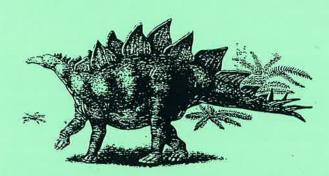
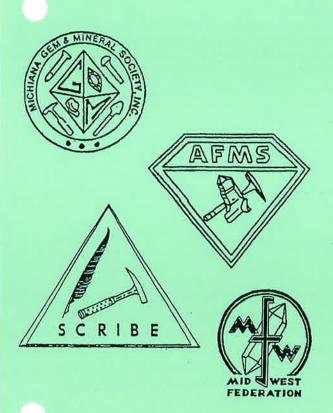
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Michiana Gem & Mineral Society Tom Noe, Editor 305 Napoleon Blvd. South Bend, IN 46617







## 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.

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Mineral Society, Inc.	, and its individual members and the owners
of any premises upo	on which I enter under permit granted to the
society, absolutely fr	ee of any liability whatsoever, to my person
or my property, an	d further I will respect the equipment and
property of the afore	said owners.
Signed	Date



### Newsletter of the Michiana Gem & Mineral Society

Volume 41, Number 6

June, 2001

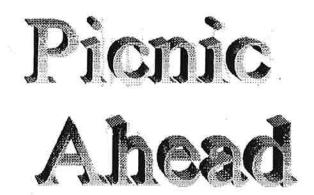
## IMPORTANT UPCOMING DATES FOR CLUB MEMBERS

June 23—Field trip to Ft. Wayne quarry; see information in this issue.

August 19—Club picnic. A flyer will be sent to all members later in the summer.

August 31 to September 2—Club's annual gem & mineral show at Century Center.

October 7—Club field trip by bus to Illinois to collect Mazon Creek fossils. Mark your calendars!





A woodcut from 1509 showing a man gathering agates in a farmer's field. The rings indicate gemstones.

#### UP AND COMING

June 11-17: AFMS/South Central Federation show, Texas.

June 16-17: Michigan Geology & Gemcraft Society Rockhound Seminar, Carter Middle School, Clio, MI.

June 22-24: California Federation show, California.

June 22-24: Bloomington Rock Swap, Monroe County Fairgrounds, Bloomington, IN.

July 13-15: Eastern Federation show, New York.

Aug. 5-12: Keweenaw Week, field trips, swaps, auctions, shows in Copper Country, Portage Township School Gym, Calumet, MI. (Show is August 10-12.)

Aug. 17-20: Faceting Seminar 2001, Midwest Faceter's Guild, Mott College, Flint, MI.

Aug. 20-Sep. 1: Northwest Federation show, Washington.

Aug. 31- Sep. 2: Michiana Gem & Mineral Society show, Century Center, South Bend.

Sep. 7 - 9: Midwest Federation show, Wisconsin.

Sep. 7-9: Greater Indianapolis Gem, Mineral & Fossil Show, Hancock County Fairgrounds, Greenfield, IN.

Oct. 7: Club field trip to collect Mazon Creek fossils.

Nov. 2-4: Southeast Federation show, Mississippi.



Sorry I missed the last meeting, but Tom Noe sent me a copy of the minutes and it sounds as if it was a good meeting, with the program on trilobites—thanks, Sam. We went to Tennessee for a graduation we couldn't get out of. We will try to see you all at the quarry in Fort Wayne for the June field trip, and then at the club picnic in August. I hope that all of you will put the club picnic on your calendars, because we always have a great time. Please bring along your rocks collected over the summer for show and tell.

#### **JUNE BIRTHSTONES**

By Don Church

June is one of those months that can't seem to make up its mind. The first birthstone is the pearl. Pearls are the most valuable of the organic gemstones. They have been prized for about 6,000 years and are among the few ornamental objects which are not reworked into something else.

Pearls are formed when a foreign object, such as a grain of sand or parasite, becomes trapped inside the shell of a mollusk. In self-defense, the shellfish surrounds the intruder with a calcium carbonate material called "nacre." These thin layers consist of microscopic crystals of aragonite and an organic binder called "conchiolin." The nacre collects as thin concentric layers that grow larger as the host ages.

Pearls are soft (hardness 2.5 to 4.5), but their concentric structure makes them fairly durable. The distinctive rainbow-like iridescence of pearl is called orient, and derives from the dispersion of light by the thin overlapping plates of aragonite in the nacre. Most pearls are white with a silvery or yellowish tint, but they can also be gray or almost black. Pink pearls are extremely rare and are formed by large marine snails.

The first known attempts to cultivate pearls took place around the 12th century, when the Chinese learned to insert objects into living oysters. Large-scale production of cultured pearls started about 1900 in Japan. In the modern technique a "seed" of nacre from a mussel shell is inserted into a small piece of

flesh from a living oyster, which is then inserted it a host oyster. These oysters are set to work in cages in shallow, calm water. Shallow water is conducive to fast growth, but the best pearls are formed in deeper water, so the cages are raised and lowered over the course of a year to achieve the best results.

Pearls may be harvested as early as five years after implantation of the seed, but longer periods of cultivation will produce a finer product. Despite all this effort, the value of a cultivated pearl is only a fraction of the value of a natural pearl. The only way to tell the difference between a cultured pearl and a natural pearl is to look inside, and the best way to do that is by X-ray.

June's second birthstone is moonstone. Moonstone is a feldspar and rather inexpensive, with a hardness of 6 to 6.5. Moonstone is white, translucent albite (an orthoclase mineral) with a light blue sheen.

The best moonstones come from Ceylon. Cameo cutters look for large flat stones on which they can carve images, but large stones are becoming hard to find. Note, the wrong way to cut a moonstone is as a high dome, as they show a four-rayed star.

The third birthstone is the most expensive-alexandrite. It was found originally in the Ural Mountains and later in Ceylon. Named in honor of Tsar Alexander II of Russia, it is a rare variety of chrysoberyl, which, because of its unusual absorption properties, changes color in different lights. It is a blue-green in natural light and purple-red in artificial light. The Ceylon alexandrites are yellow-green in natural light and brown-red in electric light.

#### ON A LIGHTER NOTE

One old-timer was showing off his lapidary work to one of the newer club members. "Course," he commented, "my work don't look like them durn rock magazine pictures. Them pictures was posed for by professional rocks."

#### MINUTES OF THE MAY 20, 2001, MEETING

The meeting was called to order at 2:00 by Margaret Heinek, vice-president, in the absence of the president, Don Church, who was out of town. There were 17 members present and one guest, Paul Mandell, who came with Sam Shapiro. New member Robert Konrath was introduced. He came because he saw the notice of our meeting in the *South Bend Tribune*.

Tom Noe moved that the minutes of the April meeting be approved as printed in the *Rockfinder*. The motion carried.

Bob Heinek gave the treasurer's report. It was approved and filed for audit.

Dennis Horrall described the conditions at the Mazon Creek area, the location of our October 7 field trip. He recommended that we come prepared for rough hiking, and that we wear long pants to prevent our collecting a tick. Mazon Creek is a prime site for fossil-hunting. He mentioned the kinds of fossils available, including varieties of leaves, ferns, insects and the infamous (but rare) Tully monster. One does not have to climb the heights to find good specimens. They can be found anywhere on the ground as well as on the high tailings piles from the old mines.

Under new business, there was a discussion about a possible field trip to a limestone quarry just southwest of Ft. Wayne on Saturday, June 23. The quarry is available to groups who make arrangements in advance. It will be open to fossil-hunters from 7:00 to 12:00 noon. Specimens which might be found in the quarry include crinoids, brachiopods, gastropods and others. Garden-sized limestone rocks can also be picked up. The members will go to the site in private cars. A map and directions will be printed in the next issue of the *Rockfinder*.

A new fossil park attraction is being developed in Sylvania, Ohio. A fossil fest is being planned to take place there on September 23, 2001, for the grand opening. Fossils from the world-famous quarry will be brought to the park area for fossil-hunters to look through. Margaret will look into possibilities for club participation in a field trip to this festival.

Diane Gram, along with several other members, proposed a "hands on" table at our September show. She requested that members bring small rocks

to the August 19 club picnic at Pam Rubenstein's home.

The refreshments were provided by Sam Shapiro and Kathy Miller.

The program on trilobites was presented by Sam Shapiro. Paul Mandell supplied information about evolution. A recent book by Richard Fortey, *Trilobites!* (New York: Knopf, 2000), was the source for much of the material presented by Sam.

Door prizes were won by Sister Jeanne, Tom Noe and Bob Miller.

The meeting adjourned at 4:00 p.m.

Submitted by M. Jeanne Finske, CSC, Secretary

#### JUNE FIELD TRIP SCHEDULED

All Michiana Gem and Mineral Club members are invited to a morning of collecting fossils in the StoneCo quarry just southwest of Fort Wayne, IN. We have made arrangements with the quarry and are welcome to collect there from 7 a.m. to noon on Saturday, June 23. This is a working quarry, and no blasting or heavy work will be done on Saturday, so we will be able to drive into the quarry (a sight in itself) and park very close to the fossils.

You can expect to find limestone reef fossils, corals, brachiopods, etc., plus occasional crystals of fluorite, as well as plenty of marcasite and pyrite crystals. The fossils are difficult to separate from the matrix, but are plentiful.

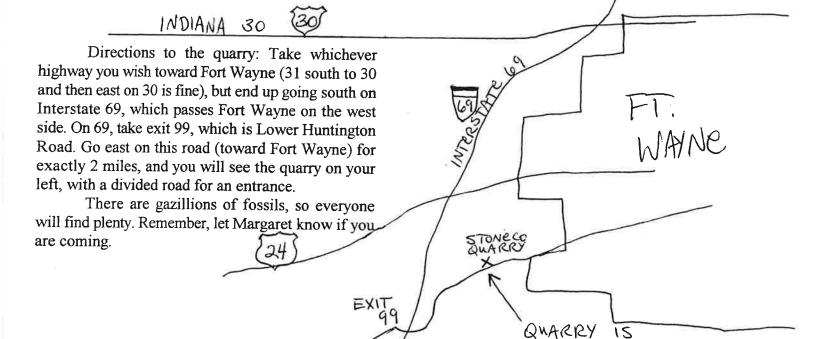
Margaret Heinek is coordinating the trip, so it's important to let her know in advance if you'll be going. She is also hoping that people will be able to carpool, so let her know ahead of time if you need a ride or can give someone a ride. The most eager collectors will have to leave early to get to Fort Wayne by the 7 a.m. opening time, but you can arrive whenever you want within the time period when we are allowed to collect. When you arrive, each person MUST stop at the office first (on the right as you enter, just past the large warehouse) and sign the necessary papers. Then you can drive down into the quarry. (From the office you basically turn right and follow the road through the machinery and the piles of gravel, then down, down, down into the quarry.) Children must be accompanied by an adult at all

times and there will be plenty of piles where they can collect.

You will not be far from civilization, so no special preparations are needed. Bring sturdy shoes, eye protection, rock hammers, crowbars, buckets, etc., and dress appropriately. Hard hats are a good idea, but you don't need to go near the quarry walls to

LOWER HUNTINGTON RI

find fossils, since there are plenty of piles lyir around. If it's a hot day, the enclosed quarry could be very hot, so bring water. They close at noon, so you must be out by then. If people bring a lunch along, the group could eat together somewhere after the quarry closes (hint).



#### JULY BIRTHDAYS

- 12 Louis Jordon, Jr.
- 19 Dewey Hassler
- 24 Elma Heynssens
- 28 Pat McLaughlin
- 29 Matt Brueske

#### **ANNIVERSARIES**

- 1 John & Margie Hawkins
- 6 Jim & Barbara McHugh
- 20 Dewey & Nina Hassler
- 31 Bob & Margaret Heinek

#### **AUGUST BIRTHDAYS**

- 10 Don Church
- 13 Todd Miller
- 23 David Peltz
- 24 Rebecca Parker
- 26 Georgia Costin
- 27 Phyllis Smallwood

#### ANNIVERSARIES

4 Ed & Marsha Miller 12 Hal & Bonnie Brueske

#### SEPTEMBER BIRTHDAYS

7 Janet Pellus

INTERSTATE

MILES

- 17 Ruth Amos
- 21 Tom Fields
- 21 Marsha Miller

#### **ANNIVERSARIES**

- 1 Tom & Pat McLaughlin
- 9 Herb & Phyllis Luckert

# FOSSIL PARK TO BE CONSTRUCTED IN SYLVANIA, OHIO

By Margaret Heinek

The Olander Park System (TOPS) is developing a new attraction for fossil collectors, Fossil Park, on a 10-acre site donated by the present owners of the famous Sylvania quarries.

TOPS will begin phase-one construction of Fossil Park in June, with the grand opening on Sunday, September 23, from 1 to 5 p.m. After that, Fossil Park will most likely be open to collectors on weekends until the end of October from something like 9 a.m. to 6 p.m., though those hours are not yet firm. It will be open on Monday through Friday on a limited basis during this time for tour-group reservations.

First-year construction includes a small parking lot, fossil dig areas and stations, an ADA handicapped-accessible walkway, an open-air shelter and possibly interpretative signage. Later developments will include a fossil interpretation center, permanent restroom facilities, additional workstations, picnic sites, a larger parking lot, playground, walking and bicycle loop around the quarry, and other park amenities.

TOPS hopes to have the park open on a daily basis beginning in 2003. In conjunction with the September 23 grand opening date, the City of Sylvania is hosting a Fossil Fest in downtown Sylvania on Saturday, September 22, from 9 a.m. to 4 p.m. If our group would like to be involved in that activity, I can get in touch with the coordinator.

I had called Sylvania to see if the Michiana Gem and Mineral Society could get into an area to hunt for fossils for a field trip this June. I was told "No," but I was put in touch with the director of the Olander Park System. I also contacted a friend in Michigan to find out more on this project. Ceil explained that the park will be on the quarry dumps, and it is said they plan on bringing in material with the fossils from the quarry proper. I should have more on this later, but plan on September 22 for the Fossil Fest. That is our regular meeting day in September, and it would be fun to have a gang go to this event.

## HOW TO MAKE A FERN FOSSIL IN AN IRONSTONE NODULE

By Michelle Yamanaka

#### WHAT IS NEEDED:

river

river mud

tropical climate

bacteria

ground water with iron in it

ferns

pressure

time

#### Step by step instructions:

- 1. Start with a tropical climate: warm temperatures, lots of rain, no winter.
- 2. Find a river that opens into a shallow swamp or bay.
- 3. Wait until the river washes lots of mud into the swamp or bay.
- 4. Help a fern fall into the mud.
- 5. The fern will be buried quickly by the mud.
- 6. Bacteria in the mud and water will make the plant decompose.
- 7. Carbon dioxide will be produced by what the bacteria do.
- 8. The carbon dioxide will grab iron from the groundwater and combine to form siderite or ironstone.
- 9. The ironstone will protect the plant remains inside from getting damaged.
- 10. Add lots of layers of mud. Because there is something inside the nodule, layers of mud will continue to form around it. Think about pearls in oysters. They start by a little grain of sand and layers of pearl form around them.
- 11. Add much pressure.
- 12. Add a long time.

### Now to enjoy:

Go dig in the layers of mud that have turned into rock called ironstone shale. Look for hard lumps called nodules. When they are broken open, you may find part of the imprint of where the fern was. Often you will not find anything inside because the fern decomposed all the way before leaving any imprints for you to admire.

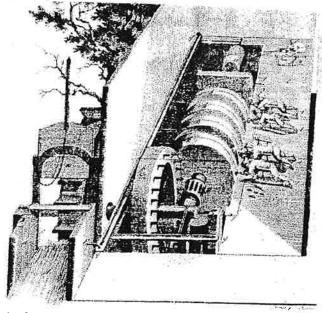
### IDAR-OBERSTEIN: THE BEGINNING OF LAP-IDARY WORK AS AN INDUSTRY

By Herb Luckert

While carving, cutting and polishing of precious and semiprecious stones has existed from very earliest historic times (and probably before), it was in Idar-Oberstein in southwestern Germany that it first developed as an industry. So many outstanding agates were found in the vicinity that it led to the establishment of cutting and polishing mills and the hiring of workforces to man "factories" well before the industrial revolution.

There are reports that the Romans developed a polishing industry there over 2,000 years ago, but this is considered unlikely. Medieval historical sources make no mention of agate (or other) cutting and polishing until the 14th century. In 1497 the lord von Oberstein prohibited anyone from mining "chalcedony eggs" or other gemstones without delivering a third of the find as payment in "royalties." Potential penalties included death. It is likely that this indicates industrial use of the stones, although no firm evidence exists prior to a map from 1605 showing the location of an agate mill. In 1766 an edict was issued prohibiting the export of stones from the region under penalty of death.

In 1774 Allesandro Cassini visited the region and reported a total of 26 agate mills employing 130 persons.



A sketch from Collini's 1777 treatise on Idar-Oberstein, *Diary of a Journey*. Note the mill race at the left turning a large water wheel.

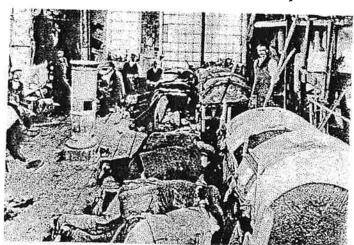
After 1834, when the first Brazilian agater found their way to Idar-Oberstein, the mining agates began a slow decline, but the polishing and cutting industry increased dramatically. The region still produces new finds of high quality but is now known principally for its cutting, carving and polishing.

The area is so prolific in producing agates that museum-quality specimens are still being found inside the city limits, one recently at a gas station next to the city hall, another while repairing a street. Others have been found while constructing highways in the area.

One of the old waterwheel polishing mills has been preserved and is still in use, principally as a tourist attraction. It has grindstones of about five feet in diameter. The workmen lay on their stomachs on benches and used the floor as a tool rest. The five foot in diameter grindstones were set in a trench below floor level.

One of the old mine adits is also available to visitors. Some of the old quarries still produce partially filled geodes containing agate, amethyst calcite and other minerals. Mining activity is very low or nonexistent, not because the mines are worked out but because of the plentiful supply of cheaper Brazilian stones.

Ref: extraLapis No. 19



Men lie on their stomachs all day on a bench and use the floor as a tool rest while grinding agates. This photo is from the early 20<sup>th</sup> century.

#### SHAKESPEARE AND GEOLOGY

By Sam Shapiro

"After God, Shakespeare created the most."
We are all fortunate that we can read the wonderful plays, poems and sonnets of William Shakespeare without translation. His stage works deal with comedy, history, tragedy, jealousy and racism (Othello), senility and madness (King Lear),

corrupting ambition (Macbeth), adultery and murder (Hamlet), anti-Semitism (The Merchant of Venice), reckless young love (Romeo and Juliet), besotted middle-aged love (Antony and Cleopatra), and politics and war (Henry V). And-universal genius that he was--he even wrote about our own special interest, geology.

The first quatrain of Sonnet 64 deals with the mystery of time, a problem with which Albert Einstein wrestled all his life. Lines five to eight foreshadow Hutton's and Lyell's discoveries two centuries later: the emergence of land from the sea, and the erosion that reverses the process. Indeed, these very lines were quoted by Alfred Wegener in his long ridi-culed book about continental drift, published 300 years after the death of the Bard of Avon.

#### SONNET 64

When I have seen by Time's fell hand defaced The rich proud cost of outworn buried age; When sometime lofty towers I see down razed, And brass eternal slave to mortal rage;

When I have seen the hungry ocean gain [Uniformitarianism] Advantage on the kingdom of the shore, [drifting continents] And the firm soil win of the watery main Increasing store with loss and loss with store;

When I have seen such interchange of state, Or state itself confounded to decay--Ruin hath taught me thus to ruminate, That Time will come and take my love away.

This thought is as a death, which cannot choose But weep to have that which it fears to lose.

1e, love death and geology--all in 14 lines!

#### A NEW DINOSAUR FIND!

A Montana family was recently credited with unearthing a new species of dinosaur—a petite, brainy creature named Bambiraptor—while digging in a fossil bed on the Rocky Mountain Front. It is the biggest-brained and most birdlike dinosaur yet discovered, according to paleontologists at the south Florida museum where the nearly complete Bambiraptor skeleton will be displayed.

"If you had a head-on collision between a bird and a dinosaur, you'd have Bambiraptor," said David Burnham, the University of Kansas paleontologist who spent more than 5,000 hours preparing the skeleton. "So much information is packed into this little skeleton, it will take years to fully appreciate its significance," Burnham said. The specimen was likely a yearling, measuring two feet tall and three feet long. Even full-grown, though, Bambiraptor was only about three feet tall.

Wes Linster, one of Cliff and Sandra Linster's seven children, found the skeleton in August, 1994, while removing overburden in a fossil bed near Choteau that the family works at excavating each summer. He was 14 at the time. "A piece of jaw rolled out," Linster said. "I thought maybe it was a baby maiasaur until I saw four or five little jagged teeth. I got pretty excited and ran down off the hill to get my mom. She thought I was pulling a practical joke." But as soon as she saw the bone fragment, Sandra Linster "knew we had something special." "We knew we had a little meat-eater," her son said. They nicknamed it Bambi.

Eventually, the family removed a piece of the hillside and encased the mud and bones in plaster. Back home in Stevensville, Cliff and Sandra started removing the skeleton from the plaster jacket, but stopped "when we got into these tiny little pieces that were like paper." That's when Burnham began his work, most of it under the microscope, to retrieve and reassemble the little dinosaur. "Almost immediately I recognized that Bambi may have been pivotal in the evolution of dinosaurs and birds," Burnham said. "Its wishbone is a bird bone, but its teeth and claws definitely belong to a dinosaur."

"We don't know if this dinosaur could actually fly, but it had the equipment for simple

takeoffs, level flight and landings," said Kraig Dersder, a paleontologist at the University of New Orleans who examined the skeleton. Bambiraptor probably wasn't the direct ancestor of birds," he said, but "it is a relict of the actual avian progenitor."

Its brain is, proportionately, the largest ever found in a dinosaur—comparable to the most intelligent birds and many mammals. Some scientists now believe that dinosaurs did not become extinct but instead evolved into birds. Bambiraptor apparently was part of the bridge between the two.

The actual skeleton is one of the most complete ever found, according to Bob Kelley, director of the Dania Beach, Florida, museum that will display Bambiraptor as the centerpiece of a new dinosaur hall. "Almost every bone is there," he said, "which is pretty amazing for something that's 75 million years old."

"It is exciting to be part of something that is so significant scientifically," said Cliff Linster, who recently retired from his construction job to spend full time on dinosaurs. The Linsters happened upon their fossil bed about a decade ago, by accident, while looking for a way to amuse their children over summer vacation. They have since purchased the acreage from a rancher and removed about 8,000 dinosaur bones from the wash.

Earlier this year, another Linster-found species of dinosaurs—a 65-million-year-old meat-eating albertosaur—was unveiled by the Graves Museum. The albertosaur was the "cheetah of the *Tyrannosaurus Rex* family," according to Linster. Linster said he's already making plans for this summer's dig. "We feel there might be more of these Bambiraptors out there," he said. "And who knows what else?" Who knows?

Original source: Billings Gazette (March 18, 2000)

Leaverite News (no date)

61st ANNUAL MIDWEST FEDERATION SHOW hosted by NORTHWEST WISCONSIN GEM & MINERAL SOCIETY

Barron County Fairgrounds
Rice Lake, Wisconsin
September 7 - 8 - 9, 2001
Friday 1 pm to 9 pm, Saturday 10 am to 6
pm, Sunday 10 am to 5 pm

## HOW DOES A DIAMOND SAW WORK?

One of the fastest ways to grab someone's attention when demonstrating cabochon cutting is to put your finger against the running diamond blade. "Be careful," the viewer always yells. "You'll cut your finger!" When the worst does not happen, the viewer stands there, mouth agape.

So, why don't you get hurt when you stick your finger against that diamond blade? The answer is quite simple: you aren't really using a saw!

The diamond blades we use to slab our rocks or trim our cabs isn't really a saw, it's a very narrow grinding wheel. Small diamonds are bonded into the rim of the blade and become exposed when we push a rock against it.

While the blade rotates and a stone is pushed against the blade, grinding takes place. Exposed surface diamonds grind the stone into a fine powder. The embedded diamonds remain attached to the rim of the blade via the bonding process, but do break down due to wear. Harder stones or extreme pressure when sawing will wear away those diamonds faster than cutting softer stones or using a lighter amount of pressure. (Sound familiar? This is just like using the diamond wheels on a cab machine or a flat lap on a faceting machine.)

Remember to use a coolant whenever operating the diamond saw. Coolants not only carry away the fine particles of ground rock, but also keep the blade and the rock from overheating.

Gem Cutters News (Jan., 1997)

4.3 Billion years old is the age of a grain of zircon, a crystal, found recently in Australia. The crystal, scientists said, is the oldest known solid on earth.

Detroit Free Press - January 22, 2001



## **FUN FOR ALL! GOOD TIMES!**

AUGUST 19, 2001. SUNDAY AFTERNOON. GATHER AT 12:30 (IN. TIME)

### EAT AT 1 PM.

Come one, come all, to the annual

summer picnic of the Michiana Gem and Mineral Society. All members and their immediate families are welcome. The meat (chicken) is provided by the club, and members bring a potluck dish to share. Bring your own table settings and lawn chairs. Pam Rubenstein (291-7183) is hosting the picnic this year at her home (1819 Georgian Court), and a map is on the other side. It is just south of the county fairgrounds.

This will be our last get-together before the club show on Labor Day weekend (invite your friends to the show!), so we will have just a little bit of business to discuss, especially volunteering to help with the set-up, admissions table, silent auction, Kiddies' Korner, etc. Many workers are needed. We always put on a good show, but it takes lots of helping hands.

We also need displays from the

members, so put together some pieces from your collection and make an interesting display. The club has extra cases if you need one.

Don asks that people bring to the picnic lots of small items that can go into the grab

bags we made as giveaways at the Kiddies' Korner: small pieces of rock, crystals, tumbled stones, small fossils, etc. Shiny, interesting or attractive pieces are the best. Also bring all finished bags that you have made. See you at the picnic.

Needed: Pam Rubenstein is looking for old, used license plates and old ladies' ice skates or roller skates to use in a crafts project (you'll have to ask Pam how she will be using these things). If you have some to donate, bring them to the picnic or contact Pam.

Also, Emily Johnson spoke to a member at one of our meetings who needed some beeswax, but she can't recall who it was. Contact Emily (232-7387) for all your beeswax needs.

Michiana Gem & Mineral Society Tom Noe, Editor 305 Napoleon Blvd. South Bend, IV 46617

