



NEWSLETTER

MARCH - APRIL 1970

MARCH - APRIL LECTURE SERIES

- March 9 MICRO-PALEONTOLOGY
Dr. J. Webers,
Macalester College
St. Paul
- March 23 GROUNDWATER GEOLOGICAL MAPS
Mr. Thomas Winter
U.S. Geological Survey
Groundwater Division
St. Paul
- April 13 ENVIRONMENTAL PLANNING
A GEOLOGIST'S POINT OF VIEW
Dr. Caryl E. Buchwald
Carleton College
Northfield
- April 27 ANNUAL BANQUET

The mapping of hard rocks concluded the set of lectures on Topographic and Geological Mapping. This set of lectures proved most interesting especially when combined with pictures taken on the field trips relative to their preparation. A special thanks should be given to Mr. Bartel who on an hours notice pinch-hit for our Jan 26 lecturer. His set of slides on the Grand Canyon taken during field studies in that area were really spectacular.

The next lecture and the two that follow change the pace as we look at other fields of geologic study. The first lecture on Micro-Paleontology a new one for the club altho the speaker is not, as Dr. Webers honored the society last year by leading one of the field trips. He is a recognized authority on this subject and his lecture should be of real interest - don't miss it.

The second lecture "Groundwater Geological Maps" is a subject of great importance today as the need for water increases (especially non-contaminated water) and this once seemingly unlimited resource becomes more and more limited.

Concluding the lecture series for the year is the timely subject so much in the news today - "Environmental Planning". We hear a great deal of the Ecologist point of view, it should be most informative to hear from the Geologist.

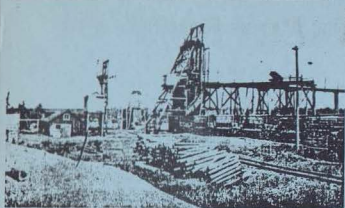
SOCIETY PLANS FOR 1971

A look at the tentative plans for this summers field trips, the GSM Picnic, and the fall - winter lecture series indicates a great season ahead.

Four field trips are already on the drawing boards with a possible 5th trip still in the running. More details will be forth coming at a special presentation to be made at the Annual Banquet.

Plans for this fall envision a new type of lecture series with each meeting divided into four periods - movies, lecture, laboratory and discussion. Learn by doing as well as watching and listening will be the new emphasis. The subject will be "Physical Geology" and the lecture series will build up thru out the season laying the ground work for a better understanding of our physical world and the forces that change it.

The social hour - coffee clutch will be combined with the laboratory and discussion periods.



B. HEAD-FRAME AND TRESTLE OF CUYUNA-MILK LACS MINE, NEAR IRONTON
LOOKING EASTWARD
PHOTO BY CARL ZAPPE

CUYUNA IRON RANGE PAST AND PRESENT
(con't from Newsletter Nov.- Dec. '69)

After our visit to the new Loretta Mine and the site of the ghost town of Manganese, we continued on our tour to the Eastern part of the range passing by Island Lake (or Foley Lake) a former pond at the south end, which marks the site of the former Milford Mine. This property was drilled in 1912 - 1914, the work being done under the supervision of Ernest Le Duc, president of the Mesabi-Cuyuna Iron Land Co. In Feb. of 1917 material and equipment for a three compartment shaft were on the ground and by the end of the year the shaft was down 150 feet and was carried on down to 200 foot level by April 1918. It began producing that season but only 4900 tons were shipped (the mine was being operated by the Cuyuna - Minneapolis Iron Co.) The stockholders not only lost all they had paid for their stock, but were required to pay an assement of 40 cents per share, which not only paid all the debts and costs, but left a balance of one cent per share as a refund to the stockholders. One stockholder receiving a check for \$4000 as his dividend.

This mine was taken over in 1922 by the Whitmarsh Mining Co. and renamed the Milford by George H. Crosby, President of the Whitmarsh Minino Co. in honor of

his mother's birthplace, Milford, New Hampshire. This Mine was the scene of the greatest disaster that has ever occurred in any mine on the Lake Superior district. Forty one men lost their lives, when the mine flooded. Between 3 and 4 o'clock, Tuesday Feb. 5, 1924, 47 men were at work underground; following a blast supposed to have been set off on the 125 foot level, a flood of mud and water poured into the mine. The water rose so rapidly that the only men saved were trammers working near the shaft. According to the story told by one of the furvivors, a blast of cold, damp air gave the first warning, followed by the roar of water. The mine filled so fast that the last man was kneedeep in water before he reached the escape ladder and altho he climbed for

his life, the water in the shaft rose as fast as he could climb. Within minutes after the first onrush the mine was completely flooded. Altho help was rushed to the mine, there was absolutely nothing that could be done to save any of the men trapped underground. Before an attempt could be made to recover the bodies, it was necessary to drain Foley Lake. The shaft of this mine was about 2000 feet from the lake and the bottom level was within 150 feet of the lake. Yet from the appearance of the surface of the ground, it seemed as if the water broke into the mine about 500 feet from the lake front under a bog. Pumps were placed in Foley Lake before midnight of that day. Every mine on the Cuyuna Range furnished men and equipment to help in the rescue work with assistance from many companies on the Mesabi and Vermillion Ranges. Within two weeks working day and night the water in the lake had been lowered to within four feet of the bottom and in the mine shaft it was down 123 feet. By that time the mud was so thick, it was necessary to pump water into the lake to operate the sandsucker. By the middle of March the water was down to the first level and the lake bed was dry.

The mine shaft was 200 feet deep with the top level (main) about 1800 feet long and down 165 feet, the bottom level down 200 feet.

On March 20th the first bodies were recovered. Two were found about 50 feet from the shaft, leaning against a tram car. By Oct. all but one body had been recovered and it took another month of hard work to find the last body which was brought out Nov. 4, 1924.

After the disaster the Amherst Mining Co. was organized by George H. Crosby Sr. and George H. Crosby Jr., Wm. Harrison, and W. A. Rose to operate the mine. This mine furnished a soft brown manganese hematite and was always known as a "wet" mine.

Opened 1917, shipped ore 1918 - 1933 (except 1921, 1924, 1932). Last shipment 1933 - 50,000 tons. A total of 1,266,172 tons. No vestige of this mine remains.

E. H. Brown Field Trip Chm.

The world is full of willing people; some willing to work, the rest willing to let them.

-Robert Frost

MODERN PROSPECTING

The old prospector and his faithful donkey has been replaced in this atomic age by a fourwheel drive vehical carrying a mobil neutron "sniffer". This latter unit bombards the samples with neutrons which when absorbed by the atoms nuclei become radioactive isotopes. Identification and concentration of the elements may then be readily made by studing the radiation patterns and disintegration rate of the isotopes. Almost any material can be identified instantly including rocks, soils and ore samples.

- Science Digest

President's Letter

AS THE "SEASON OF SPRING" COMES UPON US, IT IS TIME TO REFLECT THAT THE ANNUAL BANQUET AND MY TERM OF OFFICE WILL SOON COME TO AN END. THERE ARE YET MANY GOOD LECTURES AVAILABLE FOR GSM MEMBERS, AND THE ANNUAL BANQUET WILL BE HELD ON MONDAY, APRIL 27. I AM VERY APPRECIATIVE OF YOUR SUPPORT AND RESPONSE, AND -- An Extra

"THANK YOU"

IS DUE THE BOARD MEMBERS AND THE CHAIRMEN OF OUR MANY COMMITTEES WHO HAVE ALL WORKED SO DILIGENTLY!

WITH SOME OF THE RECENT RE-FORMATIONS IN OUR SOCIETY AND RENEVED INTEREST IN THE LECTURE PROGRAMS AND FIELD TRIPS, I PERSONALLY FEEL THE SOCIETY AND ITS MEMBERS ARE EMBARKING ON A NEW EXPERIENCE. IT IS ONLY THROUGH INDIVIDUAL COMMITMENT BY THE MEMBERS IN MAKING OUR SOCIETY A TRULY GEOLOGICAL SOCIETY AND PARTICIPATING IN ITS ORGANIZATION, PROGRAMS, AND ACTIVITIES THAT WE WILL HAVE THE REWARDS THAT COME IN LEARNING ABOUT EARTH SCIENCE.

AGAIN, ON BEHALF OF THE SOCIETY AND ITS BOARD, THANK YOU VERY MUCH FOR YOUR SUPPORT!

--- PAUL J. VOGT, PRESIDENT

ANNUAL BANQUET - MEETING

The 1970 Annual GSM Banquet-Meeting will be held on Monday evening, April 27, beginning at 5:30 p.m., at the First Christian Church, East 22nd Street at 1st Avenue South, Minneapolis. The social hour at 5:30 p.m. will be followed at 6:30 p.m. by the Banquet, the Annual meeting and election of Directors, and a presentation by the Field Trip Committee. The talk will be illustrated with colored slides.

CORRESPONDENCE

Letters to the Editor are welcomed and will be published, if found suitable, as space permits.

**RECOMMENDED
READING**

"GEOLOGY ILLUSTRATED" - by John S. Shelton
Price \$10.00 A large 8 1/2 by 11 size book of 434 pages and nearly 400 photographs.

By studying the rocks and landscapes pictured, the reader is guided to an understanding of the kind of evidence upon which the generalizations of Geology are based.

The Book is divided into 6 sections.

- 1 - Materials - a brief look at the materials that compose the accessible part of the crust of the earth.
- 2 - Structure - the geometry of rock bodies, including the effects of bending and breaking by forces within the crust.
- 3 - Sculpture - How the exposed parts of the rocky structures of the earth have been modified by the surface processes to give the landscape the shapes we see.
- 4 - Time - How geological events can be arranged in chronological order, and some insight into the magnitude of geologic time.
- 5 - Case Histories - Examples of how a knowledge of geological principles may be used to decipher the record of past events and thus to read the autobiography of the earth.
- 6 - Implications - Some facts and speculations bearing on the deeper problems raised by observations at the surface of the earth.

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*****REMINISCING*****

1969 passed before we were aware of its unique place in the history of the Geological Society of Minnesota. It was 30 years earlier in 1939 that the society became incorporated and Junior Hayden became its first president. And it was 20 years ago when on October 30, 1949, the society dedicated its first geological marker near Taylor Falls. This plaque which overlooks the St. Croix valley was dedicated in memory of Edward P. Burch who founded our society in 1938.

Thus in 1949 began a long range project designed to explain the geology of the state to residents and visiting tourists. The tablets describe briefly the geological formations and events which are responsible for the scenery of the area. In this and subsequent issues of the NEWSLETTER we wish to publish their texts for the benefit of our members who may not be acquainted with them.

Tablet Inscription

Geology of Minnesota

Taylor Falls Region

About 750 million years ago the Lake Superior region was the scene of tremendous volcanic activity. Of the 500 or more lava flows which issued from great fissures, some reached as far as Taylor Falls. The rocks of the St. Croix gorge at this point are composed of that lava. Many millions of years later, when the eastern outlet of the Great Lakes was blocked by glacial ice, the St. Croix was one of the outlets of Lake Superior, at which time this gorge was eroded. The abrading action was caused by sand and gravel carried by the great volume of water moving at high velocity. The pot holes in the state park one-half mile north of this site were formed by similar action.