



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.

The Central Dakota Gem and Mineral Society is affiliated with:
The Rocky Mountain Federation of Mineralogical Societies
The American Federation of Mineralogical Societies

MEETINGS: First Sunday of each month in the Hospitality Room of Capital Electric Co-op Building on Highway 83 north of Bismarck. Meeting time is 7:30 P. M.

VISITORS ARE ALWAYS WELCOME.

OFFICERS:

President.....	John Dosch.....	1425 N. 15th St., Bismarck.....	255-1924
Vice-President.....	Earle Campbell.....	1134 N. 28th St., Bismarck.....	255-3658
Secretary.....	Stanley Fairaizl.....	205 6th Ave. NW, Mandan.....	663-9712
Treasurer.....	William Buresh.....	1527 N. 19th St., Bismarck.....	223-0611
Program Chairman.....	DeLane Meier.....	516½ Gary Ave., Bismarck.....	223-8579
Field Trip Chairman...	Ronnie Stelter.....	Wilton.....	734-6483
Librarian.....	Ewald Muggli.....	Glen Ullin.....	348-3897
Nominations.....	Vernie Peterson.....	615 N. 12th St., Bismarck.....	223-9179
Refreshments.....	Mrs. Albert Anderson..	RR. #2, Bismarck.....	673-4585
Annual Show.....	Gordon Bell.....	515 N. 22nd St., Bismarck.....	223-5146
Historian.....	Mrs. Ted Giese.....	New Salem.....	843-7005
Official Greeter.....	Dick Bergantine.....	703 12th Ave. NW, Mandan.....	663-3419
Editor.....	Mrs. Earle Campbell..	1134 N. 28th St., Bismarck.....	255-3658
Pebble Pup Leader.....	Harold Brady.....	1401 Sunny Rd., Mandan.....	663-3904

All contributions should be mailed to the editor, Mrs. Earle Campbell, 1134 N. 28th Bismarck. Please have them in by the tenth of each month.

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

THE PRESIDENT'S LETTER

Thanks again to our fellow club member, Dr. Gordon Bell, for a swell program he presented at the last meeting.

Those who went on the last field trip enjoyed it very much. Our thanks to the field trip chairman, Ronnie Stelter, for arranging it. It was decided at the June meeting that we will go on a trip to the Cannonball River, Sunday, June 24th. Details on this trip are elsewhere in the bulletin.

We had a rather small group at the June meeting but enjoyed the meeting very much. Coffee and goodies mixed with conversation with fellow club members (rockhounds) is, to me, an evening well spent.

We are very sorry we cannot be with you on the next field trip. We will be on vacation in Colorado and Kansas at that time. Good luck for some good findings and we will see you all at the July 1st meeting.

John Dosch

* * * * *

MEETING NOTES

At the June meeting the club members voted to have Ruby Hill, delegate from South Dakota, represent us at the Federation meeting. No one from our organization planned to attend the Federation meeting.

Guests at the meeting were:

Steve Stubbs.....Chaffee, Missouri
Dave Rice.....Cape Girardeau, Missouri
Ruth Cordner.....119 Ave. A. West.....Bismarck, N. D.
Mrs. N. O. Ramstad.....422 East Main.....Bismarck, N. D.

It was with the greatest of pleasure that we welcomed back Mr. and Mrs. Ray Barnett. Ray is one of our past presidents. Please add the Barnetts to your club membership roster.

Ray and Bertha Barnett.....406 North 17th, Bismarck.....223-9471

Bernham Toepke won the door prize at the June meeting.

Hostesses for the July meeting will be Sally O'Neill and Verna Giese.

Dr. Gordon Bell, geologist for the Highway Department and a club member, was the guest speaker. He showed a series of slides depicting North Dakota scenery and gave a very interesting commentary of each picture. The scenes ran the gamut from the sugar beet plant in Drayton in mid-winter to the badlands. All in all, North Dakota is a very beautiful state (even when it is 30 below!).

We received a note from Joe and Marlys Duchene thanking the club for the honorary membership. They also mentioned enjoying this bulletin and finding the show dates which are published nearly every month to be very helpful in planning their summer travels.

* * * * *

SHOP HINT

Silicone treated tissues for cleaning eyeglasses do a great job of removing fingerprints from polished stones.

A THANK YOU NOTE

I would like to take this opportunity to thank each and every club member for the lovely flowers you sent to me when I was in the hospital. It helps make a person feel better to know that others are thinking of her.

Sincerely,

Marlene White

(We all wish you a speedy recovery and hope you will soon be able to attend our meetings. Ed.)

* * * * *

WHAT DO YOU WANT FROM YOUR HOBBY?

1. THE QUEST. Getting out into the mountains, deserts, quarries, gravel pits, mine dumps, etc. with a definite objective, namely--hunting for minerals. Many persons, caught in the rapid tempo of modern life, find their greatest relief and recreation in this quest; digging in the dirt, eating a little sand with their food, and enjoying the wind and the sun--yes, even the rain--and a "Far Horizon".

2. THE FINDING. The thrill of receiving direct from the hand of the Creator a bit of agate, a fragment of petrified wood, a gemmy crystal. The lure of buried treasure, the uncertainty of success, the excitement in the discovery of your specimen, and treasure.

3. COMPETITION. The fun of selecting what you think is your very best and matching it to what your fellow hobbyist has, serves as an excellent means for most of us to study minerals of a kind and quality not otherwise available.

4. CRAFTSMANSHIP. The exercise of skill, artistic ability and the patience in creating a thing of beauty from intractable material gives satisfaction to the creative instinct.

5. LEARNING. The job of adding, bit by bit, to your store of knowledge of the natural world. Every time a new mineral form is studied the frontiers of experience are extended by just that much. Every day spent with congenial companions make us wiser and kinder, for it has often been brought to our attention that it is the most experienced collectors, the most serious students of mineralogy, who are the most generous and understanding in their dealing with their fellow hobbyists.

6. SERVICE. Through helping others to learn by teaching, lectures, leading field trips, and welcoming beginners to your home to see your collection and donating samples from your store so that they, too, may start a collection, you help others to the fulfillment in the field of Searching, Finding, Doing, Comparing and Learning.

7. APPRECIATION. Last, but not least, you stand in awe of the Creator of all these mineral wonders. This is especially so when you are out searching along a lake shore, on a mine dump or in a gravel pit or a quarry.

AN IMPRESSIVE LIST OF VALUES, ISN'T IT? SURELY THERE IS SOMETHING HERE FOR EVERY ONE OF US. WHAT DO YOU WANT FROM YOUR HOBBY?

by Mrs. Vivienne Dosse, via Flint Rock &
Gem Club, via The Geode Newsletter

* * * * *

At the time Columbus was discovering America, the savage Indians were operating underground mines for turquoise, emeralds, obsidian, and quartz. Los Cerrillos turquoise mine, near Santa Fe, New Mexico, reached its peak about 1200 years ago.

FIELD TRIP PLANNED!

YIPPEE!!!! ANOTHER FIELD TRIP!!! On June 24th, we will meet in Mandan and travel to the Cannonball River. With no snow this winter and a very dry spring, the Cannonball is reported to be very low so the pickin's should be good. You old timers who have spent many a day exploring the banks of the river should turn out so that you can teach us tenderfeets what to look for along the river. Those of you who are new at the game of rockhunting join us. Who knows what you might find!

We will meet at the park on N. D. #6 on the southwest edge of Mandan (by the golf course) at 10:00 A.M. Central Daylight Time. Bring your lunch, your family, your enthusiasm, your jug of coffee and be prepared to have a good time!

Twenty-two eager rockhounds explored the gravel pits northwest of Dickinson on our field trip last month. Some Montana agate, petrified wood, a couple pieces of coral, and lots of vari-colored jasper were found. The day was warm - but not too warm - but very windy. We all kept wishing that it would rain just enough to wet the rocks so that the agates would be easier to pick out.

* * * * *

THIS 'n THAT

Our Dr. Gordon Bell is a versatile fellow! A few days before he spoke at our club he gave a talk to the Bismarck Kiwanis Club. He gave a brief look at human behavior and the individual in his speech.

Bill Buresh besides being a rock hound is also a bird watcher and a member of the Audubon Club. He has an extensive collection of slides of the birds of North Dakota. On May 29th he shared these slides with the residents of the Missouri Slope Lutheran Home. The people enjoyed the slides so much that they kept him there until 10:30, showing the slides and discussing birds.

On June 1st, Earle and Blossomae Campbell also visited the Missouri Slope Lutheran Home. They took along some of their rocks and led an informal discussion on rocks and rock hunting. The evening was enjoyed by all.

Betty Peterson is recovering from a sprained shoulder. Right now it is rather painful but Betty says she is recovering slowly.

Albert and Vina Anderson are going to Iowa for the wedding of their niece, which will take place in "The Little Brown Church in the Dale". The Andersons will be back in time to join the upcoming field trip.

* * * * *

SHOW DATES

June 15-17	Rocky Mountain Federation Show.....	Oklahoma City, Oklahoma
June 16-17	Montana State Rock Show.....	Kalispell, Montana
July 20-22	Winnipeg Rock & Mineral Show.....	Winnipeg, Manitoba, Canada
July 21-22	Yellowstone Agate Club.....	Miles City, Montana
Aug. 25-26	Shoshone Rock Club.....	Powell, Wyoming
Sept. 8	Central Dakota Gem & Mineral Society.....	Bismarck, N. D.
Sept. 15	Central Dakota Gem & Mineral Society.....	Mandan, N. D.
Sept. 21-23	Williston Rock & Mineral Club.....	Williston, N. D.
Oct. 6-7	Lakota Glacier Rock Club.....	Aberdeen, S. D.

* * * * *

One of the heaviest loads to carry is a pack of grudges.

Plains Rock & Mineral Club

WHAT IS CHALCEDONY?

John Cholson

A while back, a friend asked me, "Just what is chalcedony?" Well, in a way, that's like asking what is apple pie, because there are about as many forms or varieties of chalcedony as there are recipes for apple pie, give or take a few. Basically, apple pie is piecrust, sliced apples, sugar and cinnamon, right? Basically, chalcedony is silicon and oxygen. It's that simple. Of course, the ingredients must be in the right proportion, or you come up with a mess in either case. The baking of the pie, and the crystallization of the chalcedony are of importance, too.

To get back to the question, chalcedony is silicon dioxide, SiO_2 . But so is quartz, so what is the difference? Crystallization is the difference, because chalcedony is a quartz, too, but a kind of first cousin.

The two principal forms of quartz are crystalline -- or phenocrystalline, if you want to get technical about it -- and cryptocrystalline. The prefixes "pheno" and "crypto" are from Greek--or is it Latin--and mean conspicuous or easily seen for pheno, and hidden or covered for crypto, both referring to the crystals. Any quartz; clear, milky, amethyst, citrine, smoky or whatever in which the crystalline structure can be detected by ordinary means is phenocrystalline, or crystalline. If ordinary magnification or other tests cannot detect such a structure, the material is said to be cryptocrystalline. (Any of you sharpies thinking of bringing up amorphous structure, knock it off; we ain't talking about that). Chalcedony is cryptocrystalline quartz--the crystals are there, but you can't see 'em unless you've got an electron microscope.

Sub-varieties of chalcedony make up most of the materials amateur lapidaries use, as well as some of the professionals. I like the list John Sinkankas gives in his "Mineralogy for Amateurs" better than that given in some of the more technical books. He omits some of the older and less used names, such as hornstone, in favor of the more familiar ones. The list begins with a definition of (pure) chalcedony; "Sub-microscopic rod-like crystals arranged in parallel position, forming dense wax-like masses. Pale gray, blue-gray to nearly colorless." Note the term "wax-like"; the waxy luster of chalcedony is one of its identifying features. The purest chalcedony is usually found as pebbles or botryoid crusts, the so-called "moonstones" of California beaches are chalcedony pebbles, as are the "snakeskin" agates of one of the western states. True moonstone is a feldspar.

The subvarieties of chalcedony have come to be classified according to the mineral and other impurities included in the pure chalcedony which gives them color, pattern or opaqueness. Iron, nickel, chlorite, manganese and copper commonly provide the color and/or pattern, while clay minerals and other impurities render them opaque. The opaque and sub-translucent varieties include jasper, flint and chert, and it is difficult, if not impossible, for the average amateur to differentiate between these three, since they tend to grade into each other. Sinkankas covers this in saying that jasper is sometimes sub-translucent, and that flint is nearer pure chalcedony than chert. Briefly, the other and more desirable varieties are:

Carnelian and sard. Chalcedony naturally impregnated with iron compounds, giving brownish-red to yellowish brown color.

Chrysoprase. Bright yellowish green, due to nickel compound.

Chrysocolla chalcedony. Pale blue-green form included chrysocolla. (Note that chrysocolla is only an inclusion in the chalcedony. Pure chrysocolla is a hydrous copper silicate, with a hardness of only about $2\frac{1}{2}$.)

Agate. Originally the term was confined to color-banded chalcedony, but later expanded to include irregularly clouded colors and moss-like inclusions (moss agate) in translucent material.

Onyx. Agate with straight bands of contrasting colors, once much in demand for the carving of cameos. Sardonyx has alternating bands of white and brownish colors,

(continued on next page)

and is one of the birthstones for August. The more recently popular black onyx is usually dyed agate, and the Mexican and California "onyx" is calcite with colored bands.

The stones listed above are all translucent to a considerable degree, while jasper, flint and chert are, with the exception of some jasper, completely opaque. For this reason, any material which is not translucent over the major portion should not be labelled with any of the above names, particularly "agate".

Jasper. Opaque to subtranslucent chalcedony containing much finely divided mineral matter as clay, iron oxides. Commonly red, brown, yellow, green.

Chert. Chalcedony deposited in sedimentary rocks, commonly in limestones. Nearly pure material forms nodules of flint.

Chalcedony commonly replaces wood, bone, shell and other organic matter, sometimes so faithfully that minute structural details are preserved. (Petrified wood, dinosaur bone, silicified shells)

I hope this has answered my friend's question.

---Quarry Quips
May, 1973

* * * * *

10 WAYS TO GET RID OF UNWANTED ROCKS FROM THIS SUMMER'S COLLECTING

1. Fix the chuckholes in your driveway.
2. Throw them at bill collectors and door-to-door salesmen.
3. Take them to club displays and go off and leave them there.
4. Donate them in grab bags.
5. Put them in your tumbler with a double dose of coarse grit and forget them.
6. Slip them into your competitor's case when no one is looking.
7. Throw them over the fence into your neighbor's rock garden.
8. Fix up a large label "This gem material insured by Pinkerton" and leave them unwatched somewhere.
9. Fill up the trunk of your car with them to help you get thru the winter snowdrifts and then next spring take them back to where you found them and leave them for other collectors.
10. Best of all, don't take too many home in the first place!

From Rock Ramblings, via Ozark Earht Science
via S.E.I.S. Club News

* * * * *

ESSAY ON SOIL

Sometime ago the editors of Farmer-Stockman printed a picture of a deserted farm house in a desolate, sand-swept field, then offered a prize for the best 100-word essay on the disastrous effect of land erosion. A bright Indian lad from Oklahoma bagged the trophy with this graphic description:

"Picture show white man crazy. Cut down trees. Make too big teepee. Plow hill. Water wash. Wind blow soil. Grass gone. Squaw gone. Deer gone. Whole place gone to hell. No pig. No pony.

"Indian no plow land. Keep grass. Buffalo eat grass. Indian eat buffalo. Hide make plenty big teepee. Make moccasin. All time Indian eat. No work. No hitch-hike. No ask relief. No build dam. No give dam. White man heap crazy."

Jade Journal, via
Sooner Rockologist via
The Rock Vein

WHAT IS FOOL'S GOLD?

As recently as a generation ago, prospectors hunted for gold and turned up their noses at anything less. A certain golden colored shiny metal often occurs with deposits of gold. Prospectors called it fool's gold and laughed at people who mistook it for the real thing.

Nowadays, no sensible prospector walks away from a deposit of fool's gold. Chances are, he does not even call it fool's gold. He more likely whoops joyfully that he had struck a deposit of iron pyrite and prances off to take the steps necessary to stake his claim. His granddaddy would have tested a bit of the shiny yellow metal in a hot tub of soapy laundry. If it became discolored, he scoffed and said "Fool's Gold" -- then went on his treasure hunting way.

But fashions in minerals change, and pyrite certainly has come back into style. Its ancient name pyrite means "fire stone" because it is hard enough to strike sparks when whacked with a brisk blow. Before the tinderbox and then matches were invented, a hard lump of brassy, streaky pyrite was a very valuable possession. Then came the era of the gold rushers with one mineral on their minds, since pyrite can fool even an expert until he tests it, pyrite was called fool's gold.

Flakes of pyrite occurring in gold-bearing quartz shine like flakes of gold. Rocky lumps are streaked with green and brassy yellow and often embedded with yellow metallic crystals. Gold, however, is not stained with streaks of tarnish. It is soft and pliable while flinty pyrite breaks under the hammer. Pyrite is more than twice as hard as gold and five times as heavy as water.

Iron pyrite is a compound of iron and sulphur, though most samples contain other minerals. Some five million tons of pyrite ores are mined every year and there must be a good reason for all this toil. The industrial world has found many new chores for the old firestone. Yellowish chalcopyrite tends to tarnish with rainbow colors. This ore of iron pyrite and copper is a source of copper. Other pyrite ores contain worthwhile quotes of nickel and lead, zinc or cobalt. Some samples make fools of the treasure hunters who named pyrite fool's gold. They actually contain traces of real gold.

Most pyrite is mined for its sulphur content which is processed to make sulphuric acid. This busy chemical does most of its work behind the scenes and the Age of Industry needs millions of tons of it every year. Sulphuric acid helps to refine petroleum and steels. It has a role in manufacturing soaps, glues and gelatins and in certain printing processes. But most sulphuric acid helps to make rayon and when this work is done it may be reprocessed into soil fertilizer.

The earth has plentiful deposits of pyrite, usually mixed with various rocks. It may occur in thin papery layers sandwiched between slabs of slate, shale and even coal. Grains and granules often occur in beds of granite and other fire-formed rocks. Flakes and grains of this so-called fool's gold also may occur embedded in milky quartz, along with fragments of real gold.

From "Ask Andy"
Tulsa Daily World
via The T-Town Rockhound
via Flint Rock & Gem Club

* * * * *

SHOP HINT

Slip a very heavy rubber band around each rock on the vibrating lap to keep them from banging together and chipping.

Earle Campbell

THE AMERICAN FEDERATION CODE OF ETHICS

- I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.
- I will keep informed on all laws, regulations, or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no wilful damage to property of any kind--fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires in designated or safe places only, and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material--matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supply.
- I will cause no wilful damage to collecting material and will take home only what I can reasonably use.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter, Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, Bureau of Land Management, or other proper authorities, any deposit of petrified wood or other material on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and "Public Image" of rockhounds everywhere.

This is a composite "Code of Ethics" selected from many sent in by clubs from all parts of the country. Voluntary conformity by all collectors on field trips will insure continued use of collecting areas and build invaluable good will.

* * * * *

DID YOU KNOW

that platinum (now a very expensive metal) used to be used in the counterfeiting of gold coins? The coins were made of platinum and then plated with gold. Since the two metals are of almost equal weight, the counterfeits were hard to detect without testing each coin. Spanish doubloons were counterfeited in this manner. In the last half of the eighteenth century, crude platinum from the new world sold in Spain for 14¢ per ounce whereas gold sold for \$17 per ounce.

* * * * *

Lowcountry Diggins

Jewelers look for the four "C's" in diamonds. In this order: 1. Cutting, 2. Color, 3. Clarity, 4. Carat (size)

LeRoy Walker