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MIDDLE TENNESSEE GEM & MINERAL SOCIETY

MID-TENN GEMEERS

Newsletter of The

Middle Tennessee
Gem and Mineral
Society, Inc

P.O.Box 1256
Murfreesboro, Tennessee 37133-1256

Affiliated with:
SOUTHEAST FEDERATION OF MINERALOGICAL SOCIETIES, INC.
AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES , INC.

VOLUME 24 NUMBER 7
July 2002

MIDDLE TENNESSEE GEM AND MINERAL SOCIETY, INC.

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MEETINGS

Third Thursday of each month at 7:30 PM in the Farm Bureau Building at 818 S. Church St. in Murfreesboro, Tennessee, except for the June picnic. Meeting dates are on the inside back cover.

E-Mail Address: steve.henegar@nashville.com

Internet Web Page: http://www.mtgms.org

MIDDLE TENNESSEE GEM AND MINERAL SOCIETY, INC.

REGULAR MEETING DATES 2001

January 17, 2002	**July 18, 2002**
February 21, 2002	August 15, 2002
March 21, 2002	September 19, 2002
April 18, 2002	October 17, 2002
May 16, 2002	November 21, 2002
June 20, 2002	December 19, 2002

SPECIAL EVENTS 2002

Annual Picnic	June 20, 2002
Annual Earth Treasures Show	**December 13-14, 2002**
Christmas Party	December 19, 2002

FIELD TRIPS

Field trips will be scheduled and announced in the bulletin and at meetings. See or call a member for further information.

MEMBERSHIP

The MTG&MS, Inc. is a non-profit educational society dedicated to the study and enjoyment of the earth sciences. We are open to the public for the education of all who wish to attend. Society membership is open to persons interested in the earth sciences. Applications are available on request from members.

DUES

Dues are $12.00 for the first person of each household and $2.00 for each additional family member. Dues are payable January 1st and are prorated in April, July and October.

Send dues to : **Will H. Smith**
5304 Bellcrest Drive
Antioch, TN 37013

SOCIETY MAILING ADDRESS

Middle Tennessee Gem and Mineral Society, Inc.
P. O. Box 1256
Murfreesboro, Tennessee 37133-1256

A SOUTHEAST FEDERATION OF MINERALOGICAL SOCIETY INC. & AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES Affiliate

My Rockhounding Story

Editors' Note: This page intentionally left blank for you to fill in your own story. Please copy and return (or email) to the editor once you are finished.

MIDDLE TENNESSEE GEM AND MINERAL SOCIETY, INC.

Volume 24 Number 7

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NEXT MEETING:	**JULY 18 2002**
PLACE:	**FARM BUREAU** **818 SOUTH CHURCH STREET** **MURFREESBORO, TN**
TIME:	**7:30 P.M.**
PROGRAM:	**RICHARD GROSS** **Minerals—Nature's 3-D Art**
BOARD MEETING:	**6:30 P.M.**

Presidents Message

Speaking of uneventful months. This has really been one. I have been on the seat of a D-5 Caterpillar bulldozer or waiting at a hospital for most of the last month. Have not been able to get time to do anything except get ready for the AFMS convention in Port Townsend, Washington. By the time you read this Anna and I will be there and "hard at it" getting everything in shape for the convention and the Endowment Fund booth at the show.

Many of our members are on vacation this month and will be unable to attend. This is a real shame as we have a wonderful speaker in Richard Gross. His program last year was one of the best of the year and I hate to miss him this time. I hope that many of you will get out to hear Richard as he is truly an interesting speaker and person.

See you when we get back.

Lewis F. Elrod, CFE

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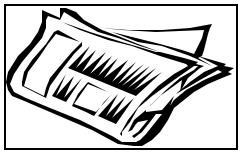

Now The News!!!

June Meeting
Annual Picnic

In lieu of our regular meeting in June we had our annual picnic. Although attendance was low the food and fellowship was great. The Wilderness Station at the Barfield-Crescent Park is a wonderful place for us to hold our picnic—it's air conditioned. No bugs, no sweat, just a nice cool, clean place to dine. Enough food was available for even the hungriest rockhound.

Swap and Shop

For Sale: Rough Rock $1.00/lb - 100 lbs. for $85.00. Your pick, Jasper, Agates, Tampa Bay Coral etc. June Miller (931) 598-9740.

For Sale: 6" Saws $175-$225, 8" Saw $250.00 (like new w/vise), 18 lb Tumbler $75, Cab makers. Cab Mate, Folsom & Dremel tools, sanding belts & disk, tumbling grit & polish, sphere machines, grinding wheels, welding torches, buffers, flat lap machines, 10" & 15" vibrating lap and a whole lot more at low prices. Call for info. George Jones (615)333-3781) 5025 Franklin Rd, email georgejones@comcast.net

For Sale: Raytech-Shaw faceting machine, 11 laps and several dops - $750. Kenneth Swann, (931) 857-3435.

Swap and Shop is for Club members and friends of the Club to advertise goods and services for sale or swap. Want ads are also accepted.

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Untried Shop Tips

Stabilizing porous stones: If you would like to try your luck at stabilizing porous stone, such as turquoise, so the it can be cut and polished, the Silvery Colorado Rock Club offers the following advice. Take a jar with a lid and add one pint of acetone. To this, add the complete contents of both the resin and hardener tubes of epoxy glue. Mix well. Add well-dried stones. Cover the jar and let it sit for at least four days. Remove the stones and allow a week for them to dry. They should now be stabilized and ready to work.

original source unknown, via *The Hound's Howl* 6/02

Upcoming Events

July 18-21 AFMS/NFMS Convention and Show
Host: Port Townsend Rock Club
Port Townsend, WA
Jefferson County Fairgrounds, Port Townsend, WA

July 24-28 Franklin Gem & Mineral Society
Franklin Chamber of Commerce
Macon County Community Center, Franklin, NC

August 1-4 Bancroft Rockhound Gemboree
North Hastings Community Center, Bancroft, Ontario

August 9-11 Colorado Federation of Gem & Mineral Societies
Rodeo Grounds, Buena Vista, CO

August 16-18 Greater St Louis Association of Earth Science Clubs
Greensfelder Recreation Complex, St Louis, MO

August 30-September 2
Henderson County Gem & Mineral Society
Whitmire Activity Building, Hendersonville, NC

August 31 Hendersonville Gem & Mineral Society
Annual Micromount Symposium
Salvation Army Building, Hendersonville, NC

September 7 Hellgate Mineral Society
Ruby's Inn & Convention Center, Missoula, MT

September 13-15 Greater Denver Area Gem & Mineral Council
Denver Merchandise Mart, Denver, CO

September 28-29 Western Piedmont Mineral & Gem Society
Hiddenite Center, Hiddenite, NC

September 28-29 Oshkosh Earth Science Club
Winnebago County Fairgrounds, Oshkosh, WI

October 5-6 Jacksonville Gem & Mineral Society
Morocco Temple, Jacksonville, FL

October 11-13 Big Sur Jade Festival
Pacific Valley School, Big Sur, CA

October 18-20 Knoxville Gem & Mineral Society
Kerbela Temple, Knoxville, TN

December 14-15 Middle Tennessee Gem & Mineral Society
Tennessee State Fairgrounds, Nashville, TN

Magnet Cove Arkansas

Mike Baldwin

Magnet Cove (located about 12 miles east of the city of Hot Springs, in Hot Spring County, Arkansas) is a ring-dike complex of alkali rocks covering an oval-shaped area of about five square miles. The cove is made up of volcanic rocks which have gradually been forced to the surface of the earth. It was probably not an eruptive volcano. About 42 distinct mineral species have been found in the cove and many of the mineral types and combinations are of world-wide interest to mineralogists because they are known to occur in only two other localities: (1) the Ural Mountains in western Russia, and; (2) the Tyrolean Alps in Austria.

Magnet Cove mineral collectors come in two types: micromounters and collectors who love black or dark colored minerals.

Micromounters discover unique crystals of many types and are not limited to a well known location to hunt for specimens. Any old rock will do, just so long as when it is broken, it contains cavities. I 'm sure the MAGS Micromounters will be studying minerals from the Magnet Cove Complex.

Rockhounds and collectors who like black minerals, sometimes perched on black minerals, can hunt for brookite crystals on smoky quartz, loose clusters of magnetite, perovskite, spinel, and hercynite in the soils overlying the carbonatite zones, single and small clusters of schorlomite garnet in the soils formed from the central core of iolite, and rutile black from the presence of niobium and iron in the mineral 's structure. Small dark brown kimzeyite garnets, along with shiny perovskite, contrast nicely with white calcite, yellowish carbonate-fluorapatite, emerald green biotite, and brown monticellite.

There are also some interesting white and other colored minerals from the area, including fine-grained nepheline and potassium

feldspar pseudomorphs after leucite, albite bowties after an unknown mineral (almost looks like it 's after stilbite!), albite "rice grain " rose specimens, iron pyrite coated with molybdenite so it looks a little like galena to the inexperienced eye, masses of naturally magnetic magnetite (lodestone) and many others, too numerous to name.

Magnet Cove is a 100-million-year old igneous intrusion (mass of igneous rock) of some rare and unusual rock types -all derived from a melt that was originally a CO 2-rich basaltic liquid in the earth 's upper mantle. The Magnet Cove Complex was intruded into highly folded Paleozoic sedimentary rocks during the Cretaceous time. 1 or 2 miles east of Magnet Cove these rocks are overlain by the Cretaceous and Tertiary sedimentary rocks of the Gulf Coastal Plain. The intrusion 's piercing style resulted in a steep, near vertical contact with the country host rock, Paleozoic shales and novaculite. It is likely that the intrusion never reached the surface. Only one geologist in the 1930 's described anything like a vent. It is probable that what he described, though volcaniclastic in appearance, was a steep-walled breccia pipe or explosion zone as has been noted in the smaller pipe at Potash Sulphur Springs, about 4 miles west of Magnet Cove.

Magnet Cove was a large piercing body, some of which had already become a crystalline mush by the time it reached the elevations of its present exposure. It did not reach the surface, but caldera collapse resulted in injections of molten material into circular fracture zones. Caldera collapse happened several times. The resultant outcrop maps at the present level of erosion take on a somewhat circular pattern (sometimes called a ring-dike) for some of the major units.

The silica-deficient molten liquids (no free quartz will form from these melts) underwent several stages of crystallization between injections and caldera collapse. And so, we have a series of igneous rocks with unusual compositions, all ultimately related to the mantle parent.

story to members of his tribe. If there was a cave under Devils Tower, no one has found it yet. Maybe the lost cavern is not under the tower but nearby. It would be impossible to have a cavern in a laccolith. There are caves in the area, but none under the tower. Usually there is some truth in legends, could the golden cavern still be there waiting to be rediscovered?

References:

1. "Lost Gold of Devils Tower' by http://unmuseum.mus.pa.us/dtgold.htm
2. "Devils Tower National Monument" by http://volcano.und.nodak.ed/parks/devilstower.html
3. "Devils Tower Geology" by http://www.nps.gov/geo-slides/geology.htm
4. "Black Hills Badlands" by Mike Link and Craig Blacklock

From *The Rock Rustler's News 12/01 via Strata Gem 8/02*

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Pearls That Grow on Trees

Pearls formed by oysters or other mollusks are made of Aragonite, a form of calcite (calcium carbonate). These are well known, but the most surprising pearls are those that grow on trees – Cocoa palms. A coconut pearl occurs inside the nut when the three holes, including the one that opens, are lacking. The embryo, unable to escape, forms a valuable and highly esteemed pearl of the same carbonate of calcium.

From *The Pegmatite,* no date given, via *The Hound's Howl 6/02*

miles long. There are three other trails and five miles of park roads. The hiking is great!

Since prehistoric times the Native Americans felt that the tower was a holy place. They think of this sacred rock as a cathedral in nature. This place of power was used as burial grounds for the northern plain tribes. Today, as before, the tower is the site where vision quests begin. These Native Americans call the tower "Mateo Tepee," Bear Lodge. The name Devils Tower came about, when in 1875, the Indians called it the "Bad God Place." It was translated into Devils Tower because "devil" is considered a bad god. In Kiowa Indian mythology, it is said that once upon a time seven girls were playing in the woods. While in the woods they came upon some bears that chased after them. They found refuge on a great rock that rose into the sky with them on it. The bears tried to pursue them, but no matter how they struggled, they could not get at the girls. The bears claw marks are still seen in the tower's sides, henceforth, Mateo Tepee, Bear Lodge.

One legend of the Kiowa doesn't tell about the creation of the tower but what is below it. A man from Wyoming was visiting in Yankton, South Dakota. While there, he showed a picture of Devils Tower to an elderly Sioux Indian who became very excited. The Indian wanted to know if the passage at the base of the tower had been found yet. The man said that a passage had not been found. The Indian then passed on to him the Sioux legend regarding the tower. Many years before there were three braves hunting near the base of the tower. While exploring the base, they discovered a passageway underneath it. They made torches and followed the tunnel until it opened up into a cavern. In the cavern was a underground lake, 25 yards long by 15 yards wide, and all around it there was gold. Large quantities of gold laid all over the ground and the cave walls were also golden. The braves couldn't take the gold with them, so they left the tunnel and hid the entrance. They were going to return later, but never made it back to their golden cavern. One of the braves on his death bed told the

Even though Magnet Cove (with its unique mineralogy - especially rich in titanium minerals) has been known to mineralogists and collectors since before 1850, the total amount of material in collections is small. Originally, most specimens were surface collected from the weathered soil and alluvium of the central Cove area. Since the late 1800 's, mineral specimens have come from a few exploration and mining operations for titanium and vanadium, quarrying carbonatite, small-scale specimen digging and the Diamond Jo Quarry, noted for its microminerals.

Works Sited:
Mike and Darcy Howard; Rockhounding Arkansas; http://rockhoundingAR.com; 1998-2000
Arthur E. Smith, Jr.; The Diamond Jo Quarry; "Rocks & Minerals", Vol. 64, No. 4; July/ August, 1989

From *Mags Rockhound News 7/2002*

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Deserts

Whenever we think of deserts, we usually picture a really hot place where the sun is blazing down and there is no water. In reality, there are four different kinds of deserts ranging from the blazing hot Sahara to the frozen waste-land of Antarctica. Deserts are found on every continent. The only thing they have in common is that they receive less than ten inches of rain a year.

Four factors influence the formation of deserts. The most important one is high pressure. This type of desert is usually found between 15 degrees and 30 degrees latitude. Back at the equator, the air is heated and rises. Then it cools, condenses and rains before it sinks back down toward the earth. Because the air mass has already lost its moisture, no clouds form and no rain falls. The Sahara is an example of a high-pressure desert. Another high-

pressure desert but very different from the Sahara is found at the South Pole. Antarctica is the driest place in the world. It is even drier than the Sahara. It is so cold there that the air is unable to hold any moisture.

Cold, up welling ocean currents along the western coasts of continents cause the second type of desert. Here the air is so cool that it won't hold much moisture and no rain reaches the land.

The third cause of a desert is the rain shadow effect. The Mojave and Death Valley are the rain shadow of the Sierra Nevada Mountains. As the air tries to rise and get over the mountains, it cools, condenses and rains on the western side of the mountain. By the time the air gets over, no moisture is left.

The fourth and last type desert is found in the middle of continents. By the time the air mass reaches here, most of its moisture has already been lost so a desert forms. The Gobi desert in China and the Australian deserts form this way.

Wind and water are the main forces that sculpt the deserts. During the few storms that do occur in deserts, water, moving with great force, carries soil, rocks and other debris and dumps it in cone shaped alluvial fans. This is a great place to go rock hunting.

Wind is responsible for the beautiful sand dunes found in most deserts. Bryce Canyon in Utah was formed from huge dunes piled up by the wind 200 million years ago. Wind has since eroded the sandstone layers into dramatic forms. Many of our beautiful land formations out west were formed this way.

From *Rockwood Rockhound News via Strata Gem 8/2002*

Devils Tower

By Chuck DeFlorin
Minnesota Mineral Club Member

Most of the area around the Devils Tower consists of sedimentary rocks. The dark red sandstone, siltstone and shale were laid down during the Triassic age (225 million years ago) in a shallow sea. Seas came and disappeared many times adding layer upon layer of sedimentary rock. During the Tertiary period (around 65 million years ago) near the end of the dinosaur age the earth started to change. The Rocky Mountains were lifted up and the Badlands were formed. Magma started pushing its way through the sedimentary layers creating a dome. The molten magma started to solidify and as it did so, it started to shrink as it cooled down, splintering into vertical columns. It actually came to a complete stop about 3,000 feet below the surface. Millions of years later the Belle Fourche River had washed away the surrounding landscape. Gravity and erosion stripped the soft layers of sedimentary stone, bringing the once subterranean volcano plug to the surface. It is a volcano that never made it to the surface.

There is still an ongoing debate about Devils Tower. All of the geologists agree that the tower was formed by the intrusion of igneous material. The rock is called Phonolite Porphyry, based on its mineral composition, which includes Anorthoclase, Aegirine-Augite and Sphene. What the geologists can't agree on, is how the process took place. Some believe it is a eroded remnant of a laccolith. A laccolith is a mass of igneous rock that got through sedimentary rock beds but never made it to the surface. Another theory is that the tower is a huge volcanic plug, perhaps the neck of an extinct volcano. Today the ancient monolith has a base diameter of almost 800 feet and rises vertically 1,267 feet into the sky. All around the base of Devils Tower are huge slabs of stone which have broken from the sides and toppled down. It is a testament on what erosion and gravity are capable of doing. One of the many park trails loops around the tower's base and is only 1.3