

MAY 1992

THE ROCKFINDER



Joyce Larson, Editor
Michiana Gem & Mineral Society
144 Spruce Drive
Westville, IN 46391

FIRST CLASS MAIL

1992 Combined
AFMS & MWF Show
July 23, 24, 25 & 26, 1992
Brunswick High School
Brunswick, Ohio



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The MICHIANA GEM AND MINERAL SOCIETY, a non-profit organization, is affiliated with the MIDWEST FEDERATION OF MINERALOGICAL AND GEOLOGICAL SOCIETIES and with the AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES.

Regular Meetings

Time: 2:00 p.m. EST	Place: Westminster Presbyterian Church
Fourth Sunday of each month	1501 W. Cleveland Road
June - Field Trip meeting	South Bend, IN
July - No meeting	West of the St. Joseph River
August - Annual Club Picnic	
December - Date to be announced	
Christmas Party	

Dues

Individual	\$ 6.50 per year
Family	10.00 per year
Junior	2.00 per year

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THE ROCKFINDER

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MAY 1992

PUBLISHED BY: MICHIANA GEM AND MINERAL SOCIETY

SOUTH BEND, IN

MEETING: May 17, 1992
Westminster Presbyterian Church
1501 W. Cleveland Road
South Bend, Indiana

PROGRAM: Paul Godollei, our
Club Fossil expert
will present a program
on "Fossil Collecting".

HOSTS FOR MAY: Gladys Pacholke
Pam Rubenstein



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As I sit here at my office typewriter this late Sunday "Mother's Day" afternoon, I find myself thinking of Mother's Day past and the years of Mother's Days that as a younger person, were just taken for granted that the same day will roll around next year and it would be a special day for Mom again. And then one day, even though my sisters and I realized Mom was really losing her health and at 82 spent her last "Special Day" in the hospital, we had hopes that the following year she would still be with us - it wasn't to be. All I can say is she has to be everybodys favorite angel! HAPPY MOTHER'S DAY, MOM.

Joyce

Birthstone for May.....Emerald

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Please note the change of our meeting date to May 17, 1992. This is due to the Memorial Day Weekend. I wanted to make note that the U.S. Mail has not cooperated with me in getting material to complete the Rockfinder as it should be so I have to complete it without the minutes of the last meeting. I will print **thsee** minutes separate and you may pick up a copy of same at our meeting Sunday. It seems that normal mail takes at least one and sometimes two days to reach Westville. Margaret can testify that one of her articles didn't reach me for two weeks after mailing. Now that is Turtle Express.

So I am taking the liberty of completing The Rockfinder in order to get it in the mail tomorrow. In the meantime I have two pages to fill so need to get hustling as the sun is going down and there's much to do.

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To all of the clubs that are sending in Exchange Bulletins, keep them coming!

Spring



"GET THE LEAD OUT" by Betty McVey Meyers (The Glacial Drifter)

Lead, a metallic element, is a soft, malleable, ductile metal, a freshly cut surface has a bright silvery luster which quickly turns to the dull, bluish, gray color characteristic of the metal. It has a specific gravity of 11.34 (very heavy), a melting point of 327.4°C, 621.3°F, chemical symbol Pb (Latin, plumbium).

Lead is one of the first metals known to man. It is mentioned in the Bible seven times, referring to its weight, low melting point and for trade. Coins or medallions of lead are found in ancient Egyptian ruins dating to about 3000 B.C., and it seems probable that the extraction of lead from its ores by smelting was the first such practice recognized by man. The Roman ladies (unwisely) used white lead as a cosmetic. The slaves extracted and prepared the lead, and Pliny, the Roman naturalist and writer (23-79 A.D.), describes a disease among the slaves that was clearly lead poisoning.

Some unusual uses of lead include its use in the Hanging Gardens of Babylon, built about the 6th century B.C., one of the seven wonders of the ancient world. The garden was contained in a square 400 feet on each side and to a height of the city wall. Thick sheets of lead were the base on which lay the garden soil, deep enough to take the roots of big trees.

And how about this sneaky use showing the soft malleability of lead. They placed a common sealing wax impression between two pieces of soft sheet lead on an anvil and struck them with a hammer until an impression of the seal was obtained on the lead. Then new impressions of the seal were obtained with new sealing wax. It is said that this was the mode employed by inquisitive Post Office authorities in olden times when they wanted to learn the contents of a letter without betraying themselves by a broken seal. And as for the molds, those so-called "tin soldiers" molded for children of past years, either were lead or an alloy of lead and tin. Before the days of aluminum foil, we had tinfoil, which again was an alloy of lead and tin.

Formerly no person could be buried in a vault under a church except in a lead coffin. There was a problem though, because the lethal gases generated within caused the lead coffin to bulge out and then to burst, thus throwing out deadly gases and bad odors into the church above. Needless to say, the custom was abolished.

Although many lead minerals are known that are very colorful, very beautiful, very interesting and make wonderful mineral specimens such as cerussite, anglesite, crocoite, wulfenite, mimetite, pyromorphite, vanadinite, endlichite, etc., galena is the source of virtually the whole modern lead production. On a tonnage basis, lead is the world's fifth most important metal. Approximately one-quarter of the world's output is produced by the United States. Australia, U.S.S.R., Mexico, Canada, Peru, Yugoslavia and Japan are other producers. The United States consumes half of the world's supply of lead.

A large amount of lead is consumed in the form of its compounds, particularly as paints and pigments. The most important compound of lead is basic lead carbonate called white lead, which has been used for thousands of years as a white pigment. It makes the most beautiful white paint and is of long duration. It is used in ceramic glazes and in making other pigments. Lead monoxide (litharge) is used in making flint glass (today known as lead glass or crystal), as a drier in oils and varnishes, and in insecticides. Red lead, a scarlet crystalline powder formed by oxidizing lead monoxide, is the pigment in paint used as a protective coating for structural iron and steel work. Lead chromate or chrome yellow, prepared by the reaction of lead acetate and potassium bichromate, is used for making red, orange, yellow and lemon pigments. Sugar of lead, so-called because of its sweet taste, is prepared by dissolving litharge in acetic acid. It is used as a mordant in dyeing, as a paint and varnish drier and in making other lead compounds.

MARGARET'S COLUMN

Just looked out the front door and in the yard there were a pair of Wood Ducks, a Mallard, a Woodpecker, a male Cardinal and the trees are really budding. I think we are finally having our Spring! It is about time.

The 4th Sunday this month is Memorial Day weekend, so our meeting date has been moved up one week, to May 17th. Please mark your calendar and come to hear Paul Godollei's program. Paul as you know, is our expert on fossils, so this should be a very interesting program.

Bob and I attended two shows this last month, the Merrillville, IN show, and the Kalamazoo, MI show. We saw dealers that we have in our shows, and they are all looking forward to another good one in South Bend.

The MWF held their Spring meeting at the Merrillville show. We were told about the AFMS-MWF Show and Convention to be held in Brunswick, Ohio, July 23rd through the 26th. If you have never been to an American Federation Show, you should try to attend this one. I am sure you would enjoy seeing all the displays and competitive exhibits in many phases of our hobby, from all across the USA. Most of you have been to the MWF Conventions, but this one should be different, as it is an American Federation show and one of the host clubs is a "Junior Club." There will be meetings for the juniors, conducted by juniors, where the adults may attend, but will not participate! This will show us the caliber of our future rockhounds.

It was reported that the 1993 Convention will be held in the Upper Peninsula of Michigan, and will be all field trips. There will be competitive exhibits at the museum, which also has excellent exhibits. There will be no dealers. You will be informed as to the dates, and the field trips you can take. I understand there will be dorm rooms to rent, which will be less expensive; there will be motel rooms as well as camping. There will be more on this later. Start saving your pennies, and plan on attending this one. It is a rare opportunity to hunt

in some of these areas. The MWF had a field trip there several years ago, which Bob and I were unable to attend, but if at all possible, we will do so in 1993.

Pam Rubenstein is trying to make arrangements for a June field trip for our club to a quarry in Michigan. She will give us a report at the next meeting.

I did get the agates I had wanted for a program a few months ago. We will let you know when a work session will be held so all members will have the opportunity to make a piece of jewelry for themselves. I would like to see all displayed in a club case for the Labor Day show. After the show the pieces will be returned to the members who made them.

Margaret

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HAPPY DAYS TO ALL OF THE FOLLOWING MEMBERS!

Birthdays: Adeline Niebauer..... 1
Jane Stone..... 1
Kenneth Stout..... 4
Pam Rubenstein..... 12
Kathy Miller..... 13
Sue Fields..... 22
Marian Fiege..... 22
Joe Fashbaugh..... 26
Alec Rubenstein..... 27

Annivesaries:

Gloria & Clayton Merrill.... 3
Betty & Kenneth Stout..... 4
Marilyn & Jo Meier..... 11
Jane & Stan Kile..... 14
Marie & Bill Crull..... 28

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"The budget should be balanced, the Treasury should be refilled, public debt should be reduced, the arrogance of officialdom should be tempered and controlled, and the assistance to foreign lands should be curtailed lest Rome become bankrupt."

Cicero, Roman statesman and philosopher
(43 B.C. - 106 B.C.) via The Lithnics

The following article was taken from the M.M.S. Conglomerate, April 1992 club newsletter. A short two weeks later the Humboldt County, California area was rocked by an earthquake of considerable magnitude:

HUGE QUAKES MAY AGAIN RESHAPE NORTHWEST by David Perlman, Chronicle Science Editor

Geologists probing the restless earth along the Humboldt County coast near Eureka in northern California have discovered the strongest evidence yet that truly monstrous earthquakes have rocked the Northwest in the past -- and could strike again.

The record is written in trenches that scientists have dug across long-quiescent seismic faults on land, in instrument readings from acoustic shock waves reflected off hundreds of seismic faults offshore, and in the ages of long-buried fossil trees and peat bogs, deduced from their remnant radioactive carbon.

As recently as 300 years ago, the evidence indicates, quakes releasing far more energy than anything that ever struck the San Andreas Fault must have thrust inland areas abruptly upward and buried the coast underwater along a 150-mile path in Northern California, covering almost 7,000 square miles north and south of Humboldt Bay.

Recently discoveries have also uncovered signs that the same giant quakes may have triggered massive changes in land levels every few hundred years all along the Oregon and Washington coasts, ripping the ground apart along a huge zone at least 750 miles long.

A RECENT EXAMPLE: A quake of that magnitude would be as large as one in 1960 that destroyed major cities in Chile, killing at least 5,000 people and sent huge tsunamis -- known as tidal waves, although they are unrelated to tides -- that drowned 61 people on the shore of Hilo bay in Hawaii and hundreds more in Japan's major harbors.

The Chile earthquake unleashed violence of a thousand Loma Prieta events. It is rated at a magnitude of 9.5 on a scale unrelated to the conventional Richter magnitude, which cannot accurately measure the size of quakes much larger than the 1989 Loma Prieta quake.

Such enormous quakes, say the geologists, "are well known to generate extensive damage from ground shaking, liquefactions, ground failure and large tsunamis."

The new seismic research in the Humboldt Bay region is led by Samuel H. Clarke, Jr., of the U.S. Geological Survey in Menlo Park and Gary A. Carver of Humboldt State University in Arcata. The latest report on their findings is being published in the journal Science (1/10/92)

DIFFERENT FROM SAN ANDREAS: Unlike the San Andreas Fault, where two slabs of Earth's crust are constantly sliding past each other and generate quakes when they release built-up strain after remaining stuck for many years, the prehistoric temblors that Clarke and Carver study are known as subduction quakes.

In the Northwest off the Pacific Coast, a large segment of Earth's crust called the Gorda Plate and an even larger one called the Juan de Fuca Plate are thrusting themselves beneath the North American continent in an inexorable process called subduction. The entire region, stretching northward from the so-called "Mendocino Triple Junction" where the San Andreas Fault swings westward into the Pacific, is known as the Cascadia subduction zone.

As the massive crustal plate of the zone grind their way downward under the western margin of the continental plate tens of miles offshore, they push eastward beneath the land as well. The moving slabs may slide imperceptibly for hundreds of years, then lock tight for a period while strain builds up, then jolt suddenly into motion again.

(continued - page 5)

HUGE QUAKES:

Similar processes are at work in many regions of the world - off Japan, Alaska and the coast of South America. They generate deadly volcanic eruptions and raise up mountains as high as the Andes over millions of years.

DEFORMING THE EARTH: Subduction quakes are "a breed unto themselves," Carver says, "and the energy they release, often for many minutes at a time, can be so monstrous that they deform the earth over tens of thousands of square miles."

In their report in *Science*, Clarke and Carver describe how at least three large earthquakes on "thrust faults" at the south end of the Cascadia subduction zone during the past 1,700 years have left traces of their destructive power in the deformed earth. The quakes abruptly shoved the ground 15 to 20 feet upward in some places and suddenly slumped it in others, they said.

The evidence comes largely from trenches dug across the Little Salmon Fault, which trends northwestward across the land south of Eureka, runs under Humboldt Bay, and then continues offshore to cleave the seabed of the Cascadia subduction zone. The Mad River Fault and the McKinleyville Fault have yielded still more signs of the ancient seismic events.

The most recent major Cascadia quake struck the region about 300 years ago, the scientists have determined, although far more moderate temblors often shake the area, such as the series of three in a single week that troubled residents of Petrolia, a tiny town 50 miles south of Eureka, in January 1990.

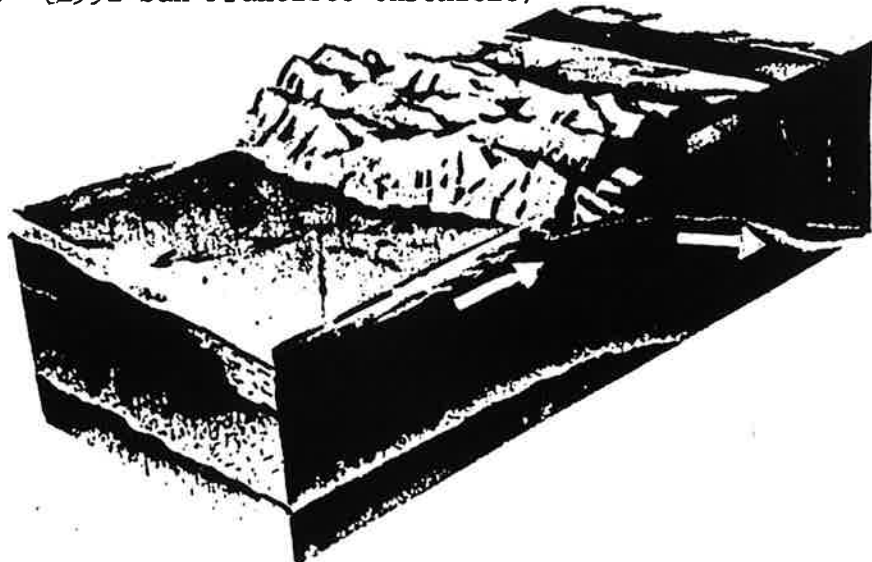
EVERY 90 TO 560 YEARS: The giant quakes of the distant past apparently occurred at intervals ranging from 90 to 560 years, the scientists said.

And, as Clarke noted cautiously in an interview, "The fact that the main interval between past event is about 350 years and that the last big one struck about 300 years ago isn't something to be totally ignored if we think about future hazards. So far, however, our work has no predictive value."

Fossil remains of tree stumps, peat and long-buried driftwood that have been roughly dated using radioactive carbon techniques indicate when the last major quake struck the Cascadia zone at its southern end. Reports from other scientists working in the Northwest during the past few years indicate that thrusting and slumping also hit the Seattle region at about the same time, and still other explorations along the Oregon coast have shown similar signs.

The geologic evidence makes it more and more likely, say Clarke and Carver in their report, "that great subduction-related earthquakes have occurred in this region in the recent past and presumably will recur in the future." (1992 San Francisco Chronicle)

The Juan deFuca plate is getting jammed as it attempts to slide under the North American plate, and the compression is wrinkling the northwest coast and squeezing together the Olympic Mountains. The current fault is inland, but when the deadlocked plates finally slip, huge quakes could strike the coast.



TERRA NON-FIRMA - It looks as if two of the geologic plates that make up the Earth's crust have locked horns beneath the beaches of the Pacific Northwest. The consensus is that those plates are building up compression that, when released, could unleash tremors of titanic proportions.

The deadlock involves a small off-shore plate, the Juan de Fuca, and the larger North American plate, which supports the continent. The Juan de Fuca plate acts like a wedge, sliding slowly northeastward under the North American plate, not unlike the coastlines in Chile and Alaska that are situated over similar faults.

To be sure, Washington and Oregon have their share of quakes, but most originate inland, near Puget Sound. This area is over the deep part of the fault. Evidence shows that the coast has had much bigger earthquakes in the past. Layers of coastal sediments show that the shoreline has abruptly dropped below sea level several times in the past 5,000 years.

Calculations of average sea levels from 35 years of date show that the northwest coastline is rising by four millimeters per year. Meanwhile the nearby Olympic Mountain range is actually being compressed, a fact researchers discovered by shooting a laser between mountain tops and recording its travel time. Over the past eight years it found that a 30-kilometer line between two peaks diminished by 16 millimeters.

It appears that the upper surface of the Juan de Fuca plate is jammed against the leading edge of the North American plate, raising the coast and wrinkling the crust above it like a rug pushed up against a wall. The compression building up could easily produce earthquakes or magnitude between 8 and 9. Worse still, the shaking would probably last not seconds but minutes.

FRIENDSHIP ON THE ROCKS

Rockhounds who have been in the hobby for some time begin to realize that the most precious gems they found are the friends they have made along the way. Some are still in the rough; some are highly polished; some are dull and colorless until they are viewed in the right light; but they all have one thing in common. Like everything else on the mundane sphere, they are imperfect and have flaws. If we were to enjoy them, we must accept them as they are, and realize that their beauty and warmth make up for their imperfections. If we concentrate our attentions on their better aspects, the flaws become insignificant and merely marks of their individuality.

(-from the Cycad, Diggin's from Dakota and G.I. Nugget).

#####

THINK SPRING!!!!!!!!!!!!!!

CHUCKLES CORNER

The flood was over and Noah lowered the gangway of the Ark and said to all the animals, "Go forth and multiply!" Once the exodus was over, he turned to inspect the Ark and found two snakes lying in the corner. "I thought I told you to go forth and multiply," said Noah. "We can't," came the reply from one of the snakes. "We're ADDERS!"

(via G.I. Nugget)

A friend refused to wear her bifocals because she thought they made her look older. One day I stopped by her house and noticed she had them on. "How long have you been wearing your glasses?", I asked. "Since yesterday", she replied. "I was baking some cookies and saw something on the counter. I picked up the fly swatter and killed four chocolate chips."

(via The Kentucky Agate
The Petrified Log - an
The Glacial Drifter)

.....condensed from the President's Message in the MWF Newsletter

PRESIDENT'S MESSAGE

This month I am going to condense the proposals of the AFMS President's Select Committee as I understand them after reading three different copies of the committee's report.

1. Creation of a separate 501 c-4 organization. At the present time, AFMS is incorporated as a 501 C-3 organization, prohibited by IRS regulations from lobbying activities. The 501 C-4 status (still non-profit) would allow rockhounds to lobby in our interest. The P.S. Committee voted to recommend the establishment of a separate organization and the providing of funds for getting it set up. Membership in this separate organization would be strictly voluntary, and dues have not been set.
2. Individual memberships to the AFMS. At the present time, each MWF club sends \$1.00 per member to the MWF treasurer. He, in turn, sends 25¢ to the AFMS for each member. The P.S. Committee suggests that some form of individual membership be instituted. This would require complete membership lists, so that each individual member could receive mailings from the AFMS. This should result in improved communication. However, the committee report notes that this could result in the loss of local club membership in the regional federations.
3. Restructuring of the AFMS Executive Board. At the present time, an officer of the AFMS serves on the AFMS board for a total of seven years, beginning as Junior Regional Vice President and moving through the offices of Senior Regional Vice President, Secretary, Treasurer, Executive Vice President, President and chairman of both Nominating and Long Range Planning in the past-president year. Many people are reluctant to take on this kind of long-term commitment. Under the new structure suggested, the Secretary and Treasurer would be chosen on the basis of their abilities to perform the duties of these offices. Selected for three year terms, they could be reselected. All current AFMS officers would be allowed to complete their rotation, but as each Federation's turn "at the foot" comes around, the regional vice-president elected there could serve for only one year. Eventually, the board would consist of a vice-president from each regional federation, plus a President-elect and the President. The P.S. Committee's report uses the word "select", but it is not clear to me who will "select" the President Elect from the several persons who could have been vice-presidents by the time the MWF's turn comes around. At the present time, each regional federation is consulted by the AFMS Nominating Committee to submit a name. I assume this would not change.
4. Newsletter and other communications. The P.S. Committee suggests, among other things, increasing the size and scope of the AFMS Newsletter and direct mailing to all member households.

The committee also suggests that AFMS have two meetings a year, instead of the current annual meeting. Drawback: Costs to those attending.

REMEMBER, THESE ARE PROPOSALS ONLY. They will be presented as a committee report to the AFMS meeting at Brunswick, OH, next July. The complete committee report is printed in the February issue of the AFMS Newsletter. Someone in your club received a copy! Your MWF Executive Committee will be discussing these at the spring meeting in Highland, IN, April 25. Let us know what you think.

Sincerely yours,

Glen

THE WORD IS OUT: April 25 AFMS President Ed Romack Select Committee met on November 1-2 and voted to recommend the formation of a separate 501(c)4 organization to permit a funded lobbying activity" supported by concerned members to keep collecting sites open. This and other recommended proposals, will be discussed further at the MWF Executive Committee Meeting. A possible \$1 Million liability policy for the MWF clubs at a very low per member cost will be discussed.

John Boland, Environment/Legislation (E/C Committee)

GLASS MOUNTAINS

In northwest Oklahoma, you can weave 24 miles through mountains that glisten like diamonds. They are referred to as "Glass Mountains", their eroded buttes and mesas send flashing lights across their valleys like signal lights from a ship. Thomas James in one of the journals called the region "one of the great curiosities of our country", he referred to them as Shining Mountains.

The reflection is attributed to layers of Gypsum stratified there; (1) Alabaster which may be pink, gray, or black; (2) Selenite which is clear & colorless, giving the mountains their glassy reflections; (3) Satin Spar a more fibrous gypsum that creates miniature diamond-like sparkles.

This strata of gypsum was deposited millions of years ago when the region was an inland sea. The sea evaporated, the land heaved upward and erosion began to carve the forms we see today. Wind and water, working over eons, has revealed the gypsum strata. Some of the pinacles are horizontally striped as a layer cake. In others, such as the flat topped mesa, the gypsum strata forms a table top surface. When the sun is low in the sky, the exposed rock strata reflects the light with blinking intensity and depending on the type of rock the rays strike, you see a pure flash of light on the mountain that looks like a rainbow of colors. Oklahoma claims this area as one of its "wonders".

(-from "The Mountain That Glows" by E. Hoaglin, The Geode, The Mountain Gem)

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COPPER BRACELETS (-from Deming Rock Chips and Golden Nugget, The Rocky Reader)

Is it true that copper bracelets relieve arthritis? This folk remedy has been in disrepute for several years, but now researchers have discovered there may be something to it. Copper, they found; reacts with the skin chemicals to produce an anesthetic called "Ethylene" which can be absorbed into the body.

JUNIORS.- Here are the states that we still need specimens from. I'm still trying to locate rocks or fossils from.....

- | | |
|--------------|---------------|
| DELAWARE | NEW JERSEY |
| CONNECTICUT | MASSACHUSETTS |
| SO. CAROLINA | MARYLAND |
| NO. CAROLINA | RHODE ISLAND |
| KENTUCKY | TENNESSEE |
| MISSISSIPPI | ALABAMA |
| MAINE | MISSOURI |
| WISCONSIN | MINNESOTA |
| KANSAS | W. VIRGINIA |
| NEBRASKA | COLORADO |
| NO. DAKOTA | IDAHO |
| OKLAHOMA | HAWAII |

Your collection should number 26 states and 26 specimens. Anybody out there have any of these state stones laying around gathering dust?

Would like to have five small samples so we can finish our posters.

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Here are a few SHOP HINT ideas:

Always grind and sand using coolant. Grinding dust does not dissolve in lung tissue.

Drain coolant water from machines into a jug and empty it outside. When you see how hard this residue sets up, it is easy to see that it would stop up plumbing drains.

Use short dop sticks. This helps to not use excessive pressure and lessens the chance of the dop stick becoming wedged between the wheel and the catch pan.

Always use eye protection.

Run grinding wheels for a short time after turning off the water supply. This helps remove water and sludge from wheels that can cause them to become out of balance.

(-from Lodestar)

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The average time between throwing something out and needing it again is about 2 weel

There's one thing to be said about an egoist - he doesn't talk about other people.

(-from Strata Data)

LEAD - continued from page 2

In more recent times, lead in one form or other has been or still is being used in fishing sinkers, as weight for sounding depths at sea, as wheel weights on automobiles, lead shot, as strips to hold stones or glass together in windows or lamp shades, in refractometer hemispheres, and as a roofing material. It is in solder alloyed with tin for joints in copper tubing and in industry for lining pipes, tanks and x-ray apparatus. Because lead absorbs gamma radiation, lead bricks are used as protective shielding from radioactive material. It is used in storage batteries and in sheathing electric and telephone cables. Early pewter was an alloy of tin and lead. Lead tetraethyl is the chief component of ethyl gasoline, which is added to improve engine efficiency and reduce gasoline consumption. The above are only some of the uses of lead.

Because lead pigments have been found to be toxic, their use is now restricted. Due to the toxic effect on the environment, replacements are being sought for leaded gas. Modern pewter is a tin antimony alloy. Lead paints which were widely used for home interiors and school rooms until the 1940's are no longer used. After years the paint would peel and chip and children would play with the chips, put them in their mouths and even swallow them, **therey** getting high levels of lead in their blood. Today "tin soldiers" are plastic or other harmless materials. What about lead pencils? Children chew on them, and so do many adults. Have no fear. The lead in pencils is graphite, not lead.

New electric and telephone cables are being sheathed in plastic. The plumbing pipes in many homes are now plastic instead of copper with lead alloy solder. If your home still has lead solder in connecting the pipes, run off the water so as not to use what has been standing in the pipes. Drinking fountains in older schools have been found to contain lead and are being replaced. High levels of lead have been found in some bone-meal calcium supplements and would be very dangerous to a fetus if the expectant mother took them. Bone meal is ground animal bone. The animal may pick up lead while eating in a contaminated area. More tests are being made on this problem. Some vitamin companies sell calcium supplements low or no lead.

Lead shot, from years past, **in** killing off our waterfowl. It is estimated that about two million ducks die in the United States each year from lead poisoning. This is the result of the birds swallowing spent shotgun pellets while feeding in fields and on marsh bottoms. The lead pellets are swallowed by the waterfowl (ducks, geese, swans, etc.) where they pass through the upper digestive tract to the gizzard and are converted to a soluble form and absorbed by the blood stream. The lead causes a reduction in oxygen supplies to all tissues. It interferes with the body's ability to break down glucose and other carbohydrates, leading to weight loss. Lead disrupts the production of hemoglobin, and anemia is the likely result. The imbalance in blood chemistry impairs the functioning of the liver and **hart** and causes damage to these organs. The very visible symptoms of weight loss, wing droop, refusal to eat, tendency to seek isolation and **voer** and the loss of the ability to walk or fly, lead to eventual death. In the late 1970's the decision was made to convert, over a period of years, to steel shot for hunting waterfowl. Today the local sporting goods shop has no shells with lead shot.

Typically, an adult ingests about **0.3** milligrams of lead daily. Of this, only about 10% is absorbed from the intestines. Similarly, only a fraction of inhaled lead enters the blood. Most lead excretion is through the kidneys. Lesser amounts are excreted in the feces and **seat**. If lead ingestion exceeds **0.6** milligrams daily, the body's ability to excrete it diminishes, and as lead accumulates in the body, poisoning develops. Top medical specialists warn that more than 38 million Americans are being poisoned by lead. It works slowly, showing up in such early symptoms as headaches, anemia, cholic, palsy, fatigue, muscle pains, indigestion, poor coordination and often a paralysis of the wrists and ankles. Later it can cause kidney damage and make the body vulnerable to every disease from the common cold to cancer. It can trigger severe mental problems including senility and retardation.

(continued page 10)

FOSSIL COLLECTING IN INDIANA: By Paul Godollei, Club Member

I had an opportunity on May 2 to turn off of Route 74 between Indianapolis and Cincinnati to look for fossils. I got off on Route #1 at the St. Leon Exit and went north 4 miles past the little village of South Gate to a big road cut that extends through numerous Richmond strata of Ordovician age.

A sign says "No digging allowed, violators will be prosecuted", so I did not even get out my rock hammer! There are numerous "steps" about 15 feet wide cut in the strata all along both sides of the road, so it is simple just to bend over and pick up loose fossils washed out of the formations.

From the specimens examined, it appears the formations at the bottom of the hill are upper Maysville extending up to upper Richmond at the top of the big hill. At the road side going down at the second step I found 5 loose horn corals *Grewinkia canadensis*, 5 or 6 gastropods, including *Cyclonema*, *Loxoplocus* and *Sinuities*, and some Brachiopods, including *Strophomena* and *Platystrophia*. At the next stop about 50 yards further down the hill I found *Rafinesquina*, more *Grewinkia* and some *Thaerodonta* brachiopods and a very nice *Strophomena vetusa*. There were numerous bryozoa also, but I didn't pick up any. If we had driven further down the hill we probably would have found some trilobite remains and pelecypods, but I did find a nice large *Rafinesquina ponderosa* lying loose. I also picked up a couple of small slabs to clean up later with some nice brachiopods and gastropods in them.

I was on my way to a wedding, so we had to move on, but I plan to go back another time and try to find that trilobite layer!

BIBLIOGRAPHY:

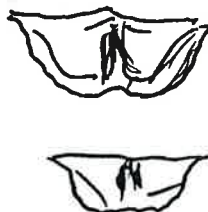
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CUP CORAL
Grewinkia canadensis



BRACHIOPOD
Hiscobecus capax



BRACHIOPOD
Thaerodonta clarksvillensis



GASTROPOD
Cyclonema bilix

LEAD - continued from page 9

Lead poisoning is common among people working in lead industries where now more rigid safety precautions are being taken. Children absorb more of the toxin than any other age group. Numerous studies and theories have been published on this problem. Lead poisoning is treated by administering a chemical agent that binds the lead in a nontoxic form that can be safely excreted in the urine. Such treatment, though, can be hazardous and take several months. Prevention of lead poisoning, therefore, is of prime importance. So get the lead out in every possible way.

(References: Encyclopedia Britannica - Encyclopedia Americana - Academic American Encyclopedia - Universal Standard Encyclopedia - Strong's Exhaustive Concordance of the Bible - King James Translation of the Bible - The Accult & Curative Powers of Precious Stones, by Wm. T. Fernie, M.C. - 1989 TV News - Dept. of the Interior, U.S. Fish & Wildlife Service pamphlet, Chicago Tribune - The Globe - Rock Buster News & Mineral Matter)