

# The CHIP & LICK newsletter



**VOLUME 54, NUMBER 7**

**September, 2008**



## *Purpose and Memberships*

The objectives of the Miami Valley Mineral and Gem Club are:

- To promote interest and increased knowledge in the fields of mineralogy, geology, and the lapidary arts.
- To further the art of mounting and setting stones.
- To encourage the collecting, identifying and displaying of specimens in these fields.

The annual dues are \$10.00 for an individual membership, \$15 for a couple, or \$17 for a family membership.

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This club is a member of the Midwest Federation of Mineralogical and Geological Societies (MWF), which is a member of The American Federation of Mineralogical Societies (AFMS). **MEETINGS:** Second Sunday of the month except July and August.

**PLACE:** Small Business Development Center, 300 E. Auburn Ave., Springfield, OH 45505. Phone: 322-7821

**TIME:** 2:00 P.M.

**Editor:** Tom Bolka  
2275 Caestrano Dr.  
Xenia, OH 45385

**WEB SITE:** [www.mvmgc.org](http://www.mvmgc.org)

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**MATERIAL IN THIS BULLETIN MAY BE COPIED PROVIDED FULL CREDIT IS GIVEN TO THE AUTHOR AND TO THE BULLETIN.**

Welcome Back! – Our monthly meetings will begin again begin on Sunday the 14<sup>th</sup>. I hope everyone is doing well and enjoyed lots of digging this summer.

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## MIAMI VALLEY MINERAL AND GEM CLUB, INC.

### **2008 OFFICERS**

President	Tim Fosberg	849-4471
Vice President	Andreas Ruben	390-2081
Corresponding Secretary	Katrin Ruben	390-2081
Recording Secretary	Phil Lind	408-3744
Treasurer	Joyce Perry	372-8228
Editor	Tom Bolka	372-3365
Librarian	Joyce Perry	372-8228
Curator-Historian	Tim Fosberg	849-4471
Trustee (2005)	Marie Shinabarger	426-2289
Trustee (2006)	Becky Dobbs	372-9022
Trustee (2007)	Hugh Fulton	322-1021
Trustee (2008)	Hugh Fulton	322-1021
Trustee (2009)	Udean Babyak	

### **2008 COMMITTEES**

Anti-Litter	All Members
Canceled Stamps	Kay Faux
Chaplain	Udean Babyak
Field Trips/ Safety	Phil Lind
Field Trips/ Safety	Tom Bolka
Field Trips/ Safety	Clyde Spencer
MWF Liaison	Hugh Fulton
Photographer	Andreas Ruben
Program	Andreas Ruben
Refreshment	Joyce Perry
Scholarship	Joyce Perry
Show Chairman	
Spring Banquet	Udean Babyak
Sunshine	Joyce Perry
Swap	Hugh Fulton
Webmaster	Katrin Ruben
Christmas Party	Katrin Ruben

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Special club-member news!

#### **September Birthdays**

No for this month

#### **September Anniversaries**

Tim & Sharon Fosberg Sept. 28  
Dick & Faye Faux Sept. 30

Happy anniversary to each couple! Don't forget the Springfield Culture Fest is coming up soon. Try to go and check it out. This month's meeting will feature a silent auction so bring in extras to raise money for the club.

## Mineral of the month - Bauxite

**Bauxite** is the most important aluminium ore. It consists largely of the minerals gibbsite  $\text{Al}(\text{OH})_3$ , boehmite  $\gamma\text{-AlO}(\text{OH})$ , and diaspore  $\alpha\text{-AlO}(\text{OH})$ , together with the iron oxides goethite and hematite, the clay mineral kaolinite and small amounts of anatase  $\text{TiO}_2$ . It was named after the village Les Baux in southern France, where it was first discovered in 1821 by geologist Pierre Berthier.



### **Bauxite formation**

Lateritic bauxites (silicate bauxites) are distinguished from karst bauxites (carbonate bauxites). The early discovered carbonate bauxites occur predominantly in Europe and Jamaica above carbonate rocks (limestone and dolomite), where they were formed by lateritic weathering and residual accumulation of intercalated clays or of clayey dissolution residues of the limestone.

The lateritic bauxites occur in many countries of the tropical belt. They were formed by lateritization (see laterite) of various silicate rocks such as granite, gneiss, basalt, syenite and shale. Compared with iron-rich laterites, the formation of bauxites demands even more intense weathering conditions with a very good drainage. This enables dissolution of kaolinite and precipitation of gibbsite. Zones with highest aluminium content are frequently located below a ferruginous surface layer. The aluminium hydroxide in the lateritic bauxite deposits is almost exclusively gibbsite.

### **Production trends**

Bauxite output in 2005

In 2007, Australia was the top producer of bauxite with almost one-third world share, followed by China, Brazil, Guinea and Jamaica. Although aluminium demand is rapidly increasing, known reserves are sufficient to meet the needs for a considerable time. Increased aluminium recycling, which has the advantage of lowering the energy costs of production, will help extend bauxite reserves.

Country	Mine production		Reserves	Reserve base
	2006	2007		
Australia	62,300	64,000	5,800,000	7,900,000
People's Republic of China	21,000	32,000	700,000	2,300,000
Brazil	21,000	24,000	1,900,000	2,500,000
Guinea	14,500	14,000	7,400,000	8,600,000
Jamaica	14,900	14,000	2,000,000	2,500,000
India	12,700	13,000	770,000	1,400,000
Russia	6,600	6,000	200,000	250,000
Venezuela	5,500	5,500	320,000	350,000
Suriname	4,920	5,000	580,000	600,000
Kazakhstan	4,800	4,900	360,000	450,000
Greece	2,450	2,400	600,000	650,000
Other countries	5,460	6,800	3,400,000	4,000,000
World total (rounded)	178,000	190,000	25,000,000	32,000,000

Source: U.S. Geological Survey, Mineral Commodity Summaries, January 2008

## Processing

Bauxite is strip mined (surface mining) because it is found at the surface, with little or no overburden. Approximately 95% of the world's bauxite production is processed into aluminium. Bauxites are typically classified according to their intended commercial application: metallurgical, abrasive, cement, chemical and refractory.

Bauxites are heated in pressure vessels with sodium hydroxide solution at 150-200 °C through which aluminium is dissolved as aluminate (Bayer process). After separation of ferruginous residue (red mud) by filtering, pure gibbsite is precipitated when the liquor is cooled and seeded with fine grained aluminium hydroxide. Gibbsite is converted into aluminium oxide by heating. This is molten at approx. 1000 °C by addition of cryolite as a flux and reduced to metallic aluminium by a highly energy-consumptive electrolytic process (the Hall-Héroult process). (From wikipedia website)

## How to Tell if You've Found a Meteorite

(From Mama's Minerals website)

So, you think you've found a meteorite. . . but how can you be sure? Every year, hundreds of people bring us rocks they've found in the desert, wondering if they might be from space. First, we inspect them visually for a few tell-tale signs that they did not form here on Earth:

**Weight** -- Unusual density is one of meteorites' more characteristic features. Iron meteorites are generally 3.5 times as heavy as Earth rocks of the same size, while stony meteorites are about 1.5 times as heavy. However, iron ores are also exceptionally heavy.

**Appearance** -- Of all the rocks that fall from the sky, stony meteorites are by far the most common, making up 85-90% of all meteorites. They can be tricky to identify, as they more closely resemble terrestrial rocks than do the iron meteorites. However, if your specimen contains quartz, it is not a meteorite. Quartz is produced on the earth at plate margins; other planetary bodies like asteroids do not have this kind of setting and do not produce quartz crystals.

Meteorites are rarely round or aerodynamically-shaped, and virtually never have a bubbly appearance or small holes in the exterior or interior. The surface of a meteorite is generally black or rusty brown (not shiny silver, unless the fusion crust has completely disintegrated), very smooth and featureless, and has shallow depressions or cavities resembling thumbprints (called *regmaglypts*).

Here are some simple tests you can use to determine if a suspected meteorite is worth sending to a testing laboratory for analysis:

- The first test your potential meteorite will have to pass is the **magnetic test**. 99% of all meteorites are attracted to a strong magnet on a string (including stony meteorites, which contain 3-30% nickel). However, so are metal artifacts and iron ore. This is a simple test that will rule out tektites and many terrestrial rocks. Keep in mind, though, that exposing a meteorite to a magnet can corrupt or change its natural magnetic field -- possibly destroying research information, if your find is important. If you're concerned about this, use a compass needle to determine if your specimen is magnetic.
- Next, the **streak test**. Iron ore is the most common meteor-wrong; magnetite (lodestone) is very magnetic, and hematite is mildly magnetic. Fortunately, both of these minerals will leave a distinctive mark on a streak plate. Take your suspected space rock and rub it vigorously on the unglazed side of a ceramic tile (or the underside of your toilet tank cover, if you don't have a tile). If it leaves a grey-black streak (like a lead pencil), what you have is almost certainly magnetite; if the streak is red-brown, you likely have hematite. If there is no streak, your specimen has passed the second test!
- Finally, the most complicated and definitive test you can do in your home -- a **test for nickel**. All iron meteorites and nearly all stony meteorites contain some nickel; a chemical test for nickel is definitive for meteorites 99% of the time. You should be able to buy all the chemicals you need at a hardware store (though you

might need to get dimethylglyoxime from an online source). Be careful! Wearing gloves and goggles, dissolve about 1 gram of your suspected meteorite in heated chloridric acid. Add a few drops of nitric acid, then a few drops of citric acid, then add ammonium hydroxide. Filter the solution if it's cloudy. Then add a few drops of dimethylglyoxime. A nice bright cherry red color will indicate the presence of nickel.

If your rock passes all these tests, there's a good possibility you have a meteorite! Contact your local university, or check online for a reputable testing laboratory.

## How to Choose the Right Tumbler

(From Mama's Minerals website)

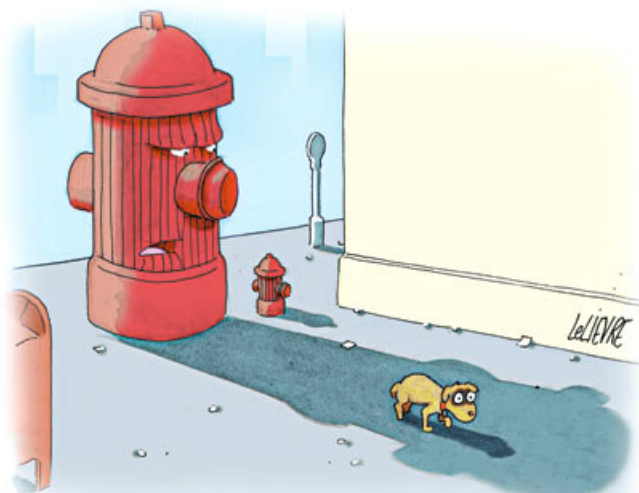
Rock tumblers make very popular gifts for adults and kids alike, but it's often difficult to decide which one you should buy. First, you should consider three basic properties:

**Rock Hardness.** The stones you tumble together must be of the same hardness. For example, you would want to tumble quartz with other quartzes, such as jasper or agate. If you tumble softer rocks with harder ones, the softer rocks will end up in little bits and pieces. In general, rocks with a hardness of less than 5 Mohs are more likely to crumble than polish if tumbled.

**Barrel Size.** The barrel must be at least 2/3 full, and may be no more than 3/4 full. If you think you'll want to tumble fairly large pieces of rock, you may want to consider one of the larger-barreled models. On the other hand, if you feel that you won't often be able to fill a larger barrel, you might want to look into a smaller one.

**Number of Barrels.** You may wish to consider a multiple-barrel tumbler. Some of the advantages of more than one barrel are 1) not having to wait for the rocks you found last week to finish tumbling (five weeks from now) before you start tumbling the rocks you found this week; 2) being able to tumble rocks of different hardnesses at the same time; and 3) having a barrel for each member of the family!

### A little Humor!!!



"This the guy?"

(From Rd.com)

## 2008 Summer Fieldtrip Report

Clyde Spencer

This has been an interesting and busy field collecting season. It has also been an expensive Summer, with the gas typically costing about \$75 roundtrip, split three ways, usually. In April, Tom Bolka, Phil Lind, and I got our annual MSHA training certificates, which allows us to visit operating quarries throughout the country. Tom and Phil took their training in Columbus, while I took my training in Dayton, courtesy of arrangements made by the Dayton Gem and Mineral Club.

We started off with a trip to Indiana three weeks after getting our certificates. For starters, I'll list all the trips we have been on this Summer:

May 3 <sup>rd</sup>	IMI Quarries, Anderson, IN and Swayzee, IN
May 10 <sup>th</sup>	Shelly Materials Quarry, Maumee, OH
May 24 <sup>th</sup>	Shelly Materials Quarry, Auglaize OH
June 7 <sup>th</sup>	Shelly Materials Quarry, Lime City, OH / Huron River
July 11 <sup>th</sup>	Shelly Materials Quarry, Portage, OH / Bellevue, OH
July 26 <sup>th</sup>	Shelly Materials Quarry, Lime City, OH
August 16 <sup>th</sup>	Gurken Quarry, West Milgrove, OH
August 23 <sup>rd</sup>	Hansen Aggregates Quarry, Salem, IN
Sept 13 <sup>th</sup>	GenLime Quarry, Genoa, OH (scheduled)

In addition to the above trips, Tom went to Marion, KY, twice. Most of the trips had been arranged by Kathy Bailey of the Dayton Gem and Mineral Club, with a couple arranged by Reggie Rose of the Columbus club, and the Huron River was an impromptu side trip by just the three of us. The pyrite collecting site following the aborted Portage quarry collecting was suggested by Dr. Ernie Carlson, who led the caravan there. Some of these, such as the Salem, IN, trip, were joint trips organized by the Mid-West Friends of Mineralogy.

Most of the collecting sites were near Toledo and required a drive of 2 ½ to 3 hours. This means we had to leave before most deer hunters would normally be getting up to go hunting. That is dedication!

Good material was obtained at most of the quarries except the Gurken Quarry. Very little of interest was found there by anyone, and the manager remarked that it had been a few years since anything of interest had been found.

Some of the highlights are: 1) Exceptionally large and well-formed sphalerite crystals at Auglaize; 2) A single crystal of classic blue celestine, about 4" long, attached on its side to the dolostone at Lime City by Bob. (It is an exceptional piece that is worthy of the Smithsonian. Unfortunately, it was not one of the three of us who found it.); 3) Some large, very unusual habit calcite crystals at the Sink Hole in the IMI Quarry at Swayzee; and 4) Some unusual pyrite and limonite pseudomorphs after pyrite near Bellevue.

The IMI quarry in Anderson produced mostly large, intergrown, yellow calcites in a sandy sort of matrix of dolostone. Some small, loose dogtooth spar crystals were also found by me. The dogtooth spar crystals typically look dirty. However, upon examining them with a stereomicroscope, the 'dirt' can be seen to be inclusions of a metallic mineral, probably a sulfide.

In the afternoon, May 3<sup>rd</sup> we went over to another IMI quarry in Swayzee. For those of us looking for crystals, the first part of the collecting was a little disappointing. The quarry was on top of a Paleozoic reef and was fairly pure calcite, instead of the usual dolostone. There was a dike-like feature of pisolite, which was composed of little hexagonal-shaped granules. There were lots of fossils, including some trilobites and

numerous brachiopods. However, I'm not into fossils and was a little disappointed with crystal collecting. However, late in the afternoon, perhaps because we hadn't done anything foolish, the quarry geologist took us to The Sinkhole. This was a spot that had not been blasted, had a red lateritic soil, and some outstanding large calcite crystals of unusual habit, with an inner gray core and outer milky rind. We all got excited and competed for spots to dig in the ground, until somebody found a huge boulder above us coated with 3" crystals.

Speaking of the Sink Hole, go to the URL

[http://en.wikipedia.org/wiki/Pipe\\_Creek\\_Sinhole](http://en.wikipedia.org/wiki/Pipe_Creek_Sinhole) . [note that there are underscores between the words, not spaces] There is an interesting explanation of the site along with some additional internet links if you would like to learn more.

The Maumee quarry started off slow with nothing too spectacular. However, Phil pointed me to a pile of boulders that had large, yellow crystals in them. Upon more careful examination at home under a microscope, they appear to have blue cores typical of celestine. I suspect that as they grew, barium was substituted for the strontium, causing the color change. I haven't checked the specific gravity yet to verify this hypothesis. I think that Tom managed to find some fluorites.

The quarry in Auglaize produced some outstanding, large sphalerites. I was working next to Chris Stefano, a graduate student from the University of Michigan. I loaned him my hacksaw with a carbide blade a couple times to help him get some crystals out. As usual, I think Tom found some fluorite crystals.

There were two separate trips to the quarry in Lime City. In my opinion, the Lime City quarry has consistently produced the largest amount of material and the best quality of celestine. Most of the material has been celestine (this is where the 4" specimen was found), with Tom and others finding a significant amount of brown fluorite, and most of us finding some interesting pieces of sphalerite. On the first trip, one of the more experienced collectors, John Medici, abandoned a boulder he had been working on. I took over. Unlike most of the rocks, it was soft and friable. Every time I hit it, I'd open up a cavity with 2" water clear celestine (barite?) crystals in it. Unfortunately, it was time to leave, and I didn't think to put the boulder in Phil's van and take it home. On our second trip there, the boulder was gone, and in fact, there was much less material to work over. However, we all still did well. I'm sure Tom found some nice fluorites there, because even I came back with some. Phil usually brings back a lot of what he calls "yard rock" but judging by what I have seen in his house, they don't spend much time in the yard.

At the end of the collecting on the first trip to Lime City, we decided to go over to the Huron River to look for pyrite. We really didn't find much. Phil picked up a piece and put it in his pocket and didn't discover it was pyrite until we got back. I tried panning the gravels and didn't find any pyrite in my concentrates. So, I wasn't convinced it was abundant there. This side trip added about another 100 miles to our total mileage.

The Portage Quarry, which was a Friday trip, had mixed results. A couple of the more experienced collectors found a fairly large seam of celestine in the wall. However, I didn't see what they managed to get out of it. I found a large pocket that was producing a lot of milky white celestine (barite?) with very large, but intergrown crystals; however, everyone else was disappointed and wanted to go to an alternate site to collect pyrite. On the way out of the pit we stopped to wait for Reggie Rose, and right next to the road was a small boulder full of celestine. On the ground all around it were numerous large crystal fragments. I felt that if we explored that boulder pile we would probably have turned up some interesting material. However, almost everyone else was already out of the pit. We had to catch up.

We followed Dr. Earnie Carlson east to Bellevue to collect large clusters of pyrite along a railroad right-of-way near the intersection of highways 113 and 4. All the pyrite clusters had an attractive patina of limonite that made them look a little bit like wood. Some were

completely replaced by limonite, but most were still quite heavy. They were lying around on the surface and appeared to be weathering out of a fine-grained sandstone or siltstone. As mentioned above, the trip to the Gurken quarry was disappointing. Tom and Phil found some calcite crystals with a milky white coating. I found some dogtooth spar crystals heavily stained with limonite that I don't think will clean up. We all brought back some striped dolostone that I'm using as yard rock, and Phil intends to turn into spheres.

The trip to Salem, (IN) was a four-hour drive! Celestine was rather rare, but Bob again found the best specimen at the quarry. It was a cluster of very large crystals. I found a large plate of calcite scalenohedrons with individual crystals over an inch in length. How it managed to be blasted out of the wall, and be bulldozed into the windrow without being damaged is unfathomable! Tom found some orange-coated rock and upon breaking it open found sphalerite, calcite scalenohedrons, and what is probably either dolomite or possibly ankerite. All three of us took out numerous smaller clusters of calcite crystals from the location where I found the large plate. It was a good trip, but we all are of the opinion that that we probably won't go back.

We are all looking forward to an opportunity to get to the Clay Center quarry next year. Phil is of the opinion that Tom finds all the good specimens. Tom denies this.

## **Meeting minutes**

### **MIAMI VALLEY MINERAL & GEM CLUB MINUTES**

June 08, 2008

The president was not in attendance, therefore, the meeting was called to order by the vice-president, Andreas Ruben. There were only five members present and no visitors.

There was no meditation reading since Udean was not present

Minutes were read and accepted..

Treasurer's report was read and accepted. There was \$57.74 donated to the AMFS scholarship fund.

The Librarian reported that we have a new CD available for viewing.

Liaison, Hugh Fulton gave a brief account of the various newsletters, brochures and other documents received from other clubs. All were placed at the front of the room for further examination. He also reported on an offer for an African mineral safari.

There will be no MWF news letter for July or August.

Al Cowan has send in the dues for 2009 and an article on the danger of mis-use of propane tanks.

Our editor has not been available recently due to conflicting meetings and events, however, as usual he has continued to furnish us with copies of the newsletter "Chip & Lick" by delivering them to Phil Lind so that they would be available at meeting.

Old Business:

There was an error on the MVG&M culture fest information. It has been announced that it will be on August 12<sup>th</sup> and it isn't until the 27 of September (11 am to 7 pm). Word of mouth is the only way we can correct the error.

We need to renew our CD at the bank and Joyce needs a second signature on the paperwork. She is making arrangements for one of the trustees to sign the paperwork.

New Business:

The Culture fest booth is now \$105.00 and we to vote on whether to participate or not. We don't have enough members present to take a vote. To compensate for that problem we are contacting a couple of members by speakerphone to assist in the vote. It has been approved. Andreas made the motion and Katryn 2<sup>nd</sup> it. All members voted to approve.

The September meeting program is to be a silent auction. Money will help pay for the culture fest booth.

Meeting was adjourned for refreshments and we viewed our copy of the Franklin DVD program

Submitted by Secretary  
Philip Lind.

## **Regional Events September**

**Greenfield, Indiana – 32<sup>nd</sup> annual Indianapolis Gem, Mineral and Fossil show**  
Hancock 4-H Fairgrounds, 620 N. Apple Street. Fri. 10:00-8:00, Sat. 9:00-7:00, Sun. 9:00-4:00. Sponsored by the **500 Earth Sciences Club**. *THREE BIG AREAS* of dealers and swappers offering fossils, minerals, gems, and jewelry, *plus* silent auctions, raffles, door prizes, good food, kids activities, demonstrations, educational displays, and programs for all! There's even *RV parking!*. Admission: FREE! CONTACT: Don Mahoney, 17914 Juniper Road, Argos, IN 46501, (574) 892-5264, **DLMCNACLU@aol.com**, or James Yarber, 6877 W. Byron Drive, Fountaintown, IN 45130, **jyarber@mail.inct.net**.

**5-7: TOLEDO, OH. Toledo Gem and Rockhound Club 37TH ANNUAL JEWELRY, GEM, AND MINERAL SHOW AND SALE.** Stranahan Theater Complex, Great Hall, 4645 Heatherdowns Boulevard. Fri. 2:00-9:00, Sat. 10:00-6:00, Sun. 10:00-5:00. This year's theme: "Beads, Gold, and Gemstones!! Tradegoods through the Ages." Vendors will be selling gems, jewelry, beads, precious metals, fossils, meteorites, artifacts, tools, equipment, *and more!* There will be mineral exhibits, demonstrations, mini-classes, a "touch and feel" display, a silent auction, and club sales. For kids there will be games and kid's mineral kits. Donation: Adults \$4, Students and Seniors (over 53) \$3, Children (under 12, with Adult) FREE, Scouts and Soldiers in uniform FREE. FREE parking. CONTACT: Jerri Heer, 247 Decatur, Toledo, OH 43609, (419) 389-9204, **jheerx6@aol.com**, or visit the club Web site at **www.toledogemandrockhoundclub.com**.

**12-14: HOLLAND, MI. Tulip City Gem and Mineral Club 39TH ANNUAL SHOW.** Holland Civic Center, 150 W. 8th Street. Fri. and Sat. 9:00-7:00, Sun. 11:00-5:00. This

year's theme: "What's Inside? Discovering Earth's Treasurers." There will be 8 vendors, selling Russian minerals, geodes, and jewelry. There will also be demonstrations of jewelry making, wire wrapping, and Petoskey stone polishing. For kids there will be a Kids' Table, a Triassic Mineral Tent, and gold panning. There will also be door prizes, a silent auction, a fluorescent display, food, and *much more!* Admission: Adults \$2, Students \$.50, 3-day *Family Pass* \$6, 3-day *Individual Pass* \$3. FREE parking. CONTACT: Rebecca Cisparo, (616) 393-9307, [r4squares@sbcgolbal.net](mailto:r4squares@sbcgolbal.net).

**20-21: CLARKSVILLE, IN. 14TH ANNUAL FALL FOSSIL FESTIVAL.** Falls of the Ohio State Park, 201 W. Riverside Drive (near Interstate 65, exit 0). Sat. 9:00-6:00, Sun. 10:00-5:00. *Rain or Shine!* Sponsored by **Indiana Society for Paleontology**, Falls of the Ohio State Park, and others. There will be 10+ vendors selling fossils, minerals, books, and related items. There are fossil bed tours and special workshops and programs. **Collect your own fossils** from huge *fossil collecting piles!!* A local quarry donates *30 tons each* of fossil-bearing Silurian Waldron Shale and Devonian Jeffersonville Limestone. Dig for brachiopods, bryozoans, corals, crinoids, cystoids, snails, clams, and trilobites. A mineral collecting pile from Hastie's mill dump in Rosiclare, Illinois, will also be available. Speakers on Saturday include: Dr. Steve Greb, Kentucky Geological Survey, "*The Geology of Coal*;" Dan Phelps, "*Fossils in the Ohio Valley*;" Charles Oldham "*Minerals in the Ohio Valley*;" and Nelson Shaffer, Indiana Geological Survey, "*Minerals and Life*." On Sunday, Rick Schrantz, Kentucky Paleontological Society will present "*Fossil Collecting Tips*." Door prizes, food, FREE resources, and FREE rock and fossil ID! Interpretive Center admission is \$5 adults (age 19 and older), \$2 children (age 2 – 18) and under 2 is free. CONTACT: Alan Goldstein, [agoldstein@dnr.in.gov](mailto:agoldstein@dnr.in.gov). For more info, visit the festival's website at [www.falloftheohio.org/fossil\\_festival.shtml](http://www.falloftheohio.org/fossil_festival.shtml).

## October

**10-12: WARREN, MI. Michigan Mineralogical Society 64TH ANNUAL GREATER DETROIT GEM, MINERAL, FOS-SIL, AND JEWELRY SHOW.** Macomb Community College (South Campus) Expo Center, Building. P, 14500 E. 12 Mile Road. Fri. 9:00-7:00, Sat. 10:00-7:00, Sun. 11:00-5:00. *Michigan's largest mineral show for 63 years!* 50+ choice dealers offering minerals, fossils, gems, cutting rough, jewelry, beads, and lapidary supplies from the nation's best suppliers. Displays by Smithsonian Institution, Carnegie Museum, Royal Ontario Museum, Cranbrook Institute of Science, A. E. Seaman Museum, Cincinnati Museum, Kent State University, Wayne State University, and University of Waterloo. Also demonstrations by the **Monroe County Gem and Lapidary Society**, noted private collectors, and Michigan Mineralogical Society members. There will be book signings, a silent auction by the Carnegie Museum, and FREE mineral and fossil ID. Suggested donation: Adults \$7; Seniors \$4; Children (5-17) \$3; Scouts in Uniform \$2; Three Day Pass \$10. FREE lighted parking. CONTACT: Carol Werner, 3401 Briarhill Road, Hartland, MI 48353, (248) 887-3906, [briarhillwerner@comcast.net](mailto:briarhillwerner@comcast.net), or visit the club web site at [www.michmin.org](http://www.michmin.org).