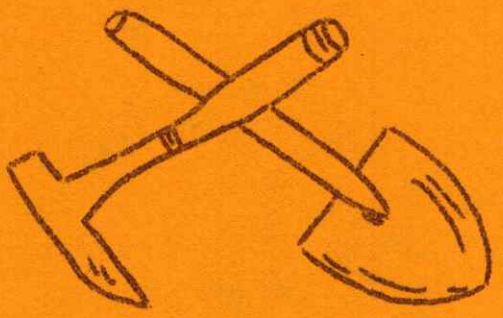
APR 1961

THE PICK & SHOVEL



LINCOLN GEM AND MINERAL CLUB, INC.

Lincoln, Nebraska

LINCOLN GEM AND MINERAL CLUB, INC.

O F F I C E R S

President. . . . . .Dr. R. D. Gibson

First Vice-President . . . . . Mr. John A. Lewis

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Recording Secretary. . . . . .Mrs. Lois Marie Gibson

Corresponding Secretary. . . . . .Mrs. Frances Tracy

Treasurer. . . . . .Mrs. Frances Tracy

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MEETINGS - Third Monday - September through May

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Affiliated with:

Midwest Federation of Mineralogical and Geological Societies

Rocky Mountain Federation of Mineralogical Societies

* * *

BULLETIN EDITOR - Mrs. Frances Tracy
3601 South Street
Lincoln, Nebraska

Telephone IV 8-5341

THE PICK & SHOVEL VOL. 2, NO. 4 LINCOLN, NEBRASKA

THE PRESIDENT'S PAGE

Dear fellow rockhounds,

It may be my own enthusiasm, and not representative of all of the members, but this last meeting was one of the best we have had. We had an unusually large number of guests and a nice representation of our members spend about an hour just visiting and exchanging information. Personally, I enjoy the new quarters, I am beginning to get re-acquainted with some members I haven't visited with for several months. For you who have not been to one of our last two meetings in the Muny building you'd better plan on attending the April meeting and see what I mean.

My attention was recently called to an article that appeared in EARTH SCIENCE about the Lincoln Gem and Mineral Club. I was pleased to see that our club was getting the publicity; but disappointed that certain inaccuracies were included in the article. These misstatements were not made by the publication but by the individual that submitted the article. I do not know who submitted this article, nor do I care to know; but I would like to suggest that whenever a member of the club thinks that some "rock" publication should have material sent to it this material should be cleared by the Publicity committee or the club secretary. If you check the material with either of these two this will prevent duplication of material submitted and also will insure accuracy in the information sent.

Do you want a cover-dish supper for the May meeting? Come to the April 17th meeting and make your wishes known on this and many other items.

Rockspectfully yours,

Les.

R. D. Gibson

APRIL 17, 1961

Regular Meeting - Muny Center, 22nd & N Sts., 7:30 p.m.

Program - Mr. Bob Neuman from the Smithsonian Institute will be our guest speaker

COMMITTEES

Refreshments
Mr. & Mrs. Arthur Bloyd
Dr. & Mrs. F. S. Lange
Mr. & Mrs. Norman Engelhart & Chris Engelhart

Junior Hospitality
Judy Lewis

Hospitality
Dick Hedges
Mr. & Mrs. Maurice Tracy

House Committee
R. H. Dannar
Clyde Benham
Thomas Simmons

* * *

April 14 - 16

Central Nebr. Rock & Mineral Society
Seventh Annual Show
National Guard Armory
Hastings, Nebraska

April 15 - 16

Lawrence Rock & Mineral Club
Sixth Annual Show
Community Building
115 West 11th Street
Lawrence, Kansas

APRIL 22 - 23

Wichita Gem & Mineral Society
Eighth Annual Show
East National Guard Armory
620 N. Edgemore
Wichita, Kansas

REMEMBER - OCTOBER 7 & 8

WELCOME

Donna Lacy
3200 "R" Street

Mrs. Louise Lacy
1649 South 21st St.

Lloyd W. Lederer
240 South 48th St.

Mr. & Mrs. Ray Sincebaugh
1756 Sumner Street

We are happy to welcome these new members to our Club. Please add their names to your copy of "Who's Who and Where".

Dick Gibson	April 24
Mrs. Lillian Kosch	April 12
Mrs. Louise Lacy	April 21
Mrs. Walter Moser	April 4
Orville Spencer	April 9

Flower of the Month - Sweet Pea or Daisy

Birthstone Ancient - Sapphire
Modern - Diamond

Sapphire - Fine blue transparent variety of crystalline corundum. Hardness 9.

Diamond - This is one of the crystalline forms of carbon; colorless, blue, yellow, pink. Transparent. It is the hardest mineral (10 in Mohs' scale) hence valuable as an abrasive as well as a gemstone.

HOW I BECAME A ROCKHOUND

As the dawn broke early in June 1956, our caravan of heavy earth moving equipment rolled out onto the highway, heading for Fort Meade and the Dakota territory. Up to this time, Fort Meade did not mean too much, but before the excavation for the Veterans Hospital was finished and the building completed, I, as well as Mrs. Carveth, were to become avid rockhounds.

In the process of the digging, we were unearthing beautiful chunks of petrified wood and huge boulders of granite. I had the pleasure of becoming acquainted with a fossil collector from Rapid City who owns a most complete collection and has toured the State giving lectures on his findings. Mr. Groveland is also a fairburn agate hound. This led to our wonderfully enjoyable trips into the badlands, the "Hadees" of the earth, appropiately named that by a famous author. We would take off early in the day with food and water, drive for miles, then park and walk, many more miles, until our car looked like a miniature of the high plateau. In some areas of this grotesque land we found green, lush, grassy areas, and other species of plant life. The village of Scenic looks like a ghost town, and the heart plateau in this area is a good hunting ground for black agate and obsidian.

One summer a group of student geologists from the University of Wisconsin were making a trek into the Whitewood Peak area. We joined their party and after driving the "Gray Goose", otherwise known as my gray pickup truck, over miles of logging roads, we found some nice amethyst geodes in the area off Boulder Canyon. We enjoyed Buffalo steakes broiled, on the banks of Bear Butte Creek, in the moonlight, which was all very exciting in this land of the Sioux and Cheyenne. In this land, on the trails left by General Custer on his last famous march into the little Big Horn, which was to make him a hero or something else, history and book writers still are trying to decide.

A friend and owner of the Blue Spruce Motel near Hill City has two claims of Burl. We enjoyed several good treks through this piney area. We unearthed huge pieces of Teepee Canyon agate in Hills Canyon one summer day, 102° in the shade, and rolled them down the mountain side, then to load them into the truck and head for the cutter in Custer. So many beautiful specimens to be found in this country, and so much enjoyment to be had and so many wonderful friends we have found and continue to find that we are real happy to have become rockhounds.

V. A. Carveth

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It has been reported that a huge block of green jade, estimated to weigh at least one hundred tons, has been discovered in Northeast China. The stone is said to be 14.7 feet by 16.5 feet by 5.5 feet. Some pebble!!

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MIDWEST FEDERATION'S
L E T T E R - A - M O N T H
for April 1961

Subject: Participation in Midwest Shows
-by Harry H. Sprague
General Chairman, 1961 Convention and Show

The date is set, the buildings have been set up, the decorations are all in place, the dealers from all over the United States have signed their contracts, the special educational exhibits have all been allotted their space, and the general programs as well as the Editors Breakfast and the Annual Banquet are all in their final stages of planning.

WHAT IS MISSING? You the Societies and INDIVIDUAL MEMBERS of the Midwest Federation. We the Host Society to the Midwest Federation Gems and Minerals Fair and 21st Annual Convention have gone just about as far as we can with out you!

NOW it is up to you. If you wish to make this 1961 show your best in 21 years of existance it will be up to you. We will need your help and participation with Club Displays and individual displays entered in the competitive as well as the non-competitive divisions of the show.

The Rules and Regulations are in the mail, see to it that the members of your Societies get copies of them. This is your show... it is put on expressly to give the collectors in the Midwest a chance to see just what material their fellow collectors have gathered.

We have an abundance of cases available, for your use rent free. Fill out the applications for entry and join us here in Saginaw at the biggest show and convention that the Midwest Federation has ever held.

So, come and meet old friends, join the active members of the Federation by displaying your best. But if YOU CAN'T DISPLAY COME ANYWAY SO THAT WE MAY ALL ONCE AGAIN MEET AND RENEW OLD FRIENDSHIPS.

/s/ Harry

Harry H. Sprague

THE VALUE OF FOSSILS

Jay Wollin

From The Midwest Geologist

Pick up a fossil. Look at it. What is its value to you? Is it a nice brachioped worth, say 50¢. Or a very fine trilobite worth $5.00? This is one way to value your fossil specimen, but there are many fascinating hidden values that can be seen by those who know how to look for them.

To the trained oil paleontologist, fossils have a special value. He knows oil is found only in marine sediments, and in the field he looks for marine fossils, which give him an indication of where to drill. Later on, as the drill probes for oil, it brings up cores of rock from deep within the earth. The fossils contained in these drill cores, usually microscopic, tell the paleontologist what layer of rock the drill is biting through, its age and its position in the many layers of rock lying between the surface and the possible pool of oil. These microfossils also tell when the drill has gone too deep, beyond where the oil should have been, saving costly over-drilling.

The biggest value of fossils, besides making an interesting collection, is their use in reconstructing the past. Fossils are known as index fossils if they can be used to date rock layers, date other fossils found in that layer, and to correlate rock layers found many miles apart. To be considered a good index fossil, it must:

1. Be fairly common.
2. Be found over a large area - have a wide horizontal range.
3. Live during a short interval of time - have a narrow vertical range.

These three qualifications are obvious. If the fossil is extremely rare or is found only in one location, it loses its value as an index fossil. Likewise, if it is a fossil of some creature that has remained unchanged from the Cambrian to the present, it dates nothing.

You need not be a trained paleontologist to recognize and use index fossils. By reading a good text on fossils, you can become familiar with the common index fossils of the different geologic periods, and by identifying your own collection as completely as possible, you will find that it contains a large percentage of index fossils. By being able to recognize only eight or ten index fossils for every period (Silurian, Devonian, Permian, etc.) the chances are great that you will be able to recognize at least one of these fossils in any strange rock exposure. There is great satisfaction in visiting a strange quarry, picking up a slab of rock, and being able to pronounce the rocks in that quarry "Silurian" on the basis of a fossil you see in that slab. Needless to say, this dates all of the other fossils you may find in that quarry and makes their identification much easier.

Fossils are the only way to determine the ancient geography of the continents. This is a special brach of geology known as "Paleogeography". Discovery of marine fossils of the same age over a wide area implies that this area was under water at that time. By examination of surface

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THE VALUE OF FOSSILS Continued

exposures, well drillings, and test borings, the extent of this ancient sea can be determined becaue of the fossils contained in the rocks. If the fossils of that age disappear in a certain area, it can be generally assumed that that area was not under water at that time. For instance, when the distribution of lower Cambrian fossils is plotted, it becomes apparent that only two narrow belts of fossils are found, one in the Appalachian Mountains, the other in the Rockies. This indicates at least the minimum extent of the seas at that time and thus a map of North America as it appeared during the lower Cambrian can be drawn. Climate controls the distribution of all modern plants and animals, except man. Palm trees don't grow in the Arctic tundra, nor do polar bears roam through the Amazon jungles. We can certainly expect such climatic controls to have been present in the past. Thus, by comparing the habitats of modern animals with their fossil ancestors, with the additional help of other fossils climatic indicators (fossil sand dunes, coal beds, remains of glaciation gypsum and salt beds, etc.), many fossils are found to indicate a definite past climate. Picture the woolly mammoth, and we see one type of climate. Picture a towering tree fern rising out of a steaming Pennsylvanian coal swamp and we feel a different type of climate.

Petrified wood is a very valuable climate indicator, not only because of the tree species, but because of the presence or absence of growth rings. Annual growth rings develop only in trees which grow where there is considerable seasonal variation in temperature. During the cold seasons, a tree grows very little, adding a ring of tiny, closely packed cells. In warm weather, the tree grows rapidly and adds large cells. This creates the familiar "rings" we see in wood grown in this part of the world. In constantly warm and even climates (such as in some of our present day deserts and jungles) growth rings are completely absent or very faint.

In the upper Devonian, fossil wood is found with a well developed ring structure. Plant remains from the Pennsylvanian (coal age) have a very weak ring structure at best. In contrast, trees which grew during the times of Permian glaciation have strongly developed rings. This shows the change of climate from the Devonian to the Permian.

Life under water is marked into zones as well as life on land. Corals are essentially shallow, warm water lovers. Certain brachiopods, such asLingula, indicate brackish water. Different species of protozoa inhabited definite depth and temperature zones of the ocean. Some life requires cold water, or quiet water, or fresh water. So not only the shape of the ancient seas can be determined, but their depth, temperature, salinity, and clarity as well as the general climate surrounding the ocean.

Recently it has been discovered that shells contain the isotope of oxygen, O^{18}, in amounts related to the temperature of the water they lived in, cold water shells containing more of the isotope. By measuring the amount of O^{18} in fossil shells, the temperature of ancient seas can be determined with a consistency that implies accuracy.

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THE VALUE OF FOSSILS Continued

Nearly everyone is familiar with the carbon-14 method of dating fairly recent fossil material. Measurement of the amount of this radioactive carbon isotope remaining in shell or plant material can give accurate dating up to a maximum of 40,000 years ago. It may be anticipated that certain other isotopes will be found that will allow accurate dating far into the past.

Finally, fossils indicate the pattern of life development and the geologic history of groups of plants and animals.

More and more uses are constantly being found for fossils. New methods of dating with fossils are being discovered. Right now data is being collected to see if oil is formed only in sedimentary rocks deposited in seas of a certain temperature. If so, fossils will be the key in finding these rock layers.

Your fossils are worth a great deal more than the 50¢ or the $5.00 value. By letting them talk, they can tell you when they lived and the fascinating story of how the world looked many millions of years ago.

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