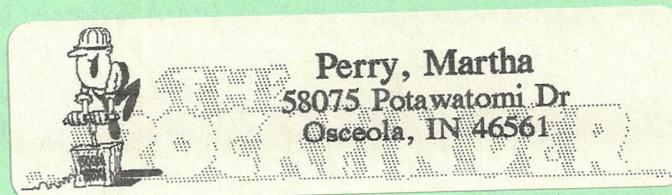
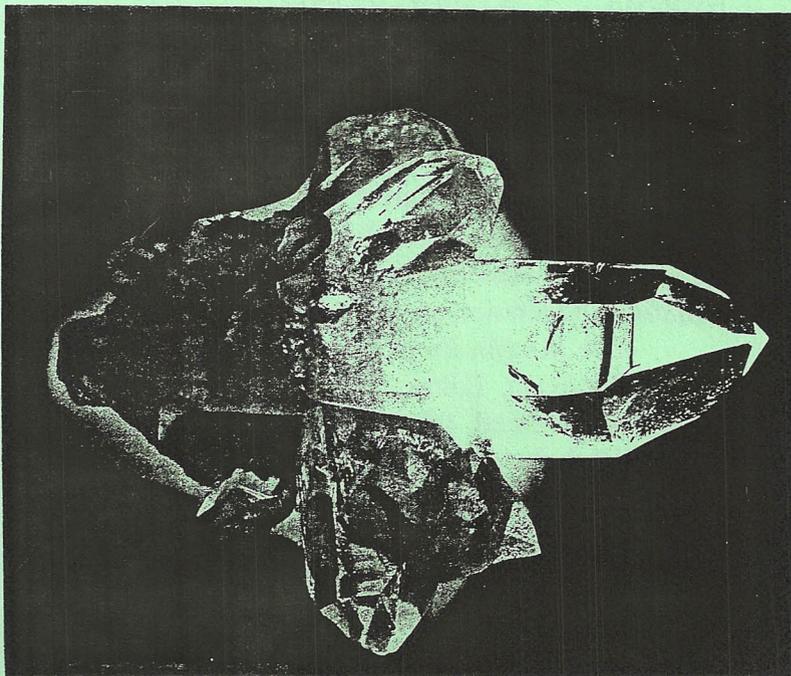


THE ROCKFINDER

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



THE ROCKFINDER

JANUARY, 2002

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
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Please indicate areas of special interest.

General Geology _____ Beads _____
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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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With my signature I hereby release the Michiana Gem and Mineral Society, Inc., and its individual members and the owners of any premises upon which I enter under permit granted to the society, absolutely free of any liability whatsoever, to my person or my property, and further I will respect the equipment and property of the aforesaid owners.

Signed _____ Date _____

THE ROCKFINDER

Newsletter of the Michiana Gem & Mineral Society

Volume 42, Number 1

January, 2002

Meeting:

Sunday, January 27
Doors open at 1:30 p.m.
Meeting starts at 2:00 p.m.
Guests are always welcome.

Place:

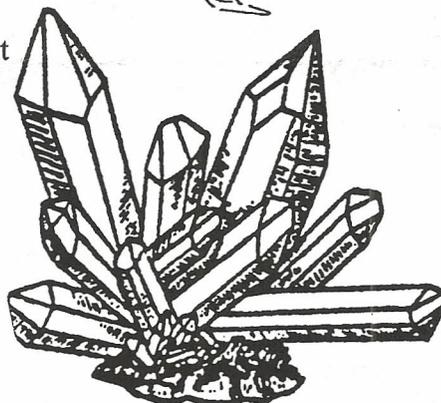
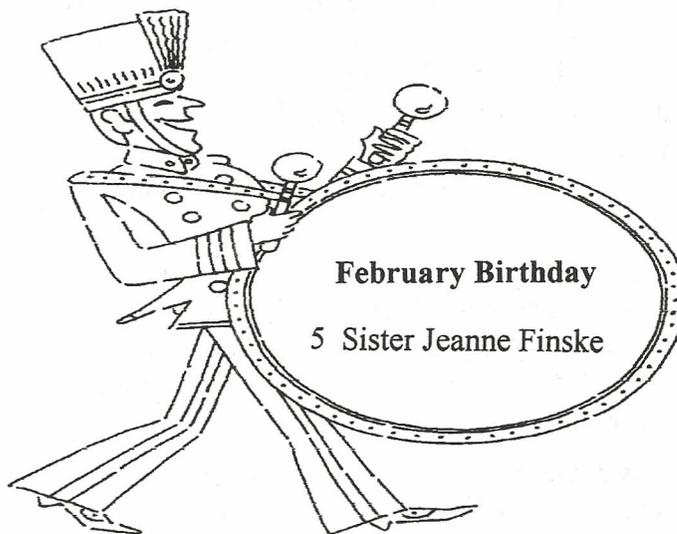
Our Redeemer Lutheran Church
805 So. 29th St. (19th & Wall)
South Bend, IN

Program:

Bring your Arkansas quartz crystals
and other nice-looking crystals.
There will be a short video on Hot
Springs quartz crystals.

Refreshments:

Marty Perry
Heidi Santarelli



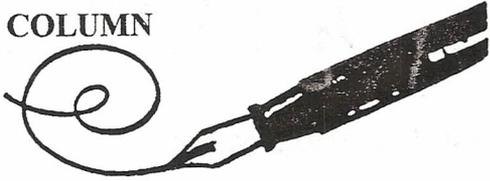
CLUB DUES ARE PAST DUE!

All members should pay dues by the 1st of January each year. Instructions are on the inside cover of this issue of the *Rockfinder*. Send your dues to Treasurer Bob Heinek.

UP AND COMING

- Feb. 9-10: South Central Federation show, Tyler, TX.
- Feb. 10: South Suburban (Chicago) Earth Science Club annual silent auction.
- Mar. 8-10: Eastern Indiana Gem & Geological Society show, Wayne County Fairgrounds, Richmond, IN.
- Mar. 15-17: Michigan Gem & Mineral Society show, Masonic Lodge, MI Center, MI.
- Mar. 16-17: Stark County Gem & Mineral Club show, Canton, OH.
- Mar. 16-17: Cedar Valley Rocks & Minerals Society show, Teamsters Union Hall, Cedar Rapids, IA.
- Mar. 23: Metro Rock Swap, Dearborn club, Democratic Club of Taylor.
- Mar. 23-24: Des Plaines Valley club show, Des Plaines Leisure Center, Des Plaines, IL.
- Apr. 6-7: Central Ohio Mineral, Fossil, Gem & Jewelry Show, Veterans Memorial, Columbus, OH.
- Apr. 19-21: Rocky Mountain Federation show, Enid, OK.
- Apr. 20-21: Greater Cincinnati Gem, Mineral & Fossil Show, Cincinnati Convention Ctr.
- Apr. 27-28: Summit Lapidary Club and Akron Mineral Society show, Emidio Expo Center, Cuyahoga Falls, OH.
- Apr. 27-28: Eastern Federation show, Franklin, NJ.

DON'S COLUMN



Well, here it is another year gone by and I believe we have had a good 2001. The club has some new and active members and we have lost very few. I wish to thank everyone who came to our end-of-the-year Christmas party. We had a great turnout and it was nice to see a lot of familiar faces and so many smiles. The potluck really turned out well.

I got a phone call from Leo and Alma Heynssens and all is well--they are back in Arizona. Leo had his gall bladder out (had stones) and is doing fine. Alma said he is getting his lapidary shop all set up.

We will have a lot to do this year, so if you have some helpful ideas please pass them on. We need to grow. Thanks again for the support you all gave last year and I hope to do better this year.

President Don Church

ITEMS FOR SALE

David Peltz needs to make room to set up his lapidary equipment, so he has decided to sell some rocks! He has lots of petrified wood, thunder-eggs, geodes, Petoskey stones, agate rough, etc. Also some sets of weights to use on balance scales: grams, ounces, grains, etc.--several sets. He'd also like to get several hundred telephones and various electronic stuff out of the way. Give David a call (616-683-4088) if you're interested.



THE GREATEST ROCKHOUND

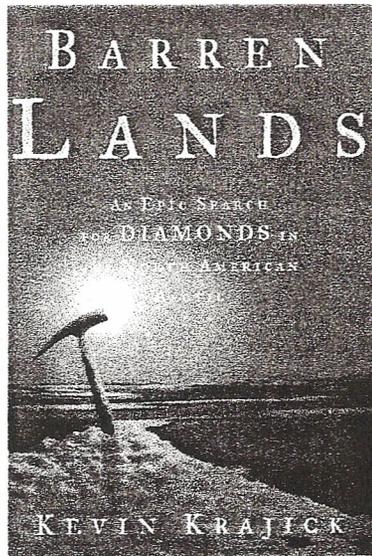
By Samuel Shapiro

In our time, alas, the most famous Muslim is a psychotic murderer named Osama bin Laden, but many centuries ago Islamic rulers in Cordoba, Istanbul and Agra ruled over empires that were rich, powerful, tolerant and intellectually advanced. The mathematicians, historians, philosophers, poets, architects, artisans and astronomers whom they gathered at their courts created works of lasting importance and beauty. For us, the most interesting is Shah Jehan, Mogul Emperor of North India from 1628 to 1666, who ordered the creation of the Peacock Throne and the Taj Mahal, and was the greatest rockhound in history.

The Takht-i-Taus, or Peacock Throne, constructed for the shah's coronation, cost a million rupees and took seven years to complete. It had a platform on which 12 emerald-studded pillars were placed, the capitals of each composed of two jeweled peacocks standing on either side of a diamond-studded tree. The pillars supported a canopy six by four feet, covered with pearls, emeralds, sapphires and gold. To mount the throne, one climbed a staircase of solid silver. This dazzling creation hardly strained the shah's collection of precious metals and gems. The treasury at Agra listed the following assets:

"750 pounds of pearls, 275 pounds of emeralds, 5,000 gems from Cathay, corals, topazes...in almost infinite numbers...1,000 gold-studded saddles with jewels, two golden thrones, three silver thrones...100,000 silver plates, 50,000 pounds of gold plate...tubs of uncut diamonds, gold images of elephants" (and on and on). The treasure house at Lahore contained more than three times as much royal booty.

The Peacock Throne was carried off in 1739 by the Afghan bandit-king Nadir Shah, and broken up, but the Taj Mahal, the most beautiful building in the world, built as a mausoleum for Shah Jehan's beloved wife Mumtazahal, still stand outside Agra as a memorial to a great love, built on the orders of the greatest rockhound in history.



BOOK REVIEW

Barren Lands: An Epic Search for Diamonds in the North American Arctic, by Kevin Krajick (Henry Holt, 2001), 442 pages.

By Tom Noe

Well, I *like* this book. It's got guts. It's also got swashbuckling prospectors, multinational intrigue, lots of Arctic scenery and even some hard-nosed geology. You may have read about the huge diamond strikes in Canada in the past few years, with Gold Rush-type stories of claim markers being thrown down from helicopters, kimberlite pipes located under lakes like long-lost treasures, suits and countersuits filed by stockholders and former stockholders and nonstockholders. This book brings together all the stories of the major players.

First, though, Krajick takes us through a history of the diamonds that have been found in North America and the centuries-old search for more of them. Most were brought down by the glaciers, but from where? Where was the mother lode?

He offers the reader a thorough grounding in the chemistry and geology of kimberlites (the pipes which shoot up through the earth's crust bearing diamonds inside them), and this is really necessary to understand the problems associated with finding diamonds. He also takes you through the blow-by-blow (and sometimes it actually came to blows) stories of the solitary shoestring prospectors who beat the odds, found the pipes, and in the process beat De Beers to the punch.

I've known some Canadian prospectors who

are just like the ones in this book, and they are fun to read about—like a bunch of yahoos out of the Wild West. The horses have been replaced by float planes, but the men are still basically like something you read about in Mark Twain. The book's history part could have been a little shorter, if you ask me, but the rest of the book is fast-paced and outrageous. I got a copy at the Notre Dame library. I don't know if South Bend has it or not, but it would be worth requesting or purchasing.

SMITHSONIAN COLLECTION OF GEMSTONES

Not only does the Smithsonian's Hall of Gems hold the Hope Diamond, but one of the most dramatic and most admired gemstones in the hall is the Logan Sapphire, one of the largest blue sapphire gems known. The stone weighs 423 carats and is the size of a goose egg. The sapphire was mined in Sri Lanka, is set amid 20 diamonds totaling 16 carats and was donated in 1960 by Mrs. J.A. Logan.

Another superb sapphire is the Star of Asia, 330 carats, acquired in 1961 from a California gem and mineral dealer. He accepted in exchange two lots of small faceted diamonds that had been seized by U.S. Customs. The gem is said to have belonged to the Maharajah of Jodhpur. It is one of the biggest blue star sapphires known.

In 1884 Professor F.W. Clarke established the Smithsonian gem collection, when he prepared an exhibit of precious stones from America as a part of the Smithsonian Institution's display at the New Orleans Exposition. There have been many new gems for the collection in the years since that event. The collection has expanded from American to worldwide gems, and the range and species and varieties is enormous. Prof. Clarke established the general idea in the beginning that not just a few but many kinds of gems are worthy of note, such as the Rosser Reeves Star Ruby, 138.7 carats, called the finest of its kind.

The best-known of the collection is the deep blue Hope Diamond, 44.5 carats. It was probably cut from the stolen French Blue of Louis XIV, which came from India. The gem was donated by Harry Winston in 1958. Not only is the Hope the largest faceted blue diamond in the world, it has the longest and most vivid history of any major diamond. It is

felt that the diamond was cut from a diamond already cut in India which weighed 112 carats.

A lesser-known blue diamond rests within the Smithsonian, known as the Eugenie Blue, 31 carats, donated by Mrs. Marjorie Merriweather Post in 1964.

The Hooker Emerald, 75 carats, is surrounded by 109 round diamonds, a total of 10 carats, and 20 baguettes totaling 3 carats. It is said that this magnificent emerald once adorned the belt buckle of Sultan Abdul-Hamid II, who reigned in Turkey around 1900.

The Smithsonian sports one of the largest known specimens of zoisite, in the bright blue color now known as tanzanite. The flawless gem is 122.7 carats. They also have a very rare tanzanite cat's-eye weighing 18.2 carats.

One of the largest gemstones was presented to the Smithsonian by the American Federation of Mineralogical Societies. It is 22,892.5 carats, a Brazilian topaz known as the American Golden Topaz. The collection also has the largest known fine quality peridot, 310 carats, from Zeibrist, Egypt.

Prospectors Pickings (Oct., 1998)

FAITH IN THE POSTAL SERVICE

Sparkling in its bullet-proof glass case at the National Museum of Natural History is a red diamond. It is one of only five known red diamonds in the world. The round, brilliant-cut 5.08 carat diamond was a gift to the nation from the late Boston gem dealer, Sydney DeYoung. John S. White, museum curator, was shocked when the precious diamond arrived on his desk in a small cardboard box, shipped via registered mail, uninsured, from DeYoung's estate in Boston. The box arrived with a yellow invoice describing the contents simply as "one red diamond," and a postage cost of \$11.58. The diamond is estimated to be worth several million dollars.

The Post Rock (No date)

TINY CRUSTACEAN MAY PUSH BACK TIME SCALE FOR EMERGENCE OF COMPLEX ORGANISMS

The discovery of a tiny 511-million-year-old crustacean is causing a stir among paleontologists. The exquisitely preserved fossil raises questions about the theory that a sudden explosion of fossils in the early Cambrian signals a "rapid evolution of the main animal groups that we see today over a relatively short period."

Although less than 1/50 of an inch long, the minuscule animal predates previously discovered crustaceans by millions of years. It lived 50 million years before the first known fish and 280 million years before the first dinosaurs. Recovered from limestone in Shropshire, England, the small fossil supports the counter-argument to rapid evolution over a short period in the early Cambrian: it suggests it is likely that Precambrian evolution gave rise to the large variety of animal groups found in the early Cambrian, but the early creatures were not preserved in the fossil record.

Two specimens of the phosphatocopid crustacean were discovered after dissolving some of the limestone in acetic acid in a laboratory. The specimens are preserved with astonishing detail. Not only the shells are preserved, but the soft parts are cast in calcium phosphate, yielding three-dimensional views of the critters.

"(British Geological Survey paleontologist Mark) Williams said the appendages the crustacean used to bring food to its mouth are preserved, as well as an antenna and parts of the body. The arrangement of head appendages is typical of crustaceans, he added. It had a spherical shell, with its legs and head protruding below. Williams said it resembled the juvenile form of today's barnacles, which also are crustaceans." Williams's findings appear in the journal *Science*.

Source: Fossil of Oldest Crustacean Has Exquisite Detail

ftp://lhome_news.excite.com/printstory/news/r/010719/14/science-science-crustacean-dc

COLLECTING AMETHYST IN CANADA**or 72 Hours in a Purple Daze**

By Dave Malm and Jeff Groff

Jeff Groff and I had discussed a trip to hunt amethyst around Thunder Bay, Canada, for the last couple of years. Comparing notes on a rock-hunting trip in mid-July we found that both of us could take a few days off during the last week of July. In a spur of the moment decision we decided to go for the purple.

Doing some quick research using information from club members who had recently visited Thunder Bay, the internet, and phone calls to mines at Thunder Bay, we put together a list of mines to visit. We left Cedar Falls at 2:15 PM on Friday, July 27, with the intent of driving as far as we could that evening. Like all carefully planned trips, we ran into a problem when we went to stop for the night above Duluth, MN. All motels were full and we ended up sleeping in the truck in a driving rain in the parking lot at Tettegouche State Park.

Early Saturday morning, well rested, we got an early start to Thunder Bay. We checked in a hotel and headed out to the Thunder Bay Agate Mine. The agate mine consists of a rock shop selling rough and worked agate from the mine and a tour of the agate mine and agate beds. You are allowed to pick agate up for purchase at the mine site or purchase rough at the shop. No digging or tools are allowed when picking agate at the mine site. The price for this material is \$8 per pound Canadian or \$5.20 US. If you let them know that you are a rock club member, a \$2.00 per lb. Canadian discount was available. The agate is colorful and has nice patterns but also has to be examined carefully because it is highly fractured.

We spent an hour at the agate mine and then moved on to the Diamond Willow Amethyst mine which is 45 km northeast of Thunder Bay. At this mine we met Don Noyes, the owner, who said we could hunt anywhere on the mine site outside of his current mine workings and the old mine pit (for safety reasons). This is the only mine to allow hunting with tools to find amethyst. We were soon looking through the mine tailings piles to expose rocks with traces of amethyst. Rock chips were soon flying and Jeff and I were making small rocks out of large ones. This is serious work and requires large sledge hammers. Safety glasses are a must, as small sharp

rock pieces fly and could injure your eyes. We were able to expose some fist-sized pockets of amethyst crystals and enjoyed the hunting a lot.

The mine is open from 10 to 5 each day. The fees are \$7.00 for a small pail of material and \$30.00 for a 5-gallon pail (Canadian). Don also has material from his mine for sale at the mine site. He has very good material for some of the best prices we found.

Sunday morning we were able to meet a local miner and claim owner and talk about rock hunting in the Thunder Bay area. He was very knowledgeable and, besides having claims of amethyst, Mary Ellen jasper and gold, he also directed us to other collecting sites and collectors. His claims were not being worked at the time so we did not get a chance to visit them. He took us to a local park and showed us the geology associated with finding amethyst. This required walking around in the woods for over an hour and a half.

After meeting the miner we went back out to the Diamond Willow Mine for another day of digging. In the evening we made appointments to meet other mine owners and collectors with whom we traded for amethyst and looked at some super amethyst collections.

On Monday we awoke to rain and overcast skies. We had intended to go back to the Diamond Willow Mine and hunt again, but it was closed due to the rain. We then decided to check out as many rock shops in the area as possible. One, the Ontario Gem Mine, was a mine where you could pick up material from the mine site but no tools were allowed. I picked up some quartz material with purple coloring but no crystals. This may be nice as lapidary material. Hand-picked material from the mine sold for \$2 per pound. The shop also had amethyst for sale from the mine.

In the evening we were able to meet with members of the Thunder Bay Lapidary and Mineral Society, who were having a work night in the club's lapidary shop. We had a great time comparing rock-hunting experiences, exchanging samples of material and making contacts for future trips. On Wednesday morning we started back to Iowa, stopping at rock shops along the way. The trip to Thunder Bay is roughly about 12 hours from Cedar Rapids. It was a short 3 days in Canada but we had a lot of fun during our stay.

Cedar Valley Gems (Sept., 2001)



LAPIS LAZULI (=LAZURITE)

By George Judd, G.G.

The lovely blue lapis lazuli (pronounced LAP-us LAZ-u-lie) shares with turquoise the distinction of being among the most prized of all gemstones in earlier civilizations. There is little doubt that it was at least as sought after as turquoise and probably even more in demand. At that time there was only one source for it, compared with at least three for turquoise, and that source was remote from the Mediterranean area. Badakshan, Afghanistan, has one of the oldest operating mines in the world (7,000 years). Lapis occurs in large blocks and crystals in white matrix—the world's finest lapis.

Descriptions by Pliny and others leave no doubt that lapis was the “sapphire” of the ancients. Pliny referred to sapphire and described it in the following unmistakable fashion: “Sapphires contains spots like gold. It is also sometimes blue, although sometimes, and indeed rarely, blue tinged with

purple. It is never transparent.” This is certainly no description of sapphire, but fits lapis lazuli.

Unlike any other important gem, lapis is actually a rock, rather than a mineral. It is composed primarily of a blue mineral, lazurite, plus variable amounts of pyrite and calcite and minor amounts of diopside and other minerals. The usual means by which lapis is formed is by the alteration of an impure limestone by the “cooking” effect caused by an intrusion of an igneous mass nearby. Thus, it may be regarded as a product of contact metamorphism.

The finest lapis is considered to be a solid, deep blue with no white calcite spots and just a sprinkling of brassy yellow pyrite. Such material is found only in Afghanistan and Pakistan in commercially interesting quantities. The Colorado material is quite fine but of limited availability.

Lapis is always opaque to semitranslucent and is usually slightly violetish blue. Sometimes, it is almost bluish violet, but the blue usually predominates. Specks of golden-colored pyrite and white calcite are frequently present. “Swiss lapis” and “German lapis” are misleading terms used to refer to jasper or chalcedony dyed blue by the use of ferric-ferrocyanide, or Prussian blue. Calcite or limestone and even inferior lapis are also sometimes dyed and sold under one of these trade names. The following names are used in the American jewelry trade to refer to various qualities of lapis lazuli.

Persian Lapis. This high-quality stone, which is actually from Afghanistan, is the finest color and is difficult to obtain. It is an intense, evenly colored, slightly dark violetish blue with little or no pyrite and no white calcite veining.

Russian, or Siberian, Lapis. This type occurs in various tones and intensities of blue, contains pyrite, and is usually of good quality.

Chilean Lapis. Material referred to as Chilean lapis contains numerous white calcite inclusions and is often tinged or spotted with green. It is usually the least valuable.

From the days of ancient Greece and Rome through the Renaissance, lapis was pulverized to make the durable pigment called ultramarine, which was used extensively to produce the intense blue in many of the world's most famous oil paintings. In more modern times, however, ultramarine was replaced by a synthetic product made by fusing kaolin with sodium carbonate and sulfur.

Lapis lazuli is usually fashioned into cabochons or flat, polished tablets, but many of these flat pieces are also carved. Beads, clock cases, cigarette boxes and various other ornamental objects are also made. This stone has long been a favorite of the Chinese for carving figurines, snuff boxes, pendants and other small objects. In Russia it is a favorite material for wainscoting. For example, the walls of a palace at Zarskoe-Selo, built by order of Catherine II, are entirely lined with slabs of lapis and pieces of amber. The J. Pierpont Morgan home in New York City, which is now a museum housing his collection of art, had a fireplace that was set off by columns of lapis.

Some precautions are necessary when fashioning lapis. First, since it grinds away rapidly, care must be exercised in this operation. Also, close attention must be given to any protruding pyrite inclusions, because the surface may undercut badly. The most satisfactory polish is obtained using either Linde A or chromic oxide on a leather lap.

For purposes of establishing the value of various grades of lapis lazuli, it is first necessary to distinguish between those qualities that are commercially available and those that can be described as exceptional and difficult to obtain. Exceptional types are subdivided into three classifications, as follows: First Quality: Stones in this category are an intense, slightly dark violetish blue. They are evenly colored, entirely free of calcite or pyrite, and have a superior polish.

Second Quality: Cabochons of second quality have the same qualifications as those listed above, except that the color is either pure blue or violet-blue.

Third Quality: The color and other attributes of these stones are equal to those of the first or second type, but they are characterized by an attractive, even distribution of small pyrite crystals over the entire surface.

Stones that are normally available in commercial quantity contain varying amounts of pyrite and/or calcite; of these, calcite is the least desirable. In addition, the color is often low in intensity and unevenly distributed and the polish inferior. The least expensive are stones containing a high percentage of large white areas. Those containing little pyrite and almost no calcite are the most expensive in this group.

PHYSICAL AND OPTICAL CHARACTERISTICS

Chemical Composition: Lazurite is a mineral in the sodalite group; it is common for two or more of the minerals of this group to be represented in the same rock. Lazurite, however, constitutes the bulk of lapis lazuli.

Crystallographic: Cubic. Gem material is in the form of a granular aggregate. Cleavage - None.

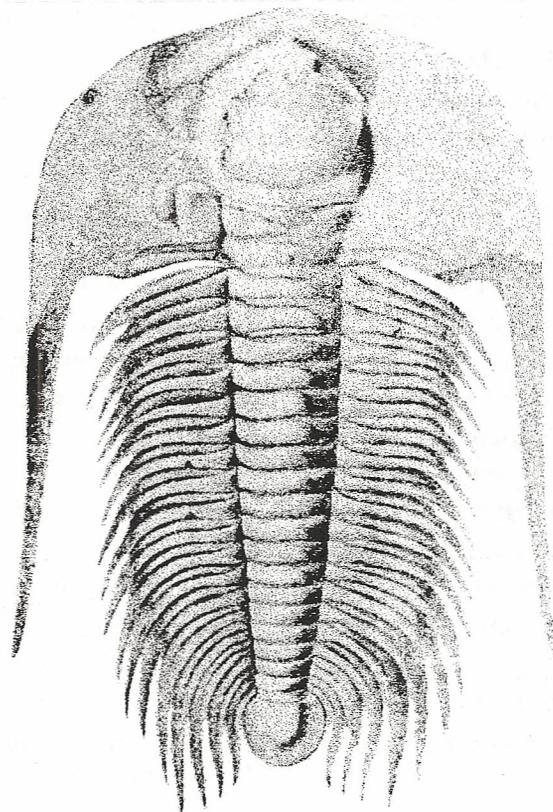
Fracture: Granular, uneven.

Hardness: 5 to 6. The variation is related to the amount of impurities present.

Toughness: Fair.

Refractive Index: 1.50.

Luster: Polished surfaces are vitreous to waxy; fracture surfaces are dull.



WHAT'S SO SPECIAL ABOUT ARKANSAS QUARTZ CRYSTALS?

By Jon Erlandson

Arkansas quartz crystals are regarded as some of the world's finest. The quartz in the Ouachita Mountains contains very few contaminants. Water-clear quartz is the specialty and it is found throughout the mountains. Ron's Mine, the Old Coleman Mine, is distinguished not only as the largest producer, but also as the purest source for quartz crystal. The uniqueness of this deposit is a result of how the quartz developed. Most quartz has been formed through volcanic activity, where fractures on the earth's crust allowed hot silica-laden water-based fluids, heated to high temperatures by volcanic activity, to leach into crevices within the earth. As the fluids passed along their route, contaminants were introduced by the various minerals these fluids came in contact with. When the fluids encountered favorable conditions, silica began to be deposited and from that quartz grew.

Crystals found in the Ouachita Mountains are thought to have formed in a different and non-volcanic manner. The forces created during the building of the mountains are thought to have "squeezed" water from the underlying unit of shale and sandstone. Because of the depth of the burial of the sandstone and shale units (perhaps tens of thousands of feet) and also as a result of high pressures developed within the sedimentary units during the mountain-building process, water was heated to very high temperatures (260 degrees C.; 500 degrees F.) This hot water, derived from trapped original sea water, was very different from fluids originating from igneous sources. In particular, it contained fewer dissolved minerals. You can easily see the difference if you compare samples of the crystals. Quartz from Brazil and Chile is volcanic in origin. Although crystals from either source can be well formed, the difference in clarity is truly noticeable due to different conditions of growth.

Gem Cutters News (no date)

AGATIZED CORAL

By Wilma Bonar

Agatized coral in many forms and colors is found all over Florida. Sometimes these heads are solid; some, as around Tampa Bay, are hollow and are properly called geodes. Agatized coral is scientifically identified as "chalcedony, pseudomorph after coral," because one mineral has been replaced by another.

Millions of years ago, these rocks were colonies of little animals belonging to the phylum Coelenterata. Coral is the name of the limy skeleton within which they encase themselves. It is also a fossil. Diluvial action of some kind covered these colonies. Over time, the carbonate of the skeleton was replaced by quartz. The geodes found in the Tampa area may have centers colored red, blue or black, or varying size quartz crystals. In northern Florida, solid heads of various shades of yellow banded with blue or black are found. Heads have been found in all areas, but no fingers have been found in the Suwanee Basin. Many enhydros are found, some in salt water, but the water contained in them is always fresh.

Heads and fingers are highly prized specimens. Smaller pieces are made into jewelry. They have come to be called "Ballast Point Diamonds" because they were first found in quantity at Ballast Point. To coral lovers, their beauty rivals that of diamond.

Condensed from *Coral Geode*. (1970)