Central Dakota Gem and Mineral Society
Mrs. Blossomae Campbell, Editor
1134 North 28th Street
Bismarck, North Dakota 58501

DIGGINS FROM DAKOTA

CENTRAL DAKOTA GEM & MINERAL SOCIETY

AIM:
1. The study of Mineralogy and Geology.
2. To foster field trips to collect minerals, gems and fossils.
3. The improvement of its members in the art of cutting, polishing and mounting gem material.
4. To provide opportunity for the exchange, purchase and exhibition of specimens and material.

MEETINGS: First Sunday of each month in the Hospitality Room of Capitol Electric Building on Highway 83, north of Bismarck.

VISITORS ARE ALWAYS WELCOME!

OFFICERS:

President	Earle Campbell	1134 N. 28th St.	Bismarck	255-3658
Vice-President	William Buresh	1527 N. 19th St.	Bismarck	223-0611
Secretary	Stanley Fairaizl	205 6th Ave. N. W.	Mandan	663-9712
Treasurer	DeLane Meier	RR 1, Mr. B's Est.	Bismarck	223-8579
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Librarian	Owen O'Neill	906 1st Ave. NW	Mandan	663-3748
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Refreshments	Mrs. Bob Randall	928 N. 16th	Bismarck	223-1625
Annual Show	John Dosch	1425 N. 15th	Bismarck	255-1924
Historian	Mrs. Albert Anderson	RR # 2	Bismarck	673-4585
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Editor & Publicity	Mrs. Earle Campbell	1134 N. 28th St.	Bismarck	255-3658
Pebble Pup Leader	DeLane Meier	RR 1, Mr. B's Est.	Bismarck	223-8579

All contributions for this bulletin should be mailed to the Editor, Mrs. Earle Campbell, 1134 N. 28th Street, Bismarck, by the 10th of each month.

Other editors may reprint any article from this Bulletin. A credit line would be appreciated.

The Central Dakota Gem & Mineral Society is a member of The Rocky Mountain Federation of Mineralogical Societies and The American Federation of Mineralogical Societies.

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MARCH 3
Capitol Electric Co-op Building
Time - 2:30
Hope to see you there.

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PRESIDENT'S MESSAGE

Our February meeting was an excellent example of some of the fine talent we have in our Society! More than eighty persons saw and heard a fine demonstration on jewelry casting. If you missed this, there will be many more good programs in 1974! Plan to attend every one of them!

It is not too early to start planning your display case for our fall show. Don't wait until the last minute to start planning -- start now! You all have specimens, cabs and jewelry that will make for interesting viewing. So don't be bashful. If you do not have enough for a full case -- team up with some one -- lets everyone take part and show our best!!!

We still need a chairman for our membership committee. May we have a volunteer???

Oh, yes, Dues are due!

Earle Campbell

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FEBRUARY MEETING

A near-record attendance was reported for our February meeting. More than eighty visitors, members and pebble pups were on hand to watch Marlys Duchene demonstrate how to make jewelry. Marlys explained how she works in her kitchen and makes rings and settings using the lost wax method. It was a very interesting and educationable program!

Visitors were:

Ernie Knudson and son, Kim....2020 Catherine Drive, Bismarck
Helen Nelson.....603 NW 9th, Mandan
Mr. & Mrs. Virgil Woeller.....304 NW 11th, Mandan
Mrs. Clyde W. Larson.....Rte # 2, Rhinelander, Wisconsin

It was mentioned during the business meeting that the Society start thinking about having a competitive type show in two or three years. A booklet of Uniform Rules of the American Federation has been placed in our library. Anyone interested in learning about these rules may check the book out.

A thank you note from Joyce Muggli was read. She enjoyed the flowers that were sent to her during her recent stay in the hospital.

Frank Herr donated two door prizes. Two beautiful specimens of Montana travertine onyx were given. Joel Ramberg's name was drawn first. He was absent so another name was drawn. This time Al White was the lucky person. The name drawn for the second prize was Mrs. Al White! How lucky can one family get!!!

THIS 'n THAT

This past month Ray Barnett has had an excellent display of spheres, jewelry, rough rock specimens and lamps in the Fellowship Hall of Trinity Lutheran Church. I hear it is well worth the time to stop by and see this outstanding display.

Joyce Muggli is slowly recuperating from eye surgery and is back in school. We hope things go well for her.

Ted and Verna Giese have returned from Mayo Clinic in Rochester where Verna underwent some tests. However, she is to return to the Clinic on March 4th for surgery. Our prayers are with Verna and are looking forward to the day when she will be back with us.

On March 5th, Dick Merrill will present a program to the first and second grades at St. Mary's School. He will show slides of different birds seen in North Dakota. These slides are from Bill Buresh's outstanding collection.

On the same day, Sister Shirley's combination fifth and sixth grade class will visit the Earle Campbell home to watch Earle give a demonstration of lapidary work.

These icy days this winter have been the downfall of many, including Gen Buresh. She slipped on the ice and fractured her wrist. Tough luck, Gen!

Al and Ardell Strom have been busy at the Presbyterian Church organizing bell choirs. They say one doesn't need a musical background to play (ring?) the bells. All one needs is a sense of rhythm. Ah, me! for some people - including this editor - that is an impossible dream.

Hostesses for the March meeting are Fran Bergantine and Ardell Strom.

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PROGRAM NOTES

As mentioned elsewhere in this bulletin, Marlys Duchene did a very good job of demonstrating the art of silver smithing. Those of you who missed this outstanding program should ask for another program in the near future featuring the talented Duchenes.

The program for March will be a slide feature entitled "Buttes, Badlands and Beauty at the Center of the Nation". It sounds great. Y'all come.

Dick Bergantine is doing a very good job as program chairman. But he would like some help. Do you know of a resource person he could contact? Any ideas for a change of pace program? Share your ideas with him. Dick's phone number is 663-3419.

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A hobby is a lot of hard work you wouldn't do for a living.

Now we know - a rockhound is a good father who slaps his little boy's hand for picking up candy that has been dropped in the dirt -- then licks a slab of agate to see if it will polish.

THE GOLDSTONE STORY

For hundreds of years men everywhere have tried to transform base metals into gold. In older times monks of a northern Italian monastery were also engaged in this task. For many years these monks labored to recover the precious metal in their retorts.

About 1590, after years of effort, the monks happened to make a very beautiful sparkling material with innumerable golden stars. The monks had failed in making gold, but they did succeed in producing a marvellous specimen which they properly named "Goldstone". Goldstone was used for decorative purposes until 1890, when it was imported to the United States, after it was found to be suitable for cutting and polishing for jewelry pieces.

The monks called goldstone the "adventuring" stone, as it is impossible to foretell the success of a mixture for many weeks. To this day, due to the lack of modern production methods, a batch of material can turn out unsuitable for use because of the uncertainty in the heating and cooling process. The production of goldstone has been a secret method all these years, concealed from everyone. Many have tried to duplicate goldstone, but to date no one has been successful in imitating this beautiful stone.

For the most part, the bulk goldstone, after it is removed from the retorts, is shipped to the major stone cutting and polishing centers throughout the world. Germany, perhaps, is the most important cutting center, although much of the cutting is done in Austria, Holland and some in Japan.

In recent years a blue goldstone has been developed from the same process as the first brown goldstone. This stone has been called "Blue Magic". Some people claim it will glow in the dark after being exposed to sunlight for many hours. Goldstone will not discolor or fade or lose its beauty in any fashion, making it a precious keepsake.

There is also a new green goldstone now available on the market. It is made by a slightly different process but has the same sparkling effect. It can be made into lovely flat-topped cabs but is a little more difficult when worked into the usual rounded tops. And we have received news of the latest goldstone, which is black in color and is called "Midnight Stone". Same process as the brown and blue, a beautiful stone and one you will want to work on.

NOTE: Goldstone is essentially a glass; the inclusions are caused by crystallized copper filings.

from The Michigan Gem News via The Rock Vein via Halite Hilites

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SHOW AND TELL

Remember to bring some "braggin" rocks and specimens for our "show and tell" table. There was a nice representation at our last month's meeting. Vernie Peterson and Frank and Anna Herr had some lovely specimens to show. There were several others also but I was busy in the kitchen and neglected to get their names.

If you have an unusual specimen, bring it and try to stump our experts.

Did you get your name tag? It is a bargain - only 25¢ !

FALLING STAR

When you think of a falling star you think of something bright and beautiful. A meteor flashing through the sky. A signal from outer space. In reality, it is a rock from a planet--perhaps similar to our own earth--which was torn apart by an internal explosion or an external impact. If there are several they may be fragments of celestial bodies originally the size of asteroids. The friction of air as they enter the atmosphere of the earth heats them to incandescence and they become meteors or shooting stars.

The fusion crust is the outer layer of the meteorite caused by friction as it passes through the earth's atmosphere.

The fusion crust of an aerolite is glass with a mixture of glass and minerals underneath. The fusion crust of a metallic meteorite consists of magnetite.

A pallasite has large rounded grains of olivine in a sponge-like network of metal.

Spiderite, a metallic meteorite, has grooves in it which sometimes radiate from a single point, and pits known as "thumb marks". When it is etched with acid the iron-nickel alloy shows fine lines or triangular crystal bands.

Tektites are of natural glass of meteoritic origin. They are quite similar internally, but it is not yet known how or why they originated. One theory is that they are solidified droplets of lunar material splashed into space by the impact of of huge meteorites with the moon.

There are many minerals that are found only in meteorites. One of them, ureyite, is an emerald-green mineral found in 1965 as tiny grains in three meteorites. It is related to jadeite.

The best-known of the world meteoric craters is found in Arizona. It was a prehistoric fall (20 to 75 thousand years old).

The largest meteorite on exhibit and the second largest in the world was found in Greenland. It weighs 34 tons and was known to the Eskimos in 1818 as "The Tent".

The oldest house-striking meteorite on record fell through the roof of a hut in Uttar Pradesh, India, in 1798. It weighs two pounds.

The largest known meteorite (weighing about 60 tons) was found in southwest Africa in 1920.

These are only a few of the interesting meteors that have landed on our earth from outer space.

By Beatrice Swanson, via The Geode
Newsletter, via The Stone Chipper
via Jade Journal

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REAL ROCK BOOKS

Did you know that the University of Michigan has a library stacked with books made of rocks? It is true. Gore Library of the U. of M. Geology Department's laboratory of sub-surface geology houses about 400 tons of "rock books". These books are composed of slices of core samples of rock taken from many oil wells throughout the state.

Most of the cores are donated to the University by oil companies from both successful and unsuccessful wells. The cores are sawed into thin slices and stored in sequence. They are then labelled with location, depth and donor information. They are stored in fiberboard cartons and stacked on wooden pallets.

(continued)

(Rock Books - continued)

Petroleum geologists regularly do research in the volumes of "rock books". Students utilize them as the source for research papers and doctoral theses. They are often referred to by public and private industry before doing heavy construction in certain questionable areas of the state.

from The Lithogram, via The Michigan Gem
via The Rock Vein

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COMING EVENTS

April 20-21, BILLINGS, MONTANA - Billings Gem & Mineral Club
April 27-28, SIOUX FALLS, SOUTH DAKOTA - Sioux Empire Gem & Mineral Society
May 4-5, WATERTOWN, SOUTH DAKOTA - South Dakota State Gem & Mineral Societies
May 18-19, HOT SPRINGS, SOUTH DAKOTA - Picture City Gem & Mineral Society
June 7-9, CHEYENNE, WYOMING - Rocky Mountain Federation of Mineralogical Societies, Wyoming State Federation of Mineralogical Societies
June 8-9, MILES CITY, MONTANA - Yellowstone Agate Club - Montana State Gem & Mineral Show
June 13-16, LINCOLN, NEBRASKA - American Federation of Mineralogical Societies, Midwest Federation of Mineralogical and Geological Societies and the Nebraska Association of Earth Science Clubs, Inc.
June 14-16, CASPER, WYOMING - Natrona County Rockhound Club
July 19-21, WINNIPEG, MANITOBA, CANADA - Winnipeg Rock & Mineral Club
July 6-12, FARGO, NORTH DAKOTA - Red River Valley Fair and Rock Show, Lake Agassiz Rock Club
*Sept.14 MANDAN OR BISMARCK, NORTH DAKOTA - Central Dakota Gem & Mineral Society
*Sept. 21 MANDAN or BISMARCK, NORTH DAKOTA - Central Dakota Gem & Mineral Society
Sept. 20-22, WILLISTON, NORTH DAKOTA - Williston Rock Club

*These dates are tentative.

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FROM OREGON

I thought I would write and invite you to our Gem Show we are having next week. I am sure looking forward to it as it is right across the street from our office. They expect about 30,000 visitors. There are supposed to be rocks from all over the world.

I haven't been doing any rock hunting but this week a friend and I are planning to go to the seashore to look for agate - that is, if we can get enough gas.

The temperature here is about 35 to 50 degrees, but it seems colder than North Dakota as I am outside all day. I hope to be home in another month.

Walt Weisenburger
Forest Grove, Oregon

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Meeting time for the March meeting will again be 2:30
DON'T FORGET!!!!

CRYSTALS AND HOW THEY FORM
By Frederick H. Pough, curator of Physical Geology and Mineralogy, American Museum of Natural History.
via - The Book of Knowledge Annual 1951 - Page 124
via Corn Krib News, December, 1973

In the world of nature we find many different shapes. In the mineral world, there is one large group of minerals that assume no special shape and these are called amorphous (without shape). Minerals known as crystals take definite shape. They become solids bounded by planes (flat sides - often called faces) and straight edges. There are many different forms - four sided, six-sided, and double pyramids.

These interesting mineral forms almost seem to grow as the chemicals or chemical compounds slowly become solid.

When you study salt that looks like a fine powder, under a microscope, you will see that each particle is an almost perfect cube. Salt particles are never round.

Snowflakes are crystals of water, no two snowflakes are alike and they all have six sides.

Most diamonds have eight sides and are called octohedrons (from the Greek meaning "eight" and "base").

Garnets appear in the form of dodecahedrons, or solids having twelve planes.

The outline of a crystal is known as its "habit", thus, salt has a cubic habit, and a diamond has an octahedral habit.

Scientists put all crystals into six large classes known as crystals systems. The system is determined by the axis of the crystal and their arrangement.

To understand: Let us examine a cube - it has six equal planes, each plane meets other planes at the edges and corners. A cube has only three directions the edges can run. If we drill a hole through the center of one plane it will come out in the middle of the opposite plane. This hole will represent one axis of the cube, and will be parallel to one set of edges. By repeating through the other two planes, there are no more holes of this kind to drill. Thus the cube has three axis. A cube has three axis of equal length and is called an isometric crystal.

In crystals of different shapes and having different numbers of sides, the number and direction of the axis are different. It is in relation to the number and arrangement of these axes that the six great crystal systems have come into existence. The Cube, The Octahedrons, The Dodecahedrons and many other variations of the cubic shape, all have three axes of equal length, at right angles to each other.

The second great system is known as the Tetragonal (four-sided) system. Crystals that belong to it, such as the zircon, have four sides. Crystals in this system have two axes of equal length and a third of a different length, all at right angles to each other. They are also recognized by their four long sides (prisms) and the two square planes at the top and bottom - pinacoids.

The third system - the Hexagonal, six-sided - is of the greatest importance to the jewelers, for in this class occur most of the gem minerals - the sapphire, ruby, emerald, aquamarine, tourmaline and many others. Crystals of this type have three equal horizontal axes on one level, set at an angle of sixty degrees to each other, with a fourth axis set at right angles to these three. This fourth axis may be longer or shorter than the three equal ones.

The Orthorhombic system is the fourth, and crystals belonging to it have shapes like a shoebox. The word means that there are three axes of unequal lengths, set at right angles to each other. In this system we find topaz and chrysoberyl.

(Continued)

(Crystals, continued)

The next system is the monoclinic. Here one axis is inclined or tilted. The only well known gem in this system is Kunzite. Gypsum, the source of plaster of Paris, forms fine monoclinic crystals.

The last of the possible systems is the Trioclinic, in which we find all the axes inclined at different angles to each other. In this group belong turquoise and the feldspars.

The crystal takes its shape from the way the atoms inside are arranged. A scientist, x-raying the inside of a crystal, can see reflections from tiny particles arranged in orderly fashion. These tiny particles are atoms and their order must be determined by the arrangement of the binding forces within. There are thirty-two possible ways in which the atoms of crystals can be arranged, and NO more.

An expert can recognize any crystal by the arrangement of its axes, and planes as well as by its color and texture. When a gemstone is prepared for setting in a piece of jewelry, it is cut into anyone of various shapes to best bring out the beauty of the stone.

The expert with an x-ray of the interior of a stone could always identify it by the arrangement of the inner particles which would not be changed by any outside cutting, even though the cutter had removed all the original planes.

It is interesting that man now puts smooth surfaces and angles on his gems to make them more beautiful. Nature did this for him millions of years ago, and many crystals are lovelier than man-cut jewels.

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GRINDING GUIDE

1. All grinding wheels for Lapidary work are manufactured with a bonding code - K, L, M. N. O, P, etc. When you buy a new wheel, be sure to notice the bond. If it is too hard, go back down on the letter toward A and if too soft, go upward to Z. This will give you a wheel with a bond that exactly fits your own desire.

2. Never exceed manufacturer's R.P.M.

3. Make sure flanges support wheel properly before using wheel.

4. Grit in Black Diamond Carbide wheels have a range of hardness lower than Green, but also could be minutely harder. Grit in Green Silicon Carbide wheels will always be almost as hard, and usually harder. However, they are more uniform in hardness and will usually last longer.

5. Don't let wheel stand in water or against a sponge.

6. Don't grind with a dry wheel. This causes excessive heat on the outer layer and will cause wheel to get rough and deteriorate rapidly.

7. Grind lightly on extreme corners of wheels even when wet.

8. Bumpy wheels will dig deep scratches in your stones, making sanding difficult.

9. Fingers and fingernails get more precious each time they are ground.

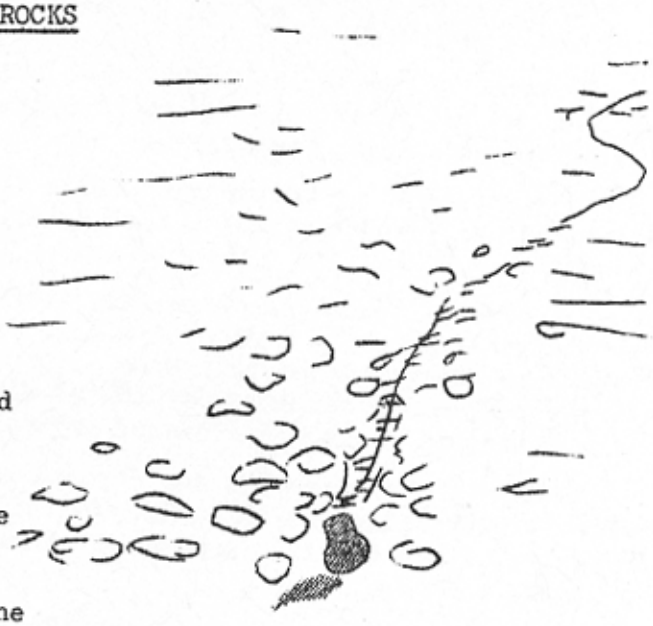
10. Stones can harbor various unfriendly agents. Always disinfect that scratch or grinder burn.

By Bill Meyers via Rock Chatter, via
Pick & Chisel, via RMF Newsletter

WALKING ROCKS

Most of us have heard of the talking rocks. I had one that used to fascinate students, but how many of you have heard of the "walking rocks?" They were discovered in California's Death Valley around 1900 and have been the subject of much debate ever since then. There is a dry lake bed called the Racetrack which, of course, is very flat. Oddly enough, no one has ever seen the rocks in motion, but they leave trails which are very definite - sometimes straight, curved and sometimes zigzag.

Geologists have been mystified for years and have tried to explain just what causes the movements of these rocks. One theory is that rain or snow might make the lake bed so slippery that the rocks could be blown along by the 100-mile-an-hour winds that have been reported there. The geologists refuse to consider the theory that was believed in past times - that the rocks are pushed by ghosts.



The above sketch, made from an actual photograph, show the path made by one of the traveling rocks.

American Federation Newsletter, March 1974

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LITHIUM TANTALATE

The telephone company has used quartz crystals in their products since the 1920's because quartz is piezoelectric -- it can convert pressure into electrical energy. Since 1959, Western Electric engineers have "grown" quartz crystals for this purpose. The quartz is crystallized from a solution, 40 at a time, over a period of 30 days. The crystals are about 2 x 2 x 7 inches long, and they create about a million a year!

Now, these engineers have come up with a new crystal that can be made faster, perform better, and requires less complicated circuitry than quartz to do the same amount of work. Lithium tantalate is the result of much research by Bell Labs, and development by Western Electric.

Lithium tantalate crystals are grown by slowly rotating and pulling a seed crystal from a solution of melted powder at 3065° F. They grow rapidly, almost a half-inch in length an hour! When finished, they are about 3/4 inch across and 3 inches long.

from article by Walter Rowen in WE magazine for Western Electric Co.
via S.E.I.S. Club News

(Wonder how I can get one of THOSE for my collection???? ed.)

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When the directions say it's so simple a child can do it - Be wise! Let a child do it.

A Nony Mous

We make a living by what we get; we make a life by what we give.

Dr. Duane Hulse