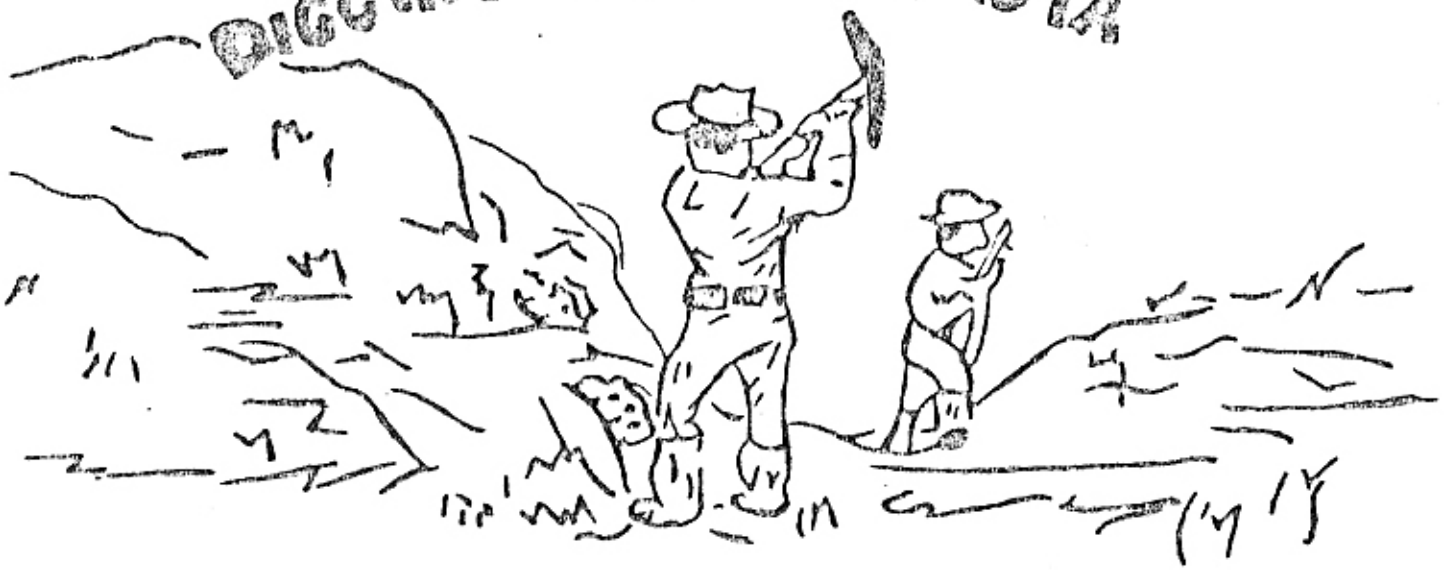
DIGGIN'S FROM DAKOTA



MONTHLY PUBLICATION OF THE CENTRAL DAKOTA GEM & MINERAL SOCIETY
P.O. Box 2445, Bismarck, ND 58502-2445

SERVING BISMARCK, MANDAN, AND SURROUNDING AREAS IN

NORTH DAKOTA

SAVE STAMPS FOR

STAMP CHAIRMAN

Gen & Bill Buresh, Eds.
DIGGIN'S FROM DAKOTA
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FIRST CLASS

SAVE STAMPS FOR

STAMP CHAIRMAN

Volume 31, NO. 1
January, 1993

RMFMS - 2nd PLACE, SMALL BULLETINS, 1992
RMFMS - 2nd PLACE, SMALL BULLETINS, 1987
AFMS -- 2nd PLACE, SMALL BULLETINS, 1985
RMFMS - 4th PLACE, SMALL BULLETINS, 1985
RMFMS - 2nd PLACE, SMALL BULLETINS, 1981

DIGGIN'S FROM DAKOTA

Published by the CENTRAL DAKOTA GEM & MINERAL SOCIETY
P.O. BOX 2445, BISMARCK, ND 58502
Member of
ROCKY MOUNTAIN FEDERATION OF MINERALOGICAL SOCIETIES and
AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

Organized March 1966

OBJECT: 1. To further the study of mineralogy and geology:
2. To arrange field trips to collect minerals, gems, and fossils:
3. To assist its members to improve in the art of cutting, polishing, and mounting gem material:
4. To provide opportunities for the exchange, purchase, and exhibition of specimens and materials; and
5. To share knowledge about gems, minerals, and activities of the Society with the general public. --Article II, CDGMS Constitution

MEETINGS: First Sunday of each month at Masonic Bldg., 1810 Schafer Street, Bismarck,ND: 2:00 p.m., November through March; 7:00 p.m. April-October.

EARLY CLASS: One-half hour before each meeting. VISITORS ARE WELCOME.

ANNUAL DUES: Family - $10.00; Individual Adult - $8.00; Individual Jr. - $4.00

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Emma Brady 663-3903 or - 663-3904
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RMFMS-STATE DIRECTOR FOR ND: Betty Mautz, Rt. 1 Box 368, Garrison ND 58540 337-5775

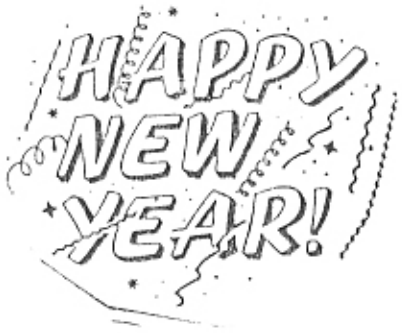
All members are encouraged to submit articles/news items for publication.
Material for the bulletin should reach the editor by the 10th of each month.
Advertisements from members will be accepted for the bulletin. ($2.00 for 1/8 page)
Permission is granted to reprint non-copyrighted articles if proper credit is given.

Central Dakota Gem & Mineral Society's
22nd Annual
GEM & MINERAL SHOW
COMMUNITY CENTER -- MANDAN, ND
Sept. 28-29, 1996
Chr.: Rodney Hickle, HC2, Box 191, Center, ND 58530
Telephone--701-794-3342

DIGGIN'S FROM DAKOTA

VOL. 31, NO. 1 JANUARY, 1996

NEXT MEETING--FEBRUARY 4, 1996, Masonic Center, 1810 Schafer St., Bismarck
EARLY CLASS: 1:30 p.m. -- Meeting 2:00 p.m.
PROGRAM: "The Rock Cycle" 18 min. Video, Scott Resources. Source: North Dakota State Library
LUNCH COMMITTEE: Sue Randall, Ledores Robey



PRESIDENT'S MESSAGE --

[This space reserved for a message from the President. Unfortunately mail service was interrupted during last week's storm when Highway 83 was closed, and the message from the new president was not received.] [Probably you also saw North Dakota weather featured on national TV. We had very cold weather--up to -39 F. with strong winds, and very low wind chills, but so far we have not heard of any flooding in this area.--Ed.GB]

CALENDAR OF EVENTS

Feb 3	BISMARCK, ND--Paleontological Soc. Meeting, 7:30 p.m., Capital Electric Bldg., Highway 83 N of Bismarck.
Feb 3	OAK HARBOR, OR--"Sweetheart of Gems" Show at Oak Harbor Senior Center, sponsored by Whidbey Island Gem Club with Whidbey Island Pebble Pushers
Feb 4	BISMARCK, ND--Central Dakota Gem & Mineral Soc. Early Class I:30 p.m.; Meeting 2:00 p.m.,1810 Schafer Street, Bismarck
Feb 7-10	QUARTZSITE, AZ--Quartzsite Pow Wow, Annual Gem & Mineral Show
Feb 8-11	TUCSON, AZ--Tucson Gem & Min. Show. Theme Minerals: Calcite and Fluorescents Tucson Convention Center
Feb 13-Mar 6	LORDSBURG, NM--5th Annual "Rockamania" 1966. Gem & Mineral, Arts & Crafts & Market Show, Hidalgo Co. Fairgrounds
Apr 26-28	WICHITA, KS--Annual Show, Wichita Gem & Min. Soc. Inc. Nazarene Church, 421Ellis

Central Dakota Gem & Mineral Society
22nd ANNUAL GEM & MINERAL SHOW
Mandan Community Center, Mandan, North Dakota
SEPTEMBER 28-29, 1996
Show Chr.: RODNEY HICKLE, HC2, BOX 191, CENTER, ND 58530

PROGRAM FOR FEBRUARY 4, 1996

The program for the February meeting will be a video titled "The Rock Cycle." According to the description, the video unravels the geoligic process which creates, changes, and breaks down earth's materials.

NOTES FROM THE LAST MEETING JANUARY 7, 1996

The outgoing president, Ray Oliger, opened the January meeting by leading the Pledge of Allegiance.

Minutes of the previous meeting were read and approved. Neill Burnett presented a treasurer's report.

Rodney Hickle, Show Chairman, reported that dealers' contracts will be sent this week.

Announcements: The 1996 ROCKY MOUNTAIN SHOW AND CONVENTION will be held on June 7- 9 at the Yucca Center, 500 S. Richardson, Roswell, New Mexico, hosted by the Chaparral Rockhounds of Roswell. Chrm.: Howell T. Whiting, 2300 South Union, Roswell, NM 88201. Tele.: (505) 622-5679. (The *Rocky Mountain Federation News*, 12/95, also indicates five days of field trips after this show.)

Vernie Peterson was reported to be in the hospital.

The past president turned the meeting over to the new president and the other 1996 officers:

Betty Mautz -- President
Russ Oliger -- Vice President
Robb Morris -- Secretary
Neill Burnett -- Treasurer

Ray Oliger moved that the door prize be presented to the guests. The name of Jim Ellis was drawn for the junior door prize, an azurite specimen.

There were 23 adults, 2 juniors, and 3 guests present.

Rodney Hickle was introduced as the speaker for the program. He spoke about his experiences on his1996 return trip to Kyrgyzstan.

Lunch was served by the officers. (G. Buresh) ❑❑

WIFE'S LAMENT, by Marjorie A. Caulfield

I wanted to fly to some tropical zone
For sunshine and breakfast in bed.
My husband objected to staying alone;
He bought me a sun lamp instead.
--From THE TUMBLER 9/92 via QUARRY QUIPS 12/95

FEBRUARY BIRTHSTONE: Amethyst
FEBRUARY FLOWER: Violet
Happy Birthday to:
Feb 5 Bill Buresh Feb 22 Orma Swanick

HAPPY ANNIVERSARY
Feb 2 Gordon and Beth Bell

PROGRAM AT LAST MEETING

For the program on January 7, Rodney Hickle presented an interesting report on his second trip to Kyrgyzstan, now a new independent republic in southeastern Russia. The trips are offered by Rimrock International and sponsored by the U.S. Govt. and a group of private companies. Farmers make the trip by invitation, chosen for their expertise in some phase of farming. A team of about three of the visitors met with selected farmers there to try to assist them in their operations on a farmer-to-farmer basis.

This year Rodney saw just a few of the individuals he had seen last year. One of those he visited this year was previously a business man who was new at farming. The "village" of which he was the leader is actually one large collective farm. In addition to being the leader, he also operated a bakery and a store.

Questions answered at the close of the presentation indicated much interest in Rodney's experience in a far part of the world. ❑ ❑

DUES ARE DUE--

Neill Burnett, Treasurer, has supplied the editors with membership cards for all members who have paid 1996 dues. These will be attached to the bulletin. If you do not receive a 1996 membership card, your dues have not been recorded for 1996.

The Treasurer would appreciate your taking care of this as soon as possible, so that all names can be included in the 1996 membership list, which will be prepared soon for mailing.

If you have paid 1996 dues but did not receive a card, please contact Neill Burnett at 223-6758 or the editors at 663-5397. In case you prefer to write, Neill's address is on the officers' list each month, and the editors' address is on the return address on the outside of each "Diggin's." ❑ ❑

HAPPY NEW YEAR!

From LAKE AGASSIZ ROCK HOUND, 1/96 Wil DeGraff and Ethel Eshom, Eds.

GEOLOGIC RESOURCES: INTERNET RESOURCES FOR EARTH SCIENCES IN NORTH DAKOTA

Donald P. Schwert
Department of Geosciences
North Dakota State University

This essay will be almost hopelessly outdated even by the time it is printed. The resources of the Internet (the worldwide networked system of computers, which can even include your home computer) have grown so vastly that it's difficult to keep up. Below are some Internet and Web resources that I have found worthwhile for those interested in North Dakota's geology. Down-loadable graphics are idealized for Netscape.

NDSU Geosciences Home Page: http://calvin.cc.ndsu.nodak.edu/geo/geowelcome

Aside from providing information on the NDSU Geosciences Department, this address supplies useful links to other sites and to geologic software resources. The site is under constant development by our faculty - and thus is worth checking frequently for updates and new materials.

North Dakota Geological Survey Gopher:
gopher://gopher.state.nd.us:70/11/North%20Dakota%20Government/State%20Agencies/

This site is obviously under development. Users can access the North Dakota stratigraphic column, some North Dakota maps, and information on NDGS publications.

United States Shaded Relief Maps: http://fermi.jhuapl.edu/states/states.html

This is one of my favorite sites. Users can download color shaded state maps for most of the United States, including a beautiful one for North Dakota. Options include a county-line overlay onto this map. At the bottom of the index page are links to other spectacular maps, several of which include North Dakota and adjacent states. This site is also full of surprises! For example, do you know how many vegetarian restaurants North Dakota has?

U.S. Geological Survey Geomagnetic and Earthquake Epicenter Information:
telnet to: neis.cr.usgs.gov Sign in as QED.

What is the declination and inclination of the Earth's magnetic field for any locality in North Dakota? Choose the Geomagnetic option in the opening menu. To obtain the geomagnetic information, users should have for their chosen site the following: latitude (to nearest second), longitude (to nearest second), and elevation (feet or meters). In the submenu, choose the defaults by pressing return. It's fascinating to see how fast declination data change. To reinforce this point, have your students utilize 7.5' USGS topographic maps to input the coordinate and elevation data - and then compare the declination values obtained with those shown at the bottom center of their map.

From THE AMMONITE, 12/95, Jan Baumeister, Ed.

PETRIFIED FORESTS OF THE HIGH PLAINS

by Jan Baumeister

In the early 1800's reports on petrified forests came from the mountain men who roamed the mountains and high plains looking for fur bearing animals. Wyoming, eastern Montana, southwestern part of North Dakota and western South Dakota are considered "High Plains States." The picturesque Jim Bridger, a mountain man and trapper, had found more than one petrified forest in his travels of the West. He loved to tell true stories and tales (quote) - "of peetrified birds a-settin' on peetrified trees, a-singin' peetrified songs." Such stories become legends spread eastward to the people of the Atlantic seaboard.

In 1811, Hunt's Astoria party left the mouth of the Cheyenne River, following a stream and skirting the limits of the Black Hills. Washington Irving described the area as follows: "These plains, however, had not always been equally destitute of wood, as was evident from the trunks of trees which the traveler repeatedly met with, some still standing, others lying about in broken fragments, having thrived in times long past." This same area was rediscovered and it was reported years later that a completely petrified forest existed near the headquarters of the Cheyenne River, which has its source in the Black Hills. This fossil forest is located in the same area where fossilized cycads were found later in time. Rockhounds still find excellent quality agatized wood along the Cheyenne River.

During most of the Cretaceous era, a great sea spread inland and across the high plains states. Huge forests of the Jurassic (dinosaur) period were covered under by thousands of feet of marine sediment. The final withdrawal was in late Cretaceous era when again the landscape flourished with great forests of more modern type. The retreating Cannonball Sea drained out the northward to the southwestern part of North Dakota. The draining of the inland sea left lakes, swamps and sluggish rivers where trees, bushes and other flora [had flourished] in tropical conditions in the high plains country. This is evident by the great coal beds extending through central Wyoming, southeastern Montana, western North and South Dakota.

Among the interesting species from western South Dakota and the Black Hills area generally, classified by microscopic cell structure analysis, was an ancient member of the pine family which grew 60 to 70 million years ago. Many other fossil trees have been identified, but mostly from leaf impressions. Some of the South Dakota fossilized specimens one can find include palm, sequoia, oak, hackberry, fir, spruce, beech, willow, walnut, sycamore, hazelnut, hickory and many others.

At the end of the late Cretaceous times came the Larimide Revolution where great upthrusts and buckling forced the earth's surface up thousands of feet. This was the mountain making era of the West--the birth of the Rocky Mountains, the Big Horns and other mountain ranges. Geologists estimate there was a time when the summit of the Big Horn range towered 29,000 feet above the sea level. Millions of years of erosion have worn them down to the present, still at high levels. As this erosion was taking place, volcanoes continually erupted and the silica-rich ash covered the great forests in the structural basins of the Big Horns and Green River in Wyoming.

The ash, carried eastward by air currents and flooding of old rivers, spread out like a fan into the western parts of both Dakotas and the northwestern corner of Nebraska. Silica-rich volcanic ash and other minerals replaced the wet wood, molecule by molecule, to form a variety of replacement types and colors. Some of the limb sockets, cavities and central hollow portions are encrusted with chalcedony and tiny crystals of quartz that range in color from white to amethyst, clear purple or bluish-violet. Growth bands sometimes are crinkled and folded where the log had been compressed and flattened by an overlaying mass. →

HIGH PLAINS PETRIFIED FOREST, continued

Volcanic activity reached its greatest proportions during the Eocene and Miocene times. This was the era when volcanic ash covered the giant lake that covered the southwestern part of Wyoming and fossil fish were pressed as though pages of a book. It also buried the forests of Eden Valley and Blue Forest basin near Farson. Other buried forests are located in the Williston Basin west of the Missouri River and the Badlands of North Dakota, near Tom Miner Basin on the Wyoming-Montana line, the subtropical forest in Shirley Basin and another forest located east of the Big Horn Mountains. This forest is said to be one of the largest petrified forests in the world, now covered by hundreds of acres of sagebrush. Most of the petrified forests in the high plains states contain at least 10 different kinds of trees.

Over the period of thousands of years, entire forests that first grew at the base of volcanoes were covered by lava or ash. In time seeds took root and another forest would grow on top of the buried forest. In some areas, this layering took place many times through the thousands of years. One area that shows a constant burial of forests is visible today by walking along Specimen Ridge above the Lamar River in the northeastern corner of Yellowstone Park. Here 27 layers of petrified forests are lying on top of each other ad exposed by erosion in a 40-mile area.

In June, 1994, road crews were widening out a stretch of road near the east entrance of the Yellowstone Park. They uncovered a trove of fossil tree leaves buried in the Eocene epic some 40-50 million years ago. The tree specimen found, called "macginitea," is a relative to the sycamore tree. It had giant leaves that were a foot and a-half long and shaped like an umbrella. It is rare to find whole leaves preserved. A fossilized fragment of a palm frond also was found. It's the first evidence that palms survived in Yellowstone's ancient forest when the climate was tropical.

In western North Dakota, the geological formations exposed in the Badlands range in age from Cretaceous-Pierre shale through the Oligocene White River formation. Fossil trees are clearly exposed at places in the deeply eroded badlands. Discovered in deeply eroded badlands are six levels of ancient forests where the area has petrified stumps and trees standing vertically. Huge forests with land animals and associated aquatic life forms spread across North Dakota following the retreating of the Cannonball Sea at the close of the Cretaceous period. Many giant cedar, redwood and sequoia trees flourished. The palm, cypress, and fig trees grew in the Pacific-like climate that supported the redwood and giant Sequoia trees.

More recent research has shown that most of the petrified wood is simply permeated with the mineralizing agent. The term "Petrified" should be replaced with something more accurate, such as agatized, baritized, calcified, mineralized and opalized fossil wood. All types of fossil wood can be found in the ancient forests of the high plains.

REFERENCES:

"Petrified Forest Trails," a guide to the Petrified Forests of America,
by Jay Ellis Ransom
"Petrified Wood," article by Roger Pabian, from The *Pick and Shovel, February 1986*
"Fossilized leaves call a halt to Yellowstone road," article by Associated Press
From *Rocky Mountain News, 6/13/1994*
"Trove of Leaves," article by Kurt Repansek, from *Rocky Mountain News, 6/94*
"Roadside Geology of the Northern Rockies," by David D. Alt & Donald Hyndman
from *PaleoDiscovery*, April 1987, pages 5 & 6
"The Petrified Forests of North Dakota," Part 2, article by Dr. Gordon L. Bell;
from *PaleoDiscovery*, May, 1987, pages 5 & 6 ❑❑

From THE AFMS NEWSLETTER, 11/95

THE COMPLEATE SHOPPE

by Mel Albright, Chair, AFMS Safety

Most rockhounds have a shop or a place that acts as one. Most of us have it as well equipped as we can afford. But how well equipped is it for safety?

Perhaps the best way to understand what's needed is to compare our shop with an industrial chemistry laboratory.

Let's look at lab equipment.

The lab must, by law, have a suitable fire extinguisher readily available. Most often, that means it is hanging on the wall next to the 'front' door. The lab will have a safety hood where air is drawn from the lab proper and exhausted outside and high off the ground. The lab will have safety cans--cans that have a spring-loaded lid to keep them closed and will be made of non-sparking material. The lab will have all-metal boxes or shelves or cabinets. The lab will have a non-skid floor with matting if the floor is likely to get wet. The lab will have safety glasses, face shields, ground fault electrical outlets, safety buckets, rubber and plastic gloves, safety waste cans, tongs and other tools for moving hot materials, an eye fountain for emergencies, a nearby emergency shower, dust and filter masks, a first [aid] kit, and other specific safety devices for the operations going on in the lab. AND MORE!

Well that's something, but what does it have to do with a rockhound's shop? Maybe nothing. Most likely, a whole bunch.

If you have any flammable liquids around, you should have them in safety cans--stuff like alcohol, acetone, methyl-ethyl ketone, gasoline, kerosene.

Actually, the lab will have the absolute minimum possible inside with the rest stored outside in a fireproof metal cabinet. Safety cans mean no spills. No spills mean no fires. Other flammable stuff--glues and the like--should be stored in tightly closed metal containers (a metal fishing tackle box). Bottles of acids should be stored in safety buckets--they'll contain the acids if the bottle breaks. Fuel bottles, such as acetylene or propane bottles, are securely chained to prevent their turning over and, perhaps, breaking off the valve. (Talk about a rocket!)

The safety hood in a lab will prevent the buildup in the lab of any flammable or toxic material in the air. You should copy [this] principle in your shop. Work with ventilation. Fresh air should come first to you, then to whatever you're working on and then be exhausted, or blown away if you're working outside. A floor fan hung in a window often works well.

The personal safety stuff--gloves, masks, safety glasses, tools, ear protectors and so on--are all cheap and all available at WalMarts and most hardware stores. Spares for guests should be on hand.

The fire extinguisher and first aid kit are musts. The ground fault electrical outlets certainly should be used. The non-skid floor mat is needed in many rock shops. The proper tools for the job at hand are a good safety measure.

We might not be as well equipped as a commercial lab but the closer we can come the safer we will be. We should indeed consider all the same safety factors and what we can do to be safe. ❑❑

=+=

HINTS:

▲ PROTECTORS: Dr. Scholl's Moleskin plaster is a very handy item for making protective bases for book-ends or any other rock or mineral display. It can be obtained in sheets which have a gummed surface ready for applications. This is much easier than gluing felt to the bottom of display pieces to protect the furniture. --From KENTUCKY AGATE via BURRO EXPRESS 11/95

▲ POLISHING DINOSAUR BONE, by Roger Pabian. This bone is handled much like agate, sanded to 600 grit on silicon carbide and polished on hard felt with tin oxide. It is then finished with black rouge on a muslin buff. The muslin buff can clean out the tin oxide that remains between the bone cells, and the black rouge applies a stain to the tin oxide that remains behind. PICK AND SHOVEL via QUARRY QUIPS 1/96