

# THE ROCKFINDER



Highlights of this issue --

AUTUNITE - The Beautiful but Dangerous Mineral

Soldering and Silversmithing by Bill Buckner

Collecting Micrometeorites

Larry Hess, Rockfinder Editor  
15358 Kerlin Drive  
Granger, IN 46530

**MICHIANA GEM and MINERAL SOCIETY**  
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The Michiana Gem & Mineral Society, a non-profit organization, and is affiliated with the Midwest Federation of Mineralogical and Geological Societies and with the American Federation of Mineralogical Societies.

Time:	2:00 PM EST	Place:	Our Redeemer Lutheran Church
General Meeting	4th Sunday of each month		805 S 29th St (29th & Wall).
June - Field Trip Meeting			South Bend, IN
July - No meeting	August - Annual Club Picnic		December - Christmas Party

Board Mtgs: 2nd Wednesday, 7:00pm, South Bend (Main) Library, Basement Level.

**ROCKFINDER STAFF:** Editor Larry Hess 15358 Kerlin Dr, Granger IN 46530  
 Co-Editor Margaret Heinek 7091 E East Park Ln, New Carlisle IN  
 Staff Bob Heinek / Club Members

All contributions for publication should be in the hands of the Editor by the 10th of each month.  
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cut ----- cut  
 Membership Dues are: Please send your dues and this form to  
 Michiana Gem & Mineral Club  
 c/o Margaret Heinek  
 7091 E East Park Lane  
 New Carlisle IN 46552

___ Individual	\$ 6.50 per year
___ Family	\$ 10.00 per year
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Please make address corrections to the mailing label (reverse side) and/or fill in the optional information below.  
 Check your SPECIAL INTERESTS: List Family Members (spouse and children):

General Geology ___	Beads ___	Name _____	Birth Mo/Yr _____
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Cabochons ___	Rockhound ___		will attend meetings, yes ___ no ___

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Name \_\_\_\_\_ Address \_\_\_\_\_  
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# THE ROCKFINDER

Volume 35  
Number 3

March 1995

Published by:  
Michiana Gem & Mineral Society

**Meeting:** Meeting: Sunday March 26, 1995  
Doors Open 1:30 PM  
Meeting at 2:00 PM

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

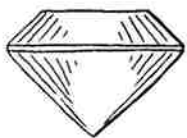
**Hosts:**

Marge Collins  
Tom Noe  
Michael Slattery

----- MARCH Program -----  
Prof. Mark Shurr, Notre Dame Univ.  
will present a program on the paleontology  
and geology of St Joseph County, Indiana

### **March Happy Birthday & Anniversary:**

6 Gladys Pacholke  
7 Barbara McHugh  
11 Marie Crull  
11 Abby Moffitt  
15 Jane Kile  
16 Ronald Douglas  
22 Gloria Merrill  
22 Jim Cytacki  
24 Joe Kossack  
27 Elspeth Johnson  
28 Kevin Klodzinski  
30 Margaret Heinek



## ***Your MARCH BIRTHSTONE.***

### ***AQUAMARINE***

Aquamarine is one of the most highly prized of the beryls. It is said to be associated with cleansing meditation, prophecy, serenity, inspiration, tranquility, peace, strength, and the wise use of inner power. Aquamarine is also said to promote the love of married couples, calm fears, and promote safe travels on water.

### **FOSSIL LECTURE-**

Paul Godolli talked on fossil collecting to 5th grade science students at Coquillard school on March 5th. He later talked to the 6th grade students, same school.

Paul explained how fossils are formed and how to identify them in the field. Examples of trilobites, cephalopods, bracs, coral, snails and fish were shown, along with maps showing where the fossils could be found.

A question period followed and each student was given an Ordovician fossil to keep.

MARGARET'S COLUMN

This has been a busy winter for most of us. It has been a very unusual winter, weather wise. Seems like we have a few good days and wham, we get hit with either a snow storm or fog! But soon we will have April showers and then warm weather.

Talked to Bill Crull and Jim Russell today (Mar 6) and they said it was 80 degrees in Florida. Oh well, we will get it soon.

Our program for March is a very interesting speaker, who has studied the archeology and paleology of Northern Indiana, and mostly the area of St. Joseph County. I am sure you will enjoy this young man, so plan on coming to the meeting on March 26th, at the new meeting place on 29th and Wall St. at Our Redeemer Lutheran Church.

I talked to AAY's on the table rental for the show, and they will meet the price that Discount Rental quoted, \$4.75 per table set up and taken down. That is a savings of .75cents per table.

We hope to have the 1985 Roster printed by the March meeting. It is in the process of being assembled, and if you have not paid your dues, your name will not be in it. Sorry!

Cathy Miller has a good trip planned for us for September. If you want to go contact Kathy to see what she has reserved for the accommodations. Also if you plan on going, you must help with the September show, if you can not be there at the show to work, it is important that you help with set-up, displays, help send out the postcards to advertise the show, or do something for the club. It is only fair that this is a requirement.

See you at the meeting. Stay well.

*Margaret*

SEPTEMBER SHOW ----

We need someone as chairman of displays. This is a very important job...! We need someone to be chairman of the demonstrators.....also very important. Please volunteer!

Minutes of the Regular Meeting -  
Feb. 26 1995

The meeting was called to order by Margaret Heinek, president, at 2:10 p.m. with 19 adults and 3 juniors present. New members Emily Johnson and her son Bill Nelson, were introduced and welcomed.

The minutes of the last meeting were approved as printed in the ROCKFINDER. Pam Rubenstein gave the treasurer's report; copies were circulated. After a brief discussion the report was approved and filed for audit.

Molly Elwell reported on cards sent in February. Two members, Catherine McHugh and Brian Hess are presently in the hospital. They were sent flowers and a get-well greeting.

The Science Alive Program at South Bend Main Library was well attended; many club members assisted. All rock materials were used by the children who enjoyed the experience polishing rocks. (200 rocks were polished, the last one at 4:p.m., closing time!).

Kathy Miller reported on the proposed field trip to Brown County State Park in September. A list of accommodations was circulated and members were asked to sign up for their preference in the cabins available. A bus list was also circulated. The club will pay for the cost of the bus, and a suggestion that the entrance fee to the park would be either the clubs or members expense. Checks for the cabin reservation must be in Kathy Miller's hands by June 5.

Tom Noe set up a display of geodes at the meeting. Several slabs were from Patagonia with calcite in the center. Tom McLaughlin displayed cow eggs (!) made at the last meeting. Some copper artifacts were displayed by Herbert Luckert.

The program for the March meeting will be a lecture with slides and displays by a University of Notre Dame professor of archeology. The topic is the minerals of Northern Indiana.

Minutes continued.....

A thank-you note was received from the Studebaker Museum for the \$50.00 offering for the use of its facilities for our past meetings.

**NEW BUSINESS-**

Margaret reported that table rental for our September show cannot be from Burns Rental as it has been in the past. The company is no longer acceptable to the Century Center. Two other companies were contacted; AAY's and Discount Banquet Service. AAY's will charge \$5.50 a table, but they want a 3 year contract. Discount Banquet will charge \$4.75 a table, also wants a 3 yr contract. After being assured that the tables will be in good condition the club approved Discount Banquet, unless AAY's will meet the lower price.

There is a grinder, polisher and saw for sale by John Royan in Niles. The cost will be about \$100.00. He can be reached by phone: 684-7423.

Since May 28, the fourth Sunday, is Memorial Weekend, our May meeting will be on May 21.

Margaret will be in Washington during our April meeting; Ed Miller will preside.

Gordon Dobecki recommended that we follow through on our purchase of a television and VCR for use at our club meetings since we now have a place to store it. He volunteered to do the necessary shopping. He also proposed an evening once a month for club members to cut and polish stones in his workshop. No specific day was decided upon.

Door prizes were won by Gordon Dobecki, Jessie Zeiger and Bill Nelson. Viola Robinson, a local artist and former club member, gave the program on making artifacts with beads. She displayed many of her necklaces and earrings made with wire & beads. The club members spent the remainder of the meeting learning some of the skills involved in utilizing beads for jewelry.

Refreshments were furnished by Tom and Sue Fields, Larry Hess and Jeanne Finske.

The business meeting adjourned at 3: p.m.

Submitted by Jeanne Finske for Marie Crull, Secretary.

DULL SLAB SAW BLADE- After years of dealing with apparently inferior diamond blades in my slab saw, I found out that it was not the fault of the blade at all. Years ago when we bought the slab saw it was set up to run the blade at about 1175 RPM. It turns out that this was much too slow for the newer blades. I replaced the drive pulleys so that the blade is now turning at 3450 RPM. The saw now cuts through even the toughest agate with no trouble at all. If you have been having trouble keeping your slab saw blade cutting properly, check the speed of the blade and run it according to the manufacturers recommendations. It makes a difference. Dick Rathjen from Stoney Statements 7/94

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Fresh water pearls are strung on silk thread with knots every third pearl. If you knot between each fresh water pearl, the necklace will not lay properly. from House of Onyx via Rock Rattler via SCFMS NEWSLETTER

\* \* \* \* \*

***Calendar of Events:***

- April 5 - 8                      Grand Rapids, Michigan
- Apr 6 - 8                        South Bend, Century Center
- Apr 22 - 23                     Munster, Indiana
- Aug 12 - 13                    MGAGS Rockhound Seminar  
Houghton, Michigan
- Sept 1 - 3                        Michiana Gem & Mineral Society  
Century Center, South Bend, IN
- Sept 13 - 15                    MWF Convention & Show, Detroit



## Soldering and Silversmithing

by Bill Buckner

Working with silver has been the most interesting and enjoyable facets of the lapidary arts for me. I want to deal with three or four areas of this art that might help you decide to add this skill to your life.

First there are some basic principles that we need to abide by. These include: (1) keeping silver clean, free of tarnish and fine scratches (2) use tools that are smooth (except files) - this means hammers that are smooth and pliers with smooth jaws etc. (3) when soldering make sure silver is touching silver and use a good flux that is compatible with your metal (4) use small snippets of solder or a paste solder to solder silver to another piece of silver (5) silver is such a good conductor of heat that you must heat the whole amount of silver to run and weld pieces together (6) you must keep your torch moving because silver will melt or burn if you don't (7) pickling is important to help keep the silver workable and to keep it free of fire scale and (8) work in a well lighted, comfortable place at a pace you are comfortable with.

Second we need to know what tools are needed: (1) The most obvious is a torch. There are several choices, but for silver, I recommend an acetylene air torch with a number three tip. My torch is a Prestolite with a B tank. (2) We need metal cutters, such as snips, jewelers saws and or bench shears. All of these must leave the silver smooth or much more filing must be done. (3) We need several pairs of pliers - at least a pair of needle nose, a pair of round nose and a pair of flat nose plus a pair of chain nose would also be helpful. These must have smooth faces. Even the smooth faced pliers may need to be filed, sanded and buffed really smooth. (4) We need a few good files. A file 6" file, a half round fine 6" file and a package of jewelry files will do well for most things. A triangular file is also helpful sometimes. (5) Since silver will stick to your file, you will need a file cleaner. This may be one you buy or a good small metal brush will

do. (6) To be able to solder you will need a pickle pot of some kind and one for holding some clean cool water. The pickle pot may be one made for that purpose or a crock pot. It cannot be metal except copper, gold or silver. That's all that should be put in the pot also. Pickle works better hot but should not boil. (7) We need some kind of polishing system that will enable us to buff our silver with tripoli and red rouge to make it shine. (8) An optivisor is also important so you can see what you are doing. (9) While I am thinking of it, you need a well lighted area that pretty much maintains the same light all the time you work. (10) A good hand held power tool like a Foredom or Dremel helps in many ways but may not be essential. (11) Mandrels are needed for rings, bezels and bracelets. (12) Work area desks should be equipped with wooden bench pins to help with sawing and filing. (13) A small piece of smooth metal about 1" x 4" x 4" makes an excellent anvil for silversmithing. (14) Several pieces of smooth hardwood 1" x 4" x 6" or a little larger make excellent tools to help with stamping and bending silver. (15) You will need at least one small metal hammer (smooth) and a rawhide hammer. (16) Measuring materials like ring sizers and sizers for bracelets and scales to measure stone sizes are essential. Most materials will come in millimeters. (17) To set stones you will need bezel pushers and one or more burnishers. (18) A small vise is very important. It too must have smooth jaws. (19) Several types of tweezers come in handy while soldering. (20) Copper tongs to use in the pickle pot are essential. (21) Some kind of non-burnable material to use on your work bench - I use a piece of 5/8" sheet rock wall board. I also use a charcoal block, a magnesium block and a refractory brick (kiln fire brick) to help with soldering and other tools that include a solder pick, small brushes for flux and storage material to help keep silver and solder clean and unoxidized.

The third area of concern for a silversmith is supplies. (1) Silver of course. You choose what you need and order it so you will have it to use. (Keep it dry and away from air as much as possible.) You can buy

silver in sheets from 30 gauge (very thin) to gauge 1 (very thick). Bezels are usually 99% silver - available in 26 to 30 gauge. Gallery wire and patterned wire are also available as round, square, half round and double half round in several gauge sizes. (2) Solder for silver melts at high temperatures. To maintain solder joints you can get "hard" 750 solder that melts at 1365 and runs at 1450 for first joints; "medium" 700 that melts at 1275 and runs at 1360; "easy" 650 that melts at 1240 and runs at 1325 and "very easy" that melts at 1145 and runs at 1205. Usually it is better to stick with the harder solder since it is somewhat stronger and has a higher content of silver. (3) Pickle compound is important. I use Sparex #2 and find it works well. Keep it clean, getting just a little iron in the pickle will turn everything to a copper color and is very hard to deal with. (4) Flux - I use Hany Flux (paste) for most soldering but also use paste solder with flux on occasion. I also use a flux of borax and denatured alcohol for cleaning silver and soldering gold. (5) Tripoli and red rouge or other buffing compound or compounds are necessary.

When you have the interest, the tools and the supplies, it is time to get started. The first steps (can come earlier) are to learn to cut metal, how to use the jewelers saw, how to bend wire and how to use the torch. When you are comfortable each of these you are ready to make jewelry. Remember to practice being clean with you metal work. Make a ring or something - then keep working and improving.

Some resources that can be helpful:

A silversmithing class at William Holland Lapidary School at Young Harris, GA.

Tapes:

Jewelry Making, Vol I and II by Paul Casteel; 4249 Goldie St, Jacksonville FL 32207.

All About Soldering by Vista Wark, available from A. Goodman, PO Box 667, Beaumont CA.

Books:

Silversmithing and Art Metal by Murray Borine.

Indian Jewelry Making Vol I and II by O.T. Bronson.  
The Jewelers Bench Reference by Harold O'Conner.  
Jewelry Makers Handbook by Iva L. Geisinger.  
The Complete Metalsmith by Tim McKeight.

From Mid-Tenn Gem'ers via Cobb-L-Stones 8/94.

Fossils in the News:

"Sue" - A Tyrannosaurus rex

Discoverer: The Black Hills Institute for Geologic Research, Inc. (Sue Hendrickson)

Origin: Hell Creek Formation - sedimentary silt and sandstone of the upper Cretaceous(late Maastrichtian).

Sue Facts - Largest, most complete(>90%) and best preserved T-Rex known.

- Would have stood 20 feet tall.
- 41 feet from nose to tip of tail.
- Judged to be female.
- The tooth of another mature T-Rex was found embedded in a healed bone in Sue's neck.
- One of Sue's hind legs had been broken and rehealed.
- Sue is thought to have died at 100 years of age.
- The left side of Sue's face was ripped away in an attack which may have caused her death.

Skeletal : - Femur 54 inches in length.

- A complete pelvis.
- A nearly complete torso.
- The first nearly complete tail ever recovered. (20 feet long - 30 caudal vertebrae, 46 tail vertebrae).
- The first complete T-Rex shoulder girdle ever found.
- Radius, ulna, and handbones of the front arms.
- Two functional fingers on two powerful forearms which could lift 1200 lbs each.
- Complete rear legs.
- Beautifully preserved and articulated 5 foot long skull.
- Lower jaw with many serrated 12 inch dagger-like teeth.

### *Collecting Micrometeorites*

Jet Propulsion Laboratory Public Education Office;  
Pasadena, CA

"Shooting stars" are not, of course, really stars. They are actually small bits of rock and metal that collide with Earth's upper atmosphere and, because of friction, burn up. On rare occasions, man made satellites and spacecraft parts fall into the atmosphere and burn up the same way.

The flash of light from this incineration is correctly called a meteor. A meteor is formed when an object, usually the size of a marble or a piece of popcorn, hits the atmosphere at an altitude of 80 to 100 kilometers. The air at that height is very thin but the objects are moving at tens of thousands of kilometers per hour. The friction causes the meteor to heat up and glow.

Larger objects do not burn up completely. Surviving fragments fall through the atmosphere and land on Earth. Once one of these objects lands it is called a meteorite. Most meteorites fall into Earth's oceans.

Meteorites can be either rock, metal (nickel and iron), or a mixture of both. Stony meteorites are difficult to identify. Stones outnumber metals, but metallic meteorites are easier to find. Rarely are chunks of metal found lying about. A metal detector can be used to search for metallic meteorites. Dry barren areas where there is little vegetation to cover up the ground and turn over the soil are the best areas to look. Dry lake beds are good places to search since wind can blow dust off of the surface leaving the meteorites exposed. Many meteorites are found on the Antarctic ice sheet.

There is an easy way to collect meteorites, but we must be satisfied with finding small metal ones. They are actually microscopic and are known as micrometeorites. Tons of these fall on Earth each day. To collect micrometeorites you need to find a place where they can become concentrated. The drains of a

house or building work well since rainwater can wash particles off of an entire roof and collect them at the drain spout. Tile roofs are best since they drain very well and do not produce many other sorts of particles or debris.

To find the metallic micrometeorites, collect and dry some of the material from a deep bowl at the base of the drain spout. After removing leaves and other debris, place the remaining material on a piece of paper and place a magnet under the paper. Tilt and tap the paper so that all of the non-metallic particles fall off. Many of the remaining metallic particles are pieces of space dust! To examine them, place the paper under a microscope. High power will be required to see them clearly. Although most of the particles are not from space, the micrometeorites will show signs of their fiery trip through the atmosphere. They will be rounded and may have small pits on their surfaces.

Much of what you are observing are particles that date from the formation of the solar system around 4.6 billion years ago! They are the debris remaining from the raw materials that formed into the nine known planets and the asteroids. Most particles have been broken off or ground down from larger objects.

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### *Calendar of Events:*

- |                   |  |
|-------------------|--|
| Feb 14 -<br>Mar 8 | Rockamania,<br>Lordburg, NM  |
| Aug 12-13         | MGAGS Rockhound Seminar<br>MTU Houghton Michigan<br>Cathy Hodgson 810-664-8985 |
| Oct 7-8           | Eddy Geology Center Arts Fair.   |
| Oct 13-15         | M W F Convention & Show, Detroit   |



FOSSILS - FELLOWSHIP - FUN - F I E L D-T R I P  
IT'S A GO!

The Michiana Gem & Mineral Society has a Cardinal coach chartered for September 15, 1995 through September 17, 1995. Our destination is Morgan Nonroe State Forest and near-by vicinities. This field trip will be for Indiana Geodes and fossils. As Chairman of this trip, I have some great sources to tap into for more collecting at a different area on Sunday, and/or a geology museum, plus possible rock shops.

HERE'S THE PLAN (SO FAR)....

Bus leaves South Bend at 4PM Friday

Bus returns South Bend at 6PM Sunday

We will be staying Friday and Saturday night in motel type cabins next to and operated by the Abe Martin Lodge in Brown County State Park. The cabins have TV and bathrooms, BUT NO telephones. As of yet I have not made breakfast or dinner reservations until the bus and cabin list is completed.

On Saturday afternoon after cleaning up from (I hope) a very successful day of collecting, we will spend some time in the near town of Nashville, IN. This is supposed to be a very interesting place to visit. After a few hours there we can go back to the Abe Martin Lodge and have a very relaxing meal in their main dinning room.

Sunday's itinerary is not complete, so be sure to read all future Rockfinder's for more exciting details!

COST.....

BUS FOR MEMBERS.....\$00.00

Entrance into Brown County State Park, \$.50 per person Friday on arriving and 1 time only on Saturday.

I have reserved by deposit the following cabins..

10 - cabins with double bed .....\$47.30 tax incl.per night

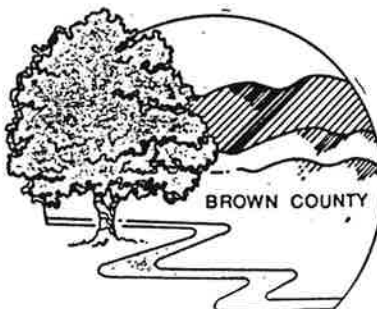
12 - cabins with 1 double & 1 single...\$49.50 tax incl.per night

3 - cabins with 2 double beds.....\$51.70 tax incl.per night

It is very important that I get your bus and cabin reservation plus money in early. The Abe Martin Lodge gave me an early deadline because it's getting into their prime season, so I HAVE TO SET OUR DEADLINE AS JUNE 5, 1995.

THIS IS GOING TO BE A GREAT FIELD TRIP FOR MICHIANA MEMBERS OF ALL AGES. DON'T MISS OUT!!!

Kathy Miller



NOTICE \_\_\_\_\_

MAKE CHECKS OUT TO  
ABE MARTIN LODGE  
NOT KATHY MILLER

AUTUNITE -- THE BEAUTIFUL BUT  
DANGEROUS MINERAL

(by Floyd Dopler, Jr. for the Blackhawk Gem and Mineral Club 1994)

A few months ago several of our local club membership and I had the good fortune of being able to examine a man's collection just before he moved. I discovered a large box with many specimens inside and bought one for my fluorescent collection. I proceeded to check the label for accuracy (correct spelling, correct identification, location, etc.). It was then that I discovered what an interesting and unusual item I had acquired.

The gentleman has told me that his wife (who had since passed away) had collected the specimens with him 20 years earlier. Below is listed some of the responses I received about my "find". They came via the internet system from all over the world in less than 24 hours, including such places as San Diego, Canada, UK and France.

My original question: Does anyone have an experience with a mineral called Autunite: I have a specimen collected in 1973 from the Chalk Mt. Mine in Spruce Pine, NC. It has a lemon yellow coating which fluoresces green in UV light.

Some of the Replies:

I am not familiar with the locality, but autunite is a uranium ore (hydrous calcium uranyl phosphate) and does occur as yellow platy coatings. The strong yellow-green fluorescence is diagnostic. It is certainly radioactive, being about 50% by weight uranium. [Richard Stead, VA]

Yes, Autunite is radioactive. However, most such ore is too weakly radioactive to pose a direct risk of radiation exposure, but there are at least two indirect risks. One is a risk of ingestion of particles. The other is the fact that the sample will be a source of radon gas. For my own collection I keep any bio-hazard sample in zip-lock baggies down in the basement. This includes any fibrous serpentine "asbestos" samples. [Ed Cox]

The mineral Autunite does contain

uranium, and it is radio-active - albeit weakly. As such, it does not pose an immediate hazard, but be aware that the effect of radiation on human tissue is cumulative. In my hometown university museum mineral collection, the hazardous mineral specimens are kept sealed in plastic or glass containers, to prevent skin contact or ingestion of minute particles of the mineral. The mineral is named for the French City of Autun. {from Florin]

The problem, as has been mentioned here, is radon, and the fact that radon is heavier than air, and that exposure to any radioactive source is cumulative over a lifetime. Don't handle it if you don't have to. Don't store it in the basement unless you've good circulation of air to the outside. Don't depend on bags or boxes or cabinets alone to protect you and others. It's ironic that some of these specimens are both beautiful and important, but are best stored in such a way that you may almost never see them when you own them. [from Sally Shelton, Collections Care, San Diego Natural History Museum]

Via Smoke Signals and Strata Data

\* \* \* \* \*

DULL SLAB SAW BLADE - After years of dealing with apparently inferior diamond blades in my slab saw, I found out that it was not the fault of the blade at all. Years ago when we bought the slab saw it was set up to run the blade at about 1175 RPM. It turns out that this was much too slow for the newer blades. I replaced the drive pulleys so that the blade is now turning at 3450 RPM. The saw now cuts through even the toughest agate with no trouble at all. If you have been having trouble keeping your slab saw blade cutting properly, check the speed of the blade and run it according to the manufacturers recommendations. It makes a big difference.

by Dick Rathjen from Stoney Statements  
7/94 via SCFMS Newsletter Jan 1995

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Fresh water pearls are strung on silk thread with knots after every third pearl. If you knot between each fresh water pearl, the necklace will not lay properly. [House of Onyx via SCMS Newsletter Jan '95]