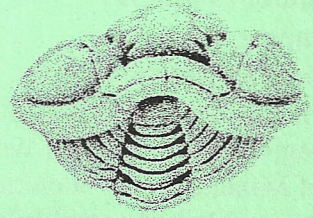
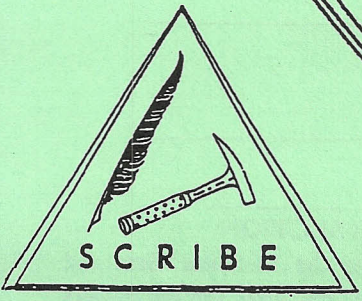
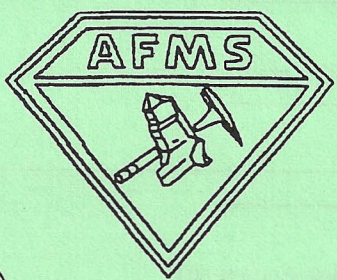
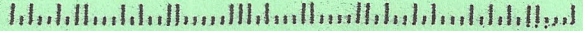


# THE ROCKFINDER

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



96361/9638



# THE ROCKFINDER

FEBRUARY, 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  
 \_\_\_\_\_ Junior \$1.00 per year  
 \_\_\_\_\_ Subscriber \$7.50 per year

Please indicate areas of special interest.

General Geology \_\_\_\_\_ Beads \_\_\_\_\_  
 Gems & Minerals \_\_\_\_\_ Fossils \_\_\_\_\_  
 Cabochons \_\_\_\_\_ Field Trips \_\_\_\_\_  
 Faceting \_\_\_\_\_ Crystals \_\_\_\_\_  
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Please send your dues and this form to  
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 c/o Bob Heinek

7091 E. East Park Lane, New Carlisle, IN 46552

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 Historian Ed Miller 498-6513  
 Sunshine Sally Peltz 616 683-4088  
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 Membership All Members

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.

Permission is hereby granted to reprint any original *Rockfinder* articles, as long as recognition is given along with the reprint.

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 Birthday \_\_\_\_\_

Name \_\_\_\_\_  
 Birthday \_\_\_\_\_

Name \_\_\_\_\_  
 Birthday \_\_\_\_\_

Date of Wedding Anniversary \_\_\_\_\_

Phone \_\_\_\_\_

**PLEASE READ AND SIGN THIS SECTION:**

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 2

February, 2002

## Meeting:

Sunday, February 24, 2002  
Doors open at 1:30 p.m.  
Meeting starts at 2:00 p.m.  
Guests are always welcome.

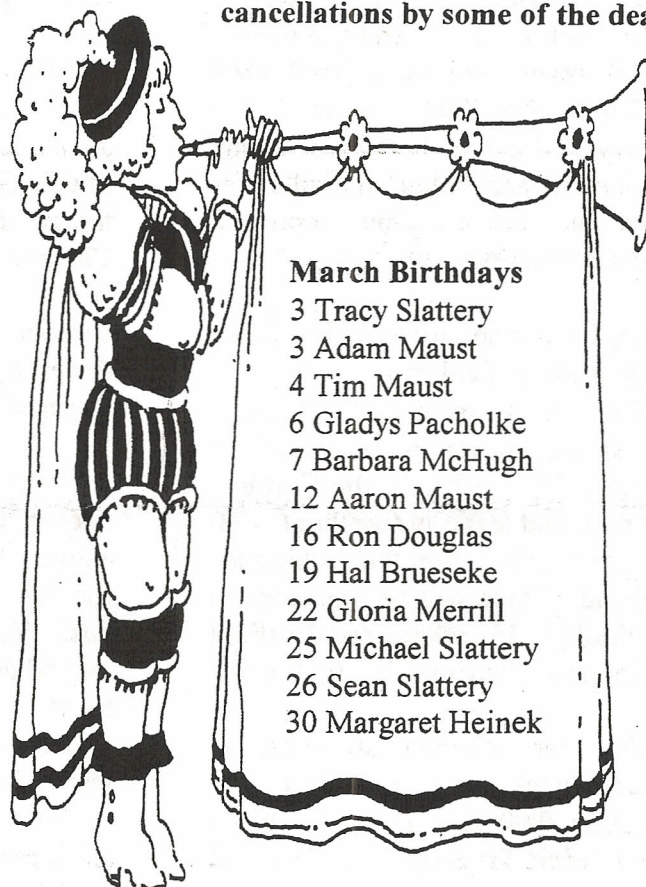
Note for Members: There is no April gem & mineral show at Century Center, because of cancellations by some of the dealers.

## Place:

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

## Program:

**NOTE: The program will start at 2 p.m.**, with a talk by Stephen T. Holland, a Notre Dame postdoctoral researcher. He proposes that a supernova was the cause of the mass extinction that ended the Pliocene. The Astronomy Society has been invited, and we expect other visitors for this talk. More information on page 3.



## March Birthdays

3 Tracy Slattery  
3 Adam Maust  
4 Tim Maust  
6 Gladys Pacholke  
7 Barbara McHugh  
12 Aaron Maust  
16 Ron Douglas  
19 Hal Brueseke  
22 Gloria Merrill  
25 Michael Slattery  
26 Sean Slattery  
30 Margaret Heinek

## Refreshments:

Tom and Pat McLaughlin

## UP AND COMING

Mar. 2-3: ESCONI Gem, Mineral & Fossil Show, College of Dupage, Dupage, IL.  
Mar. 8-10: Eastern Indiana Gem & Geological Society show, Wayne County Fairgrounds, Richmond, IN.  
Mar. 9-10: Geodeland Earth Science show, Western Illinois University, Macomb, IL.  
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 Mineral Society show, Teamsters 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. 12-14: MAPS National Fossil Exposition, Western Illinois University, Macomb, IL.  
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.



## WEEKEND CLUB SUBSIDIZED BUS FIELD TRIP TO SHEFFLER'S GEODE QUARRY/MINES in Alexandria, MO

The Michiana Gem & Mineral Society has a Cardinal coach chartered for October 18, 2002 through October 20, 2002. This field trip is for collecting *Keokuk area quartz lined geodes, Pyrites, Barites, Selenite needles, Dolomite, Sphalerite, Kaoline, Aragonite, Goethite, Hematite and pink Dogtooth Calcite*. Mr. Sheffler opened up a second quarry last June; both are within walking distance of each other and bulldozes them at least three times a year. You will not come home empty-handed.

The following is a brief itinerary for those going on this weekend field trip:

**FRIDAY**, October 18, meet at the K-Mart parking lot on the corner of Ireland Road and 31 South. We will board the Cardinal bus at 4:15 p.m. and leave promptly at 4:30 p.m. Your cars may be left in the parking lot for the weekend. There will be one stop on the way to Keokuk, IA, where our Fairfield Inn is. Arrival time approximately 10:00 p.m.

**SATURDAY** after enjoying an excellent complimentary continental breakfast we board the bus at 9:00 a.m. (pray for good weather), and depart for Sheffler's. We will collect until 3:30 p.m., then take time to tour Sheffler's Rock Shop; you will enjoy seeing the exterior of the place. We will then go back to the Fairfield to freshen up, or take a nap, or make use of the motel's indoor pool/whirlpool. Arrangements will be made to eat as a group for dinner that night around 7:00 p.m. at a local restaurant. For those who still have energy to burn, the motel pool will be open on return.

**SUNDAY** we will leave the Fairfield Inn at 9:00 a.m. for home. Time allowing, we will

check with the local Chamber of Com. for interesting historical sites near Keokuk that we might visit, as it is one of the old river towns on the Mississippi River.

On the way home we will stop at a fast food restaurant (driver's choice) then sit back and enjoy a movie, each other's company, and rehashing great finds. Arrival time 6:00 p.m.

### ADDITIONAL INFO:

1. Expenses: Motel Room -2 queen beds/no smoke \$64.90 per night-**\$129.80 2 nights**. Sheffler's fees - Adults-12 and up \$15 each for 50 pounds, overrun 75 cents per pound. Children under 12 free. Saturday night meal (we are looking at a family type restaurant, cheaper but good home-style cooking). Bus driver tip, and up to you if you wish to purchase anything at the fast food stops.
2. What to bring: Sheffler's will supply buckets for those that wish them but only as a loan while you are there. Bring a container for your specimens to be stored under the bus. You may prefer your own collecting bag while you are collecting. Bring a rock hammer, chisel, pick, rake, pry bar, safety glasses, boots or sturdy shoes (it can get wet/sticky in some places) **other** shoes for on the bus, dirty shoes or boots will **NOT** be allowed on the bus at any time, possibly a hard hat, be aware weather (rain gear), bug spray, extra socks, don't forget your camera.
3. Food: bring a small cooler for pop and snacks that will fit under the seat of the bus, and another cooler (if desired), for the bottom of bus containing extra drinks, your brown bag lunch for Saturday noon, and/or more snacks for the bus.

This should be a great field trip for ALL ages.

Kathy & Bob Miller, Trip Chairmen



## MINUTES OF THE JANUARY MEETING

President Don Church called the meeting to order at 2:10 p.m. Members present: 21 adults and 2 juniors, and one guest. The minutes of the December meeting were approved as printed in *The Rockfinder*. The treasurer's report was approved and filed for audit.

Margaret Heinek announced that there would be no spring gem and mineral show at the South Bend Century Center, as in past years, due to lack of response from the dealers.

Tom Noe reported that, as editor of *The Rockfinder*, he had submitted two articles to be judged by the Midwest Federation, along with two issues of our newsletter. This is for the yearly club bulletin contest. Herb Luckert and Sam Shapiro authored the articles.

Kathy Miller reported on possibilities for a fall field trip by bus to Sheffler's Rock Shop and Geode Mine in Alexandria, MO, the weekend of October 18. She was encouraged to make plans by the majority of members, who indicated a desire to participate. The location is a six-hour drive from South Bend. As always, bus transportation will be provided for club members, and Kathy will look into accommodations in the area.

A thank-you letter from the St. Vincent De Paul Society was read, also a request from the St. Joseph County Public Library for our participation in the annual Science Alive program from 9:30 a.m. to 4:00 p.m. on Saturday, February 9, in the downtown branch. Several members volunteered to take part.

The program phase of the meeting consisted in a videotape on quartz crystals produced by Ron Coleman, entitled *Mining in Arkansas*. Members who brought crystals from their collections were the "show and tell" segment of the program.

Sam Shapiro distributed information about Islamic culture from the continuing education class he is teaching this semester at Holy Cross College.

Door prizes were won by Sally Peltz, Phyllis Smallwood, Martha Perry, Kathy Bieschke and Dennis Horrall.

The meeting adjourned at 3:00 p.m.

M. Jeanne Finske, CSC, Secretary



## BACKGROUND FOR FEB. 24 PROGRAM

By Sam Shapiro

Aristotle, in his treatise *On the Heavens*, wrote that the earth was made up of four elements: earth, fire, air and water. The heavenly bodies were made up of a fifth substance, quintessence, which was unchanging and incorruptible. The earth was at rest in the center of the universe, and the sun, the moon and the planets revolved around it in perfect circles. This cosmological view prevailed for 2,000 years.

Since Galileo's discoveries with the telescope in the 17th century, we have learned that the earth and the heavens are intimately connected, and obey the same laws of physics. Mr. Holland will lecture on a paper posted on the internet on January 23, arguing that the discovery of an isotope of iron ( $^{60}\text{Fe}$ ) in the ocean crust suggests that the debris of a supernova two million years ago may have caused a massive extinction and brought about the end of the Pliocene epoch and the beginning of the Pleistocene ice age.



## ON-LINE AUCTIONS, AMATEURS AND PROFESSIONALS, ETC.

By Roger K. Pabian

The electronic age has brought about a new phenomenon not only to the American way of life but also to the way the whole world views commerce in collectibles. I am of course referring to on-line auction services such as e-Bay or Yahoo or other on-line auction houses of lesser-known stature. Even some of the major, world-famous auction houses such as Sotheby's have on-line auctions.

The on-line auction services offer some opportunities to make some outstanding buys and they offer the chance for one to find some major disappointments. It is strictly a *caveat emptor* (buyer beware) game.

I make it an almost daily exercise to look at the materials that are being offered on the on-line auctions. I have never bid on any item at this time but I find the pages can provide a great deal of historical information about agates and other gems. It is one of the places I can go to find colored images of some kind of stone that Mary Frances Berkholz described in one of her articles in *Desert Magazine* in 1949. I can also find material that is now being collected from someplace in central Asia but will never reach the American shores in quantities that will ever make it a highly profitable commercial success.

There is also a down side to this great source for knowledge and information. It is no different from the library in that respect. Strangely, in countries such as ours where the press is free, people have a strong tendency to believe anything that is published. People are more skeptical where the press is controlled by a totalitarian or semitotalitarian regime. That is why so much misinformation circulates in all fields of endeavor. The arts, sciences, economics, trades and businesses all have elements that publish materials, most of which is wrong. Some of our cherished learning sources such as Discovery Channel have aired documentaries on such pseudo-scientific areas as Atlantis, crystal healing, ghosts and paranormal phenomena. Some of the productions lean on being pure fantasy, such as the new series

"Walking with Prehistoric Beasts." The computer graphics are fantastic but the creatures have been anthropomorphized to a Disney World extent. Mickey Mouse may actually have more credibility. I don't want to digress too far from the title subject, on-line auctions, but the digression should help point to where I am going.

With the exception of the major auction houses such as Sotheby's or Bouwers and Merena, most of the dealers selling agates and gems, coins, stamps or what-have-you are not deeply knowledgeable in their field of business. When they offer a product for sale, they are usually taking at face value the information about their product that they received from the source. The source is never questioned. Usually, the older the source, the more credibility it has. Many of the on-line auction lots have amazing descriptors to glorify the stone. Fantastic, exciting, must see, vintage and old stock are among the more common.

Vintage and old stock are probably the most misleading. What vintage means in describing an agate has nothing to do with the stone. Vintage may be a fine descriptor for a wine. A certain variety of grapes from a certain vineyard in a certain year may produce a wine that connoisseurs cherish. A different variety of grapes from the same vineyard in the same year may produce a very mediocre wine. Similarly, I have seen some old stock or vintage Laguna agates that were very mediocre stones and some of the year 2000 that are very high quality stones. The term vintage is usually used to imply age and is often used interchangeably with old stock.

Orthography (correct spelling), or the lack of it, is one of the things that commonly appears on the on-line sales. Pridey (=Friday) Plume, Senora (=Sonora) Plume, Holly (=Holley) Blue are some of the most common misspellings I have observed.

Type areas are also poorly treated by many of the dealers on the on-line sales. I have seen such statements as: "Ellensburg Blue Agate from Holley Oregon" listed. Ellensburg Blue Agate must be from Ellensburg, Washington, and specifically from type locality defined by John P. Thomson in the publication "Ellensburg Blue."



Many honest dealers are also to be found on the on-line sales. One ad I observed has a very nice cabochon of Morgan Hill Poppy Jasper from California. The dealer did not list it as such but simply stated "...from an unknown locality." At least, the dealer was being honest. A knowledgeable buyer will probably make a great purchase in this case.

Stones that are not agate often show up among the agates listed on the on-line sales. I have seen glass, jade, rhodochrosite, rhodonite, garnet and other stones listed as agate with such descriptions as "rhodochrosite agate."

Plagiarism is one of the unfortunate things I have observed on many of the on-line sales advertisements. Descriptions that lift text from other published sources are quite common. There seems to be a belief that something that appears as hard copy in one place is free from copyright protection when it is put on line. Unfortunately, I've observed some on-line materials that have not been treated as copyrighted material when it went to hard copy. Even if public domain sources are cited, they should be credited, as plagiarism is still plagiarism regardless of what the source of the citation.

Often a seller, when confronted for committing some of the above errors, will make a comment to the effect: "Hold on, I'm just an amateur. I don't have access to a lot of information." My response is that, once a person hangs up a shingle to do business, the amateur status evaporates. That person is no longer an amateur. I hold potential authors to the same standard. If one writes material for a club bulletin, one's amateur status remains intact. When one writes a book or makes a video with the intent of selling it to gain a profit, the amateur status is no longer applicable to that person.

Even with the above observation, I think that the on-line auctions have remained relatively clean. There have been a few more abuses than have been observed in hard copy sources. Much of this is probably because the internet has been able to make vocal and visible many more potential dealers who have left the privacy of garage sales or the less than ideal exposure afforded by flea markets.

The on-line sales have provided me a great deal of good information on stones I might have never seen or confronted, and in color at that. A knowledgeable buyer can probably make many good finds, but the uninformed may have a bad day there.

*The Pick & Shovel* (Dec., 2001)

## GEODES VERSUS VUGS

By Cecil Goss

We all know what a geode is—a roughly spherical hollow rock lined with crystals. A vug is a roughly spherical cavity lined with crystals. But do you know the real difference in the structure between the two?

A geode has an outer shell or rind (like a melon) composed of chalcedony, which is harder than the host rock in which the geode formed. When the host rock weathers away, the geode is preserved intact due to its hard shell.

Vugs do not have the protective rinds that geodes possess. The crystals found in vugs are formed within a cavity in the host rock, but unlike geode crystals they are attached to the host rock itself. Therefore, vug crystals are destroyed when the host rock weathers through the cavity.

When weathering exposes a cavity and a rockhound happens to see it, the vug can be chiseled out. If an inch or two of the host rock is left around the cavity, the vug can be removed undamaged.

The geodes and vugs I am writing about are found within a radius of about 70 miles from Keokuk, Iowa, which includes portions of Illinois and Missouri. The rock in which they are found is a yellowish-brown to blue-gray dolomite shale of the Mississippian age (325 to 345 million years ago).

*Palomar Gem Bulletin* (Mar., 1996)

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### MINERAL'S R US

By Millie Heym  
(2<sup>nd</sup> Place 2000 AFMS Poetry)

I looked at the label of my vitamin jar  
and got a glimpse of what we are:  
Calcium, magnesium, manganese, and more,  
in all those bottles at the health food store.

The same minerals that make our pretty rocks  
are the human body's building blocks;  
no wonder we are drawn to stones—  
they're literally in our very bones!

*From The Coral Geode 3/2000*



## WEEKEND CLUB SUBSIDIZED BUS FIELD TRIP TO MORGAN MONROE STATE FOREST, IN 2003

### Fossils, Geodes, Gold Panning

Just as an F.Y.I. the Michiana Gem and Mineral Society has a trip already scheduled for September 19-21, 2003. We will be looking for geodes, fossils and trying our luck at gold panning in Morgan Monroe State Forest.

Arrangements (reservations) have already been made for 16 cabins at Brown County State Park for September 19 and 20, leaving on the 21. We will eat as a group at the Abe Martin Lodge (buffet style). Time will be taken for strolling through the quaint town of Nashville nearby to look at local crafts after a good day of collecting.

More information and sign up will take place later this year. Mark your calendar for these dates in 2003!

Bob & Kathy Miller, Field Trip Chairmen

## POETRY AND GEOLOGY: AUGUSTUS M. TOPLADY

By Sam Shapiro

Augustus Montague Toplady (1740-1778) was an Anglican priest who presided over a small English parish. He graduated from Trinity College, Dublin, and was ordained in the Church of England at the age of 22. Six years later he became the vicar of Broad Newbury, and began a campaign of vituperation against John Wesley and the Methodist Church. He accused them of abandoning the Calvinist doctrine of predestination, the idea that human salvation was decided in advance, and said that Wesley's way was the "road to Rome" and "popery." His collected theological writings take up more than 700 pages.

Toplady would be altogether forgotten if not for a single day's geological expedition, and a hymn he wrote that day. Caught out in a sudden storm at Cheddar Gorge, he took refuge under a granite overhang that sheltered him from the rain. (Granite: An intrusive igneous rock made up of various

percentages of quartz, mica, feldspar and other minerals. Last year, our club visited the world's largest granite mural, at the University of Notre Dame's Hesburgh Library).

While sheltering from the storm, Toplady composed the famous Christian hymn, "Rock of Ages," which begins, "Rock of Ages, cleft for me, let me hide myself in thee." It reflects his theological belief that human beings must rely on God's grace alone for salvation, and is certainly one of the few hymns in existence which was inspired by geology.

## CALCITE? -- NOW LET'S SEE!

By Ed Benjamin

There is a very interesting short article in the November, 2001, issue of *Discover* magazine about an interesting contemporary sea creature, the brittlestar. The engineers at Lucent Technology's Bell Laboratories in New Jersey have apparently been taking a close look at this "humble starfish" and have come to the conclusion that it has some very special talents!

It appears that the non-rigid armor shell of this creature is made of a crystalline material, calcite. Indeed, it is completely covered with miniscule, but perfectly shaped, "light-collecting lenses," just half the width of a human hair! Naturally, the engineers are envious of the critter and would like nothing better than having a technique to enable them to turn out these little light-sensing systems in abundance. In today's age of fiber-optics communications, the applications would be immediate—and numerous!

You can be sure that those engineers are hard at work trying to duplicate the accomplishments of the brittlestar in their laboratories. Someday, we may be using the result every time we pick up our telephone, or sit down at our computer to read our e-mail!

*Rocky Reader* (Dec., 2001)



## NEW BENITOITE DISCOVERY

Benitoite, the world's rarest gemstone, comes from only one place on the globe, deep within a remote mountain of southeast San Benito County. The Benitoite Gem Mine, home of our state rock, was sold after being held for 35 years by two Fresno miners. The new owner's plan was to gather what was profitable from a century of rubble, then open the remote, 40-acre mountain site to rockhounds. That plan may be put on hold.

*His lucky day.* Bryan Lees, a rock and gem shop owner in Golden, Colorado, and the new owner, struck paydirt April 1, after his first week on the job. Digging with a backhoe in an area long thought to be depleted, Lee's crew found part of a benitoite gem vein. Within hours, Lee hit a long hidden shelf of blue schist, the matrix that blankets benitoite crystals.

Lees had known the former owners, Buzz Gray and Bill Forest, for 15 years. The two miners had played a major role in Lees's present love affair with the gem. In fact, it was Forest who was operating the backhoe when a scoop revealed what could be a rich haul.

*Environment.* The Benitoite Gem Mine—historically called the Dallas Gem Mine after the man who first marketed the stone commercially—sits on a three-tiered serpentine mountain of magnesium silicate. The dirt is dark and fresh because the mountain is constantly being worked during the eight-week mining season that runs from March through April, when the headwaters of the San Benito River are strong enough to provide water to pump into the screening equipment.

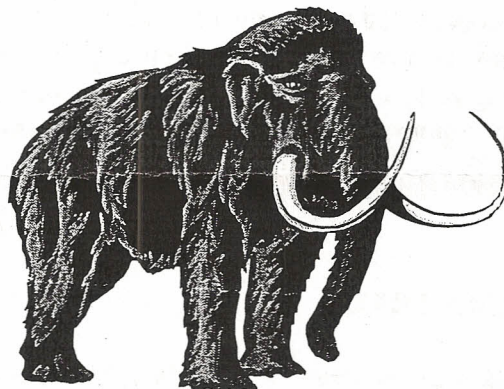
Mining the gem is difficult because, unlike gold, in which veins generally run in one direction, benitoite veins are twisted and erratic. Lees says benitoite was formed hundreds of thousands of years ago, when San Benito County was under the ocean, and silt pushed through fault lines. The silt contained barium titanium silicate.

Today, the mining operation resembles a Rube Goldberg apparatus that includes an old turkey feeder.

The loader dumps a yard or more of dark dirt and blue schist rock, the flaky kind that splits easily, as well as the hard crossite ore into the feeder, where the big rocks tumble aside and the promising stones wash through a screen to a jib below. The jib sifts and separates the precious stones from the common ore. Below the equipment are two large settling ponds where water is recycled back up the hill to start the process all over again.

*The Statistics.* Benitoite is only 6.5 on the Mohs scale, compared to diamond at 10. However, the light refraction index—the characteristic that makes sparkle—is higher than diamond. That means that blue benitoite is more brilliant than clear diamond.

*The Pinnacle* (Apr. 12, 2001)  
Summarized in *The Breccia* (No date)



## GAPS IN MAMMOTH DNA MAKE CLONING IMPOSSIBLE

By Brian Rodgers, EIGGS

Fragments of DNA from mammoths have been recovered and sequenced, but are too damaged to make cloning the long-extinct creature possible, an international team has reported. Unlike earlier research, the DNA this time comes from the nucleus of mammoth cells, not from the energy-producing mitochondria. Mitochondrial DNA is more plentiful and easier to detect in ancient samples, but nuclear DNA is more revealing and is the type needed for cloning.

Scientists recovered and sequenced nuclear DNA from several Siberian and Alaskan mammoths,



as well as from extinct ground sloths from Chile and cave bears from Croatia. The animals had all been preserved after death in permafrost or in very cold conditions, aiding survival of the tissue, but the longest sequence that it has been possible to recover is about 100 base pairs long—each base pair representing a letter of the genetic alphabet.

In modern DNA from living species, you can recover sequences hundreds or thousands of times longer. This shows that the DNA is very fragmented and there is no way to use it to clone a mammoth. The results do allow mammoths to be compared to elephants. As expected, there are many parallels, with Asian elephants apparently being more closely related to the mammoth than the African variety. The next closest relation is the manatee, and the rest are a long way away. The mammoths all come from museum collections, but scientists are now working on a mammoth collected on Wrangel Island in Siberia on an expedition two years ago. It is their hope to be able to find fragments of viruses or pathogens among the DNA, in support of a hypothesis that it was disease that killed off the mammoths.

*Rock Pickings* (No date )

## THE MAZAMA TREE

A cedar tree preserved for nearly 7,000 years in volcanic rock and ash may yield clues about the ancient Pacific Northwest. The so-called "Mazama Tree" was unearthed by Klamath County road crews excavating a pit in soil containing pumice deposited when Mount Mazama erupted.

The huge mountain in the southern Cascades exploded with a force that left the surrounding landscape covered with ash and cinders as far away as northwest Canada. What remains of Mount Mazama is now known as Crater Lake.

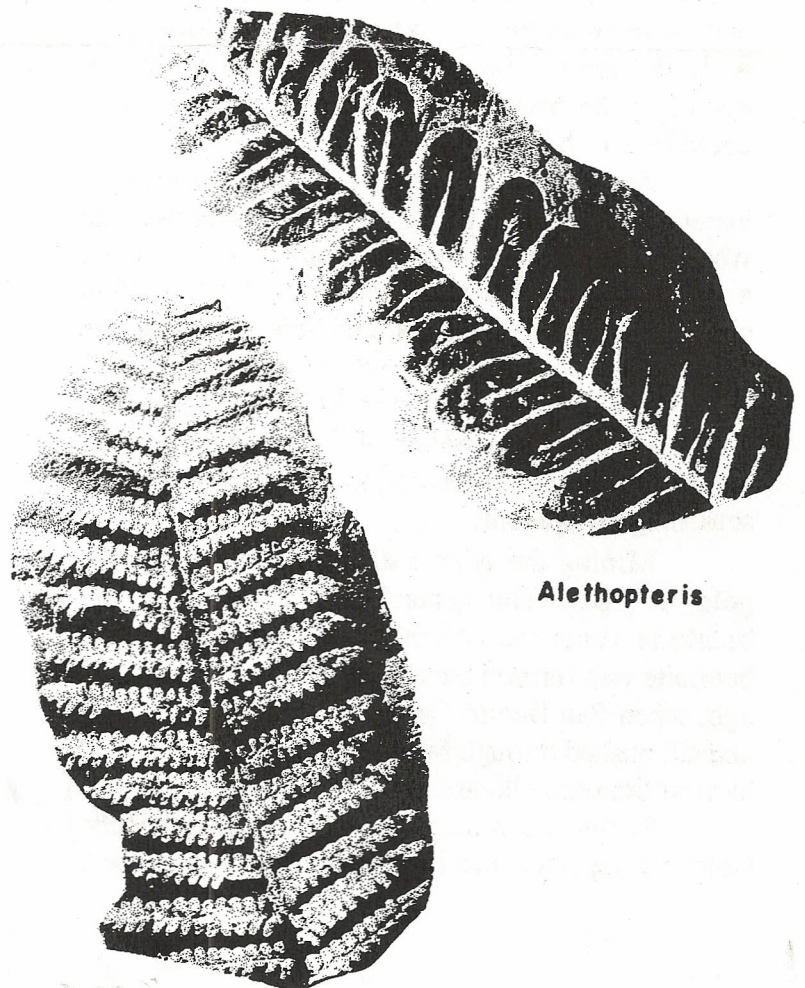
Klamath County Parks Supervisor Keith Read said his bulldozer crews dug through about 30 feet of typical central Oregon pumice and ash before reaching a layer of much coarser pumice. It was in this layer that the workers uncovered four hollow shafts 2 to 3 feet in diameter running vertically through the soil. Only a few feet farther down the bulldozer uncovered the ancient tree standing in the center of a 28-inch diameter shaft. "I was very

amazed," Read said. "To me it is unbelievable that it would survive so many years in the earth without rotting away."

A portion of the tree was apparently destroyed by the heat of the entombing ashes, but it was not carbonized by the intense heat of the Mazama eruption. "I've never seen a 7,000-year-old anything preserved that way," said Bill Hopkins, a US Forest Service ecologist based in Bend. He was joined by Forest Service scientist Steve Simone in an inspection of the tree. They theorized that a shroud of coarse pumice and cool ash protected the base of the tree from the hot gases and ash that followed.

A sample of the wood (that was not petrified) will be analyzed to see if carbon-dating is possible. "It could substantiate a lot that has been theorized about the pre-Mazama flora," Hopkins said. "The composition of the wood could also tell a lot about the climate at that time, nutrient conditions in the area, even the purity of the air."

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**Alethopteris**

**Asterotheco**