

# THE ROCKFINDER

Newsletter of the Michiana Gem and Mineral Society

Volume 49, Number 1

January, 2009

Next meeting: January 25.

**Visitors are always welcome.**

Doors open at 1:30. Meeting starts at 2.

**Place:** Our Redeemer Lutheran Church 805 S. 29th Street (29th & Wall) in South Bend, River Park area.

**Program:** A demonstration of how to wire-wrap gemstones to be used for jewelry.

**Refreshments:** Pat McLaughlin, Kathy Miller and Jess Zeiger

## UP AND COMING:

January 24: Lincoln, NE. Lincoln Gem and Mineral Club Annual Indoor Swap, 65th and Vine Streets. Sat. 1:00-5:00.

## The 2009 Federation Show and Conference Schedule:

California Federation, April 17-19 in San Jose, CA.

Eastern Federation, Oct. 17-18 in Bristol, CT.

Midwest Federation, May 16-17 in Parma, OH.

Northwest Federation & AFMS Combined, July 30 - Aug. 2 in Billings, MT.

South Central Federation, Oct. 10-11, Temple, TX.

## MIDWEST FEDERATION T-SHIRTS FOR SALE

Sue Brown, MWF Indiana state director, will be taking money and orders at the Christmas party for MWF T-shirts. They are athletic heather gray, with a 3-color screen print of the MWF logo on the front and "Rock On" in red on the back. If we can get an order for 30, the price would be \$3 cheaper per shirt. Adult sizes available are S, M, L, XL, 2XL, 3XL and 4XL at \$12 each. Shirts for

## WEATHER UPDATES

During the winter months, if there is any inclement weather on meeting day, members can call any board member on Sunday to check for cancellation of the meeting.

HAVE YOU PAID YOUR MGMS DUES YET?  
TREASURER LANA WRIGHT'S CONTACT  
INFORMATION IS ON THE BACK OF THE  
COVER PAGE.



youngsters are small (6-8), medium (10-12) and large (14-16) at \$9 each. If you write a check, make it payable to MWF Endowment Fund. Wouldn't it be great to wear this as a group when we have a club function, showing that we belong to a larger organization, similar to the Audubon Society and similar groups.

KATHY'S COLUMN



**Happy New Year!**

The wonderful turnout for our 2008 Christmas party despite the inclement weather was fantastic. For those who were able to attend, we enjoyed a great time. Good friends, good food, good everything. Thanks to our junior members for helping with Rocko. For our fellow members who couldn't make it because of the weather or illness, be sure to attend the January meeting since we are providing a post-Christmas meal and an excellent program too.

This year should be a really fun one for our club. NOTE, I say fun because we are a hobby club and that is what hobbies are supposed to be all about. Our membership has grown, we are active at meetings, field trips, the annual show, in our fellowship and the common bond of love we share in our earth science hobby. What more could we ask for!

OK, now it's time for small (but important) things to mention--like have you remembered to pay your dues for this year, did you sign up to be a hostess for a club meeting, are you willing to give a program in your field of expertise during 2009? Just contact Lana Wright (treasurer), for dues, Pat or Tom McLaughlin for host/hostess duties, or David Peltz for giving a program.

In the same way, many of you folks have the knowledge in so many areas of our hobby to write an article for *The Rockfinder*. Our new members would appreciate reading what you are doing in your specific part of the hobby, or what you collect, information on rocks, fossils, minerals or where to go to find them. Just send your article to Tom Noe, editor.

In that respect you could do the same with our webmaster Jim Daly, he has a super Michiana Gem & Mineral Society web site. Both Tom's address and Jim's web site address are located on the inside front cover of *The Rockfinder*.

That winds me down (you can take that two ways :) for this month. Think spring! Bob and I just received our first flower and garden catalog.

**FIELD TRIP TO KEOKUK, IOWA, 2009**

By Kathy Miller

Here's an update for those who are going on the September 25/27 bus trip, regarding the block of 20 rooms at the Fairfield Inn. You need to reserve your room yourself. This is not done through the club. Please make a point to call them soon to reserve your room as we are already 1 room beyond the block. They fill up really fast for the Geodefest that takes place that week and I would really hate to see anyone having to sleep on the bus because they couldn't get a room! The number to call is **319-524-9000** and mention the **Michiana Gem and Mineral Society for September 25 and 26 leaving on the 27th**. I spoke with a lady named Sharon. The cost per night is \$77.28 (includes tax), for 2 queen, no smoke. Be sure to let me know when you have done so!

I also have a private room reserved for our club at the Hawk Eye Restaurant next door to the motel serving us the standard buffet (it's loaded!) for \$15.15 (includes gratuity).

Over the next few months I will get information to you regarding collecting at the Geodefest such as fees, plus what to expect and what to bring. Rock on!

**EQUIPMENT FOR SALE**

Tom Noe has equipment to sell: a tumbler, a 16-inch slab saw in a homemade case, a like new Diamond Pacific Titan grinding and polishing machine, some trim saws. Contact him at 574-289-2028.

**BLACK HILLS INFO**

Since the October program, several members have asked Tom Noe for more information about collecting in the Black Hills and the Badlands. If you're interested, he can have a group over to his house to look at specimens and talk about collecting possibilities, maybe sometime in February. Contact: tomnoe2@gmail.com or 574-289-2028.

## GOOD COOKS AROUND

By Diane Gram

The Michiana Gem and Mineral Society has the best cooks around! So let's share that talent and come up with a cookbook that we can sell to benefit the Midwest Federation Scholarship Fund. Help make a fun profitable project to promote future geologists.

Club members, please get your favorite and best recipes to me. Bring them to the club meeting on January 25, or you could e-mail them to me at [gram.diane@sbcglobal.net](mailto:gram.diane@sbcglobal.net). If you would like to make up a fun name dealing with rocks and gems, do so and we can list it with the title.

Example: The cream cheese mints that I made in the shape of rocks—I called them "Mint-ites." Marshmallow fudge can be called "Rocky Road." I'm not sure what the end product will be in terms of pages, categories or size. That will depend on you. Let's see what we can come up with.

I'm looking forward to seeing lots and lots of recipes.

## ATLAS TO PURSUE NEW ALBANY SHALE IN INDIANA

By OGJ editors

HOUSTON, Oct. 30 -- Atlas Energy Resources LLC, Pittsburgh, plans to drill more than 100 horizontal wells to Devonian New Albany shale in southwestern Indiana by the end of 2009.

The company has acquired 114,000 net acres and has taken a farmout on 78,000 net acres from Aurora Oil & Gas Corp., Traverse City, Mich. The combined transactions give Atlas rights to 284,000 largely contiguous gross acres in the Illinois basin, mainly in Sullivan, Knox, Greene, Owen, Clay, and Lawrence counties, Indiana.

Drilling is to start in 2008, with Atlas Energy using capital from its syndicated oil and gas investment programs. The total acreage contains about 800 horizontal drilling locations.

The farmout requires that Atlas Energy drill at least 20 wells/year and grants Aurora a right to participate for 25%. Aurora will receive a well site

fee for and overriding royalty interest in each well.

The acreage is in the northern "biogenic" part of the New Albany shale play, where several operators have drilled more than 40 successful horizontal wells, said Atlas energy.

"We have been studying the New Albany shale for over 2 years and believe the predictable and statistical nature of its development is a perfect fit for our investment programs," said Atlas Energy president and chief operating officer Richard D. Weber.

Overseeing Atlas Energy's New Albany shale development will be the company's Antrim Shale operating team, led by Dick Redmond, president of Atlas Energy Michigan LLC. The New Albany shale has many similarities to Michigan's biogenic Antrim shale, in which Atlas Energy is the largest and one of the lowest cost operators.

Atlas Energy noted that New Albany is a blanket formation 100-200 ft thick and 500-3,000 ft deep. Natural fracture patterns are low-angle in the Antrim shale and vertical in the New Albany.

Atlas Energy reviewed more than 30 successful horizontal completions in and close to its acreage and observed an average estimated ultimate recovery of 1.3 bcf/well. Horizontal New Albany wells with 4,000-5,000-ft laterals can be drilled and completed for \$1.3 million.

Aurora Oil & Gas, through predecessors, has been working in the New Albany play since 1994. Operator and majority owner until now of its 121,702-gross-acre Wabash project in Clay, Greene, Owen, and Sullivan counties, it has drilled 13 wells. All may be considered productive, but all are shut-in awaiting connection to pipeline and processing facilities.

*Oil & Gas Journal* (Nov., 2008)

## GIANT FROG BEELZEBUFO

A giant frog fossil from Madagascar dubbed Beelzebufo or the frog from Hell has been identified by scientists from University College London and Stony Brook University, New York. The discovery of the 70-million-year-old fossil frog, of a kind once thought unique to South America, lends weight to a new theory that Madagascar, India, and South America were linked until late in the Age of Dinosaurs.

The new frog resembles living horned toads (ceratophryines or 'pac-man frogs') in having a squat body, huge head, and wide mouth. With a body length (not counting the legs) of up to 40 cm — longer than a rugby ball - and a weight of around four kilos (10 pounds), it is more than twice the size of its largest living relatives.

"The finding presents a real puzzle biogeographically, particularly because of the poor fossil record of frogs on southern continents," said Stony Brook University paleontologist David Krause, who led the research. "We're asking ourselves, 'What's a South American frog doing halfway around the world, in Madagascar?'"

He said that because frogs "are not adept at dispersal across marine barriers, and since the few fossil frogs that are known from the Late Cretaceous in Africa are unrelated to Beelzebufo, one possibility is that there was a land connection between South America and Madagascar during that period."

Some geoscientists have suggested a lingering physical link between South America and Madagascar during the Late Cretaceous Period — a link involving Antarctica. Antarctica in the Late Cretaceous was much warmer than it is today.

"The occurrence of this frog in Madagascar and its relatives' existence in South America provides strong evidence that the supercontinent Gondwana 'disassembled' during the latest part of the Cretaceous," said Richard Lane, program director in NSF's Division of Earth Sciences.

*Science Daily* (Feb. 19, 2008)

## CLIMATE CYCLES HELP PINPOINT TIME OF EVENTS AROUND GLOBE

By Dale Gnidovec

The Late Triassic Period was a time of change. The supercontinent Pangea was beginning to split, dinosaurs were just getting started, volcanoes were erupting and the climate was changing.

The timing of those events worldwide is a problem, because many Late Triassic sediments are nonmarine, meaning they were not deposited in the ocean. Fossils of ocean-living animals are usually widespread, whereas those organisms that lived in lakes and rivers were restricted to smaller areas, making it difficult to relate events in time in widely separate regions.

A study reported in November in the journal *Geology* used an interesting method for matching rocks in southwestern England to those on the East Coast in the United States.

Lake sediments at St Audrie's Bay show red and green stripes produced by regular climate changes that caused lake levels to rise and fall on a cycle of about 100,000 years. Those cycles were produced by regular changes in Earth's path around the sun, from circular to slightly oval.

Adding the cycles together, the researchers determined that the English sediments were deposited over a period of about 3.7 million years. But when?

Rocks in the Newark Basin along our East Coast have been dated by magnetostratigraphy, which is based on episodic reversals of the magnetic poles. Periodically, Earth's magnetic field reverses, so a compass would point south rather than north. When plotted, those flip-flops resemble a bar code unique to any segment of geologic time.

The Newark Basin sediments were subject to the same climate oscillations caused by changes in orbit. The pattern of oscillations in the rocks at St Audrie's Bay matched a segment in the Newark Basin deposited at the end of the Triassic Period.

Using climate cycles to link rocks across continents is much more precise than using fossils. Fossils from that time can date rocks to within a few hundred thousand to a million years, whereas climate cycles can date events to within 100,000 years. That's pretty good for events that took place more than 200 million years ago.

*Columbus Dispatch* (Feb., 2008)

**CRATER OF DIAMONDS MINE INFO**

Crater of Diamonds State Park is the only diamond-producing site in the world where the public can search for diamonds. And the policy here is "finder's keepers." The diamonds you find are yours to keep.

Visitors search atop a 37-acre plowed field, the eroded surface of an ancient, gem-bearing volcanic pipe. Prospectors enter the field through the visitor center that offers exhibits and an A/V program explaining the area's geology and history. Park staff provide free identification and certification of diamonds.

The first diamond was found here in 1906 by John Huddleston, the farmer who owned the property. The Crater of Diamonds has changed hands several times over the years and several unsuccessful attempts have been made at commercial mining. All such ventures are shrouded in mystery, and lawsuits, lack of money and fires are among the reasons suspected for these failures. The mine was operated privately, and later as a tourist attraction, from 1952 to 1972. In 1972, the State of Arkansas purchased the Crater of Diamonds for development as a state park. The park is open year-round except for New Year's Day, Thanksgiving Day and Christmas Day.

The diamond field is open the same hours as the Visitor Center. The park features a 37-acre field of diamond-bearing soil plowed periodically when weather allows. These plowings are unscheduled. Historical structures, old mining equipment, washing pavilions, and sun shelters are located on the field. Diamond mining tools are available for rent or purchase. Diamonds and other minerals are identified at the Diamond Discovery Center.

**Fees to search for Diamonds**

Adults:	\$6.50
Children (ages 6-12):	\$3.50
Children under 6 years old:	FREE

Organized groups of 15 or more may receive half-price admission with advance notification. From Memorial Day through Labor Day tickets purchased after 6 p.m. are also good for the following day.

**What should I wear?**

If it is wet you will need some old shoes or boots because the field will be very muddy. In the

summer, a hat and some sunscreen will be necessary to protect you from the sun.

**What do diamonds look like?**

Shape: Diamonds found at the Crater are typically smooth and well rounded. Their shape resembles a polished stone with smooth sides and rounded edges.

Size: The average size of a diamond is about the size of a paper match head, approximately 20 - 25 points. Points are an increment of measurement of diamonds. There are 100 points in a carat. Look for something small. A 1-carat diamond is about the size of a green pea.

Appearance: Diamonds feel like they have an oily film on them. This characteristic prevents diamonds from being dirty. Diamonds have a metallic luster like new steel or lead. They will not be clear like glass. They do not have a solid dull look like the Jasper rocks. Diamonds are translucent. You can typically see into them but not through them.

Color: The most common colors of diamonds are white, yellow and brown.

The park offers free rock and mineral identification at the Visitor Center. Diamonds are weighed and certified free of charge for the finder.

**What is a carat?**

A unit of weight for precious stones that is equal to 200 milligrams. It is thought that the name carat was derived from the carob tree. Carob trees are native to the Old World (Asia, Africa, and Europe) and are known for their uniformly consistent small seeds. Gemstones, including diamonds were weighed for years against these seeds. A diamond that weighs 100 points would also be 1 carat. 1 carat is equal to 100 points. A diamond that is larger than one carat would be listed as a whole number plus the number of points it was. For example, a diamond that was 1 carat and 25 points would be listed as 1.25 carats.

**How do I search for diamonds?**

How you search for diamonds usually depends on how much time you have to search or how hard you want to work.

There are three methods of diamond searching. Surface searching is walking up and down the rows of dirt looking for diamonds lying on top of the ground. This is the most productive method following a hard rain. Rain washes the soil away, leaving diamonds and other rocks and minerals exposed on the surface. Most visitors like to dig around in the soil and screen for diamonds. This usually involves searching through

## GREAT FLOOD SPLIT OFF BRITAIN ABOUT 425,000 YEARS AGO

By Dale Gnidovec

the first six inches to one foot of soil. Visitors can turn the soil over with a small hand tool while looking in the loose soil. Some visitors like to use a screen to sift the soil.

The third method of diamond hunting requires a lot of hard work, and previous experience is helpful. This method is usually preferred by the repeat or regular visitor, and involves the digging of deep holes, removal of the right type soil, washing the soil in a series of screens and patiently hand sorting the concentrated gravels from the screens. Some searchers are looking for low areas in the field where diamonds may have settled out over the years, or for tailings from the earlier commercial mining plants of the 20's and 30's. Tailings are the waste gravel that went out of the plant. Over the years, these tailing piles are covered by topsoil. The experienced regular hunters look for the tiny gravel, dig it up and wash it again by hand, looking for the small diamonds.

Are the diamonds valuable?

The park staff can identify diamonds, but are not trained nor do they have the equipment to assess the value of a diamond. The monetary value of a diamond rests in the possibility of the diamond being cut. Several large diamonds from the Crater have been cut into D flawless stones, which would bring top dollar. Should you find a large diamond that might be cut, the park staff can provide you with a list of diamond cutters.

Most diamonds found are small diamonds that would not be cut. They will be valued souvenirs of your trip to the Crater. If desired, rough diamonds can be mounted in jewelry and worn. The most popular method of displaying a rough diamond is to have it mounted in a pendant and worn around the neck.

In the local area, rough diamonds value from \$1.00 per point to \$10.00 per point or more. Therefore, a small souvenir diamond weighing 10 points might sell for \$10.00 to \$100.00 depending on the quality. However, the true value of a diamond rests with you, the finder.

Diamond Finds: as of December, 2007

Total Diamonds Found in November, 2007: 93

Total Diamonds Found in 2006: 488

excerpted from a park brochure

Although an island, Britain geologically is part of Europe. The famous white cliffs of Dover are made of chalk, a kind of limestone deposited during the Cretaceous Period, the last great flowering of dinosaurian life. Cretaceous chalk can be found through much of Western Europe—the period is named for *creta*, the Latin word for chalk. Before 425,000 years ago, Britain was connected to the mainland by a broad valley of chalk through which ran a large river system. Among the tributaries were the modern Thames, Meuse and Rhine. About 425,000 years ago, advancing glaciers in Scandinavia blocked many rivers in northern Europe. The waters backed up, forming a huge lake. Getting higher and higher, the water eventually spilled over the chalk ridge, sending a catastrophic flood downstream. That flood scoured out the channel. The process was repeated at least once more, around 200,000 years ago.

Recent high-resolution sonar mapping of the floor of the channel has shown many features that indicate catastrophic flooding. The main valley is unusually straight and contains smaller channels weaving around multiple streamlined-shaped islands of bedrock. The islands are up to 6 miles long and 2 1/2 miles wide. They resemble similar features created in the Channeled Scablands of Washington state when a huge flood roared down the Columbia River Gorge. That flood also was caused by the catastrophic release of water from a huge lake created by a glacial dam that burst 15,000 years ago. There also are hanging valleys – tributaries that meet the main valley at a steep drop-off. Normal erosion creates tributaries that meet the main river at the same level, but the catastrophic erosion can deepen the channel of the main valley, leaving the tributaries higher. The indicators of catastrophic flooding are flat-bottom valleys with steep walls and rectangular cross-sections. There also are grooves eroded into the floor of the channel. The grooves are typically 650 feet wide, 6 to 10 feet deep and 6 to 9 miles long, and show the flow of the flood. Since then, the channel has been a barrier to migration, for both animals and people.

*Flint Flashes* (Dec., 2007)

**ABOUT GYPSUM: IS EACH STATEMENT TRUE OR FALSE?**

- 1) Selenite, alabaster and satin spar are all common varieties of the mineral gypsum.
- 2) The chemical formula for gypsum is  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .
- 3) Drywall (plasterboard) has good fire resistance because when the drywall is heated, the gypsum converts to anhydrite, giving off water which slows the spread of the fire.
- 4) The type of gypsum known for its transparency and excellent cleavage is satin spar.
- 5) The gypsum crystals in the newly discovered Naica Crystal Caves in northern Mexico are as long as 14 meters.
- 6) Selenite comes from the Greek word for "Moon," a reference to a moonlike glow.
- 7) Sedimentary gypsum typically begins as anhydrite crystallizing from very salty waters. The anhydrite is later converted to gypsum by the absorption of water, which can cause some interesting distortions in the layering.
- 8) Selenite, alabaster and travertine are all common varieties of the mineral gypsum.
- 9) Gypsum is used as an ingredient in Portland cement. A little gypsum added to the cement will slow its setting time, allowing for workers to smooth it.
- 10) The hardness of gypsum on the Mohs scale is 2.
- 11) The specific gravity (~density) of gypsum is 2.3 which means that a specimen of gypsum is 2.3 times heavier than the same volume of water.
- 12) In Asia and elsewhere, gypsum is used as a coagulant in tofu (soybean curd), making tofu a great source of dietary calcium where dairy products are rare.
- 13) Selenite comes from the Greek word for "clear," a reference to a blue sky.
- 14) Heating gypsum to about  $180^\circ\text{C}$  (~ $350^\circ\text{F}$ ) converts gypsum to anhydrite.
- 15) The type of gypsum known for its transparency and excellent cleavage is selenite.
- 16.) Gypsum and anhydrite are very similar chemically: calcium sulfate.
- 17) Gypsum is the major ingredient in the manufacture of asphalt (aka blacktop).
- 18) Gypsum is the major ingredient in the manufacture of drywall (aka wallboard, sheetrock).

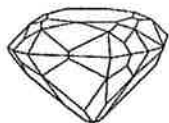


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- 19) The huge gypsum crystals in the Naica Crystal Caves apparently grew very slowly and evenly over several thousand years, benefitting from uniform conditions of high temperature and high humidity.
- 20) Gypsum crystals are flexible but not elastic, meaning that they can be bent but will not bend back on their own.
- 21) Drywall (plasterboard) has good fire resistance because when the drywall is heated, the gypsum converts to calcite, creating Portland cement which blocks the spread of the fire.
- 22) The form of gypsum characterized by long, parallel crystals that act as "light pipes" is satin spar.
- 23) Fairly common colors of gypsum include colorless, white, yellow, red, pink, and brown.
- 24) Michigan rock gypsum is early Mississippian Age (~360-340 million years ago), and formed on the bottom of a very shallow, highly saline (salty) sea which covered Michigan at the time.
- 25) Gypsum is the major ingredient in classroom chalk, but not the sedimentary rock chalk.
- 26) Due to its expense, gypsum is no longer the major ingredient in plaster of Paris, which is used in surgical splints, molds and model making.

#4, 8, 13, 17 and 26 are false. All others are true.

**Answers to gypsum questions:**



## Juniors' Page

Gemstones and precious metals are beautiful. We give them as gifts, tell legends about their magical powers, and many religious texts mention them. Over the next 3 or 4 meetings we will work on the lovely "Gemstone Lore & Legend" badge.

### January Meeting: Birthstones



Can you find a list of birthstones (or Zodiac stones) and pictures to bring to the meeting? There are lists for the day of the week on which you were born, the month in which you were born, and under which sign of the Zodiac you were born.

Let's compare our lists (there are nearly 50 different lists out there) and decide on which gem would be our favorite for our birthstone.

### Show & Tell

Do you have your birthstone in your rock & mineral collection or maybe a piece of jewelry with your birthstone? Do you have any of the gemstones mentioned on your list of birthstones? Bring them to the January meeting to show everyone.

### Youth Poster Contest



Summit Lapidary Club in Ohio is sponsoring their second annual Youth Poster Contest and would like kids in grades 1-8 from anywhere in the country to submit entries. This year's theme is "Gemstones of the World" and entries should be a 12 x 18 in. poster illustrating one or more gemstones or minerals from anywhere in the world. Each grade will have a winner and the first-place winners will receive a prize. Full details and copies of the contest rules will be available at our next two meetings. I will send in an envelope for our club with all posters turned in by the March meeting. With an April 1 deadline, we have plenty of time to produce some fine posters.

—Juniors' Activity Chair: Cordelia Tomasino

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