ROCK TRAILS

Newsletter of the StateLine Gem and Mineral Society

VOLUME 55
ISSUE IV
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In This Issue:

2014 Officers and Directors

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Meetings are held the first Sunday of each month
at 2:00 PM
at 201 W. Main St., Morenci, MI 49256

President's Tidings

I have talked to Pat, who does the kitchen at our show, and she would like to do tacos this year . She has permission to bring them in for the April meeting. Since Easter falls on the first Sunday, the meeting will be held the next Sunday, which is April 12.

We had a good turnout for the mall show by our members. There could have been more traffic, but that is ok. We did make a little money for the club.

Our next show is Jackson. The first day has gone well.

There is a rock swap in Taylor, Michigan, on March 28. It is hosted by The Midwest Mineralogical & Lapidary Society. The address is St. John's Lutheran Church, 13115 Telegraph Road, Taylor, Michigan
I went to this show and picked up several rough stones for slabbing. Not Mitch finished, mostly all rough and slabs.

Sherm

Treasurer's Statement

It certainly has been a long winter. I am hoping for a wonderful spring, but whatever the weather report might be, every day brings us closer to our biggest event of the year- our show on May 29, 30 & 31. Memorial Day falls early this year, which shortens the time we have to complete all the preparations. I know many of our members have already been working diligently and their work is greatly appreciated. I sincerely believe we will have a wonderful show, with all of us working together and keeping the mission statement of the club as our guide. Briefly, that is to promote interest and increase knowledge in the fields of mineralogy, geology and the lapidary arts. In other words, have fun doing what we like to do.

The 2015 membership list is included in this newsletter. Please carefully review your information to be sure it is correct and let me know if any corrections need to be made.

Doris Brzezicki, Treasurer

Secretary's Scoop

The State Line Gem and Mineral meeting was called to order by President Sherm with Richard B. giving the invocation, followed by the pledge of allegiance.

Secretary's Report: Richard B. made a motion to accept the Secretary's report as printed in the newsletter. Glenda seconded and the motion was approved with all in favor.

Treasurer's Report: Most of the dealers have sent in their money, and bills for rent, Consumers Power, fossils for educational purposes and the booth for the Jackson Fairy Festival have all been paid. After some discussion, Bill asked about our share of the Consumers Power bill for the basement. Originally, it was thought that the electric water heater was the cause of the high bill, but since the landlord removed the water heater, our share of the bill has not gone down very much. Frank suggested a natural gas unit should be installed and Doris mentioned that there are heaters that can attach directly to the sink and heat water only when it was needed. Richard stated that those types of heaters are very expensive. Doris said she had talked to Larry about the high bill but thought it would be more productive to have the current president talk with him. Richard B. made a motion to accept the treasurer's report which was seconded by Phyllis and passed with all in favor.

Glenda reminded the club of table covers and the need to get some for uniformity and a professional look to our show. She was trying to figure out what type of covers and how many were needed. There were different suggestions for color and it would all depend on availability. The consensus was that we needed 20 eight foot table covers and 4 round table covers for the kitchen area. Glenda was going to see about getting the tablecloths as a donation or having a discount for a nonprofit organization.

Show Chairperson Report: Doris explained that other shows give food vouchers to volunteers who spend the whole day working the show and asked if our members thought that would be a good idea for our show. She thought it could be a type of thank you with more than words for the few folks who gave so much of their time. Doris made a motion to give a $5.00 voucher to volunteers who spend the whole day at the show. Judy seconded. Sherm asked if there was any more discussion. Richard said it was a good idea. Glenda felt it was not needed. There are other thank you's like the dealer and member dinner after set up and Linda Sharkey bringing breakfast for the dealers. Carl said that working at club activities was just part of being a member. A vote was called for and the motion failed with one dissenting vote from Richard B.

The information passed out by Glenda and Sherm at the February meeting which included a copy of the club by-laws was discussed. They thought we may need to update the by-laws to meet current needs. Some considerations were that if we modify the by-laws we may lose our non-profit status. Doris said the original by-laws were authored by scholars and very well thought out. They were updated in 2000 to make some minor changes so that we would qualify for the non-profit status but overall the founders did a wonderful job. Doris said when there was a concern, a committee was formed to go over various aspects and review what was needed. Bill said if we change something we might screw up what we have.

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Shows Coming Up: March 14th for the kids outreach program at the Adrian Mall. Several club members have volunteered to man a booth at the mall for children's outreach, geode cracking, gem trees, member sales, coloring books etc. The Jackson show for March 20th , 21st , 22nd was discussed. We also have volunteers to demonstrate, crack geodes and do member sales in Jackson. We will need to pick up the Mexican geodes we ordered at the Parma, Ohio show on May 16th or 17th.

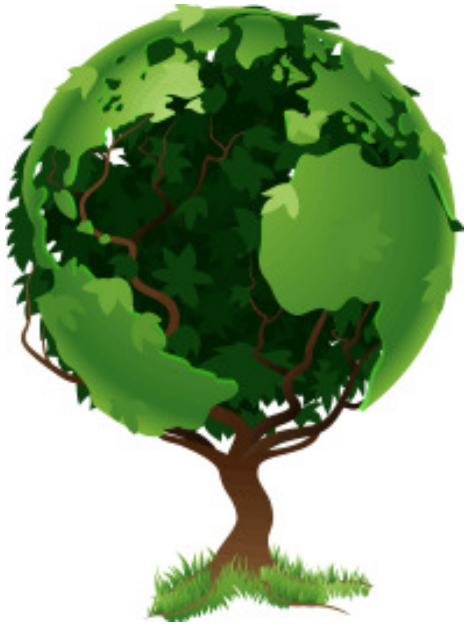
Doris mentioned that the Midwest Federation show was May 22nd thru 24th in Wheaton, Illinois. She said that member clubs elect a representative to attend for them. Traditionally, it is the club president who attends such functions. We need to let them know by April 20th. They will have a dinner, awards displays etc.

There seemed to be some confusion about the amount of Mexican geode purchase the club authorized. Last month's newsletter stated that the club authorized the purchase of $75.00 worth of Mexican geodes but in fact it was 75 pounds of geodes. **This is a correction for the March newsletter. The club actually authorized 75 pounds to be purchased for the club to resell. (Apologies from your secretary).**

Bedford Indiana Field Trip: Glenda needs to finalize the motel room reservations, so let her know if you need a reservation. She said the campground should be able to store the trailer for an undetermined amount at this time.

Grab bags were discussed. There was a question about having sufficient bags for upcoming shows. Doris felt we should have enough to meet our needs. There are still some empty bags that need to be stuffed. She thought some members could stay a bit later at the next meeting and fill the empty bags.

Richard made a motion to adjourn for the silent auction, seconded by Ed and passed with all in favor.



Happy Earth Day!
April 22, 2015

COLLECTING ROCKS

by Rachel M. Barker

Rocks Tell the Story of the Earth

The Earth is made of rock, from the tallest mountains to the floor of the deepest ocean. Thousands of different types of rocks and minerals have been found on Earth. Most rocks at the Earth's surface are formed from only eight elements (oxygen, silicon, aluminum, iron, magnesium, calcium, potassium, and sodium), but these elements are combined in a number of ways to make rocks that are very different.

Rocks are continually changing. Wind and water wear them down and carry bits of rock away; the tiny particles accumulate in a lake or ocean and harden into rock again. The oldest rock that has ever been found is more than 3.9 billion years old. The Earth itself is at least 4.5 billion years old, but rocks from the beginning of Earth's history have changed so much from their original form that they have become new kinds of rock. By studying how rocks form and change, scientists have built a solid understanding of the Earth we live on and its long history.

Types of Rocks

Geologists classify rocks in three groups, according to the major Earth processes that formed them. The three rock groups are igneous, sedimentary, and metamorphic rocks. Anyone who wishes to collect rocks should become familiar with the characteristics of these three rock groups. Knowing how a geologist classifies rocks is important if you want to transform a random group of rock specimens into a true collection.

Igneous rocks are formed from melted rock that has cooled and solidified. When rocks are buried deep within the Earth, they melt because of the high pressure and temperature; the molten rock (called magma) can then flow upward or even be erupted from a volcano onto the Earth's surface. When magma cools slowly, usually at depths of thousands of feet, crystals grow from the molten liquid, and a coarse-grained rock forms. When magma cools rapidly, usually at or near the Earth's surface, the crystals are extremely small, and a fine-grained rock results. A wide variety of rocks are formed by different cooling rates and different chemical compositions of the original magma. Obsidian (volcanic glass), granite, basalt, and andesite porphyry are four of the many types of igneous rock.

Sedimentary rocks are formed at the surface of the Earth, either in water or on land. They are layered accumulations of sediments-fragments of rocks, minerals, or animal or plant material. Temperatures and pressures are low at the Earth's surface, and sedimentary rocks show this fact by their appearance and the minerals they contain. Most sedimentary rocks become cemented together by minerals and chemicals or are held together by electrical attraction; some, however, remain loose and unconsolidated. The layers are normally parallel or nearly parallel to the Earth's surface; if they are at high angles to the surface or are twisted or broken, some kind of Earth movement has occurred since the rock was formed. Sedimentary rocks are forming around us all the time. Sand and gravel on beaches or in river bars look like the sandstone and conglomerate they will become. Compacted and dried mud flats harden into shale. Scuba divers who have seen mud and shells settling on the floors of lagoons find it easy to understand how sedimentary rocks form.

Sometimes sedimentary and igneous rocks are subjected to pressures so intense or heat so high that they are completely changed. They become metamorphic rocks, which form while deeply

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buried within the Earth's crust. The process of metamorphism does not melt the rocks, but instead transforms them into denser, more compact rocks. New minerals are created either by rearrangement of mineral components or by reactions with fluids that enter the rocks. Some kinds of metamorphic rocks–granite gneiss and biotite schist are two examples–are strongly banded or foliated. (Foliated means the parallel arrangement of certain mineral grains that gives the rock a striped appearance.) Pressure or temperature can even change previously metamorphosed rocks into new types.

Rock-forming and rock-destroying processes have been active for billions of years. Today, in the Guadalupe Mountains of western Texas, one can stand on limestone, a sedimentary rock, that was a coral reef in a tropical sea about 250 million years ago. In Vermont's Green Mountains one can see schist, a metamorphic rock, that was once mud in a shallow sea. Half Dome in Yosemite Valley, Calif., which now stands nearly 8,800 feet above sea level, is composed of quartz monzonite, an igneous rock that solidified several thousand feet within the Earth. In a simple rock collection of a few dozen samples, one can capture an enormous sweep of the history of our planet and the processes that formed it.

Starting a Collection

A good rock collection consists of selected, representative, properly labeled specimens. The collection can be as large or as small as its owner wishes. An active collection constantly improves as specimens are added or as poor specimens are replaced by better ones. A rock collection might begin with stones picked up from the ground near your home. These stones may have limited variety and can be replaced later by better specimens. Nevertheless, this first step is helpful in training the eye to see diagnostic features of rocks (features by which rocks can be differentiated). As you become more familiar with collecting methods and with geology, the collection will probably take one of two directions. You may try either to collect as many different types of igneous, sedimentary, and metamorphic rocks as possible or to collect all the related kinds of rocks from your own particular area.

Identifying Rocks

Many books about geology explain the identification and classification of rocks and describe the underlying geologic principles. Almost any recent general book on geology would help a rock collector. Geologic maps, which are useful guides for collecting, are also excellent identification aids. They show the distribution and extent of particular rock types or groups of rock types. Depending on size and scale, the maps may cover large or small areas. Most have brief descriptions of the rock types. Some are issued as separate publications; others are included in books.

Most geologic maps are issued by public or private scientific agencies. The most prolific publisher of geologic maps in the United States is the U.S. Geological Survey (USGS). "Geologic and Water-Supply Reports and Maps, (State)," a series of booklets published by the USGS, provides a ready reference to these publications for 13 States. The booklets also list libraries in the subject State where USGS reports and maps may be consulted.

Older catalogs are available free of charge at the locations listed above. Geologic organizations of

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many States also publish geologic maps, as do many universities and scientific journals. Geologic maps may be located through public or university libraries.

Comparing one's own specimens with those in a museum collection can help in identifying them. Most large rock collections are well labeled. Small rock collections abound in libraries, schools, public buildings, small museums, and private homes.

Where to Find Rocks

Collections usually differ depending on where the collector is able to search for rocks. In the great interior plains and lowlands of the United States, a wide variety of sedimentary rocks are exposed. Igneous and metamorphic rocks are widespread in the mountains and piedmont areas of New England, the Appalachians, the Western Cordillera, and scattered interior hill lands; igneous rocks make up almost all the land of Hawaii. Along the Atlantic and Gulf Coastal Plains, loose and unconsolidated rocks are widespread; in the northern United States, glaciers deposited many other unconsolidated rocks.

The best collecting sites are quarries, road cuts or natural cliffs, and outcrops. Open fields and level country are poor places to find rock exposures. Hills and steep slopes are better sites. Almost any exposure of rock provides some collection opportunities, but fresh, unweathered outcrops or manmade excavations offer the best locations. If possible, visit several exposures of the same rock to be sure a representative sample is selected.

Collecting Equipment

The beginning collector needs two pieces of somewhat specialized equipment-a geologist's hammer and a hand lens. The hammer is used to break off fresh rock specimens and to trim them to display size. It can be purchased through hardware stores or scientific supply houses. The head of a geologist's hammer has one blunt hammering end. The other end of the most versatile and widely used style is a pick. Another popular style-the chisel type-has one chisel end; it is used mostly in soft sedimentary rocks and in collecting fossils.

The hand lens, sometimes called a pocket magnifier, is used to identify mineral grains. Hand lenses can be purchased in jewelry stores, optical shops, or scientific supply houses. Six-power to ten-power magnification is best. Optically uncorrected hand lenses are inexpensive and quite satisfactory, but the advanced collector will want an optically corrected lens.

Other pieces of necessary equipment are inexpensive and easy to find: a knapsack to carry specimens, equipment, and food; bags and paper in which to wrap individual specimens; a notebook for keeping field notes until more permanent records can be made; and a pocket knife, helpful in many ways, especially to test the hardness of mineral grains.

On some collecting trips, additional equipment is needed. Sledge hammers can be used to break especially hard ledges of rock. Cold chisels often make it possible to loosen specimens. Dilute hydrochloric acid helps in identifying limestone and dolomite. A long list could be made of such equipment; the collector must decide for each expedition which tools are really worth the weight.

Housing and Enlarging a Collection

The practical problems of cataloging and storing a collection must be considered by every collector.

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Housing arrangements can be very simple because rocks are durable and do not require special treatment. Shoe boxes and corrugated cardboard boxes are often used. Ordinary egg cartons can be used if the specimens are rather small. Shallow wall cases for rock collections are available commercially.

It is important to have a careful system of permanent labeling so that specimens do not get mixed up. Many people paint a small oblong of white lacquer on a corner of each specimen and paint a black number on the white oblong. The number, rock name, collector's name, date collected, description of collection site, geologic formation, geologic age, and other pertinent data are entered in a small notebook. If rocks are kept on separate trays, a small card containing some data is usually placed in the tray.

Extra specimens are sometimes used for trading with other collectors. Few people have the opportunity to obtain all varieties of rock types, and exchanging can fill gaps in a collection. Collectors interested in trading are usually located by word of mouth. No nationwide organization of rock collectors exists, though local clubs and individual collectors are found throughout the United States. It may be necessary to buy some specimens, but good specimens are expensive.

Hints for Rock Collectors

Label specimens as they are collected. Identification can wait until later, but the place where the rocks were found should be recorded at once. Many collections have become mixed up because the collector did not do this.

Trim rocks in the collection to a common size. Specimens about 3 by 4 by 2 inches are large enough to show rock features well. Other display sizes are 2 by 3 by 1 inch, or 3 by 3 by 2 inches.

Ask for permission to collect rocks on private property. The owners will appreciate this courtesy on your part.

Be careful when collecting rocks. Work with another person, if possible, and carry a first aid kit. Wear protective clothing—safety glasses, hard-toed shoes, hard hat, and gloves—when dislodging specimens. Avoid overhanging rock and the edges of steep, natural or quarried walls.

Do not collect rocks in national parks and monuments or in State parks; it is illegal. Similar rocks commonly crop out on land nearby.

Look for unusual rocks to study in large buildings or in cemeteries. Dimension stone blocks and monument stone are often transported long distances from where they are quarried. Polished stone sometimes looks different from unpolished rock. This provides good identification practice.

Join a mineral club or subscribe to a mineral magazine. They occasionally discuss rocks.

Collecting rocks from each State or country has no scientific significance. The distribution of rocks is a natural phenomenon and is not related to political divisions.

http://pubs.usgs.gov/gip/collect1/collectgip.html

Bench Tips

by Brad Smith

DIVIDERS

A set of dividers is a tool I find very useful in laying out the geometry of a piece I'm making. It has two needle-like tips with an adjustment to set the spacing between them.

They can be used to transfer a measurement. Let's say you need a 7mm wide strip of sheet metal. Set the spacing between the divider tips to 7 mm on the ruler. Then lay the sheet on the bench, put one tip against the edge, and run the dividers down the edge scribing a line parallel to the edge.

Dividers can be used to mark equal segments of a line or arc. For instance, assume a line between A and B that might be straight or curved, and you want to divide it into 5 equal lengths. Set the dividers to an estimate of the distance. Starting at Point A, use the dividers to mark off five lengths along the line. If you end up short of Point B, lengthen the distance on the dividers. If you end up overshooting Point B, shorten the length of your dividers. After a few tries, the length on the dividers will be the exact distance you need to mark the 5 segments.

Dividers can let you quickly find the center of a circular disk. With the tip of the dividers at the edge of the disk, set the other tip to an estimate of where the center might be. Fix one tip of the dividers at the 3 o'clock position and scribe an arc with the other tip near the center. Do this again from the 6 o'clock, 9 o'clock, and 12 o'clock positions. The arcs at the center will form a small four-sided box. The center of the box is at the center of the disk.

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PIECE OF LEATHER

Leather has a multitude of uses in the shop. I often use a scrap of it to avoid scratching the back of a piece of jewelry while setting stones. It's also great for times when you need to clamp one of your tools in a vise, for instance a drawplate.

More Bench Tips by Brad Smith are at facebook.com/BenchTips/
or see the book "Bench Tips for Jewelry Making" on Amazon

Get all 101 of Brad's bench tips in "Bench Tips for Jewelry Making" on Amazon
www.amazon.com/dp/0988285800/

2014 Stateline Gem & Mineral Society Membership

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Jim & Margaret	Chagnon	7192 St Rt 582	Woodville	OH	43469	jc123mb@yahoo.com	(419) 849-2213
Catherine	Choske	707 Wenonah St	Tecumseh	MI	49286		(517) 423-3572
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Dolores	Fish	322 Elm St, Apt 1	Kalamazoo	MI	49007	doloresfish@gmail.com	(269) 861-9661
David & Glenda	Gafner	3720 Britton Hwy	Britton	MI	49225	ggafner@frontier.com	(517) 451-2079
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Linda	Sharkey	6195 Roberts Rd	Mecosta	MI	49332	l.sharkey@aol.com	(989) 382-9141
Stephen	Shimatzki	107 Florentine Dr	Holland	OH	43528	sjs132@gmail.com	(567) 868-8794
Bill & Phyllis	Sipes	2108 Wo;f Creek Hwy	Adrian	MI	49221		(517) 263-3816
Sue	Smithers	14109 Monclova Rd	Swanton	OH	43558	suzews2@gmail.com	(419) 825-1424
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Charles	Swanson	3121 W Weston Rd	Sand Creek	MI	49279		(517) 436-9299
Walter	George	1298 Laberdee Rd	Adrian	MI	49221	comstock.lode1859@gmail.com	(517) 215-8582
Armando	Zamarripa	16166 State Rt 424	Napoleon	OH	43545		(419) 906-7542

Upcoming Events

Sunday, Apr. 12, 2015
State Line Gem & Mineral Society
monthly meeting
2:00 p.m.
201 W. Main St.
Morenci, MI 49256

APRIL 9 - 11, 2015
Wyoming, MI
39th ANNUAL SHOW
INDIAN MOUNDS ROCK & MINERAL CLUB
Rogers Plaza Town Center
972 28th St., 49509(1/4 Mile West of 131)
Thurs & Fri 9:30 - 9:00, Sat 9:30 - 8:00
Free Admission & Parking

April 11 - 12, 2015
Columbus, OH
Frozen: Ohio's Ice Age
41st Annual Central Ohio
Mineral, Fossil, Gem & Jewelry Show
Sponsored by
Columbus Rock and Mineral Society
Northland Performing Arts Center
4411 Tamarack Blvd.

April 18 - 19, 2015
Roseville, MI
38th ANNUAL GEM & MINERAL SHOW
MT. CLEMONS GEM & LAPIDARY SOCIETY
Roseville Recreation Center
18185 Sycamore
Sat 10-7, Sun 11-5

April 26 - 27, 2015
Benton Harbor, MI.
ANNUAL SHOW
BLOSSOMLAND GEM & MINERAL SOCIETY
Sat 10-7, Sun 11-4
Orchards Mall
1800 Pipestone Rd.

May 1 - 3, 2015
Kalamazoo, MI
Kalamazoo Geological & Mineral Society
Rock, Gem, Fossil, Jewelry & Mineral Show
Kalamazoo County Expo Center
2900 Lake St

May 15-17, 2015
Southgate, MI
Gem and Mineral Show
hosted by
Midwest Mineralogical and Lapidary Society
Southgate Arena
14700 Reaume Parkway

Rock Trails

Sandy Gerhart, Editor
704 W. US 223, #205
Adrian, MI 49221

Meetings are held the first Sunday of each month at 2:00 PM at 201 W. Main St., Morenci, MI 49256