

THE ROCKFINDER

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



THE ROCKFINDER

MARCH, 2003

MICHIANA GEM & MINERAL SOCIETY

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

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



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

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

The Rockfinder is published monthly except July and August. Editor, Tom Noe, 305 Napoleon Blvd., South Bend, IN 46617 (ph. 289-2028). Co-editor, Herb Luckert, 221 Marquette Ave., South Bend, IN 46617 (ph. 282-1354). Reporters, Bob Heinek, Herb Luckert, club members.

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THE ROCKFINDER

Newsletter of the Michiana Gem & Mineral Society

Volume 43, Number 3

March, 2003

Meeting: Sunday, March 23, 2003
Doors open at 1:30 p.m.
Meeting starts at 2:00 p.m.

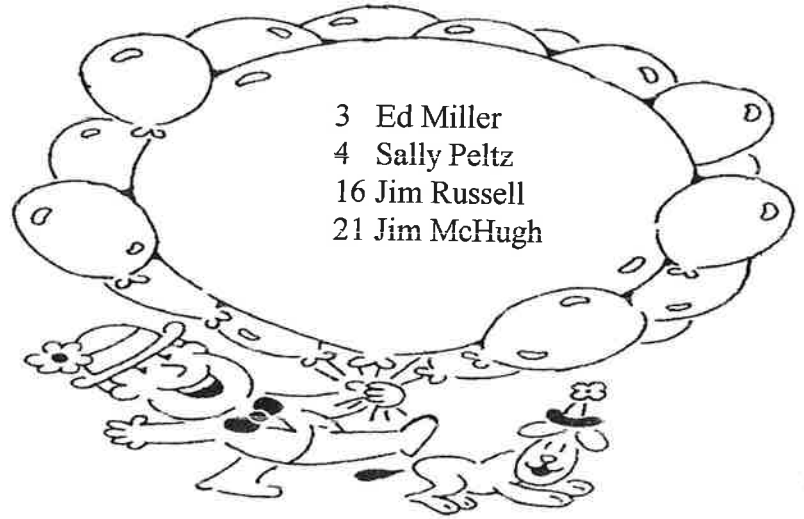
Place: Our Redeemer Lutheran Church
805 S. 29th Street (19th & Wall)
South Bend, IN

Program: Margaret Heinek will explain
the how-to of preparing displays
of your lapidary materials.

Refreshments: Yvonne Church
and Sally Peltz

April Birthdays

3 Ed Miller
4 Sally Peltz
16 Jim Russell
21 Jim McHugh



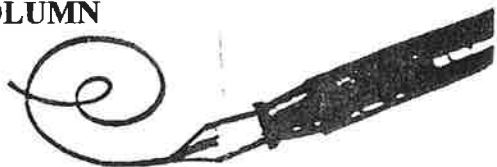
UP AND COMING

- Mar. 14-16: Michigan Gem & Mineral Society show, Masonic Lodge, Michigan Center, MI.
- Mar. 15-16: Stark County club show, Canton Memorial Civic Center, Canton, OH.
- Mar. 22: Metro Rock Swap (Dearborn), Democratic Club, Taylor, MI.
- Mar. 22-33: Badger Lapidary Society show, Monroe High School, Monroe, MI.
- Mar. 22-23: Geodon Show, Dupage County Fairgrounds, Wheaton, IL.
- Mar. 28-30: Mid-America Paleontology Society (MAPS) National Fossil Exposition, Western Illinois University, Macomb, IL (midamericapaleo.tripod.com).
- Mar. 29-30: Blossomland Gem & Mineral Society show, Berrien County Sportsman's Club, 2985 Linco Rd., (north of) Berrien Springs, MI.

There will be no April show at Century Center this year.

- Apr. 5-6: Columbus Club and Licking County Club joint show, Veterans Memorial, Columbus, OH.
- Apr. 11-13: Mt. Clemens Lapidary Society show, Community Center (Groesbeck Rd.), Mt. Clemens, MI.
- May 30-June 1: Midwest Mineralogical & Lapidary Society show (Dearborn club), Allen Park Civic Arena, Allen Park, MI.
- June 28-29: MGAGS Rockhound Seminar, Washtenaw Community College, Ann Arbor, MI.
- Labor Day weekend—our annual MGMS club show at Century Center.**

DIANE'S COLUMN



Is it spring yet? I have enjoyed the sunshine that we've had over the winter. The cold temperatures were cause to get out little-used down coats, hats and mittens. I tried out cross-country skiing and really liked it. I found it was a great way to spend time outside and good exercise. I am getting tired of bundling, so I look forward to the warmer weather.

The new liaison officer has been listed incorrectly in *The Rockfinder*. Martha Perry was elected at our December meeting and has assumed the position. We had such a great Christmas party that there was a mix-up. I think this shows how important good communication is.

Part of our March meeting will be set aside for committees to meet. This will be a good opportunity to do some advance planning. Be prepared to share some goals and how to get them accomplished. After meeting in small groups, a spokesperson will be able to share with the rest of the group.

When we receive information from clubs about nearby shows, we list them in *The Rockfinder* and announce them at the meetings. To make it easy to get more information on these events, I have put the flyers in a notebook, arranged by date. We'll keep the notebook on the display table for easy accessibility. Look for the "Up and Coming" book, and remember that it is good to support other clubs.

Our sympathy goes to member Leo Heynsens on the passing of his wife Elma. Several of our members have visited them out west.

Also, condolences go out to Janus Horrall on the passing of her mother.

BLUE, BLUE, MY QUARTZ IS BLUE

By Bill Cordua

I've been fascinated with blue quartz ever since I was a youngster who picked up a chunk in the Blue Ridge area of northern Virginia. The color was

deep to sky blue, and seemed to change in hue as I tilted it. Like most blue quartz, it was not gemmy as it was cross-cut by many fractures stained with iron oxides. It was special to me because there aren't many blue minerals and I had never found one before.

Blue quartz occurs at many localities. One famous locality is in Llano County, Texas, where it is found as small doubly terminated crystals in a rhyolitic porphyry called, informally, llanoite. The crystals weather loose and can be collected easily. Slabs of this rock studded with blue crystals are cut and polished. Blue quartz is found in Wisconsin, most notably in a diorite exposed by the Dairyland Power Dam near Tony.

The cause of the blue color is reasonably well known. Blue quartz is crowded with tiny grains of minerals such as rutile (TiO_2) or ilmenite ($FeTiO_3$). There may be as many as 2 million of these included crystals per square centimeter, scattered uniformly through the quartz. Even so, because the crystals are so tiny, they make up only about 0.02% of the volume of the quartz. Light entering the quartz is scattered by these tiny particles, the scattering being most pronounced for blue light. The light reflected back to the eye is blue. This effect is also responsible for the blue color of the sky. Light shining through the blue quartz from behind is yellow or red (the complementary color to the blue), because the back light is not scattered and reflected. This is what occurs in the sky at sunset.

Titanium is also responsible for the color of rose quartz. Here, however, the titanium occurs as the ion Ti^{+4} within the quartz structure, not as grains of other minerals. In this form, the titanium absorbs all colors except the rosy pink one we all know so well.

Artificial blue quartz can be made by including cobalt impurities in quartz grown in the laboratory. Unlike the blue quartz in nature, the artificial crystals are deep royal blue and can be grown in large flawless masses which can be readily faceted.

Natural blue quartz can rarely be used for lapidary purposes, but it is a wonderful experience to find it and see what looks like pieces of the clear blue sky embedded in the solid rock.

MINUTES OF THE FEBRUARY MEETING

President Diane Gram called the February 23 meeting to order at 2:00 p.m. at Our Redeemer Lutheran Church. There were 22 members present, plus two adult and two junior guests. The minutes were read as printed in *The Rockfinder* and approved without amendment. The treasurer's report was read and approved, and will be filed for audit.

Under old business:

Kathy Miller requested funds for the September field trip to cover the motel reservation for the bus driver. It was moved, seconded and approved. She stated that one cabin remains available for a club member or members to go on the trip.

Under new business:

Diane requested a volunteer to replace her in taking responsibility for the club library. She also reminded the members that they are expected to serve on at least one of the club committees. The sign-up sheet was circulated during the meeting. Next month some time will be reserved for committee planning sessions at the regular meeting. The goal is to have greater participation in club activities on the part of each member. Sue Brown volunteered to chair the picnic committee so that a location may be selected and a reservation made for our annual August event.

Bylaws for the club need to be brought up to date. A committee was formed to do this before the March meeting: Diane Gram, Tom Noe, Phyllis Smallwood and Jeanne Finske. Margaret Heinek informed the members about the death and memorial service for member Elma Heynssens. Elma and Leo moved to the Southwest not long ago, and have been especially generous in donating materials from their collection for club use.

Tom Noe reported on his writing to an Indiana Congressman about the club's position regarding fossil collection by amateurs

Bob Miller informed the members about coverage by insurance policies held by the club.

Margaret Heinek demonstrated how to use the available patterns to make club vests out of dark blue polyester material. She also handed out pins from past MGMS shows. The vests are helpful in identifying club members for the visitors at our annual show at Century Center.

Lana Wright, Jessica Zeiger, Bob Miller and Sue Brown won door prizes.

After adjournment of the business meeting at 2:40 p.m., Victor Riley, rock sculptor and poet, displayed and discussed his works of art.

Marty Perry and Sue Brown provided the refreshments.

M. Jeanne Finske, C.S.C., Secretary

Funny Test Responses

Teaching scientific concepts can be a challenge. Below is a sampling of some of the more interesting test answers collected by science and health teachers at various grade levels, printed in *Popular Science* magazine.

When you breath, you inspire. When you don't breath, you expire.

The pistol of a flower is its only protection against insects.

A fossil is an extinct animal. The older it is, the more extinct it is.

When you smell an odorless gas, it is probably carbon monoxide.

For head colds, use an agonizer to spray the nose until it drops into your throat.

The moon is a planet just like Earth, only deader.

Artificial insemination is what the farmer does to the cow instead of the bull.

Dew is formed on leaves when sun shines down on them and makes them perspire.

To collect fumes of sulfur, hold a deacon over a flame in a test tube.

Equator: A managerie lion running around Earth through Africa.

ALIQUANDO DORMITAT BONUS HOMERUS

("Even the good Homer nods.")

A Metallurgical Anachronism in the *Odyssey*

By Sam Shapiro

The *Iliad* and the *Odyssey* are the first epic poems, and, astonishingly, after 2,600 years, still by far the best. It is as if the Wright brothers built a 747 jet at Kitty Hawk in 1904. The tale of Troy was to the Greeks what the Torah was to ancient Israel, the New Testament to Christianity, and the Koran to Islam. Nobody believes in the Olympian gods any more, but the stories of Paris and Helen, Agamemnon and Achilles, Odysseus and Penelope have been told and retold, in a dozen plays by Aeschylus and Sophocles, by Virgil in Latin, by Dante in Italian, by Shakespeare (*Troilus and Cressida*), by John Keats ("On First Looking into Chapman's Homer"), by Tennyson and James Joyce (*Ulysses*) in our own English.

The two poems took six days to recite by *rhapsodes* in competitions that were like our football games, yet Homer managed to get almost every detail and episode just right. However, there is one anachronism in the *Odyssey*, book nine, lines 391 to 393. Odysseus and his men, trapped in the cave of the one-eyed cannibal Cyclops, sharpen the end of his olive-wood club in the fire, and run it into his eye. Homer adds a typical extended Homeric simile:

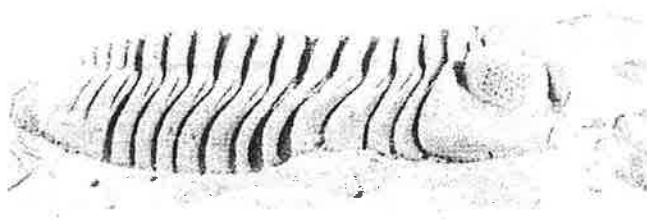
As in a smithy one sees a white-hot axehead or an adze plunged and wrung in a cold tub, screeching steam--the way they make soft iron hale and hard--just so that eyeball hissed around the spike.

Robert Fitzgerald translation
(by far the best)

What's wrong? Well, the first stone tools were made about 700,000 years ago. After an unimaginably long time, men learned to dig and smelt copper and tin, and combine them in various ratios to make bronze daggers, swords, shields, helmets and chariots. The Bronze Age in Greece and Asia Minor lasted from about 3,000 BC to 1,100 BC, and the Trojan War took place toward the end of that period. Homer, correctly, has Greek and Trojan warriors using bronze weapons. However, by the time he put together his epic from earlier oral

poems, iron had been introduced. (Our telephone book has pages and pages of Smiths, presumably descended from men who smelted iron). One quenches iron in water to harden it--not bronze.

Of course, neither Homer nor his audience would have noticed, or cared about, his inaccuracy. It's like the watch Shakespeare has one of the Greeks consult in his play about the Trojan War.



Phacops rana is a common trilobite.

IS IT REALLY JADE?

Lapidarists and jewelers should constantly attempt to call gemstones and rough materials by their correct names. The term "jade" is applied to many non-jade stones, for example:

Korean jade is bowenite, a hard variety of serpentine;
Transvaal jade is a massive variety of green, grossular garnet;

Amazon jade is aventurine;

American jade is a rock, a mixture of idocrase and grossular;

Australian jade is chrysoprase;

Colorado jade is microcline;

Jasper jade is green jasper;

Flukien, Manchurian and Honan jades are all soapstone;

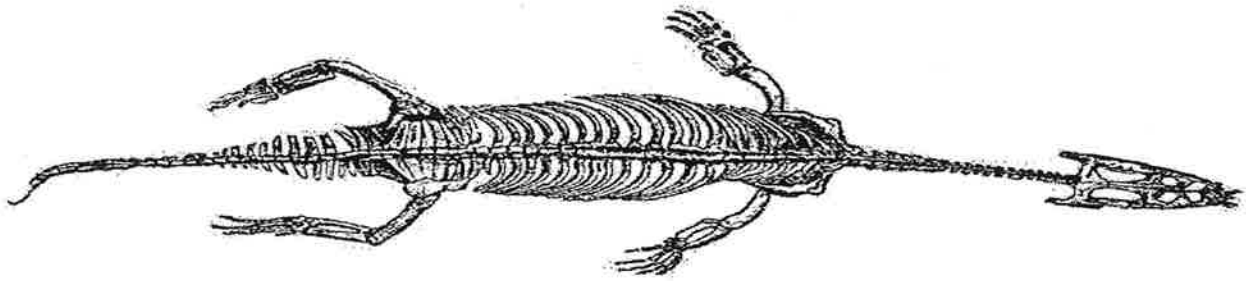
Mexican jade is green-dyed marble or calcite;

Oregon jade is dark green jasper;

Silver peak jade is malachite.

It would be clearer to beginners if jade were called jade, malachite called malachite, aventurine called aventurine

Carmel Valley Prospector (no date available)



SCIENTISTS DISCOVER ICHTHYOSAUR VOMIT

On February 11, 2002, British scientists said they had discovered what they believed to be the world's oldest fossilized vomit from an ichthyosaur, a large marine reptile that lived in the Jurassic Age 160 million years ago. Professor Peter Doyle of the University of Greenwich in London said the vomit was discovered in a clay quarry in northern England and contained the shells of dozens of belemnites, tiny shellfish that were found in abundance in the waters around Britain and which were a staple food for

ichthyosaurs. Scientists are convinced the sample is vomit because of the way belemnite shells were scattered in the fossilized sample. A microscopic examination appeared to show that the shells had been etched by stomach acid from the digestive fluid of an ichthyosaur. Skeletons of ichthyosaurs with stomach contents intact have previously been found, but belemnite shells were quite unpalatable and usually expelled from the body. Professor Doyle said it was unlikely that the shells passed through the ichthyosaur's intestines because the shells would have damaged the soft tissues.

The Pegmatite (condensed, with excerpts, from Reuters article of 2/11/02)

LONG-NECKED DINOSAURS: WERE THEY COWS?

Were the long-necked dinosaurs such as *Diplodocus* and *Apatosaurus* really ground-grazers instead of the tree croppers they have always been considered? According to a study by Michael Parrish, a researcher at Northern Illinois University, the animals were not able to raise their heads much above the height of their backs. Parrish and colleagues used a computer model to test how well the beasts were able to move. According to the model, when the head is raised just above the back height, the vertebrae run into each other and the back locks up. So Parrish believes the head was held straight out or down, which would limit the animal to grazing on the ground instead of from the trees unless it stood on its hind legs. That possibility has not been ruled out, but Parrish said that if they rose up on their hind legs, there would be a blood pressure problem.

Condensed from Reuters article, 4/29/99, via *Pebble Pusher* (Nov., 2001)

HOW DO YOU BECOME A ROCKHOUND?

This classic story is probably older than most fossils, but in case anyone has not heard it yet...

Q: How Do You Become a Rockhound?

A: Buy a large bag of marbles and carry it with you whenever you go looking for rocks. Every time you pick up a rock and put it in your pocket, take out one of the marbles from the bag and throw it over your left shoulder. Any time you see one of your marbles, pick it up along with the rock nearest to it--the rock goes in your pocket, the marble into the marble bag. When you have finally lost all of your marbles, you are a rockhound.

HOW TO GET THE MOST OUT OF A FIELD TRIP

By Bonita Spencer

So you went on a field trip and you are disappointed that you did not find what you expected or as much? Tell me, did you take time to enjoy the beauty of the great outdoors?

Did you leave the roadside and go up to the top of the hill and see what was on the top or the other side? (The view was great. Sure, it was only the other side of the mountain, but it was grand and new and the rocks there were untouched compared to those nearer the road.)

Did you look up and see that young bald eagle sailing up there in the sky, and alighting on top of a tall snag by the roadside?

Did you branch off and prospect a far hillside, (with at least one buddy, of course) and investigate the strange outcropping there?

Did you leave the creekbed and prospect the banks here and there?

Did you enjoy the wind in the trees and moss on the rocks and logs and animal tracks where they walked in their country?

Did you go on the other side of that clump of brush or just follow the trail?

Did you sit down and look around, watch the water, bees and study a flower?

Did you stop and sketch, or photograph a spot of beauty to take home for a future bright memory, or press a flower in your notebook, or jot a few lines of poetry inspired by the surroundings?

Did you turn over a few rocks, or rake your hammer through a few gopher holes to see what they had brought up, and then scratched the surface to see if you could do as well?

Did you find and bring home something other than rocks? A shell, bone, piece of weird-shaped wood, piece of scrap wire, or moss or lichen?

If you didn't, too bad. If you did just half of these things, you should have come back much enriched in soul and body as well as in the collecting sack. A field trip is to get rocks, true, but more than that, looking at the whole picture, it is to get out and enjoy the land and the people you are with, and all of the blessings God put there for you to enjoy. **JUST LOOK!**

CMGC (March, 1996)

THE INGREDIENTS OF AN ARROWHEAD

The American Indian wasn't fussy about what he used to make an arrowhead as long as the material would suit his need. Throughout the ages, the Indian's choicest material for arrowheads was flint and the flint-related rocks such as chalcedony, agate, novaculite, jasper, opal, etc. He liked obsidian, too. These are the silicon dioxide "glass rocks" of nature and, like glass, they flake beautifully in conchoidal fractures and shape easily into sharp cutting edges. Quartzite, which is granular silica, was used quite extensively, but was more difficult to shape.

The Indians of the eastern seaboard were starved for good flintlike rocks, and their arrowheads are the ugliest of all, since they are made of slate, trap rocks, quartzite, schists and other forms of rock which a Wyoming Indian would have written off as junk.

There are rumors of Wyoming jade arrowheads, but they probably aren't true. The Indian was too smart to wrestle with a tough unsuitable rock like jade. The Indians of the valley of Mexico made beautiful jadeite sacrificial knives, but they weren't flaked. They abraded, honed and polished them into shape.

Probably the most spectacular arrowhead ever found was a fabulous fluted early-man Clovis point struck out of a large quartz crystal. The diamond-clear point was found by a farmer in North Carolina who then took it home and used it to strike against steel to start kitchen fires. The now damaged point rests in the Smithsonian. Some arrowhead and spear points were made of wood, especially the stunning arrow. Many were made of bone, antler and tusk. The Indian tribes bordering the Gulf of Mexico used garfish scales extensively. Bottles, telegraph insulators and other glass articles were popular everywhere. Best of all, Indians liked the white man's iron. Barrel hoops were a favorite source, but any blacksmith's stock was satisfactory.

The Indians also traded fur pelts to the white man for steel arrowheads. Pierre Choteau's men brought the first of these to Wyoming in about 1822. These steel points were somewhat diamond-shaped, with a thin sawtooth stem and were always stamped with a St. Louis factory trademark.

Leaverite News (no date available)

FLUORESCENT MINERALS IN WISCONSIN

By Bill Cordua

One of the things that can turn people on to minerals and mineral collecting is seeing minerals take on unexpected colors when exposed to ultra-violet light. As part of my efforts at a compilation of a minerals of Wisconsin database, I've been interested in gathering information on those minerals in the state that are significantly fluorescent. Below is a summary of some observations made on specimens from the state in the collections of the University of Wisconsin—River Falls. I hope this encourages others to check their collections and let me know of additions to this list.

Calcite—Manganocalcite from the Montreal and adjacent mines near Montreal, Iron County, Wisconsin occurs in spherical masses that fluoresce red in shortwave U.V. Several calcite scepter crystals from the Shullsberg area in Lafayette County fluoresce deep red under shortwave U.V. Red fluorescing calcite is also found at the Mathy (Tork) Quarry in Wisconsin Rapids. A small amount of calcite was found at the Flambeau Copper Mine, near Ladysmith. Most of it was not fluorescent, but some had zones that fluoresced red. One vug had calcite that fluoresced orange under shortwave U.V. and yellow under longwave U.V. Calcite in the form of travertine from various exposures in the Prairie du Chien Group and Platteville Formation in Buffalo, Pepin, Pierce and St. Croix Counties fluoresces and phosphoresces bluish-yellow in both shortwave and longwave U.V. In general calcite from any part of the state should be checked for fluorescence and phosphorescence.

Dolomite—Much dolomite in the Prairie du Chien formation fluoresces and phosphoresces a dull bluish to yellowish in shortwave U.V. light. This forms an interesting part of the fluorescent mineral display part of the tour in Crystal Cave, near Spring Valley, Wisconsin.

Fluorite—Fluorite from the Koss Pit near Wausau, Marathon County, fluoresces blue, yellow or greenish in shortwave U.V., sometimes in zonal patterns. Fluorite found as zoned clear, brown and yellow

cubes in vugs in calcite in a quarry on the south side of Sturgeon Bay fluoresce and phosphoresce yellow in both longwave and shortwave U.V.

Hydrozincite—Earthy hydrozincite coatings with sphalerite and other minerals from the zinc-lead district in Iowa, Lafayette and Grant counties fluoresce blue under shortwave U.V.

K Feldspar—The K feldspar in the “rotten granite” and other granite quarries in Marathon and Wood counties will often fluoresce deep red in shortwave U.V. K feldspar with epidote from the dumps of Jackson County Iron Mine near Black River Falls also fluoresces red.

Opal—Hyalite opal from the “rotten granite” quarries south of Rib Mountain in Marathon County fluoresces bright green in shortwave and longwave U.V.

Quartz—Drusy to coarse quartz crystals, some with phantoms, were found in dolomite in a road cut on Hanley Road, Hudson, St. Croix County. These fluoresce pale yellow in shortwave U.V. Associated calcite and aragonite which fluoresce and phosphoresce blue in shortwave and longwave U.V. Thus some samples will give 2 or 3 different fluorescent colors.

Also, quartz in chert breccia from the quarry on Glover Bluff fluoresces faint yellow, blue and green in shortwave U.V. light.

Finally, although not strictly a mineral, slag from the iron smelting operation in Spring Valley, Pierce County, Wisconsin, fluoresces orange under shortwave U.V.

<http://www.uwrf.edu/~wc01/WIFluor.htm>

SOAPSTONE

The Chinese have treasured soapstone for centuries and used it to carve delicate figurines. The Eskimos use it to make lamps and cooking pots. In ancient Babylon, it was used to make signet rings and other items of jewelry. In North America, the early pioneers used it to make laundry tubs, but this is not why it is called soapstone. The mineral gets its name because the waxy polished surface looks and feels like soap.

Geologists classify soapstone as a hydrous magnesium silicate and call it "steatite," a mineral related to talc. Its main ingredients are magnesium oxide, silicon and moisture. It is one of the softest of stones, easily carved with a knife. Its colors may be pearly or bluish gray, milky white or pastel yellow. A few rare samples are a vivid apple green. Some are opaque, others are translucent like foggy glass.

Since early times, artists have treasured its lovely colors and soft carveable qualities. It makes durable linings for boilers and electric furnaces because it insulates both heat and electricity. It resists all stain and corrosion, and is used for laboratory table tops. As a filler ingredient, powdered soapstone gives body to certain papers and paints and a spreading quality to face powder.

Soapstone is classified as a metamorphic rock, a mineral completely altered from its original form by tremendous forces within the earth's crust. The original form was mostly like lava, rich in magnesium and silicates fused in the furnace of some ancient volcano. For ages it was buried amid the seething activity of growing mountains. Steaming underground water and enormous pressures gradually remodeled and refined its texture. The original mineral was metamorphosed, completely changed into something quite different. The various colors were added from traces of magnetite, chlorite, mica and other ingredients that seeped into the recipe.

Considering its long history of hardships, it is not surprising that soapstone has learned how to resist heat, electricity and corrosive acids. It is surprising that this lovely soft material is not marred by its past experiences.

Most of the world's steatite minerals are mined in North America, and both soapstone and talc, its somewhat softer relative, are found in the western

mountains of California. More massive deposits are in the Appalachians. Near Schuyler, Virginia, the soapstone mines are along a belt 30 miles long and occur in blocks, some thicker than 300 feet and more than 1,500 feet long.

If you have a soapstone carving which has begun to look a little dull, heat the object in the sunlight, and while it is still warm, apply paste wax. Rubbing should restore the soft luster. This same treatment can be used for an emergency touchup of a jade bracelet. An electric light bulb, or other moderate heat source, may be used instead of the sun.

To polish soapstone, cut the shape desired with a hand saw. Carve to shape with a knife. Sand with 200 - 400 grit sandpaper. Smooth with 000 steel wool. Heat in strong sunlight or warm oven until warm to the touch. Rub with clear paste wax while tale is still warm.

(assembled from various bulletins)

MONTANA ADOPTS THE GOODMOTHER DINOSAUR

Maiasaura Peeblesorum, a species of duckbilled dinosaur, has become the official Montana State Fossil through the efforts of sixth-graders in Livingstone. The dinosaur was found on the Peeble Ranch in Teton County. The children were inspired by the 1978 discovery of a nest, including eggs. Children and parents launched a campaign to convince the state legislature to adopt the dinosaur as the State Fossil.

One hundred thirty children wrote letters and sent information to schools (200 of them), obtained 9,000 signatures on petitions supporting adoption of the bill and converged on the House of Representatives in Helena. They served dinosaur-shaped cookies and testified in favor of the bill, resulting in a unanimous decision for its passage. It is hoped that studying the fossil will show if warm-blooded dinosaurs existed.

From *American West*, no date available