# The Petoskey Stone

Oakland County Earth Science Club
www.OCESC.com
November 2009

**Club Meeting**

**Nov. 4th**
**7:30**

Club Rock Swap this month- do you have something to sell or trade?

## November Club Program

Betty Cockerham notes that we will have a a swap/sell program for the membership. Guests are always welcome.

Programs are needed for January, March, May and June upcoming meetings- please consider sponsoring one of these months. Did you know it is as easy as ordering a video from the Midwest Federation Library, and playing it for our members? Rentals are open to all club members- contact John Blue 16155 Shurmer Rd., Strongsville OH 44136, Phone 440-238-4412, e-mail jblue@n2net.net
-Laura Sheffer

## A Big Thank You

There are many of you to thank for your help before and during and after the Detroit Show. A big thanks to 13 of you who helped with the set-up on Tuesday before the show. Several of you helped get our rocks, etc. up the steps from the club room. Thanks to Tony and Leon for getting rocks into vehicles and over to the show room. Also a big thanks to everyone who worked in the club booth during the show. Several members packed up the leftover specimens and Leon returned them to the club room, I'm assuming with some help from one or more club members. We also had people who helped MMS take down their display cases, tables, etc.

Thanks to all of you and I hope each of you had time to enjoy the show. We also thank MMS for all the work they do in producing a show for everyone who enjoys rocks in one form or another. It's a highlight of the year. -Katherine Van Hoy

## Silver Class

A silver-smithing class will be offered starting Wednesday, January 13th. in the club room. Classes will run for 8 weeks on Wednesday night from 7:00 to 9:00, except on Club meeting nights. The charge is $35.00. If you have tools you are welcome to bring them. If you do not, I have whatever you will need. Silver and stones for making the jewelry are included in the cost of the class.

Please let me know if you are interested. Those who have had the class are invited to join us anytime after the first Wednesday we meet.

-Eleanor Snyder

## Shop Tips

Via The Rockpile, Rock Rollers

Wipe a piece of chalk over your jeweler's files to keep the file from clogging.

Use rubber darts from kids dart guns, or plastic golf tees, to dob a cabochon; the rubber dart works for dobbing the cab on the curved surface (just wet it and stick), when you want to polish the back of the cab, too.

**Upcoming Events** (more events can be found at www.rockngem.com or http://www.amfed.org/mwf/Calendar/) For detailed information, please visit the club's website.

Oct 23-25: Mason, MI. 44rd Annual Show, Central Michigan Lapidary & Mineral Society, Ingham Co Fair Grounds, MainArena, 700 E. Ash, Fri 6:00-9:00, Sat 10:00-7:00, Sun 11:00-5:00. Contact:Alan Hukill, (517) 641-6125, Facetman60@yahoo.com
Oct. 25th, Mt Clemens Gem & Lap. Society Show, Knights of Columbus Hall, St. Claire Shores, MI. 10AM- 4PM, 20 Vendors, Auction, Kids' activities.
Nov. 6-8 Micromineral Soc. Of Cleveland Museum Annual Micromount Symposium. Cleveland Museum of Natural History, 1 Wade Oval. Info - Dick Green, jgreen2@neo.rr.com
Nov. 7th: 44th Annual Auction of MMLS, Democratic Club of Taylor, 23400 Wick Rd. Taylor MI. Sales tables open at 6PM, Auction at 7PM, Free admission. Minerals, lapidary, jewelry, fossils books and more. Info- Lou or Cindy Talley 734-525-1684
Nov. 7th MIDLAND, MI Mid-Michigan Gemcraft and Mineral Society Annual Rock, Gem and Mineral Show 9 am -- 7 pm Midland Resort Hotel Convention Center 1500 W Wackerly St., Midland Michigan, 48640 (989) 631-4220 www.midlandresort.com
Nov. 9th, MMS Annual Auction, Cranbrook Institute of Science Auditorium, 39221 N. Woodward, Bloomfield Hills, MI. Info- Mildred Hurt, garnetgeom@peoplepc.com

**2009 Refreshments**

| | |
|---|---|
| Jan. | Linda Whitehead |
| Feb. | Pat Rives, Debbie Rathburn |
| Mar. | Lynnette & Tony West, Phyllis Keene |
| April | Chris Schull, Sue Klopfer |
| May | Jackie Presson, Monica Rowe |
| June | Banquet |
| Sept. | (didn't get a name- thanks to those folks!) |
| Oct. | Betty Cockerham & Nancy Mathura |
| Nov. | |
| Dec. | Club Potluck |

**2009 Programs**

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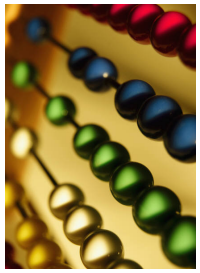
|---|---|
| Jan. | Pam & Mike Brady-"A Desert by Any Other Name" |
| Feb. | Dave Whitehead |
| Mar. | Tony West |
| April | Silent Auction |
| May | J. & P. Schnur-flint knapping |
| June | George Matyas, Cave of Giant Crystals |
| Sept. | Members' Trips and Projects |
| Oct. | Nancy Mathura- Hungry Hollow |
| Nov. | Cub Member Swap/Sale |
| Dec. | |

Please look over this list and see if you can fill in somewhere. Remember you do not have to do a program yourself. You can elect to be responsible for getting a speaker or a video etc.
--Betty Cockerham, Program Chair

**November Birthdays**

2 PATRICIA RIVES
2 TERRY WILMOT
18 CHRIS SHULL
23 SOPHIE GUNTERMAN (98)
23 ELEANOR SNYDE



Young men's minds are always changeable, but when an old man is concerned in a matter, he looks both before and after.

**Homer (800 BC - 700 BC)**, *The Iliad*

***Welcome our new members***

Leslie Bart
393 Woodland
Oakland, MI 48363
248 496 3906

Barbara Morey
229 Decca Dr.
White Lake, 48386
248 202 6151

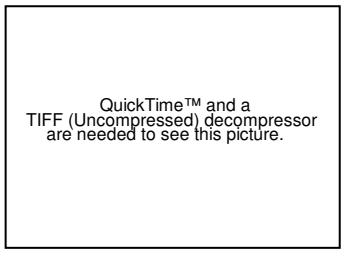
Marlene Rofe
2010 Meadow Ridge
Commerce, 48390
248 935 4685

Gary Truhn
2520 Lansdowne
Waterford, 48329
248 666 4888

**OCES Board Meeting** October 7, 2009. Meeting called to order 6:30 pm by President, Jim Rives. Attendance: Eleanor Snyder, Dwight Keith, Katherine Van Hoy, Tom Pierson, Leon Pearson Betty Cockerham, Gerry Runkle, Dan Woerner, Jim Rives, Tony West, Roberta Thomas. Secretary's report approved as it appeared in the Petoskey Stone. Treasurer's report read, motion made, voted on and approved as read. Discussion regarding money to be advanced to Chris for the purchase of rocks/minerals to be used in the raffle. Motion made and voted on to advance Chris $100 for said purchase. Dan Woerner has shown the board members the inexpensive, nice, practical mineral/fossil kits that can be used for the children's room. No field trips upcoming. Grinding room is open and being used on a regular basis by several people. The much needed saw blade as discussed in last month's meeting was purchased and has now replaced the old blade. Three new members will be introduced at the club meeting following. Meeting adjourned 7:08 p.m.

**OCES General Meeting Minutes** October 7, 2009. Meeting called to order 7::34 pm by President Jim Rives. New members are introduced to the club: Barbara Morey, Marlene Rofe, Gary Truan. Welcome to the group. Secretary's report approved as it appeared in the Petoskey Stone. No treasurer's report available--treasurer ill. We still at this late date need a few more volunteers to work our tables at the MMS show. The sign up sheet will be passed. It has been brought up that our membership should consider entering a display case at the 2010 show. Future discussion regarding this suggestion. No field trips are set up for now. However, there is the possibility of going to Duff's Quarry, Huntsville, Ohio (marcasite, pyrite) sometime in the future. Jim Rives gave a brief description of his and Pat's collecting trip to Kentucky and Alabama. Betty Cockerham has let the club know there is a change in the program for November. It will be a swap/sell program for the membership. Guests are always welcome. Programs are needed for January, March, May and June. Grinding room is, as usual, open Monday's 7 to 9. One dollar per person (is) due to CAI for use of the room. It has been brought to our attention that following our meetings we need to vacuum the floor, bundle the trash, setting it on the landing. Being careful cleaners is another way to let the church know that we are very thankful for the use of the church as a meeting place. Also, that the last person leaving carefully turn out the lights and lock the doors. Meeting adjourned 8:01 pm. Raffle winners are: Bob Albertson--geode, Debbie Rathburg--geode pair, Eric Rathburg--geode, Monica Rowe—celestite. Respectfully submitted, Roberta Thomas, Secretary

"The secret of joy in work is contained in one word – excellence. To know how to do something well is to enjoy it."
-Pearl S. Buck (1892 -1973)




**Cutting Thundereggs**

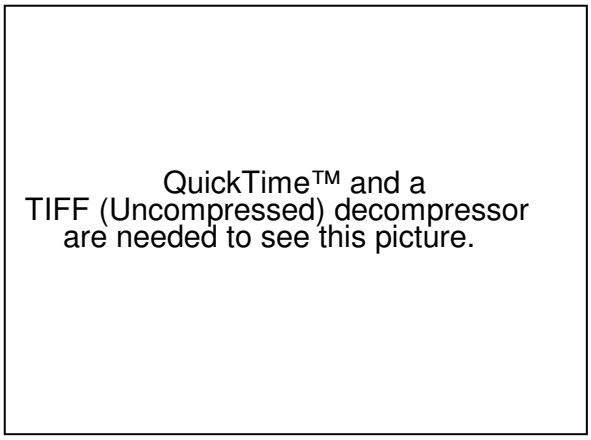
*Provided by Richardson's Recreational Ranch, submitted by Joe DeField, Rock Rollers, The Rockpile, October 2009*

Thundereggs were formed in the ground many years ago. With very little background information and a little luck, you can determine what the basic design of your thunderegg will be when cut. Thundereggs, (especially Priday blues) have pronounced features that should enable you to get the most out of every egg. These features are called "pressure ridges." Such ridges appear a little way don from each end of an egg and form a cicle. These circles are joined by perpendicular lines.

The areas fomed by the circular lines are referred to as "caps." The eggs form sitting on either one cap or the other. Sometimes one or both caps may come off, due to natural causes, Don't let this bother you, the caps don't contain any agate. Much of the time, you can determine just which cap was on the bottom by looking for a chalky stain on it.

When cutting thundereggs, it really doesn't matter which end was down during formation, so don't worry about it. Since the egg formed off of the cap it is logical to assume that the agate in the middle either filled the egg entirely, forming a beautiful center, or filled it partway up, creating a geode with a beautiful agate base.

Lapidaries try to cut thundereggs from cap to cap in order to capture all the beauty that was created while the thunderegg formed. Cutting a thunderegg is like opening a present. You never know what you will find inside. Have fun cutting your thundereggs and don't be afraid to experiment. This is what makes the lapidary hobby so interesting.



***Radioactivity and You***

by Ted Reith, AFMS Safety Chair, AFMS Sept. 2009

(editors note: This is a condensed version-for the complete article see the AFMS Sept. 09 newsletter, online at amfed.org)

I taught military students about nuclear weapon effects and defense against same for my two years U S Army active duty service many moons ago…

Radioactivity and fluorescence are somewhat related, in that neither can be detected by any of the five senses; specific electronic devices are necessary to know their existence. However, fluorescence can't hurt you, while radiation can be a hazard. There are three types of radioactivity that may be emitted by the unstable nuclei of certain minerals. Borrowing on the Greek alphabet, they are:

•Alpha: structurally a helium nucleus. This form of radiation has very low penetrating power (can be stopped by a sheet of paper), thus is no hazard outside the body. Internally, however, it poses a risk if an alpha emitter would be inhaled or ingested.
•Beta: structurally, a stream of electrons. Beta has some penetrating power, though can be stopped by a thin piece of aluminum. It is more of an external hazard than alpha – prolonged skin contact will produce a sunburn-like effect. Internally, it's of lower hazard than alpha, but eating is not advised.
•Gamma: essentially similar to X-rays. These, depending on energy level, have great penetrating power, and can be stopped only with generous amounts of high-density materials such as Lead. They may pass through the body without doing damage, or may chip electrons off atoms and cause great damage if the energy is high and the exposure time is long.

How may one identify such species in their collection? To start, some of the more common radioactive minerals are: Uraninite, Torbernite, Autunite, and Gummite – all uranium containing species. To detect them, a Geiger counter (military Radiac instrument) is needed. eBay lists quite a few devices in the $20 - $60 range…

So, you determined part of your collection is radioactive…what to do. Common sense takes over. Don't eat, drink, or smoke while handling these materials. Wash your hands after handling. Store them further away from your living areas (dose rate decreases with the square of the distance). Avoid mechanical processes which may put fine debris in the air. Consider that Lead-lined box for fairly strong Gamma emitters (but not for Beta). Like many other hazards in life, one can generally control them with knowledge. Handled safely, you'll get more radiation in a CT scan, from normal background (always present) radiation – cosmic rays and naturally occurring radioactives, and from the radioactive Potassium 40 present in your own bodies, than you will from your mineral collection.

Free safety P.S.: The US Dept of H&HS offers a household product safety site, which may be reached at http://householdproducts.nlm.nih.gov/index.htm . This site includes many specifically named commercial products commonly found around the home and

discusses topics such as health effects, symptoms of exposure, first aid, physician notes, and many others. Additional information may be found at <www.hedegaard.com/Minerals/Groups/Radioactives.html>.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Canyon Diablo meteorite created Meteor Crater, Arizona. Photo credit: D. Roddy, USGS

## Age of the Earth

One of Cranbrook Museum's interesting displays at the Greater Detroit Gem, Mineral, and Fossil show was the Acasta Gneiss with Zircon crystals sample, dated to 4.03 billion years old. The display introduced the Canyon Diablo Meteorite, and its importance in determining the age of the Earth.

Currently the accepted age of Earth is 4.55 billion years, and was determined by C. C. Patterson using uranium-lead isotope dating on several meteorites, including the Canyon Diablo meteorite, in 1956. This meteorite created Meteor Crater (a.k.a. Barringer Crater) near Flagstaff Arizona.

Because Earth has constantly been changing in the form of plate tectonics, hydrothermal circulation, and weathering, its materials cannot be depended on to give the most accurate dates for the age of the earth. These "mixed up" materials have minerals that may be altered at the atomic level. All matter has a mix of neutrons and protons, which is termed a nuclide. In radioactive minerals these ratios change, and are called parent and daughter nuclides. In Earth's "open" system of weathering, etc., some of the original material can be gone, and this would not give accurate results when used in isotopic dating. There are many combinations of parent and daughter nuclides used in dating materials. For example, the "parent" Uranium 235 decays to the "daughter" Lead 207, at a half-life of 0.704 billion years.

The Canyon Diablo meteorite is a rare, important source of material that has not undergone the effects of Earth's plate tectonics, etc. Three of the important mineral types in it give accurate results when used in isotopic dating—troilite, a sulfide mineral, nickel-iron alloys, and silicate minerals. Because uranium decays over a very long time to lead, and lead has an affinity for sulfur containing host materials (the sulfides), the lead isotopes found in the meteorite are particularly important in this dating process.

The moon is another source of material that has not undergone plate tectonics or weathering. The moon rocks returned by the Apollo missions have been dated at a maximum of between 4.4 and 4.5 billion years old. There are minerals on earth that are considered relatively untouched by weathering, or tectonic forces, such as galena, and these samples' dates are consistent with the moon rocks and the Canyon Diablo meteorite. The Canyon Diablo meteorite is, today, considered the age standard to which all other materials are compared.

References: Cranbrook Museum case display; Wikipedia; USGS; University of Chicago.

--Laura Sheffer