The Living Stones

Livingston Gem and Mineral Society July 2010

President's Message

We had out first potluck picnic meeting at Bill and Mary Barnett's in Whitmore Lake in June. 29 members attended. Everyone had a good time and we even also had a good meeting. The biggest issue at the present time is cleaning up at the shop. We all have to do a little more cleaning each time we are there- on the grinders, on the floors and throughout the shop. On Thursday 6/24 Bryant, Dave, Al, and Juanita scrubbed and waxed the floors all day and then put the shop back together again. HELP KEEP IT CLEAN! Thanks to them from all of us! Our next picnic meeting will be at Dita's home.

My family and friends went to Frankfort for a musical cabaret on Monday the 20th of June. Then on Tuesday the 21st we went to Lelanau beach to find Lelanau blue. It had stormed on the night we got there so the next day was "great pickin'". It was the first time for me at the Lelanau but I will be going back. A good time was had by all.

A few members have been bringing in stones to show their finds and buys. All the club members enjoy the sharing!

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We had some nice stones donated to the club for the silent auction at our show. Thank you for the donations.

The faceting guild and MGAG seminar was great again this year. I saw some of you there. Thanks for stopping by to say hi.

Watch the bulletin board for upcoming shows!

Marv

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.

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Official Minutes of the Livingston Gem and Mineral Society
June 15, 2010

Marv called the meeting to order at 7:20 p.m at the potluck gathering at the Barnett home.

Chuck is interested in organizing a field trip and asked how many would be interested in going to the Rockport Quarry in July. Many raised their hands and the date was set for Saturday, July 10. For those interested in staying overnight, there are many places in Alpena. Additional details will be in this newsletter. Dave has also mentioned the possibility of making a field trip to the Manitou Beach rock sale on July 24-25.

Marv brought up the need for members to be more responsible in maintaining a clean shop. Whenever we use a machine or see something that needs cleaning, it is our job to do it. The counters, grinders sanders, saw areas, and wax casting areas all need to be wiped down and kept clean. There was much discussion about maintaining the floor. Some have helped by coming in and sweeping or mopping when the shop is closed but during the time the shop is in use, we need to keep the water mopped up. Mary brought up the possibility of hiring someone to clean and seal the floor and this was discussed. There is also the possibility of doing it ourselves. Bryant volunteered to do the floor if others would clear it. Marv agreed to explore all the options further.

We thank Bill and Mary Barnett for inviting us to their home. We appreciate their hospitality and everyone enjoyed the great food!

Dita volunteered to have the next potluck meeting at her home on July 20. Directions are in this newsletter.

At 7:45, George made motion to close the meeting, Bill seconded.

Respectfully submitted, Violet Porritt, Secretary

Our Mission

The 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.

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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.)
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Rockport Field Trip

Saturday July 10, 2010

Meet in the Rockport Marina Picnic Park just north of the boat launch at 12 noon. Bring hammers, chisels, milk crates or 5 gallon buckets and 2 wheel dollies, if available.

Be sure to bring your lunch and plenty of water. Children of all ages welcome.

Rockport Marina is about 10 miles north of Alpena and about a 4 ½ hour drive from our area. See maps on the bulletin board at the shop.

See Chuck Amberger for additional information.

Coming Shows and Sales

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Huge Rock/Mineral/Fossil Sale

July 24-25, 2010

15345 Rome Road

Manitou Beach, Michigan 49253

Information: 517-260-1087 or 517-260-0821

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Livingston Gem and Mineral Society's

Gem and Mineral Show

September 18 and 19, 2010

Hartland Education Support Service Center, 9525 E. Highland Road, Howell, MI

Information: Chuck Amberger, 248-446-0818 or Bryant Hiiter, 248-889-3974

About Sedimentary Rocks

By Andrew Alden

Sedimentary rocks are the second great rock class. Whereas igneous rocks are born hot, sedimentary rocks are born cool at the Earth's surface, mostly under water. They usually consist of layers or strata, hence they are also called stratified rocks. Depending on what they're made of, sedimentary rocks fall into one of three types.

Clastic Sedimentary Rocks

The most common set of sedimentary rocks consist of the granular materials that occur in sediment: mud and sand and gravel and clay. Sediment mostly consists of surface minerals — quartz and clays — that are made by the physical breakdown and chemical alteration of rocks. (Feldspar and other minerals may also be in sediment if they have not had time to break down.) These are carried away by water or wind and laid down in a different place. Sediment may also include pieces of stones and shells and other objects, not just grains of pure minerals. Geologists use the word *clasts* to denote particles of all these kinds, and rocks made of clasts are called clastic rocks.

Look around you at where the world's clastic sediment goes: sand and mud is carried down rivers to the sea, mostly. Sand is made of quartz, and mud is made of clay minerals. As these sediments are steadily buried over geologic time, they get packed together under pressure and low heat, not much more than 100°C. In these conditions the sediment is cemented into rock: sand becomes sandstone and clay becomes shale. If gravel or pebbles are part of the sediment, the rock that forms is conglomerate. If the rock is broken and recemented together it is called breccia.

It's worth noting that some rocks commonly lumped in the igneous category are actually sedimentary. Tuff is consolidated ash that has fallen from the air in volcanic eruptions, making it just as sedimentary as a marine claystone. There is some movement in the profession to recognize this truth, although I still observe convention by mentioning tuff in About Igneous Rocks (About.com).

Organic Sedimentary Rocks

Another type of sediment actually forms in the sea as microscopic organisms — plankton — build shells out of dissolved calcium carbonate or silica. Dead plankton steadily shower their dust-sized shells onto the seafloor, where they accumulate in thick layers. That material turns to two more rock types, limestone (carbonate) and chert (silica). These are called organic sedimentary rocks, although they're not made of organic material as a chemist would define it.

Another type of sediment forms where dead plant material builds up into thick layers. With a small degree of compaction, this becomes peat; after much longer and deeper burial, it becomes coal. Coal and peat are organic in both the geological and the chemical sense.

Although peat is forming in parts of the world today, the great beds of coal we mine formed during past ages in enormous swamps. There are no coal swamps around today, because conditions do not favor them. The sea needs to be much higher. Most of the time, geologically speaking, the sea is hundreds of meters higher than today and most of the continents are shallow seas. That's why we have sandstone, limestone, shale and coal over most of the central United States and elsewhere around the world's continents. (Sedimentary rocks also become exposed when the land rises. This is common around the

edges of the Earth's lithospheric plates, and for more about that, see Plate Tectonics in a Nutshell in About.com.)

Chemical Sedimentary Rocks

These same ancient shallow seas sometimes allowed large areas to become isolated and begin drying up. In that setting, as the seawater grows more concentrated, minerals begin to come out of solution (precipitate), starting with calcite, then gypsum, then halite. The resulting rocks are certain limestones or dolomites, gypsum rock, and rock salt respectively. These rocks, called the *evaporite* sequence, are also part of the sedimentary clan.

In some cases chert can also form by precipitation. This usually happens below the sediment surface, where different fluids can circulate and interact chemically.

Diagenesis: Underground Changes

All kinds of sedimentary rocks are subject to further changes during their stay underground. Fluids may penetrate them and change their chemistry; low temperatures and moderate pressures may change some of the minerals into other minerals. These processes, which are gentle and do not deform the rocks, are called *diagenesis* as opposed to *metamorphism* (although there is no well-defined boundary between the two).

The most important types of diagenesis involve the formation of dolomite mineralization in limestones, the formation of petroleum and of higher grades of coal and the formation of many types of ore bodies. The industrially important zeolite minerals also form by diagenetic processes.

Sedimentary Rocks Are Stories

You can see that each type of sedimentary rock has a story behind it. The beauty of sedimentary rocks is that their strata are full of clues to what the past world was like. Those clues might be fossils, marks left by water currents, mudcracks or more subtle features seen under the microscope or in the lab.

From these clues we know that most sedimentary rocks are of *marine* origin, usually forming in shallow seas. But some sedimentary rocks formed on land: clastic rocks made on the bottoms of large freshwater lakes or as accumulations of desert sand, organic rocks in peat bogs or lake beds, and evaporites in playas. These are called continental or *terrigenous* (land-formed) sedimentary rocks.

Sedimentary rocks are rich in geologic history of a special kind. While igneous and metamorphic rocks also have stories, they involve the deep Earth and require intensive work to decipher. But in sedimentary rocks you can recognize, in very direct ways, what the world was like in the geologic past.

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Livingston Gem and Mineral Society
9529 E. Highland Road
Howell, MI 48843-9098

Next General Meeting

6 P.M. ~ July 20, 2010

Potluck Gathering

Dita Albert's home

7465 Jennings Road, Whitmore Lake, MI 48189

734-449-2907

Please bring a dish to pass along with your own table service, a drink, and your own chair.

Directions:

1. **Take US 23 south to exit 49 (North Territorial Road)**
2. **Turn right (west) on North Territorial Road and go about 3 miles to Jennings Road**
3. **Turn right (north) on Jennings Road and go about 1 mile, to the first driveway on the left past Pillar Road, 7465 Jennings Road.**