CEDAR VALLEY GEMS

CEDAR VALLEY ROCK & MINERAL SOCIETY

CEDAR RAPIDS, IOWA

NOVEMBER 15, 1995 MEETING

Cedar Valley Rocks and Minerals Society will meet November 15, 1995, at 7:15 P.M., at the LIFE INVESTORS/AEGON BLDG, NE corner of Edgewood Road and 42nd St. N.E.

Jeff Groff, vice president and program chairman, reports we will have a Midwest Federation slide program, WASHINGTON COUNTY, MISSOURI BARITES.

I am looking forward to this program. Alice and Norman and Bud and I hunted in that area several times many years ago.

Hostesses will be Leslie and Robert Blin and Alberta and Bud Cray.

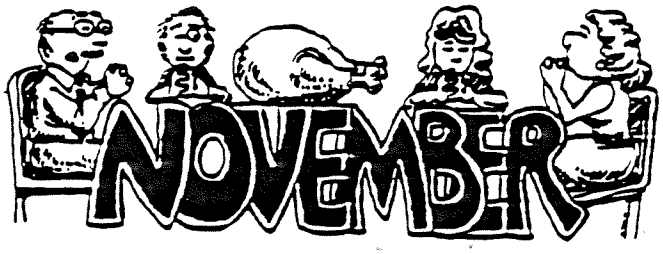
We have just one family, or one member signed up to be hostess for each month in 1996. Think about it. Could you help in January, February, March or April? Some have served 2 or 3 times. Some not at all. Maybe it is your turn.

December 16 will be the **Christmas Party and potluck.** We will eat at 5:30 pm. Bring a well-filled basket and your own table service. We will have more about this in the December bulletin. We will probably have some Christmas music and a sing-a-long. I'm sure the committee is busy making 'fun' plans.

We will be taking a collection of cash and food for 3 baskets for the needy. If you cannot make it to the December Christmas party, please bring your donations to the November meeting. A committee will get together and buy fresh meats, fruits, and other perishable foods (a few days before Christmas) to fill out the baskets. If you will bring canned goods, cereals, jello, pudding, etc., we can really bring Christmas cheer to those less fortunate.

DUES DUES DUES

Dues run from January 1 through Deecember 31. Give yourself a Christmas gift now and get your dues in to Dale Stout, treasurer. Dues are only $7.00.



HERE AND THERE WITH OUR MEMBERS AND FRIENDS

We welcome new members: Charles Jordan & Travis Jordan
5937 Sharon Lane N.W.
Cedar Rapids, IA 52405 Phone 396-9240 W.366-1871

Congratulations to Dennis DeFord and Robin Rachotzke. They were married September 16, 1995, in Cedar Rapids. They will make their home in Marion, IA.

Kudos to Larry DeSotel for sharing his knowledge of our rock hobby with our area's students and others. Larry reported that from Sept. 1994 to Sept. 1995 he has traveled 388 miles to speak to 1003 students and 53 adults. Since 1988 he has covered 2613 miles speaking to 6132 kids and 349 adults. He also invites all those people to our show. Way to go, Larry!

Congratulations to Floyd Dopler, editor of the SMOKE SIGNALS, bulletin of the Black Hawk Gem & Mineral Club. Floyd entered the Bulletin Editor's contest as a new editor. His bulletin came in in 5th place. That is very good.

Floyd also received honorable mention' for an original article which he submitted.

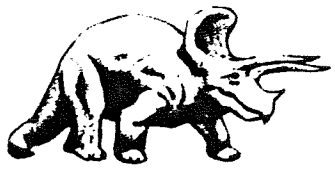
Floyd is also a member of our club.

Several of the editors, with whom we exchange bulletins, also placed in the top TEN.

Cedar Valley's bulletin placed 8th in the 'small' bulletin category. Our bulletin needs lots of help. I'm not sure that I have the time to give to it that is needed. I would like to think that there are members in the group who could write an article. This is YOUR bulletin. Let's make it a club bulletin.•

OCTOBER PROGRAM REVIEW

Sharon Sonnleitner presented a slide program on her family's trip to Baker, Montana, to search for dinosaurs with the North Dakota Paleo. Society. The dig took place July 28-30. She started with some beautiful scenery of Theodore Roosevelt National Park (ND). She told that the first thing they did at a find was collect the microfossils to preserve as much of the fossil record at the site as possible. Later we were shown the process of plaster-jacketing a bone before it is removed from the site. All casts were marked with an arrow indicating "north" so studies about the direction of the water flow could be done later in the lab. We also saw that the site was covered with 2-3 feet of dirt at the end of the dig so the remaining bones would be protected until further excavation took place. The dinosaurs they were working on were identified as triceratops. The program ended with a few slides of the wildlife in the Black Hills, where they ended their trip.

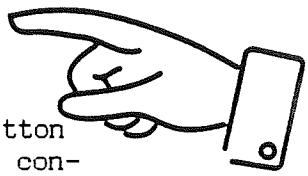


Triceratops

CORALVILLE FIELD TRIP

Bill Mitchell reported that 17 people attended the October 15th field trip to Conklin Quarry in Coralville. Several found millerite, the prize mineral there, and Marv Houg, of course, found trilobites. Those who went had a good day.

CEDAR VALLEY ROCKS & MINERALS SOCIETY - 1996 SHOW
MARCH 23 & 24, 1996
CELEBRATING IOWA'S SESQUICENTENNIAL
150 YEARS OF GEOLOGICAL CONTRIBUTIONS TO THE DEVELOPMENT OF IOWA



Put your "thinking cap" on and see what ideas you can come up with that will exemplify our theme. Coal mining, lead mining, the use of limestone for roads and agricultural purposes. The uses of various minerals in the manufacture of many everyday items. I am thinking about expanding on the pearl button exhibit which I had last year. As you probably know, Muscatine was considered the pearl button capital of the nation way back before plastic buttons were developed. Your ideas and suggestions are needed.

Alberta Cray, Cedar Valley, Ed

HELP HELP HELP

APACHE TEARS - One of our members has been tumbling apache tears, however he is not having the success he would like, and feels there must be a secret to tumbling apache tears. If you know the SECRET, or if you have been happy with your finished stones, please let us hear from you. We will be happy to publish your methods in the bulletin. Thanks for your help.

Alberta Cray, Cedar Valley, Ed.

BOOKS BOOKS BOOKS

Sometime, somewhere, I have heard someone in the club saying they would like to have a copy of, **EASTERN IOWA PREHISTORY** by Duane Anderson, (1981) and **DISCOVERING HISTORIC IOWA** by LeRoy G. Pratt (1975). Both books are out of print. I have recently acquired a copy of each book. Call me if you are interested. If you travel much around Iowa, I think you will find DISCOVERING HISTORIC IOWA especially interesting. If you are interested, give me a call: Alberta Cray 362-5530.

ATTENTION - PACK RATS

The Linn County Historical Museum is looking for old Linn County newspapers - Cedar Rapids, Marion, Springville, etc. Also they need cotton gloves to use in handling artifacts (need not be new), and cotton sheets to use in covering some of the artifacts. You may contact me at 362-5530 or take them to the museum at 101 - 8th Ave. S.E., Cedar Rapids.

Alberta Cray

If the earth were only a few feet in diameter, floating a few feet above a field somewhere, people would come from everywhere to marvel at it. People would walk around it, marveling at its big pools of water, its little pools and the water flowing between the pools. People would marvel at the bumps on it, and the holes in it, and they would marvel at the very thin layer of gas surrounding it and the water suspended in the gas. The people would marvel at all the creatures walking around the surface of the ball, and at the creatures in the water. The people would declare it precious because it was the only one, and they would protect it so that it would not be hurt. The ball would be the greatest wonder known, and people would come to behold it, to be healed, to gain knowledge, to know beauty and to wonder how it could be. People would love it, and defend it, with their lives because they would somehow know that their lives, their own roundness, could be nothing without it. If the Earth were only a few feet in diameter.

Joan Lindenfelter in Lapidary Chatter, 6/94

via The Rockpile, 9/95

DES MOINES LAPIDARY SOCIETY - SHOW

The Des Moines show was held October 21, 1995, at the Des Moines Botanical Center. George Vacik, Bud and I drove down on Saturday morning. Skinny & Helen Lutz, Julie Sova and a friend were there also. It was good to see Susan Cain who is a member of the Des Moines Club and also a member of our club. Hadn't seen her for sometime.

It was a very nice show, and a great place to have it. There were some very special dealers which we had not seen before, and some that are old friends - Doug DeRosear, L and R , Hugh and Bev Carroll, Milt & Charlotte Charno, and Westside Agate. There were 2 or 3 of the dealers which we each felt would be a nice addition to our show. There were some very nice displays. They did not have a pebble pit for the children, however they had a table with a pile of tumbled river stones, some pipe cleaners, 2 or 3 sizes of movable eyes and glue. The children could let their imagination run wild and design whatever.

We enjoyed looking at the wonderful trees and plants in the Botanical Center. A very good show, a great trip and good friends, too!

Alberta Cray

BLACKHAWK GEM & MINERAL CLUB - SHOW

We had such a good time at the Des Moines show - the following weekend, October 28, we headed off to Milan, Illinois to the Blackhawk show. Present at the show from the Cedar Valley Club, were Dick & Millie Smouse, Jeannie & Milo Cerveny, Allyn Adams, George Vacik, Larry DeSotel, Gladys Wanek, A. J. Johnson and daughter, Tom Walsh. Julie Sova, Bud & Alberta Cray. We saw Bill Mitchell going in as we were leaving. Jim & Myrna Shetterly were dealers at the show. There were several dealers that were unfamiliar to us. Allyn Adams and Tom Walsh were among the exhibitors at the show. The show was held in a very nice, well lighted building with lots of space.

Oh, those wonderful round tables. We saw Dick and Millie having lunch. We decided to join them for a cup of coffee. Here comes Larry so we move closer together. Jeannie and Milo join us. so we get a little cozier. Then came Gladys Wanek and one of A. J.'s daughters. It's amazing how many people you can get a round one of those round tables. Then we started reminiscing. Larry recalling the good old days with Clary and Doris Frandsen and playing cards at the swaps - (cards? Crap on your neighbor!!) Also T. J. and the good times we had back then. I laughed and laughed. Don't think I had laughed that much in a year.

Larry, A.J and daughter, Bill Mithell and Gladys Wanek had been on the club field trip at Buffalo. The weather was rainy and chilly, the field trippers had obviously encountered some mud. It was a perfect day for a show.

Wouldn't it be nice if some of those on the field trip would write something for the bulletin. I hear there were some pretty spectacular finds at Sheffler's during the last month (not scheduled field trips) - just 2 or 3 members who got together and went down on a couple different occasions.

(I understand the Blackhawk Club is thinking about making a bid for the 1997 Midwest Federation show. That will surely be a large undertaking for a small club.)

Speaking of field trips. It won't be long until time for the indoor winter field trips. Has anyone got a collection they would like to show off and host an Open House on a Saturday or Sunday afternoon? Of course there are some nearby College or University Museum exhibits which could also be considered. How about it? Would you like to host an Open House in Jan., Feb., or Mar.?

Alberta Cray

ODDITIES OF OBSIDIAN

Obsidian is an extrusive igneous rock formed when the magma of an erupting volcano reaches the earth's surface and cools rapidly. It is an extrusive rock because it was pushed out onto the surface. The cooling of the extrusive rock occurs so rapidly that the magma doesn't form minerals at all but a volcanic glass.

It derives its name, according to Pliny, an ancient Roman naturalist, from a fellow named Obsious, who found it in Ethiopia. Originally it was named "obsianus," but the spelling changed over the centuries to its modern form.

Obsidian occurs in many colors, black being the most common. It can also be red, brown, or even green. It can contain inclusions of magnetite, ilmenite, iron oxide, potassium oxide, sodium oxide, lime and magnesium. It is composed of 66-77% silica with about 13-18% alumina. Magnetite most likely give obsidian its black color, and oxidized magnetite or hematite the reds and browns.

With slow cooling, silica crystals called Cristobalite form giving the "snowflake" obsidian or "flowering" obsidian. Iridescence reflected from many minute inclusions arranged in layers is known as "rainbow obsidian." Another kind with gold inclusions are grayish silver in color, it's called "silver sheen obsidian."

Obsidian is interesting in many ways; but mainly for all practical purposes, it is a true glass. It has a hardness of 5-5.5 on the MOHS hardness scale. It represents a quickly congealed mass of molten rock, for if it had time to cool slowly it would have crystallized into a rock similar to granite or rhyolite. It shows no trace of crystalline structure nor possesses any established composition and must be considered a rock instead of a mineral. It is amorphous, having no regular internal arrangement of atoms as in crystals. The word *amorphous* is taken from the Greek and means "no form," because there is no pattern to amorphous materials. The atoms are jumbled together in small groups like particles in a pile of sand. It is extremely brittle and breaks easily with shiny, black conchoidal fractures - a feature so perfectly developed that it is identifiable easily in the field. It is translucent and will not soften when heated to a bright red.

Obsidian is found throughout the western United States, mostly in Alaska, British Columbia, Colorado, Utah, News Mexico, Arizona, Wyoming, Oregon, Nevada, California, and is widespread throughout Mexico.

American Indians valued obsidian highly. Its perfect texture and easy fracture made it a prize possession for chipping into arrowheads and large ceremonial spearpoints.

The Aztecs called obsidian "izlti," "teotetl," or "divine stone," because of its usefulness in carvings and ceremonial blades. Even one of their gods was named "Itzoppzlotl," meaning "obsidian butterfly."

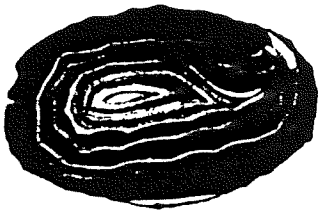
Obsidian is also used to make attractive jewelry, as cabochons or faceted. Thin slabs can be cut with a common glass cutter. Due to its extreme heat sensitivity, great care must be taken in working obsidian. Industries use obsidian as a raw material to make rock wool. Surgeons have even used thinly chipped obsidian knives in surgery because of the fine, exact cut an obsidian knife makes.

REFERENCES: *Rocks & How They are Formed* by Herbert S. Zim; *Simon & Schuster's Guide to Rocks & Minerals* edited by Martin Prinz, George Harlow, and Joseph Peters, *Gemstones of North America* and *Gem Cutting* by John Sinkankas.

-Dolores E. Rose, member of Grand Island Earth Science Soc., in their 1/95 issue of G.I. Nugget via The Pica Pick, 3/95.

LAKE SUPERIOR AGATES

by Steven Wade Veatch



There is a very special and unique gemstone known as the Lake Superior agate or "laker." The Lake Superior agate is a gemstone of great beauty, mystery and lore. It is the oldest of all agates as its formation dates back over 1 billion years. The Lake Superior agate is also unique in that it forms in an area rich in iron which causes a number of interesting colors in the agate. These agates are also unusual because the glaciers of the Great Ice Age spread them over a large area ranging from Minnesota, Wisconsin, Iowa, the upper peninsula of Michigan, the south eastern edge of Nebraska and the northwestern corner of Missouri.

The first description of Lake Superior agates was made by Henry Rowe Schoolcraft, a geologist and explorer, in 1820 after an expedition into the Lake Superior region. In 1969 lakers were designated the official Minnesota gemstone. Many new Lake Superior agates were recently washed out and exposed by the terrible floods of the summer of 1993 in the Midwest area.

The formation of Lake Superior agates began in the late Precambrian Era, 1.2 billion years ago. Tensional forces created a large crack that opened in the earth's crust. This rifting event was followed by faulting, earthquakes and an upwelling of magma that reached the surface and poured out as lava. The lava flows accumulated to over four miles in thickness and spread out over thousands of square miles. Lava flows cooled to form a new rock and the tremendous weight of the flows pressed down on the crust to form a basin now occupied by Lake Superior. This rifting process stopped before the Americas became two continents.

As each lava flow poured out onto the surface of the earth it began to cool and soldify while giving off steam and carbon dioxide. Gas filled cavities in the form of bubbles, or "vesicles," rose to the surface allowing the gases to escape. The vesicles grew in size and number as they reached the surface in response to decreasing pressure of the surrounding lava. Many of the vesicles did not make it to the top and became trapped when the flow hardened into rock. During final cooling and solidification of the lava flow, contraction took place as the lava turned into rock. A network of fractures and vesicles developed throughout the entire flow.

Water from rain and melting snow percolated down and mixed with hot magnetic waters below the surface. These hot waters leached minerals from surrounding rocks and then carried dissolved silica and other minerals throughout the fracture system into the vesicles of the earlier lava flows. As the silica-rich solutions flowed through the fractures and vesicles they precipitated a thin layer or band of chalcedony and lined the walls of the vesicle. Subsequently the solutions would fill and then drain the vesicle leaving band after band of chalcedony. This process was caused by pulses of solutions going through the entire lava structure in a circular movement. These pulses would cause the solutions to enter and then leave the vesicles. This process would continue until the vesicle was completely filled (amygdules).

Chalcedony is the basic material of agates and is one of the many forms of the mineral quartz. It does differ from quartz in that it has a different refractive index and specific gravity. These differences are caused by microscopic spaces filled with water and air between needle-like crystals of chalcedony. Crystalline quartz, however, has a more orderly internal arrangement of molecules with a structure so tight that air or water-filled spaces cannot exist.

The banding patterns formed in the agates are sometimes similar to the enclosing walls of an old fort and are known as fortification agates. If silica-rich solutions stop before an agate has completely filled a vesicle, a geode agate is formed. Sometimes crystals will be present in the void. A more rare feature of Lake Superior agates are the eye agates. They are formed as solutions enter an empty space with the consistency of a fluid gelatin. When the solution level dropped, the space is drained of most of the gelatinous fluid. The gel that remained beaded up around a droplet then crystallized into solid chalcedony "eyes."

The point through which the solutions enter is known as the fill hole. At this point the banding pinches in and becomes tighter near the fill hole and then radiates away from that point. Clear quartz will form a belly button and mark the hole during the final phase of silica deposition.

The bands are variable in thickness. The velocity of the solutions entering and leaving the vesicle is fastest at the fill hole. Pinched-off bands within the vesicle were probably caused by eddy currents similar to those in rivers. Another feature of these is the occurrence of white or transparent quartz. Although this is very common it is not highly prized by agate hunters. Following the deposition of the bands of chalcedony, the remaining void space in the vesicle was flooded by silica-rich solutions of quartz.

Sometimes there are pits or pockmarks on the exterior of agates. Often only one side or area will have pockmarks. Magnification shows smaller pits within the pits. The process that causes these unusual pockmarks is not completely understood.

The final episode of agate formation occurred during the Great Ice Age. At least four (Nebraskan, Kansan, Illinoian and Wisconsin) and probably many more distinct glaciations occurred during this time. During the Wisconsin glaciation all of Canada and most of the northern half of the United States was covered with ice that was more than three miles thick at its center and was known as the Laurentide ice sheet.

One of the protruding lobes of this ice sheet, the mile thick Superior lobe, advanced along the Lake Superior basin some 75,000 years ago. The agate filled lava flows and the eroded-out agates on the surface were in the direct path of the advancing lobe of the glacier. The moving glacier absorbed the agates on the surface of the ground and scoured out many agates from the deeper parts of lava flows and transported them. As global climate changed, a warming trend started the retreat of the Superior lobe with melting glacial outwash depositing lakers. During glacial transport the agates were under intense pressure from the weight of the ice and were subjected to abrasion and collision as well as being subjected to repeated freeze-thaw cycles. These conditions caused a "peeled" texture in some of the agates. The peeled texture develops along weak banding planes that fell off during glacial transport. Friction cracks can be seen on many Lake Superior agates. These cracks are small crescent-shaped fracture (conchoidal fractures) caused by the high pressure of glacial ice or collisions with other rocks when the agates were being moved by the glacial ice.

Today deposits of lakers are a result of their distribution by the action of glaciers. Construction sites and active gravel pits are good places to look for them. Along the shores of Lake Superior after a storm is also a good place to look, waves tend to wash them on to the beach. Rivers running through Minnesota and Wisconsin, especially along the north shore of Lake Superior, are a good place to find them. Ancient gravel bank deposits, formed when the Mississippi River was once bigger, are also a good place to collect.

The story behind these agates is indeed interesting, and these unusual specimens will make a nice addition to any rock and mineral collection.

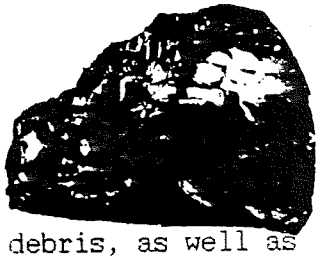
via The PEBBLE PUSHER 9/95

WHAT IS: C O A L ? or butter it's not!

by Wolfgang Vogt
NJPS Paleontograph, issue 1/92

Coal is commonly referred to as a fossil fuel. It is so called because it actually is a carbon-rich, combustible material that originated from ancient deposits of plant material.

Coal begins to form when accumulated plant matter is covered by water. This process cuts off oxygen and therefore prevents the matter from decaying. The relative carbon content of the plants increases while the oxygen decreases. As plants die and settle to the bottom not only water, but also additional dying vegetation prevents oxidative decay. The carbon atoms in the dead plants cannot combine with the oxygen in the air and become lost to the atmosphere as gaseous carbon dioxide. In this oxygen poor environment, degradation is caused mainly by the action of anaerobic bacteria which extract oxygen from the plant tissue and leave behind the carbon. At this stage of coal formation the vegetal matter becomes peat and contains about 60% carbon. Plant remains are still easily recognizable. Peat is actually "pre-coal" and is used as a fuel in many European countries.



Extensive coal deposits are formed from swamps and bogs. Warm climates favor the initiation of the coal-forming processes since these are known to enhance a lush growth of vegetation.

The pressure from additional deposits of more and more plant debris, as well as sand and silt, squeeze out the water, increase the temperature which enhances the freeing of organic gases, and leads to a further increase in the proportion of carbon. As this process is repeated and given enough time, peat is eventually, after passing through a series of stages, transformed into coal. This compaction and alteration of peat may result in the forming of lignite and brown coal with a carbon content of about 73%. At this stage the plant material is only partially recognizable.

The next stage in the coal-forming process is the conversion of the lignite and brown coal to bituminous coal, which is also known as soft coal. This material contains about 83% carbon and is much denser than lignite. Some bituminous coals have the ability to agglomerate and form coke. Several varieties of bituminous coal do not have agglomerating properties. One of the latter coals is cannel. The materials from which these coals are formed are responsible for their differences. Cannel coal, for example, originates predominantly from plant spores and pollen. In fact, plant remains are sometimes recognizable as imprints of trace fossils in these deposits.

Movement of the earth's crust and subsequent mountain building or, in some instance, volcanic action aids to increase pressure and heat on the already accumulated overburden.

Further compression drives out most of the remaining hydrogen, nitrogen, and oxygen, producing the most intensely compacted coal of all, anthracite, which contains about 94% carbon. Plant remains are not recognizable at this stage. The specimens we usually collect at St. Clair, Pennsylvania are found not in the anthracite, but in the coal shale lying above and below the coal bed. Coal shale consists of sand and silt which have become mixed in with the plant remains rather than having simply buried them.

Sulphur is present in coal at all stages and, when burned, forms sulfur dioxide and trioxide. These gaseous oxides combine with atmospheric moisture forming sulfuric acid, the major ingredient of acid rain.

Coal has an extremely complex structure. It is not, as one might infer from the percentages simply a mixture of "solution: of carbon and hydrogen with a touch of oxygen thrown in. Instead, as can be seen from the sketch of a partial molecule of coal, it is a network of intricately linked rings and, occasionally, chains. In coal the carbons, hydrogens, and other atoms are chemically bonded.

Interestingly the source of coal, i.e., plant material, consists of cellulose. Cellulose is an interlinked network of glucose (sugar) units which also are ringed structures.

Continued pressure, heat, and time can metamorphose anthracite into graphite which is 100% carbon, but does not burn well.

The structure of graphite is shown on this page. It too is a ringed system similar to that of its precursors.

The development of coal deposits depends on a luxurious growth of vegetation and a relatively rapid burial by sediments to prevent oxidative decomposition. The most important coal-forming periods in the earth's history were the Pennsylvanian, Permian, Cretaceous, and Tertiary.

Exactly when coal found it first uses is not really known. The ancient Hebrews and Greeks knew of it, but they did not know what to do with it. It is said that the Britons were the first to use it as a household fuel as early as the year 852, and some historians believe that the American Indians used it for heat long before the white man discovered America. Of course, coal was much harder to find and to ignite than wood and so, in the early days of civilization, it was not a much sought after source of fuel. However, in the course of time, as man found more and more uses for it he also found ways to mine it.

The first mining of coal in America was begun in 1750 in Virginia. The abundance of wood available for fuel delayed large scale mining of coal in this country until around 1820. For more than a hundred years thereafter, coal was the major source of energy everywhere. Only when people became acutely aware of the health hazards associated both with coal's mining and its use did alternative methods of producing heat become more attractive.

Coal is our most abundant energy resource (not counting the sun, which we have not yet fully managed to harness.) It is found on all continents and in most countries. It is generally believed that all of the major coal deposits of the world have been located. It is also estimated that beds thick enough and relatively close to the surface to be mined profitably may yield over 8 trillion tons of coal! Such easily accessible deposits may well supply the world's need for coal for the next two hundred years, provided the economic situation and the rate of consumption remain relatively unchanged. As ways are found to recover coal profitably from greater depths or from remote areas, the availability of usable coal can be extended by several hundred years.

Most (75%) of the coal is burned to produce electricity. Only 1% is used to heat residential and commercial buildings. The remaining coal is used in the manufacture of a variety of products such as dyes, insecticides, fungicides, plastics, water repellants, roofing material, creosote, drugs, vitamins, cosmetics, and fibers. During the Second World War the Germans even produced margarine from coal. How did it taste? Believe me, butter it was not!

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LAPIDARY TIPS

from BILL HORTON, Lapidary Chair

When roughing a gemstone girdle, fold a double thickness of paper towel, and using two wood clothes pins, place the toweling as a wick to eliminate the water from splashing all over your machine and work table. Hook the wick onto the splash pan.

When the lapidary saw needs to have the tub cleaned, filter all of the oil through about four or five big grocery bags. The oil will be clean and re-usable. The oil never wears out. The oil is also very expensive.

Each time you clean the lapidary saw, reverse the blade. This will give longer life to the blade as you wear each side evenly.

For a better cabochon, lap the back of the cab, and finish the back first. This will give you a very flat back. It's very hard to achieve a good flat using the wheels.

The best way to get all of the material from a rock, is to make one cut in the saw. Then glue the remaining portion of the rock to a piece of wood (2x4, etc) with Elmer's glue. Place the wood in the saw vise and cut the rest of the rock. Soak the last piece from the wood by placing the wood/rock in water (plastic milk jug with the side cut away).

When faceting, and preforming the girdle of the gemstone, do the roughing at 92 degrees, prepolish and polish at 90 degrees. This will eliminate unnecessary time and diamond compounds as the polished girdle will be lesser in area.

When constructing silverwork, the silver has a tendency to harden. To anneal your work, heat the assembly to a reddish (straw) color and quickly immerse in the pickle. Warm pickle works better than cold. Completely cover your work with flux, with each step of construction. This will help reduce fire-scale. Tobacco smoke will cause silver to tarnish. Keep your silver in zip lock bags to help keep it clean and untarnished. Polish your hammers as you would any surface. This eliminates transferring scratches from the hammer faces. This applies to all surfaces used in construction.

via MWF NEWSLETTER 10/95

INDIAN CREEK NATURE CENTER PROGRAMS

(These are just a few of the programs which I thought you might find of special interest. There are lots more.)

Sunday, November 12, 2-3:30 PM - M/$2; NM/$3. TO YELLOWSTONE AND BACK, Enjoy a visit to our oldest National park as told by ICNC trekkers.

Friday, November 24, 2-3:30 PM, Admission ?? THANKSGIVING FOR THE BIRDS. Come and seek the unroasted wild turkeys, take a walk, and make simple feeders for smaller birds to enjoy. Please bring an empty, clean 2 liter bottle.

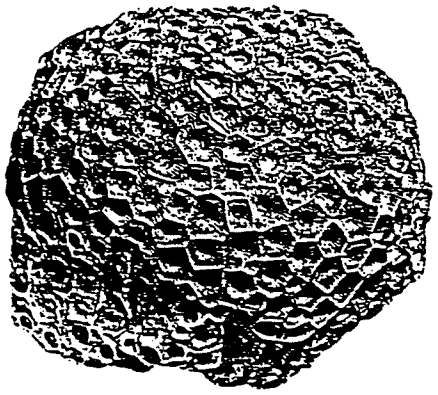
Tuesday, November 28, 9:30 AM, Fee: $3.50 Active Adults, A guided Tour. Enjoy a Guided walking tour of the National Czech and Slovak Museum and Library. Lunch is optional. Meet at the Czech Museum parking lot.

Saturday, December 2, 9 AM-1PM Nature's Noel Join the Guild for their annual holiday sale. Yule logs, holiday plants, baked goods, freezer foods, crafts, and more.

PETOSKEY STONE - The Rock That Talks

Who said rocks do not talk? For ex, a Petoskey Stone, through legend and facts, can tell you much about the history and geology of the state of Michigan. Legend and history are often intertwined. Such is the case of the Petoskey stone.

The Petoskey stone is a fossil. It ismade of colonial coral that lived in the shallow seas that once covered the Midwest. The Petoskey Stone family of corals are found in Iowa, Indiana, Illinois, Ohio, New York, Canada, Germany, England and Asia.



Petoskey Stones are primarily calcite. However, quartz, pyrite and other minerals could be present. Most will polish nicely to show off the coral design.

These corals are hard to tell apart by casual inspection. In order to tell these corals apart you must examine them very closely.

One genus of the Petoskey coral, identified as Hexagonaria percarinata, is unique to the state of Michigan. The specific fossil coral is found only in the rock strata known as the Gravel Point Formation. This formation is part of a larger group of rocks deposited during the Devonian Age called the Traverse Group. The outcrops of these rocks are found only in the Little Traverse Bay area near the town of Petoskey.

The Gravel Point formation is only part of the Devonian geologic history found in Michigan. Devonian age rocks form the bedrock for much of the northern Southern Peninsula. Devonian rocks outcrop at less than three percent of the surface of the United States. Michigan's average is much higher. Much of what is known about the Devonian Age is interpreted from the fossil record.

The name Petoskey Stone likely came about because the stones were found and sold as souvenirs of the Petoskey area. The name "petoskey" appears to have originated late in the 18th century. Its roots stem from an Ottawa Indian legend.

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According to that legend, a descendant of French nobility named Antoine Carre visited what is now the Petoskey area and became a fur trader with the John Jacob Astor Fur company, In time, Carre met and married an Ottawa Indian princess. Eventually he was adopted by the tribe and later became Chief. A son was born to the Chief and was named Pe-tos-e-gay, "rising sun". The son became a rich fur trader and started a village on the land he owned. It was later called Petoskey.

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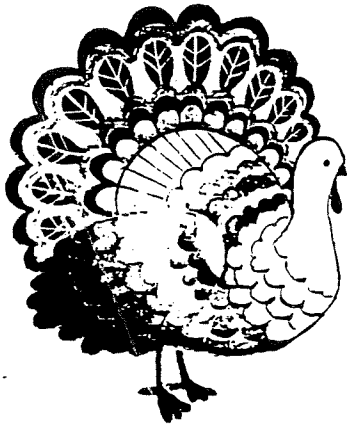
ALBERTA CRAY, EDITOR
CEDAR VALLEY GEMS
1125 J. AVE. N.W.
CEDAR RAPIDS, IA 52405



HAPPY THANKSGIVING