who worked on the windmill when it was placed on the stage in the Civic Center of Holland. This brought a number of inquiries asking about displaying it at shows and other events around the country. At the request of the Midwest Federation it was sent for their Lincoln, Nebraska, 1980 Show. This project was followed a few years later by the construction of a scale model "Big Red" Lighthouse.

Chet and Bette were part of the many club collecting trips into quarries in Michigan, Indiana, Ohio and Iowa for minerals and fossils as well as to northern Lake Michigan beaches for petoskeys and the Upper Peninsula Iron Range and Copper Country.

I have strong memories of a specific trip to Sheffler's Geode Mine in Alexandria, MO. Chet, Bette and their kids were along for what turned out to be the last opportunity to dig in the old mine on the west side of Hwy. 61 before the owner closed it (keeping for his own use). I remember Jeff being warned about the poison ivy around the outside of the pit. This trip was especially productive when we switched from working in the wall to digging in the floor which elevated slightly from one end to the other, enabling chisels, prybars and sledge-hammers to drive inward exposing a number of large geodes.

Club members often drove to Wauseon, Ohio, in May for the local rock swap (now called State Line Swap). Eventually our club decided to host Tailgates and Chet was instrumental in arranging for space at the Dutch Treat Campground practically next door to their home. Members and others

from nearby clubs would often set up with their campers on Friday night and everyone would gather for a potluck followed by a fire-pit "Cracker-Barrel" session, where rock-collecting tales grew tall. Swapping/buying went on Saturday to about Sunday noon.

Chet's professional background was in Electrical Engineering. Having graduated from Purdue University, he began working with GE in Holland, was later transferred to Tiffin, Ohio, and later to the Ft. Wayne, IN plant. In talking with Chet recently, he mentioned how upon his retirement from GE and return to Holland, they immediately the next day loaded their RV and left for an Oklahoma collecting trip. Over several winters, Smith's would drive to Arizona for the length of the Quartzsite Show, then over to Deming, NM to collect and take in their show in March—a nice 4-month sojourn!

On at least three occasions, Chet organized field trips to the western states. Those who participated were mostly retired and had their own RV's. They travelled quite leisurely, driving shorter distances between campsites. The gang was known as the "Peanut Butter Brigade," always with plenty of coffee on hand, a must for Chet. Each rig had a name: Bob and Marie Zigler's van was "Prospector." Chet fondly remembers the first great trip our club took to Thunder Bay, Ontario, in May, 1973. We drove straight through in a rented motor home rotating drivers. In the middle of the night in nowhere Ontario, Bob Z. was driving and noticed sparks flying behind in the dark. The ball joint had broken and we were attached to a U-Haul trailer only by the chains! A fellow was rousted out of bed at a gas station who, unbelievably, had a replacement with the correct size ball. We camped in the old Thunder Bay Amethyst Mine. What a wonderful collecting experience! The amethyst vein followed right up out of nearby Loon Lake with crystals forming on a sandstone base, so the digging was quite easy. The rules changed later and rockhounds were no longer allowed to use much in the way of tools.

Bette Smith connected with numerous rockhounds from other clubs here and abroad. One was with a woman from New Zealand (whose husband wrote a book on sheep shearing!). They arranged an extended trip to South Africa, NZ, Australia and Singapore where GE had a plant which Chet visited on business. Needless to say, many boxes of NZ rocks were shipped back home! Later, the lady and her sister came to Holland to visit Smith's.

In 2014 when the board decided that the early members, Chet included, should be considered Honor Members and exempt from paying dues. Even in more recent years, one could count on Chet to show up, not only at general meetings but usually at board meetings. Normally sitting quietly through the board proceedings until finally non-board members were asked if they had any remarks. He was not bashful and might speak up with a suggestion or a critical comment which usually had a good reason behind it.

During the lifetime of our club, Chet has been a primary contributor and one of those who has helped "made it go." He will be missed by all of us.

Bob Sherwood

Rock&Gem

Yooperlites' Appeal (Part ii)

https://www.rockngem.com/yooperlite-hunting-part-ii/

Editor's Note: This is the second in a two-part series by Wayne Peterson about Yooperlites.

Yooperlites' Appeal (Part 2)

Fluorescent Sodalite

April 15, 2019

After a lifetime of interest in minerals and collecting specimens, and mining experiences, it never ceases to amaze me the diversity of minerals, various compositions, and formations.

Yooperlite is a unique formation of a fairly common element, fluorescing sodalite. What is uncommon is its presentation to the world at this time. There is always the hope of new discoveries. In speaking with many rockhounds and collectors with varying levels of interest regarding the Yooperlite discovery, one technical mineral collector summarizes his assessment as "but it's only sodalite," my response was incisive: "Yes, but Niagara Falls is only water ... amazing!"

Lake Superior Specimen Showcase

As I explained in the first part of this series (published in the April 2019 issue of Rock & Gem), meeting Erik Rintamaki, the person who discovered specimens of Yooperlite along the shores of Lake Superior and gave them their unforgettable name, and learning about his journey and the mineralogy of Yooperlite was enriching on so many levels.

Photographer and Yooperlite hunter Samuel Cavada refers to this Spray Paint pattern Yooperlite as a "Splatterlite" specimen. Samuel Cavada

One of the most memorable aspects of the time my wife, Brenda, and I spent in Michigan's Upper Peninsula was the opportunity to go hunting for Yooperlites with Erik.

First, without the aid of UV light, I carefully studied his specimens of Yooperlite, noting color, density, grain patterns, and using a loupe to discover any other clue to possibly find specimens during the day. In daylight, they look like thousands of other rocks along the shoreline. They only reveal their hidden secrets and beauty in UV light.

After inspecting the Yooperlites, Brenda and I set out on our own to see if we could discover some in daylight. After several hours, we had 20 specimens we were sure would fluoresce. When we brought them back to Erik for review, all 20 failed the test. Erik then offered to take me out that evening, after the rock show, to teach me how to find Yooperlites. As you can imagine, I gladly accepted the offer.

Rockhounding at Night

At 7:45 p.m., I promptly arrived at his campsite and we drove about a half hour to a beach he had wanted to explore. In all the years of rock collecting, I have never collected in the dark, except in shaft mines, and I remember thinking to myself that this was going to be a new experience.

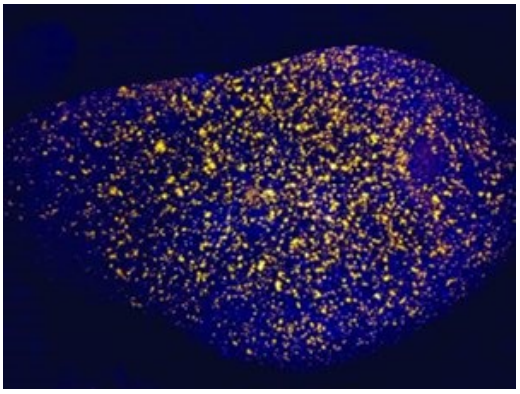
As we arrived, the sun was setting over the water and we made our way through the dense forest to the shoreline. Prior to leaving the vehicle, Erik took two battery-free emergency light sticks and individually taped them to 5-foot fiberglass poles.

One pole he set into the ground to mark the area we entered onto the beach from the forest, and the other Erik pushed into the beach at the waterline. He explained that he learned the hard way about retracing his steps when he was hunting for Yooperlite at night. That particular time, he was lost on the beach until dawn. There is little to no light pollution in most areas of the Upper Peninsula, especially on the shoreline. Dark in the U.P. is very dark.

We began walking several hundred yards toward the setting sun, without a Yooperlite specimen in sight. Yet. It was certainly a false notion of mine to think they could be found in daylight.

Yooperlite Discovery

After what seemed like we walked a mile down the shore, there it was, like a hot lava ball on the shoreline. WOW! My first Yooperlite! We walked over three miles of shoreline that evening and found several Yooperlites. Without Erik's guidance, I would not have found as many as we did, if any at all.



It's easy to see how this Galaxy pattern of Yooperlite received its name. (Wayne Peterson)

Just like a process for hunting the Lake Superior agate, Erik has developed his skill in finding the elusive Yooperlite. The tools, angle of the UV light, and how to scan the shoreline are just a few skills that often lead to a successful hunt.

Another valuable tip lies within the way you walk the shoreline. If you take several steps, turn around and shine the UV light behind you, where you just walked, there's a greater chance of spotting a Yooperlite. Footsteps can move the specimen so the fluorescing angle becomes visible. Hunting at night is an amazing experience, and quite different than shaft mining or open pit mining. Walking in pitch darkness over uneven rocks can be challenging, too, but rewarding.

Of the specimens collected that evening, most displayed distinctive fluorescing sodalite patterns. After several months of collecting Yooperlite specimens, Erik noted the distinctive patterns and named them according to their visual design: Gemmy, Flower or Snowflake, Spray Paint, Bands and Striations, and – my favorite – Galaxy. How and/or why they take on these patterns is a geological mystery at this time.

While the ability to find Yooperlites at night is certainly the reward, it's not the only one. The bio-life under UV light is something out of science fiction. Spiders and moths are a deep velvet-violet-purple, toads a fluorescent green, and even bird excrement is a psychedelic blue. Although bio-life under UV light is fascinating, it can also be a distraction. I say that because elements of nature such as crinoids, corals, Petoskey stones, and some bio-life, as well as artificial fishing lures used by Great Lakes fisherman to catch salmon, all fluoresce.

Real Deal Versus False Finds

Sometimes these appear to be Yooperlites but are indeed false Yooperlites. It is a whole different world under UV light, a kaleidoscope of living colors.

This breathtaking view of Lake Superior is quite impressive, but not conducive to locating Yooperlites. (Wayne Peterson)

There is also something soothing to the soul about walking the Upper Peninsula shoreline, where nature's rhythmic action of waves, water, and sand creates an abundance of beautiful tumbled polished rocks. Lake Superior is the second largest fresh water lake in the world, with depths of 1,333 feet and a shoreline of 2,726 miles (including Canada).

While the shoreline is stunning, at day and night, the sky offers its own brilliant display. On a clear night in the U.P., the Milky Way Galaxy can be seen in all its splendor and majesty. In fact, a few nights after our departure a spectacular view of the Northern Lights was visible dancing along the sky off White Fish Point.

Part of the joy of hunting and collecting Yooperlites, and any rock or mineral, is the chance to discuss the joy of rockhounding with others. In January of this year, I was invited to speak at a local private school in the area of Charlottesville, Virginia, about minerals and geology as part of an earth science program. Brenda and I also brought many rough, lapidary, and collectible samples of Virginia minerals for the students (K-12) to see and examine. The positive response from the students was overwhelming, and their interest was contagious.

Sharing An Appreciation for Yooperlites

Because we had just traveled to the Upper Peninsula four months earlier, we also shared information about Yooperlites. Once the room was darkened and the UV light was cast on the specimens, the student response upon seeing the Yooperlites surpassed their interest more than any of the other specimens we brought.

It made me realize the importance of sparking that interest in the younger generations and re-kindling the older generations as well. The Yooperlite discovery is unique in that it has a wide range of appeal and is accessible to all ages and levels of interest in the mineral hobby.

For years, Superior agates and Petoskey Stones, both of which are hard to find, highly prized, and worthy of any collection, have dominated interest in Michigan's rock collecting offerings, and now they have to make room for a third: Michigan's new hot rock – Yooperlites!

YOOPERLITE HUNTING TIPS

- Check the weather before you go, every time.
- Check state and local regulations regarding collecting on Michigan shorelines. Michigan's Department of Natural Resources is a good resource: www.midnr.com. Practice good rockhound etiquette.
- Research the area you are collecting.
- Use a small backpack – perfect for carrying gear and finds, keeping both hands free for collecting.
- Purchase and bring an LED flashlight (900-1,400 lumens) for lighting up the beach.
- Use caution when entering the inky water of Lake Superior to retrieve fluorescing Yooperlites underwater. Sudden changes in winds or barometric pressure can produce a seiche, which is a phenomenon that results in water levels rising or falling as much as six feet along a coastline in just a few minutes.
- Use glow-light sticks to create a path leading back to the direction you came after your hunt is complete.
- Learn more about Yooperlites and its discoverer Erik Rintamaki by visiting:
  - www.yooperlites.com;
  - www.facebook.com/Yooperlites-205165993433467;
  - www.instagram.com/yooperlites_official; and watching the documentary "***Light Up the North - The Story of Yooperlites***"

Armed with an all-important UV light, and dressed in layers to keep the chill of Lake Superior air at bay, this Yooperlite hunter canvases the shore anxious to find a glowing treasure.(Samuel Cavada)

Enjoy a short video filmed by Erik as he hunted for Yooperlites along the shores of Lake Superior in December:

https://youtu.be/gYE3F6Umx9w

On the Calendar:

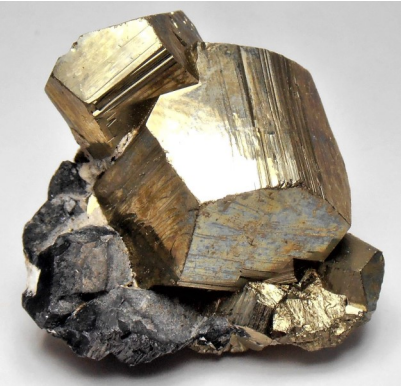
9/26-27/20	Brown County Rock & Mineral Show Columbus, IN (812) 320-6237 Rhonda
9/30/20	TCG&MC General Meeting **Virtual / ZOOM**
10/14/20	TCG&MC Board Meeting **Virtual / ZOOM**
10/16-18/20	Three Rivers Gem & Mineral Show Ft. Wayne, IN (260)639-0727 Bev

'Fool's gold' may be valuable after all by University of Minnesota

In a breakthrough new study, scientists and engineers at the University of Minnesota have electrically transformed the abundant and low-cost non-magnetic material iron sulfide, also known as "fool's gold" or pyrite, into a magnetic material.

This is the first time scientists have ever electrically transformed an entirely non-magnetic material into a magnetic one, and it could be the first step in creating valuable new magnetic materials for more energy-efficient computer memory devices.

"Most people knowledgeable in magnetism would probably say it was impossible to electrically transform a non-magnetic material into a magnetic one. When we looked a little deeper, however, we saw a potential route, and made it happen," said Chris Leighton, the lead researcher on the study and a University of Minnesota Distinguished McKnight University Professor in the Department of Chemical Engineering and Materials Science.



Leighton and his colleagues, including Eray Aydil at New York University and Laura Gagliardi (chemistry) at the University of Minnesota, have been studying iron sulfide, or "fool's gold," for more than a decade for possible use in solar cells. Sulfur in particular is a highly abundant and low-cost byproduct of petroleum production. Unfortunately, scientists and engineers haven't found a way to make the material efficient enough to realize low-cost, earth-abundant solar cells.

"We really went back to the iron sulfide material to try to figure out the fundamental roadblocks to cheap, non-toxic solar cells," Leighton said. "Meanwhile, my group was also working in the emerging field of magnetoionics where we try to use electrical voltages to control magnetic properties of materials for potential applications in magnetic data storage devices. At some point we realized we should be combining these two research directions, and it paid off."

Leighton said their goal was to manipulate the magnetic properties of materials with a voltage alone, with very little electrical current, which is important to make magnetic devices more energy-efficient. Progress to date had included turning on and off ferromagnetism, the most technologically important form of magnetism, in other types of magnetic materials. Iron sulfide, however, offered the prospect of potentially electrically inducing ferromagnetism in an entirely non-magnetic material.

In the study, the researchers used a technique called electrolyte gating. They took the non-magnetic iron sulfide material and put it in a device in contact with an ionic solution, or electrolyte, comparable to Gatorade. They then applied as little as 1 volt (less voltage than a household battery), moved positively charged molecules to the interface between the electrolyte and the iron sulfide, and induced magnetism. Importantly, they were able to

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.

turn off the voltage and return the material to its non-magnetic state, meaning that they can reversibly switch the magnetism on and off.

"We were pretty surprised it worked," Leighton said. "By applying the voltage, we essentially pour electrons into the material. It turns out that if you get high enough concentrations of electrons, the material wants to spontaneously become ferromagnetic, which we were able to understand with theory. This has lots of potential. Having done it with iron sulfide, we guess we can do it with other materials as well."

Leighton said they would never have imagined trying this approach if it wasn't for his team's research studying iron sulfide for solar cells and the work on magnetoionics.

"It was the perfect convergence of two areas of research," he said.

Leighton said the next step is to continue research to replicate the process at higher temperatures, which the team's preliminary data suggest should certainly be possible. They also hope to try the process with other materials and to demonstrate potential for real devices.

Did you Know?

The largest lake in the world is a saltwater lake, commonly known as the Caspian Sea, though it isn't a sea at all. The lake is over 143,000 square miles in size, making it over four times larger than the next largest lake, Lake Superior, which covers almost 32,000 square miles.

Counting only the total volume of water, the biggest freshwater lake in the world is Lake Baikal. Though its surface area is just a little over 12,000 square miles, it exceeds a depth of 5,300 feet in places. This lake contains more water than all five of the Great Lakes combined and it is also the deepest lake in the world.

Tulip City Conglomerate
c/o Tulip City Gem & Mineral Club
P.O. Box 2082
Holland, MI 49424

Our club is a non-profit organization sponsored by the Holland Recreation Department. it is a member of the Midwest Federation and the American Federation of Mineralogical Societies. The general purpose of this club is to develop interest in and increased knowledge of minerals, rocks, gems, fossils, and the lapidary arts. The objectives of this club shall be promoted whenever possible, through family participation.

Meetings are held monthly on the last Wednesday of the month at the Howard Miller Community Center, 14 S. Church Street, Zeeland, MI at 7pm, unless announced otherwise in the ***TULIP CITY CONGLOMERATE***.

Junior Club welcomes young rockhounds and meets separately during the meeting.

To become a member, complete the form at www.tulipcity.org

Advertising rates for club members are: $5 for business card size, $10 for $\frac{1}{4}$ page,

$15 for $\frac{1}{2}$ page, $30 for full page. non-member rates are double. Make check payable To: TCG&M with ad copy to Editor.