

THE ROCKFINDER

Michiana Gem & Mineral Society
Tom Noe, Editor
305 Napoleon
South Bend, IN 46617



Maybe you should put the big one back . . .

The Pick and Shovel (Mar., 2003)



THE ROCKFINDER

MAY, 2003

MICHIANA GEM & MINERAL SOCIETY

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The purpose of the Michiana Gem & Mineral Society is to promote the study and enjoyment of the earth sciences and the lapidary arts, and to share lapidary knowledge and techniques.

General meetings are held the fourth Sunday of each month, 2:00 PM, EST, at Our Redeemer Lutheran Church, 805 S. 29th St., South Bend, IN. Regular exceptions include May (third Sunday), July (no meeting), August (club picnic) and the November/December meeting and Christmas party. Board meetings are held before the general meetings. The annual club show is Labor Day weekend.



Yearly Membership Dues (Payable by December 1)
 _____ Individual \$10.00 per year
 _____ Family \$15.00 per year
 _____ Junior \$1.00 per year
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Please indicate areas of special interest.

General Geology _____ Beads _____
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Please send your dues and this form to
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 c/o Bob Heinek

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The Michiana Gem & Mineral Society, a not-for-profit organization, is affiliated with the Midwest Federation of Mineralogical Societies and with the American Federation of Mineralogical Societies.

The Rockfinder is published monthly except July and August. Editor, Tom Noe, (ph. 574-289-2028). Co-editor, Herb Luckert, 221 Marquette Ave., South Bend, IN 46617 (ph. 574-282-1354). Reporters, Bob Heinek, Herb Luckert, club members.

Permission is hereby granted to reprint any original *Rockfinder* articles, as long as recognition is given along with the reprint.



Additional family names:

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 Birthday _____

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 Birthday _____

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 Birthday _____

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PLEASE READ AND SIGN THIS SECTION:

With my signature I hereby release the Michiana Gem and Mineral Society, Inc., and its individual members and the owners of any premises upon which I enter under permit granted to the society, absolutely free of any liability whatsoever, to my person or my property, and further I will respect the equipment and property of the aforesaid owners.

Signed _____ Date _____

THE ROCKFINDER

Newsletter of the Michiana Gem & Mineral Society

Volume 43, Number 5

May, 2003

Meeting: Sunday, May 18, 2003
Doors open at 1:30 p.m.
Meeting starts at 2:00 p.m.

Place: Our Redeemer Lutheran Church
805 S. 29th Street (29th & Wall)
South Bend, IN

Program: Caves of Virginia

Refreshments: Mary Rumble, Pam
Rubenstein and Lana Wright

Display chair for the Labor Day show is Sue Brown. Call her at 271-5126 with the dimensions of your displays and let her know whether you need electricity for lighting.



UP AND COMING

- May 23-25: Memorial Day Rock Swap, Hidden Hill Campground, Newark, OH.
May 30-June 1: Midwest Mineralogical & Lapidary Society show (Dearborn club), Allen Park Civic Arena, Allen Park, MI.
June 4-6: Combined California and American Federation convention and show, Ventura, CA.
June 27-29: Lawrence County Rock Club show, Monroe County Fairgrounds, Bloomington, IN.
June 28-29: MGAGS Rockhound Seminar, Washtenaw Community College, Ann Arbor, MI.
July 11-13: Rocky Mountain Federation convention and show, Casper, WY.
July 30-Aug. 3: "Rockin' Around the World Show," Kingwood Center, Mansfield, OH.
Aug. 1-3: Northwest Federation convention and show, Kennewick, WA.
Aug 10: Michiana Gem and Mineral Society annual summer picnic, Merrifield Park in Mishawaka. More information next month. All welcome!
Aug. 15-17: Midwest Federation convention and show, Cottage Grove, MN.
Labor Day weekend—our annual MGMS club show at Century Center.
Sept. 19-21: Michiana Gem and Mineral Society field trip to southern Indiana.
Oct. 17-19: Eastern Federation convention and show, Poughkeepsie, NY. Oct. 25-26: Evansville lapidary Society show, Washington Square Mall, Evansville, IN.

DIANE'S COLUMN

I got home from work on May 1 and found daffodils on my door with a Happy May Day note. I had forgotten about the custom of flowers on May Day, so I was pleasantly surprised. The neighbor's daughter must have done it. I can remember putting violets on neighborhood doors. That was when you knew all of your neighbors. It is good that some old-time customs give good feelings and are still around.

I am sorry that I was not at the last meeting. Family is important and it was my granddaughter's second birthday. I got her a sand and water table. My son put it together as soon as the cake was gone. She certainly had fun.

I am in the process of moving rocks. I have a small bank that I am working on to fill with fieldstones. I have a small area of butterfly bushes and plants where I keep my special rocks. I seem to do a lot of rock moving. Herb Luckert told me he was paving an outside area with some of his stones. I'm wondering what others are doing. Do you have any projects that you are working on? It would be nice to share ideas on various uses for rock and mineral collections. How do you use your favorite rocks and gems?

I hope you are all thinking about bringing displays for the Michiana Gem and Mineral Society show Labor Day weekend. Margaret Heinek demonstrated to us some of the important aspects of a display at our March meeting. I think we can help one another to create many displays for the show. People who attend the show like to see and learn from our collections and interests. What makes our club so great is the variety of geology, mineralogy, lapidary and related subjects that we share.

MINUTES OF THE APRIL MEETING

Vice-President Don Church opened the April 27 meeting at Our Redeemer Lutheran Church at 2:05 p.m. President Diane Gram was unable to attend. There were 29 members present, four juniors and two guests. The March minutes were approved

as printed in *The Rockfinder*; the treasurer's report, given by Treasurer Bob Heinek, was approved and filed for audit. Don announced upcoming shows and made the flyers available to those interested.

Under old business: Margaret and Bob Heinek were chosen to represent the club as Midwest Federation Members of Distinction, due to their long and effective participation in club responsibilities and activities. This information will be forwarded to the Midwest Federation. Certificates of Honorary Membership in the Michiana Gem & Mineral Society were presented to Bess Wise, as one of the founding and longstanding members of the society.

Under old business: Sue Brown reported on possible locations for our annual August picnic. After a brief discussion it was decided to hold it on August 10 at Merrifield Park in Mishawaka. It was moved, seconded and approved that from now on birthdays will be printed in *The Rockfinder* only for junior members. Sally Peltz reminded members that all are encouraged to invite anyone who is interested in geology, lapidary work, fossils and minerals to attend future meetings. This will help build up membership in the club. There WILL be a June meeting; the date and a possible field trip will be decided at the May meeting. Margaret Heinek asked for a volunteer to serve as chair for displays at our annual show Labor Day weekend. Sue Brown accepted this responsibility.

The day's displays included matched shells by Kathy Miller (members were invited to select a pair); also, Herbert and Phyllis Luckert brought some materials collected on recent trips.

Members brought plants and shells for door prizes, which were won by: Joe Perry, Tom Noe, Robert Konrath, Phyllis Luckert, Susan Brown, Deena Lewandowski, Haley Lewandowski, Kent Hoffman, Ed Enos, Destiny Szucs, Bess Wise, Yvonne Church, Pat Bell, Annitta Hostetler, Tom McLaughlin, Kathy Miller and Pat McLaughlin.

The meeting adjourned at 2:50. Ed and Patty Enos and Phyllis Smallwood provided a delicious variety of refreshments. Pat Bell presented the program, which featured shell creations.

M. Jeanne Finske, Secretary

INSURANCE INFORMATION

By Margaret Heinek

Bob and I attended the Midwest Federation spring meeting in Kalamazoo on Saturday, May 3, and I asked about our club's insurance coverage during field trips.

We **MUST** ask any guest who attends our field trips to **JOIN THE CLUB**, to make sure our insurance is in force.

Following is part of the report sent to this meeting by Insurance Committee Chair Jeff Theroux: "I have discussed our claims history with our broker. Most of our claims have involved guests on field trips. This is our most serious liability exposure. Though we have never had a really serious claim, we have a huge exposure when we have non-MWF members, or 'guests,' if you will, on our field trips. One way of reducing this exposure would be to adopt tighter rules on admitting guests on our field trips. The tighter rules would be easy to adopt: (that) we require everyone who is involved in a field trip to become a member of the MWF."

So, in answer to the question which came up at the last meeting, "Can we ask guests to attend our field trip in June," the answer is "No," unless they are willing to join the Michiana Gem and Mineral Society (which means they would automatically become members of the MWF and be covered by the insurance). I asked, since the club had paid insurance only on the specific number of members listed in last year's roster, would we be covered for anyone new, and the answer was, "Yes, all new members are automatically covered by the club's insurance."

BOOK REVIEW

Reading the Earth

Landforms in the Making

Jerome Wyckoff

Adastra West, Inc. 1999

Reviewed by Herb Luckert

If you have ever wished that someone would explain the basics of geology to you so that you could easily understand it, this book is for you. It explains every kind of landform—mountains, valleys, plains, plateaus, shorelines, sand dunes, glaciated areas, arches and natural bridges, caves, playas, canyons,

cliffs, etc. It does not neglect to cover the many varieties which some of these categories have.

Along with the landforms are explanations of the various forces that create them—plate tectonics, volcanism, erosion (wind, water, chemical, freeze-thaw, gravitational), etc.

Along with the excellent text are outstanding illustrations, mostly color photographs and some diagrams. The illustrations are not only excellent, they are plentiful. My guess is that they average over 2 per page. The illustrations, along with their captions, can give you a pretty good understanding of most of the content of the book without even reading the text. Almost a geology textbook in comic book form, you might say. However, nowhere does this author talk down to his audience.

I wish I had found this book years before it was written.

NEWS ABOUT TIGEREYE

By Tom Noe

Tigereye (also called tiger's-eye) is a classic example of a pseudomorph. It forms when quartz replaces asbestos fibers, atom by atom. This gemstone is almost entirely microcrystalline quartz, but also contains fibers of crocidolite, an often bluish, iron-bearing form of asbestos. This was established by German mineralogist Ferdinand Wibel in 1873.

Except that he was wrong. Peter Heaney, a mineralogist at Pennsylvania State University, was researching tigereye trying to understand the mechanisms behind pseudomorphism, and found that tigereye isn't a pseudomorph at all. If tigereye was a pseudomorph, it would contain fibrous, defect-ridden crystals of chalcedony less than one micrometer in diameter. Instead, Heaney saw relatively fault-free, column-shaped quartz crystals more than 100 micrometers across and up to 10 millimeters in length. Pseudomorphism doesn't produce such uniform crystal forms.

In the April issue of *Geology*, Heaney and his associates announce that the famous chatoyancy of tigereye arises from the crocidolite fibers, not from the quartz, and that the mineral forms when crystals of quartz and crocidolite form simultaneously. Why had the pseudoexplanation lasted so long? Nobody had bothered to question the previous findings. They simply assumed they were true.

ALEXANDER HUMBOLDT CLIMBS CHIMBORAZO

By Sam Shapiro

My amateur interest in mineralogy and mountains began 59 years ago, when I took a course in geology at City College in New York. In fact, I may say that my connection with mountains began on my birthday, August 23, 1927, for I was born in Ellenville, New York, in the Catskill Mountains, where my immigrant grandfather owned a *kuch-allein* (a cook-your-own-meals hotel) with 40 rooms. Our family went up there every summer until I was 16, and I fondly remember the modest hills and the swimming hole in the nearby creek that ran into the Neversink River.

My dear wife, Gloria, was a fairly serious rock-climber in her youth, with ropes and pitons, but I have never actually climbed any mountains. If they were not very high and had a gentle slope, I have walked up to quite a few modest summits. In 1946, when I was a corporal in the Army of Occupation in Japan, some friends and I "borrowed" a jeep from the Air Force Motor Pool, drove halfway up Mount Fuji (12,383 feet), and walked up the rest the next day. It was like climbing a few hundred flights of stairs. In 1955 I did a similar easy ascent of Mount Washington (6,288 feet) in New Hampshire, and spent a week in the Appalachian Club shelters in the Presidential Range. On my first trip to Europe, in 1957, I saw, but did not climb, Switzerland's spectacular Matterhorn (14,688 feet). From my hotel room window, I saw two fallen climbers dangling from their ropes; they could not be rescued, and starved to death. In 1959, as a Fulbright professor in Argentina, I flew through Uspallata Pass in the Andes, where General San Martin led his *Granaderos a Caballo* to the liberation of Chile. For six months we lived in a rented chalet in the foothills of the Andes, and did some modest walking in Alpine meadows.

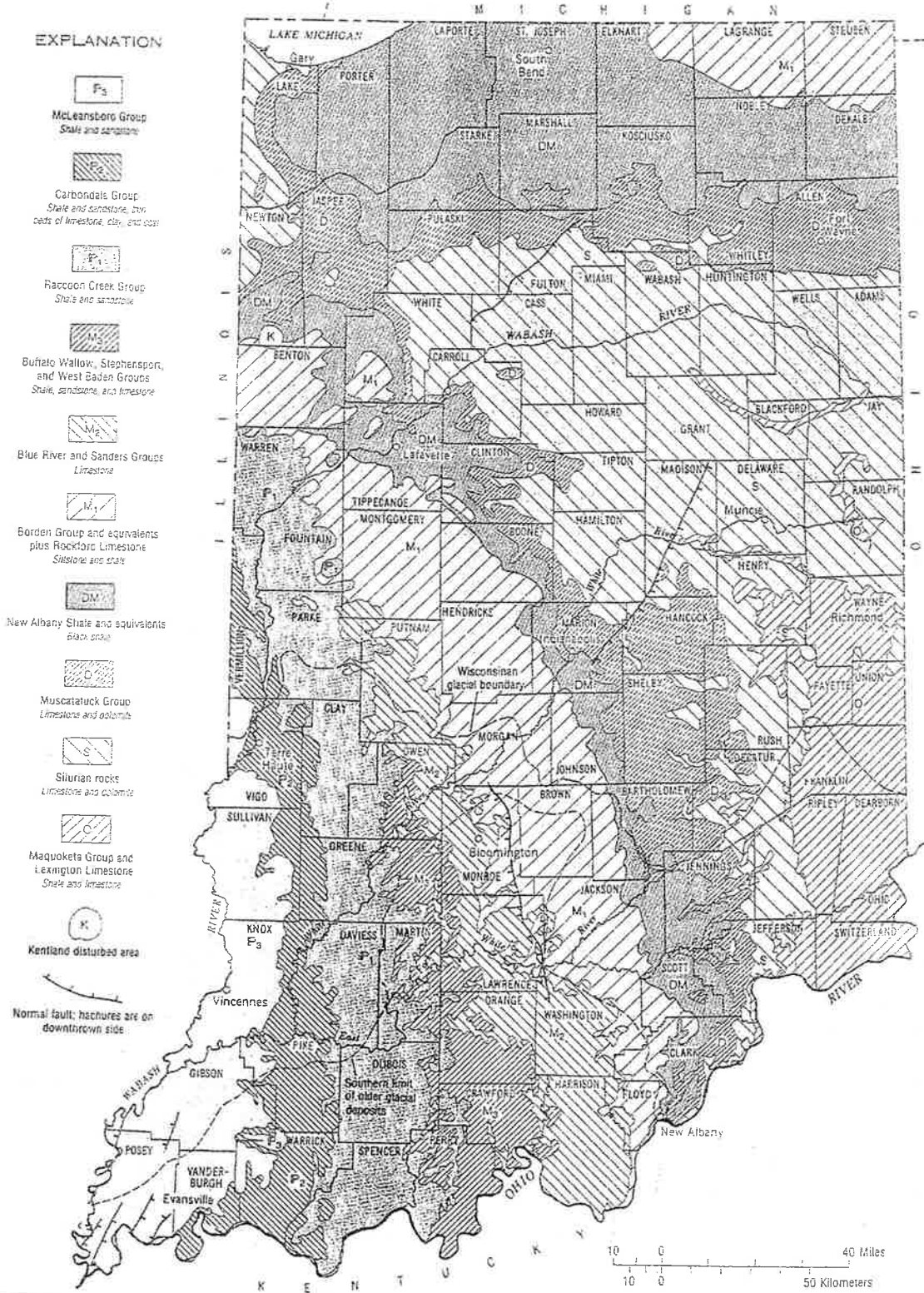
Alexander von Humboldt (1769-1859), the great biologist-geologist-historian, was a much more serious explorer and mountaineer. For five years

(1799-1804), he traveled throughout the Americas, discovered the Humboldt Current that is named after him, and the connection between the Orinoco and the Amazon, and brought back 4,000 previously unknown plants. On June 23, 1802, he climbed to 5,881 meters on the slope of Ecuador's mighty Chimborazo; no one before him had been so high on that mountain.

Chimborazo then was considered to be the highest mountain in the world; today we know that Everest and several other Himalayan peaks are over 8,000 meters, nearly five miles up. Humboldt had none of the equipment that modern mountaineers use (spiked boots, walkie-talkies, oxygen cylinders). He wore ordinary boots, a walking coat and a necktie (!). "All but one of the natives left us. . . . The rock path was often only eight or ten inches wide. On the right our gaze shuddered at a drop of 1,000 feet. We all began to suffer from a great feeling of sickness, giddiness and vomiting, difficulty in breathing, bleeding lips." (When Gloria and I looked at Chimborazo from the city of Riobamba, thousands of feet below the summit, we also suffered from *soroche* (altitude sickness).

Von Humboldt, lacking ropes and pitons, never made it to the summit (20,633 feet). "We were confronted with a ravine 400 feet deep and 60 wide. It presented an insuperable barrier to our further progress." He had set an attitude record, failing to reach the peak by only "three times the height of Saint Peter's" (or, as we Americans would say, three football fields).

Edward Whyper, the first to climb the Matterhorn (in 1865), was also the first to reach the summit of Chimborazo (1880). Today, the great mountain is a tourist attraction, and 600 serious climbers attack it every year. Some 100 reach the top. The youngest to attain the summit was 15, the oldest 69. Since 1960, 22 climbers have perished on the slopes.



from Indiana Geological Survey Miscellaneous Map 49

Drafted by Kimberly H. Sowder

MAP OF INDIANA SHOWING BEDROCK GEOLOGY

AGATES - RICH IN FIBER!

By Bill Cordua

Sometimes chalcedony, including agate, is described as a fine-grained quartz, but the real case isn't quite this simple. There are lots of clues for this. Arrowheads and other stone tools are harder and more durable when made from chalcedony than from coarse quartz. On the other hand, coarse quartz is better than chalcedony to grind up as a concrete additive. The chalcedony causes various chemical reactions in the concrete which can fail, while quartz is unreactive. With the advance of modern analytical tools, the reasons for these differences can finally be investigated.

Chalcedony has a microscopically fibrous structure, made of evenly spaced silica rods. More surprising is the fact that the fibers show a regularly alternating pattern of elongation—some parts being “length fast” and some parts “length slow.” This means that in part of a particular fiber light travels faster parallel to the long axis of the fiber. In other parts of the same fiber, the light travels slower parallel to the fiber length. This further implies that the silicon and oxygen atoms for some reason regularly twist or change in orientation as each fiber grew. Mineralogists are still trying to figure out why the fibers twist and what different forms of silica are intertwined with each other.

These intergrown fibers give chalcedony its great strength and durability. The peculiar structure also gives chalcedony its unexpected chemical reactivity in concrete.

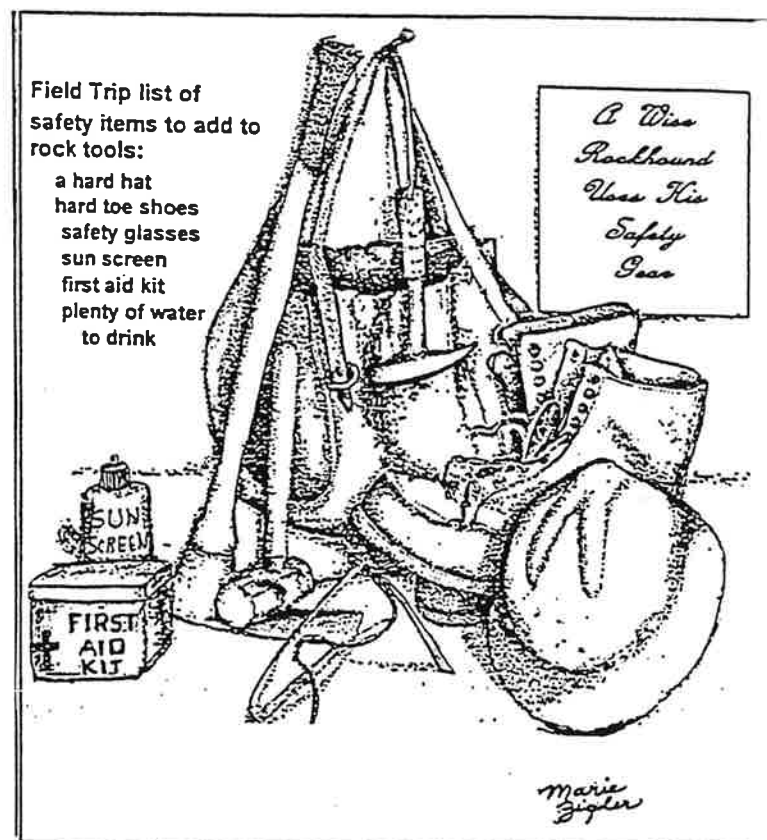
One theory for the growth of the fibers is being developed by two researchers (Yifeng Wang and Enrique Merino) at Indiana University. They envision agate as developing as fingers of silica growing progressively outward into a cavity filled with siliceous “media.” They do not specify whether this “media” is a solution or a gel. The first step is the formation of a coating of silica around the cavity. The coating (this being the real world) won't be completely smooth. In some places, the coating will bulge out slightly into the “media.” It is these bulges which will grow rapidly outward into the solution to form the fibers. Impurities in the solution (such as iron or copper) will slow the growth briefly until these impurities precipitate as their own minerals on

top of or between the silica fibers. Once the impurity's concentration is briefly reduced in this manner, silica growth will proceed again. Withdrawal of silica makes the solution richer in impurities, causing them to form another layer. This rhythmic precipitation is repeated many times as the agate grows. These layers of impurities show up as the color banding that characterize agates.

References:

Heaney, Peter J., D. Verien and J. Post, 1994, “Structural disparities between chalcedony and macrocrystalline quartz,” *American Mineralogist*, vol. 79, p. 452-460.

Wang, Yifeng and Enrique Merino, 1995, “Origin of Fibrosity and Banding in Agates from Flood Basalts,” *American Journal of Science*, vol. 295, p. 49-77.



Collecting Fossils in Sylvania, Ohio

*Information supplied by the Michiana Gem & Mineral Society
In South Bend, contact Phyllis at 282-1354.*

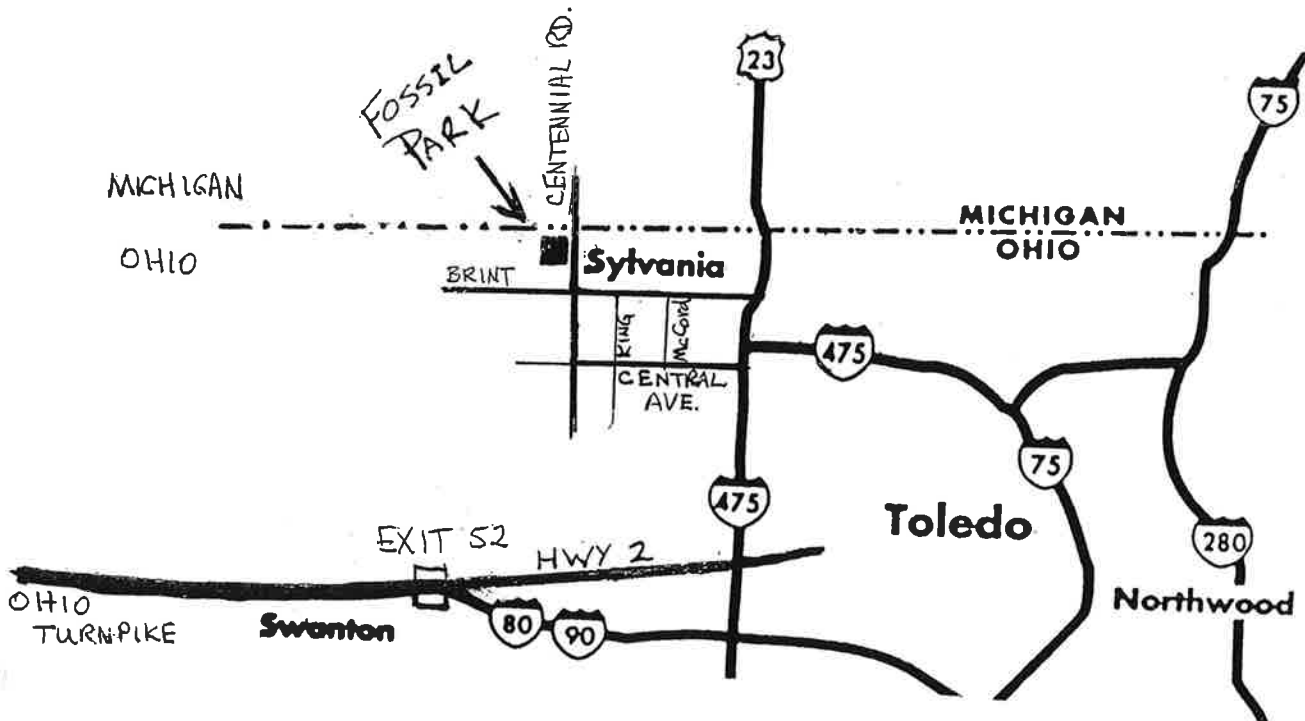
Fossil Park, in Sylvania, Ohio, is now open to the public on weekends for the collection of fossils. Hanson Aggregates Midwest has donated part of an old quarry to the local park department, and regularly trucks in fossil-bearing shale. The shale, which is quite soft and easy to break apart, contains Devonian fossils, from 350 to 400 million years old. You can keep what you find.

There is a parking lot, and the hunting areas are easy to walk to. Children are welcome, and the site is safe for all ages. The fossil-bearing shale is on concrete pads, and you simply make your way through the piles looking for fossils. Hard hats, hammers and chisels are not required. There are temporary rest rooms on the site.

These are world-class fossils. The only comparable site for this variety and quality of fossils is Devon, England, for which the Devonian Period is named. You can find various species of trilobites, brachiopods, crinoids, fossilized worm trails, coral, etc.—most are beautifully preserved. Hours in summer, 2002, are Saturdays from 9 to 6, Sundays from 11 to 6 (open until October 20). After Labor Day, the park closes at 5.

DIRECTIONS: Sylvania is just west of Toledo. Take the toll road/turnpike into Ohio to exit 52, then take Hwy 2 east to Interstate 475, then go north. Leave 475 at Central Avenue, then go left (west) on Central through two major intersections. The third intersection is Centennial Road, where you turn right (north). On Centennial, go through three intersections (the third is Brint Road). After Brint, look for Fossil Park on your left.

INFORMATION: Contact the Olander Park System at olanderpk@aol.com or phone 419-885-8313.



Collecting Fossils in Fort Wayne, Indiana

*Information supplied by the Michiana Gem & Mineral Society.
In South Bend, contact Phyllis at 282-1354.*

The Stoneco Quarry just southwest of Fort Wayne, IN, allows the public to enter the quarry on Saturday mornings to collect fossils and mineral samples. This is a working limestone quarry, with regular blasting, hauling and crushing, but on Saturday mornings they service the machinery and not much activity is going on. Hours on Saturday are from 7 a.m. until noon, precisely. You *must* be out of the quarry before noon. Most of the quarry is safe enough for older children and they are welcome, as long as they are accompanied and responsibly supervised by an adult. Do not let them climb on rocks, throw rocks or go near the high walls.

Sign in at the quarry office when you arrive (the last building on your right as you enter). You will be expected to sign a waiver of any damage claims for injuries you may experience. This is a normal requirement in this kind of situation. Also, you must follow all instructions you receive in the office. After signing in, turn right just past the office and wind your way past the crushers down into the quarry. Often, there will be piles of fossil-containing rocks in the middle of the quarry floor. These are for you to hunt in. Other piles may be available here and there. Avoid going near the high quarry walls, since a stray rock may come crashing down on you. Bring chisels, prybars, sledge hammers, rock hammers (regular hammers are not hardened enough to bust rocks), eye-protection (for flying chips), hard hats (sugg.), snacks, water (It will be hotter in the quarry than outside).

Don't expect to find the best fossil of the day after 10 minutes (but it could happen). You may keep what you find. When you are done, let the folks in the office know that you are leaving.

Your cooperation in following all instructions will help keep this quarry open for collecting. Don't be obnoxious. Cooperate. Stay away from the machines. Don't leave trash. Be friendly and appreciative.

What can you find? Minerals include small crystals of fluorite, massive or crystalline calcite, along with marcasite, pyrite, etc. Fossils may include many varieties of coral, brachiopod, cephalopod and other marine fossils associated with ancient coral reefs. The fossils are all several hundred million years old. You will not find bones or teeth.

Directions: Go toward Fort Wayne. (State Highway 30 is a good choice.) When you get to Interstate 69, head south, bypassing Fort Wayne on the west side. After several exits, go northeast (toward Fort Wayne) at the Lower Huntington Road exit (number 99). Go exactly two miles east on Lower Huntington Road, and you will see the quarry entrance on your left.

If you have any questions beforehand or want to see if there has been any change in policy, call the quarry at 260-747-5011.

PICNIC TIME!

The annual club picnic will be held on Sunday August 10th, beginning at 12:30 at Merrifield park in Mishawaka. There is a map on the reverse side.

We have rented a pavilion with picnic tables and a grill. The club will provide hamburgers, hot dogs, buns, condiments, all table service as well as lemonade and iced tea and will do the grilling as well. Members need to bring a vegetable and a dessert dish to share along with serving utensils for those dishes. Members may bring beer or wine but those drinks must be consumed under the pavilion and not in any other location in the park. Some persons may wish to bring coolers with additional drinks (other than lemonade or tea) or food and that is allowed. Do not forget to bring bug repellent and sun screen. Wear comfortable clothing and sensible shoes.

There will be a few simple games with prizes for the winners. Diane plans to hold a brief meeting to go over the plans for the Labor Day rock show and all members still needing a display case for that show will be able to give that information to Margaret at that time.

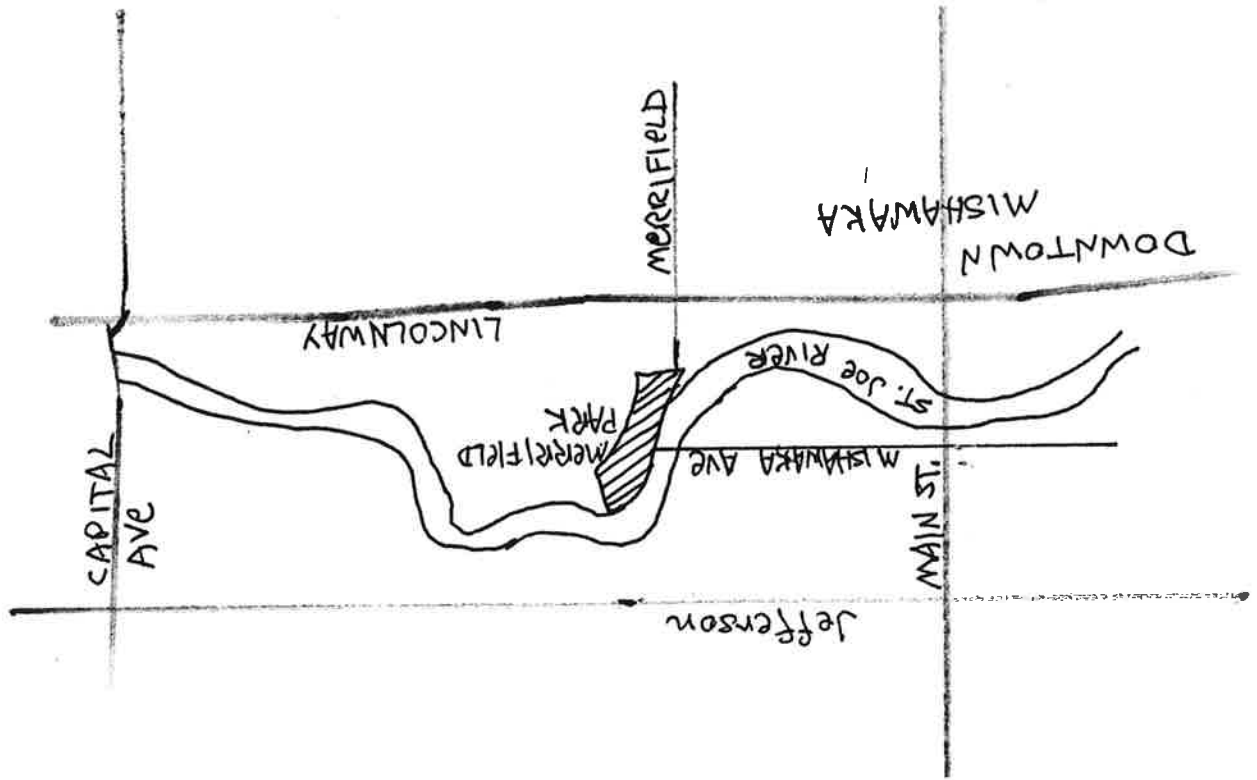
There are ample restrooms in convenient locations and plenty of places to explore. The park also has large grassy areas for children to play. Bring lawn chairs if you like.

The theme will be red, white and blue in honor of our great country and members may wear clothing to reflect that sentiment if they wish. Our pavilion will be easily located—just look for the red, white and blue decorations.

If you need any additional information you may reach Susan Brown at 574-271-5126 after 5:00. Please let Susan know if you intend to be at the picnic (by phone or e-mail) so she will know how much meat to buy. Her e-mail address is chna3333@aol.com.

CRYSTALS FOR SALE—Carl Demaegd in Elkhart has a collection of mineral specimens and crystals for sale. The collection is currently at a lake cottage near Union, MI. If you are interested in seeing them, call him at 674-6282.

EQUIPMENT FOR SALE—Keith Mast in Goshen has: tumblers, 14-inch Highland Park saw, 2 trim saws, diamond band saw, vibrasonic tumbler, roller mill, mounts and jewelry supplies, including rough agates and jaspers for jewelry. Call him at 574-533-7727.



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