

The Living Stones

Livingston Gem and Mineral Society

May 2010

President's Message

May brings our field trip to Cranbrook Institute of Science to see the gem and mineral collection that they have. Hope you've marked your calendar!

Our silent auctions are working out well. We've had a few donations and we were looking forward to more stones or cabs or rough pieces to be used in the future.

Our sessions with the 4H club are ending. We are so appreciative of all those who volunteered their time and talent to assist with these groups.

And we want to thank people that have donated things for the show that is coming up. We're always looking for more stock to be sold at the club table. If anybody out there has anything, please contact us (the telephone numbers are on this newsletter) and hopefully we can get it as soon as possible and remove it from your area so it gives you a little more room to be able to collect new stuff. We'll be glad to take your old stuff.

Talking of the show : members, try to remember showcases. It's time to start planning your display. It does take time but we definitely appreciate it and we always have good responses from the people who attend the show. We have showcases in the shop for loan. Put your name in early because September will be here before you know it.

Before that, though, we have lots of nice weather coming up and hopefully some of you have already done the shows and picked up some extra nice stuff. Hope you'll show it to us at the shop to inspire other people to say, "Ooh, golly gee I wish I had gone to that show". We have new shows coming up: the Kalamazoo show and the rockhound seminar from MGAGS,

Our outdoor meetings will be starting soon. We hope to have a few people volunteer their yards or home to have our little picnic gathering for each month of the summer months.

I guess that's about all I have to say except since this is May it's definitely "Happy Mothers Day!". Mothers and everybody else, just have a wonderful month and hopefully with our new weather coming up and getting warmer we'll be able to get out and start gathering the bounty that's out there waiting for us to find.

Marv

Next General Meeting

May 18, 2010

6 o'clock at the shop

Come and participate!

Enjoy the social hour and program!

Max Schultz Honorees

If you've ever received a Max Schultz award, please notify Marv of the year you were honored. We're trying to update our archives.

**Official Minutes of the Livingston Gem and
Mineral Society
April 20, 2010**

Marvin called the general meeting to order at 6 p.m.
Lorelei made motion to accept the March minutes. Chuck
seconded. Passed.

Treasurer's report: Peg gave the treasurer's report. We
have taken in some money from dealers for the show and
from membership renewals. The report was accepted as
given.

Shop report: Bob reported that when we need to buy oil for
the saw we can get it from Phil's home. The silent auctions
are going well with the money going toward the new saw.
The rubber mats in the shop need to be cleaned and turned
over to prevent mold. So far we have one bid on the old,
small saw. Worn sanding belts continue to be replaced as
needed.

Old Business: John P. Reported that the Cranbrook trip is
all set. He's been collecting money from those who are
planning to go. More details are in this newsletter.

New Business: Show flyers are printed and ready for
members to take to shows and distribute to other places.
Violet, Lorelei and Ken volunteered to bring refreshments
for the May meeting. Marv reminded members to be
thinking about the summer meetings which will be outdoor
potlucks at member's homes or at a park.

We have invitations to attend annual banquets from two
clubs: The Livonia Roamin' Club on May 12 and the
Central Michigan Lapidary Society on May 20. If
interested, see Marvin.

There was discussion about the Max Schultz awards. Marv
would like to compile a list of honorees and the year they
received the award. Please notify him if you were ever a
recipient.

Next month there will be a list of show assignments. Be
thinking of how you can contribute. Tony, from the Senior
Center, plans to take pictures at the show. John suggested
we ask him to take pictures of dealers, enlarge them, and
give each dealer a copy.

There was brief discussion on the possibility of providing a
scholarship fund. At 6:30 Sharon made motion to adjourn
the meeting. Ken seconded. Passed.

During the social hour we viewed an interesting film on a
California mine.

Respectfully submitted, Violet Porritt

LGMS Workshop Hours

**Monday 10 a.m. to 2 p.m.
Tuesday 9 a.m. to 9 p.m.
Wednesday 2:30 p.m. to 9 p.m.**



Officers and Chairpersons

President: Marv Martin, 517-521-3135
Vice President: Bryant Hiiter, 248-889-3974
Secretary: Violet Porritt, 810-235-6286
Treasurer: Peggy Petito, 248-887-8847
Second year Directors:
 David Riggs, 810-632-7146
 Bill Barnett, 734-449-2907
First year Directors:
 Ken Blake, 810-750-6078
 John Petito, 248-887-8847
Sunshine and Hospitality: Mary Barnett, 734-449-2907
Shop Chairpersons:
 Bob Krautheim, 810-701-3776
 Chuck Amberger, 248-446-0818
 Marv Martin, 517-521-3135
Newsletter and Membership:
 Isla Mitchell, 248-685-7804
 Chuck Amberger, 248-446-0818
Library: Bryant Hiiter 248-889-3974
General Membership Meetings are held monthly on the 3rd
Tuesday at 6 p.m. (Except in January and February when
they are held in the shop at 1 p.m.)

Coming Shows

Kalamazoo Geological and Mineral Society, Fantastical Fossil Gem and Mineral Show

April 30 - May 2, 2010 ~ Kalamazoo County Expo Center

Information: 269-649-1991 or 269-375-5678

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Huge Rock and Mineral Sale

May 22-23, 2010 ~ Marve and Kitty Starbuck, 7636 East V Avenue, Vicksburg, MI

1-269-649-1991 or 1-231-740-5512

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Chicagoland Gems and Minerals Association 34th Annual Show and Sale

May 29 - 30, 2010 ~ Dupage County Fairgrounds, Wheaton, IL

Information: 6300-337-0197 or www.chicagolandgemshow.org

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Jewelry, Rock, Gem and Mineral Show, "Forty Niner Miners"

June 4-6, 2010 ~ Fulton County Fairgrounds, Wauseon, OH

Information: 517-263-1669 or rychard@tc3net.com

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M.G.A.G.S. Rockhound Seminar

June 12 & 13, 2010 ~ Webberville High/Middle School

Information: www.mgags.org, or webmaster@mgags.org, or 313-421-8159

CRANBROOK FIELD TRIP

The club's field trip to Cranbrook (to see the Gem and Mineral Collection) is on Sunday, May 16, 2010. Bring your spouse, kids and friends. To car pool, meet in the parking lot at the senior center at 9:00 a.m. Cranbrook's Sunday hours are 10:00 a.m. to 5:00 p.m. We will all meet in the parking lot at Cranbrook and sign in with John Petito. We must go in as a group for the discount admission. One person should pay for the group. We will collect the money between now and the time we meet at Cranbrook. The cost as a group of 20 or more is \$6.00 for adults, \$4.00 for seniors (65 and up) and kids under 18. Bring a lunch for a picnic on the grounds. Hope to see you all!

DIRECTIONS TO CRANBROOK INSTITUTE OF SCIENCE

From Hartland Educational Services Center (9525 E. Highland Rd)

1. Start out going east on E. Highland Rd (M 59). Follow M59 for 23.8 miles.
2. Turn right onto S. Telegraph Road (US24) and go 3 miles.
3. Turn slight left onto W. Square Lake Road and go 1.5 miles.
4. Turn right onto Woodward Ave and go 2.2 miles to 39221 Woodward Avenue Bloomfield Hills, MI 48304

Total travel estimate: 30.47 miles, about 42 minutes.

Livingston Gem and Mineral Society is a nonprofit organization and member of the Midwest Federation of Mineralogical Societies and the American Federation of Mineralogical Societies. Our purpose is to promote, through educational means, public interest and increased knowledge in the fields of mineralogy, archaeology, paleontology, and the lapidary arts. This society was established in 1970. Annual dues are \$15 per person or family. Annual shop fees are \$10.00 per person. There is an additional fee of \$1.00 per day for workshop use. Annual dues and annual shop fees are due on January 1 of each year. The Livingston Gem and Mineral Society publishes The Living Stones. Non copyrighted articles may be reprinted provided that they are properly attributed. Newsletter deadline is the 1st of each month. Articles or correspondence can be sent to LGMS, Hartland Consolidated Schools, 9525 E. Highland Rd. Howell, Michigan 48843-9098.

Obsidian: A Biography

by Terry Yoschak

[This article originally appeared in The Rollin' Rock, July 2004]

If we were to tell the life story of a piece of obsidian, one of the millions of pieces native to California, it might go something like this: born in a volcanic eruption, quarried and carved into a scraper for tree bark, traded for ocean shells, chipped into an arrowhead, lost during a deer hunt, buried by debris and sediments, dug up by an archeologist, mailed to a laboratory for testing, and finally laid to rest in a museum collection.

That sounds like a useful, well-traveled life. But a short one, since its lifespan as described above could be a mere 20,000 years or so – quite a youngster compared to most rock and mineral specimens. Yet few other minerals have had as much cultural, historic and scientific importance as obsidian. The key to obsidian's impact lies in two factors: its homogeneity (uniformity or sameness) and its ability to hydrate (to absorb water from the surrounding air or soil).

When obsidian is born in a rhyolitic lava flow, where the lava cools so fast that no crystals form, the resulting chemical composition is homogenous across the flow.¹ Every flow will contain slightly different amounts of trace elements than every other flow, so each flow has a chemical "fingerprint" of its own. Two pieces of obsidian from the same flow will have identical fingerprints, no matter how far apart they were discovered. Obsidian "sourcing" (determining exactly where a piece of obsidian originated) is accomplished by the use of Neutron Activation Analysis (NAA), which bombards the specimen with a field of neutrons. The trace elements within the sample become radioactive and the radioactive emissions are used to identify dozens of different elements and the amounts of each element. Since no two flows anywhere in the world have exactly the same trace elements in exactly the same amounts, comparing the specimen to a database of previous specimens solves the mystery. According to the Worcester Polytechnic Institute, "fingerprinting of obsidian artifacts by NAA is a nearly 100 percent successful method."²

Obsidian sourcing has been a primary means of determining patterns of migration and trading among prehistoric peoples in California. If the same obsidian fingerprints exist on samples formed at Lassen Peak and excavated near Alameda, trading surely occurred during that 250 mile trip. People near the coast who had no local source of obsidian often traded their coastal treasures, such as shells, for the prized spear point and arrowhead-making material.

Just as homogeneity has enabled us to determine the "where" in the life of a piece of obsidian, hydration has given us clues about the "when." As soon as obsidian is formed, its exposed surface begins to absorb water from the atmosphere. The absorption continues steadily over time, dependent on variables such as local temperature and humidity. By microscopically measuring the depth of the absorbed water layer, called the "hydration rim," we can determine the date of an obsidian artifact, either relative to another artifact, or – sometimes – with an absolute date.

When obsidian is quarried or flaked in the process of becoming an artifact, new surfaces are suddenly exposed to the atmosphere, beginning new hydration processes. In our biography above, the tree bark scraper would have been hydrating longer than the arrowhead – but how would we know the true age of the artifact when different hydration depths and layers exist on the same specimen? In addition, without knowing how the climatic variables may have changed over thousands of years, the process of the hydration dating method has "major limiting problems."² Some of these pitfalls have given rise to wildly conflicting and controversial theories about the age of the first human settlements on our continent.

A new technique called Secondary Ionization Mass Spectrometry (SIMS) involves slowly penetrating into the obsidian sample with an ion beam and measuring more precisely the distribution of hydrogen (in the absorbed water), and the depth of the hydration rim.³ As science develops even more sophisticated laboratory techniques and computer models to analyze hydration variables, we will gradually be able to refine and revise the "when" of obsidian specimens, and then perhaps every piece of obsidian can have its own true biography.

References:

1. Glascock, Michael. Archaeology, Geology, and Geochemistry of Obsidian for Provenance Research. Oct 2002. http://www.peak.org/obsidian/abstracts_g.htm
2. "Neutron Activation Analysis." Worcester Polytechnic Institute. <http://www.wpi.edu/Academics/Depts/ME/Nuclear/Reactor/Labs/R-naa.html>
3. "The Obsidian Clock." Oak Ridge National Laboratory. <http://www.ornl.gov/info/reporter/no7/clock.htm>