

ROCK TRAILS



Newsletter of the StateLine Gem and Mineral Society

VOLUME 57
ISSUE IV
APRIL 2017

2016 Officers and Directors

President: Sherman Kardatzke, 517 673-5487
Vice President: Glenda Gafner, 517 403-6310
Secretary: Heidi Storehalder, 419 261-6451
Treasurer: Doris Brzezicki, 269 267-1123
Past President: Edmund Jarzembki, 419 237-2000
First Year Director: Jan Hauter, 517 286-6971
Second Year Director: Carl Mulholland, 517 539-2037
Third Year Director: Frank Kramic, 517 458-7191
Show Chairman: Sherman Kardatzke, 517 673-5487
Co-Show Chair: Glenda Gafner, (517) 451-2079
Publicity: Edmund Jarzembki, 419 237-2000
Sunshine:
Education & Lapidary:
Frank Karmic 517 458-7191
Richard Brzezicki, 269 267-7666
Newsletter Editor: Sandy Gerhart, 734 347-4796
s_gerhart@yahoo.com
Website: <http://statelinegms.com/index.html>

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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



Secretary's Scoop



President Sherman Kardatzki called the meeting to order. The invocation and Pledge of Allegiance followed.

Secretary's Report:

Richard B. made a motion to accept the Secretary's report as it was printed in the newsletter and was seconded by Jan. It passed with all in favor.

Treasurer's Report:

Doris presented her monthly report including the balance, monthly expenses and income, including yearly dues received from members and deposits from dealers for our annual show. Henry made a motion to accept the Treasurer's report and was seconded by Judy. It passed with all in favor.

Our show in June is still in need of volunteers in the kitchen, including someone to be in charge of said kitchen. Linda M. offered to help on Thursday for the luncheon. Judy suggested a meeting to get together and decide on the menu. Some members agreed to meet after the meeting concluded to further discuss this.

There was some further discussion regarding the yard signs the club was ordering to advertise for our show and everyone present voted between the smaller size and the larger size and voting was in favor of the larger size.

Glenda brought the second batch of correct posters to the meeting for willing members to put up in windows.

A list of volunteer workers was finalized for the show in Jackson, MI from March 17-19. Including volunteers and a time to load up at the clubhouse.

The trip to the Upper Peninsula, to search for Lake Superior Agates, will be June 9th - 13th, which will be a weekend and part of a week. The members who are attending would not be required to stay all days, but rather will come for the days of their choosing. Sleeping arrangements for the rented house were decided upon.

The annual Bedford, Indiana trip to attend the annual rock show and to collect geodes for the club to sell at shows and fundraisers will be June 23-25th. Some members will go down a few days early. Glenda updated the list of members who were attending so she has an accurate number of rooms to be reserved.

The trip to Kentucky for agates and geodes will be either directly before or directly after the trip to Bedford and will tie onto that trip. Glenda informed everyone that our contact to find agates will be attending the Bedford show, so if the trip was after Bedford, interested members could follow him back to Kentucky.

Secretary's Scoop
Continued from page 2

Doris received a letter from the school in Fayette, OH and one from the Morenci High School asking for donations. The one from Morenci was for the after-prom party and Ed made a motion to donate \$50. Carl seconded this and it passed with all in favor. An application for the club's scholarship fund will be sent along with the donation.

A scholarship application will also be sent to Sandy Cline to put on our website, as well as a flyer for this year's show.

A little over 500 grab bags have been finished by the time of the meeting and Carl has donated shark's teeth, crystal points, and horn coral specimens so that one of each can be included in the grab bags for our show in addition to the specimens already included in grab bags.

Doris and Richard B informed members that they would be giving an instructional class at Clinton Schools on March 29th for Math and Science Night.

We would like to remind all members that the Silent Auction will take place directly after the April meeting! Feel free to bring in specimens to donate, if you so choose.

Sherm made a motion to adjourn and was seconded by Phyllis. It passed with all in favor of the motion.

Ed drew numbers for the door prize after the meeting and it was awarded to Kurt Miller.

Respectfully submitted,
~Heidi Storehalder



Lake Superior Agates

The Lake Superior agate is a type of agate stained by iron and found on the shores of Lake Superior. Its wide distribution and iron-rich bands of color reflect the gemstone's geologic history in Minnesota, Wisconsin, and Michigan. In 1969, the Lake Superior agate was designated by the Minnesota Legislature as the official state gemstone.

The Lake Superior agate was selected because the agate reflects many aspects of Minnesota. It was formed during lava eruptions that occurred in Minnesota about a billion years ago. The stone's predominant red color comes from iron, a major Minnesota industrial mineral found extensively throughout the Iron Range region. Finally, the Lake Superior agate can be found in many regions of Minnesota as it was distributed by glacial movement across Minnesota 10,000 to 15,000 years ago.

More than a billion years ago, the North American continent began to split apart along plate boundaries. Magma upwelled into iron-rich lava flows throughout the Midcontinent Rift System, including what is now the Minnesota Iron Range region. These flows are now exposed along the north and south shores of Lake Superior. The tectonic forces that attempted to pull the continent apart, and which left behind the lava flows, also created the Superior trough, a depressed region that became the basin of Lake Superior.



The lava flows formed the conditions for creation of Lake Superior agates. As the lava solidified, water vapor and carbon dioxide trapped within the solidified flows formed a vesicular texture (literally millions of small bubbles). Later, groundwater transported ferric iron, silica, and other dissolved minerals passed through the trapped gas vesicles. These quartz-rich groundwater solutions deposited concentric bands of fine-grained quartz called chalcedony, or embedded agates.

Over the next billion years, erosion exposed a number of the quartz-filled, banded vesicles—agates—were freed by running water and chemical disintegration of the lavas, since these vesicles were now harder than the lava rocks that contained them. The vast majority, however, remained lodged in the lava flows until the next major geologic event that changed them and Minnesota.

During the ensuing ice ages a lobe of glacial ice, the Superior lobe, moved into Minnesota through the agate-filled Superior trough. The glacier picked up surface agates and transported them south. Its crushing action and cycle of freezing and thawing at its base also freed many agates from within the lava flows and transported them, too. The advancing glacier acted like an enormous rock tumbler, abrading, fracturing, and rough-polishing the agates.

The Lake Superior agate is noted for its rich red, orange, and yellow coloring. This color scheme is caused by the oxidation of iron. Iron leached from rocks provided the pigment that gives the gemstone its beautiful array of color. The concentration of iron and the amount of oxidation determine the color within or between an agate's bands. There can also be white, grey, black and tan strips of color as well.

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Lake Superior Agate

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The gemstone comes in various sizes. The gas pockets in which the agates formed were primarily small, about 1 cm in diameter. A few Lake Superior agates have been found that are 22 cm in diameter with a mass exceeding 10 kilograms. Very large agates are extremely rare.

The most common type of Lake Superior agate is the fortification agate with its eye-catching banding patterns. Each band, when traced around an exposed pattern or “face,” connects with itself like the walls of a fort, hence the name fortification agate.

A common subtype of the fortification agate is the parallel-banded, onyx-fortification or water-level agate. Perfectly straight, parallel bands occur over all or part of these stones. The straight bands were produced by puddles of quartz-rich solutions that crystallized inside the gas pocket under very low fluid pressure. The parallel nature of the bands also indicates the agate’s position inside the lava flow.

Probably the most popular Lake Superior agate is also one of the rarest. The highly treasured eye agate has perfectly round bands or “eyes” dotting the surface of the stone.



A gemstone can be used as a jewel when cut and polished. Only a fraction of the Lake Superior agate are of the quality needed for lapidary. Three lapidary techniques are used on Lake Superior agates:

Tumbling—Small gemstones are rotated in drums with progressively finer polishing grit for several days until they are smooth and reflective.

Saw-cut and polish—Stones up to 1/2 kg are cut with diamond saws into thin slabs, which then are cut into various shapes. One side of the shaped slab is polished producing fine jewelry pieces and collectible gems called cabochons. (Note the value of large Lake superior agates, which weigh a few pounds or more, will lose most of their value if cut into slabs.)

Face polishing—Polishing a curved surface on a portion of the stone and leaving the major portion in its natural state is called face polishing.

One of the most appealing reasons for naming the Lake Superior agate as the Minnesota state gemstone is its general availability. Glacial activity spread agates throughout northeastern and central Minnesota, northwestern Wisconsin, Northern Iowa, and Michigan’s Upper Peninsula in the United States and the area around Thunder Bay in Northwestern Ontario, Canada. Lake Superior agates have been found in gravel deposits along the Mississippi River basin. Other types of agate similar to Lake Superior agate have been found in southwestern Wisconsin.

Bench Tips

by Brad Smith

BEZEL PROBLEMS

When bezel setting a cab that has rather sharp corners, have you ever had problems pushing the metal down at the corners? It's a common problem often causing a wrinkle in your bezel and a grimace on your face.



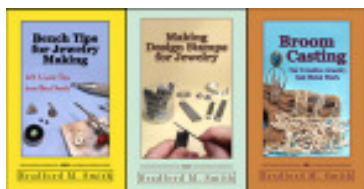
In order for a bezel to capture the stone, the top edge of the bezel must be compressed and become shorter to lay down onto the stone. With a round or oval stone this naturally happens as you push and burnish the bezel. But when setting a stone with corners, the tendency is to push the long sides of the bezel down first. No compression occurs along the sides, and all excess metal is left at the corners. Compressing everything there is difficult. Often the only way to remove the extra metal at the corner is to make a saw cut and fold the two sides in to touch.

If you want a smooth bezel all around the corners, the simple solution is to set the corners of the bezel first. Then push in and burnish the sides. In this way the necessary compression is distributed along the length of all sides and not forced to occur at the corners. With the corners set first, the top edge of the bezel can easily be compressed along the sides.

CHEAPER & BETTER PICKLE

Most jewelers use a granular pickle mixed with water. The active ingredient is sodium bisulfate. This can be purchased from local stores as a common pool chemical used for adjusting the acidity of the water. It's sold under various names, so be sure to check the list of active ingredients for a brand that is 95% or more sodium bisulfate.

An added benefit is that the pool chemical is more pure in form than what is sold for jewelry use and does not cause the brown grime often found floating on the top of the pot.



More Bench Tips by Brad Smith are at [facebook.com/BenchTips/](https://www.facebook.com/BenchTips/) or see the book "Bench Tips for Jewelry Making" on Amazon

Upcoming Events

Sunday, April 2, 2017

State Line Gem & Mineral Society
monthly meeting & induction of officers

2:00 p.m.

201 W. Main St.
Morenci, MI 49256

April 6 - 8, 2017

Indian Mounds Rock and Mineral Club
Roger's Plaza Town Center
28 th Street at Clyde Park
Wyoming, MI
Thurs & Fri 9:30-9,
Sat 9:30-8

May 5-7, 2017

Kalamazoo Geological & Mineral Society
County Expo Center
2900 Lake Street
Kalamazoo, MI
Fri 4-8, Sat 10-6, Sun 10-5

April 8 - 9, 2017

Columbus Rock & Mineral Society
Northland Performing Arts Center
4411 Tamarack Blvd.
Columbus, OH
Sat 10-6, Sun 11-5

June 9 - 13, 2017

Trip to Upper Peninsula to search for
Lake Superior Agates

June 23 - 25, 2017

Annual Trip to Bedford, IN to attend rock show
and collect geodes.

April 16, 2017

Easter



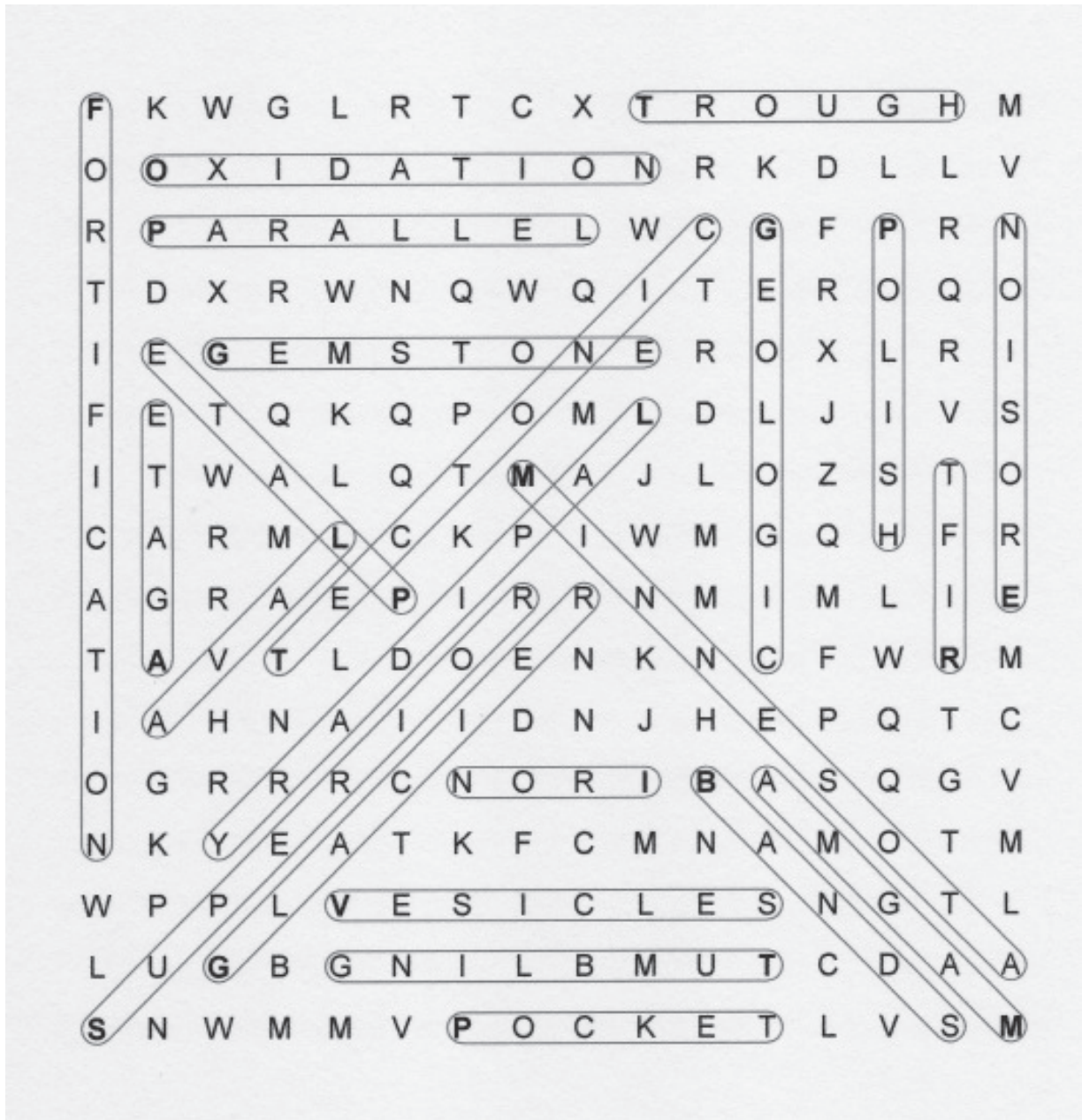
Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

F	K	W	G	L	R	T	C	X	T	R	O	U	G	H	M
O	O	X	I	D	A	T	I	O	N	R	K	D	L	L	V
R	P	A	R	A	L	L	E	L	W	C	G	F	P	R	N
T	D	X	R	W	N	Q	W	Q	I	T	E	R	O	Q	O
I	E	G	E	M	S	T	O	N	E	R	O	X	L	R	I
F	E	T	Q	K	Q	P	O	M	L	D	L	J	I	V	S
I	T	W	A	L	Q	T	M	A	J	L	O	Z	S	T	O
C	A	R	M	L	C	K	P	I	W	M	G	Q	H	F	R
A	G	R	A	E	P	I	R	R	N	M	I	M	L	I	E
T	A	V	T	L	D	O	E	N	K	N	C	F	W	R	M
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L	U	G	B	G	N	I	L	B	M	U	T	C	D	A	A
S	N	W	M	M	V	P	O	C	K	E	T	L	V	S	M

www.WordSearchMaker.com

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|---------------|-----------|----------|
| agate | lapidary | polish |
| bands | lava | rift |
| erosion | magma | superior |
| fortification | Minnesota | tectonic |
| gemstone | oxidation | trough |
| geologic | parallel | tumbling |
| glacier | plate | vesicles |
| iron | pocket | |

Puzzle Solution





Rock Trails

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

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first Sunday of each month
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