



THE MINNESOTA GEOLOGIST

OFFICIAL BULLETIN
OF
THE GEOLOGICAL SOCIETY OF MINNESOTA

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MARCH 1949 MAY

NO. 2

IN NATURE THERE'S NO BLEMISH BUT THE MIND ;

NONE CAN BE CALLED DEFORMED BUT THE UNKIND :

SHAKESPEARE -

Twelfth Night, 111.4.

G E O L O G I C A L S O C I E T Y O F M I N N E S O T A

EDITORS

Loretta E. and E. L. Koppen
3376 Brunswick Ave., *Ha. 3888*
Minneapolis 16 Minn.

The Society is devoted to the study of GEOLOGY,
MINERALOGY, and PALEONTOLOGY for their cultural value.

OFFICERS

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PAST PRESIDENTS

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Alger R. Syme *
Charles H. Preston
Joseph W. Zelusky
Dr. Edward H. Mandell

MEETINGS : October to May inclusive, 730 P. M. every Monday,
not a holiday, large auditorium, 4th floor, Public Library,
Hennepin Avenue and 10th Street, Minneapolis Minnesota.

FIELD TRIPS : May until October inclusive.

ANNUAL DUES : Residents of Hennepin and Ramsey counties \$ 3.00
plus \$ 1.00 additional for husband, wife, or dependent family
members ; for students and non-residents, \$ 1.00.

MEMBER

MIDWEST FEDERATION OF GEOLOGICAL SOCIETIES

* Deceased

FEATURE ARTICLE : "The Geological aspects of Whitewater State Park" was written by Fred L. Wunderlich, who, we are pleased to report is well on the road to recovery after a very long siege of illness. He returned home from the Des Moines Iowa Methodist Hospital several weeks ago.

SPECIAL PROJECTS : The response from the membership to the committee's appeal for funds has been very gratifying. About 70 % of the 1949 funds has already been advanced in cash, and the trustees would appreciate it greatly if the amounts pledged for 1949 could be turned in before May 1st. The trustees desire to make an immediate allocation of the funds to the various projects so that the work on all three may proceed with dispatch during the summer months. We can also report on the excellent progress made by Mrs. Corniea and her committee in utilizing the Burch rock collection for circulation to public schools. Ideas on the proper signs to use, their location, size, maintenance etc. are being discussed. Members with ideas please come forward.

PUBLICATIONS : The publication dates for the "Minnesota Geologist" have been changed slightly. For this year at least, there will be only five publications issued instead of the usual six. Publication dates are as follows ; February, April, July, October, December. From May through September a detailed field trip notice is mailed to the membership every month.

ALGER SYME COLLECTION : The success of the sale and auction of the Syme mineral collection is due in no small measure to your splendid cooperation. The total amount realized from the sales and auctions was \$ 142.45. One half of this sum was turned over to our Society by Mrs. Syme. Geological books from the Syme collection are now being offered for sale and once again half of the proceeds will be donated to the Society. A complete list of the books and second hand book prices are published in this bulletin. In ordering any of these books by mail please enclose the cost of postage with your order. The last fifteen books listed are large volumes and will require more postage. All requests will be filled in the order in which they are received. Write or phone the Editors.

DONATIONS : Dr. J. Frank Corbett, one of our charter members, has very generously presented to our Society a valuable collection of correlated glacial drift from the Twin City area to be used at the Minneapolis Science Museum. The task of correlating the glacial drift involved years of work on the part of Dr. Corbett and Dr. L. O. Dart. Miss Hattie Long, also a charter member, has donated her geological book collection to the Society.

BEQUESTS : We have been advised informally that through bequests we will receive certain rather substantial amounts from the estates of Junior F. Hayden and Herbert C. Rowberg. You will be notified when we have had formal confirmation of the exact nature and amounts.

MIDWEST FEDERATION : August 26-27-28 are the dates selected for the annual convention to be held at Davenport Iowa. Our host Society, "The Illowa Rockhound Club", is doing everything possible to make this one of the most successful conventions to date. Let's cooperate by planning to attend this annual meeting. A service bulletin called the "Midwest News" is being published in Duvenport and what a splendid job the editors are doing. Keeping the member Societies abreast of the Federation news is their chief purpose.

ELECTION AND BANQUET : We have purposely delayed the publishing of this issue so that we could announce the new panel of officers elected at the annual dinner meeting. 120 members and guests were present at the annual banquet April 18th.

In Memoriam

Junior F. Hayden had two great loves : the first a generous affection for nature in all its unfolding mystery ; and a second love, which was his photography, wherewith he sought to capture and preserve without destroying all of nature's grandeur. And in this last he demonstrated his love of his fellow man. For to share the beauties captured in his pictures with all who would view them, gave him his greatest joy.

So well did he master the science of nature and so skillfully did he manage to extract these facts and preserve them on his films, that today his colored slides are a most valuable collection of teaching material both to the University of Minnesota and the various local science societies. His first interest was Geology and in this field he has left to all students a valuable source of ready reference and easy understanding in the hundreds and hundreds of colored photographic slides telling the story of the geology of the Upper Mid West area.

Junior Hayden was the first elected president of the Geological Society of Minnesota and continued to give to that society the inspiration of his personality, the wisdom of his counsel and the generosity of his time and money, until his death, February 18, 1949. As it is so often the mark of a great human, Junior Hayden was possessed of a modesty which usually hid from common knowledge, his generous gifts and efforts. It was enough reward for him that others understood and enjoyed a little better the science and the beauties of the world in which we live.

Those of us who knew the pleasure of tramping the highways, trekking the fields, and climbing the cliffs with him learned to admire an indefatigable perfectionist, and those of us who heard his talks and saw his pictures learned to respect the depths of his knowledge and keenness of his understanding. His scientific interests began with the sea level and sought through the ZZs yet unknown.

The Minneapolis Science Museum Society has decided to set up a Memorial to Junior Hayden. This is to be an automatic slide projector where, by a button pressed by the viewer, there will be projected upon a screen a series of colored slides together with explanatory legends. The apparatus will project some thirty slides in a series. These series will be changed from time to time and will be arranged to give a cohesive story of natural science. The slides will be taken from the many hundreds left by Junior Hayden to the Minneapolis Science Museum Society. This projector will be open to the public during the public hours of the Minneapolis Public Library.

The Geological Society of Minnesota is glad to be one of the contributors to this Memorial to Junior Hayden. It is fitting that he who loved nature so much in life, should share that love with the public through this Memorial, now that he has gone.

Junior Hayden gave most generously throughout his life and at his death to the members of the Geological Society of Minnesota, but the spirit of love for knowledge and love for man that he left with us, is his most valuable gift. Life may have departed from his body but so vital a spirit cannot die among us.

Dr. Edward H. Mandell.

GEOLOGICAL ASPECTS OF WHITEWATER STATE PARK

by
Fred L. Wunderlich

The story of the Park is the story of a river named by Indians who were struck by the white water surging at flood time. The Whitewater River just south of the village of Elba in Winona County has sculptured the area set aside in 1919 as a State Park and thence extended its destructive course 14 miles to the northeast to the village of Minneiska and the Mississippi river. At its mouth are still to be seen the remnants of Indian mounds in which many artifacts have been found.

In the Park, the Whitewater River has cut vertically about 300 feet and in the process has formed spectacular escarpments, towers, and other interesting forms in the limestone formations which stand out high above the valley floor. Many caves, typical of limestone areas, are present. The destructive power of running water is well seen in the Whitewater. No gentle, meandering, pastoral stream this, but an eroding monster. Heavy rains transform it into a loud roaring turbulent stream, transporting big boulders, pebbles, and sand - all of which serve as agents to gouge and cut the hardest rocks. Just as an abrasive rubbing over the same place leaves its groove, so the combination of the power of running water and cutting tools has carved the deep valley seen today.

It is interesting to read an early description of the valley of the Whitewater by State Geologist N. H. Winchell in 1882.

"The valley of the Whitewater, which is remarkable for its great depth combined with its narrowness, affords many fine landscape scenes."

The river has eroded its valley into very old rocks, Cambrian in age, or some five hundred million years old. The rocks through which it has cut in the park and their thickness are as follows :

Mantle rock, surface materials, chiefly loess	15 feet.
St. Peter sandstone	8 "
Shakopee dolomite	35 "
Root Valley sandstone	38 "
Onecta dolomite	108 "
Jordan sandstone	75 "

Like most streams in Winona County, the river is fed by copious springs that issue along the bluffs as well as by tributary streams cutting the walls of the valley. The Whitewater is not a big stream and probably never was. The abrasive power of river water varies as the square of the velocity of the stream. The high velocity of this stream at flood, together with its transported material of big boulders, gravel and sand has readily cut out the sedimentary rocks through which it flows.

The country surrounding the Park is rolling agricultural land composed of soil known as loess. Loess is an aeolian or wind-borne dust usually associated with the margins of the great ice sheets of glacial periods ; in this case probably derived from the outer edge of the glacial deposits of the Wisconsin or last ice age during periods of tundra conditions.

Loess reveals the rather extraordinary characteristic of retaining vertical or even overhanging walls in the banks of streams even though the material is not cemented together. These vertical walls are famous in China, where loess deposits are tremendously thick, some walls standing 500 feet high and containing innumerable cave dwellings. This curious property is probably accounted for by the fact that the sand grains are apparently angular enough to interlock rather than roll or slide over each other as sand grains commonly do.

Loess is a fine-grained sediment composed principally of quartz, feldspar, or clay and calcite - glacial rock flour derived from debris of the glacial drift and transported by wind. Its loamy texture and enrichment of mineral elements make loess fabulously fertile and easily tilled.

The eroding power of the river which has wrought its sculptural effects and evoked wonderment from the casual sightseer is the same power that has brought destruction to fertile farm land. The Park will, of course, continue to devote its 700 acres to recreation. The rest of the valley of the Whitewater is being saved from the destruction of erosion under the operation of the Pittman-Robertson Act, legislation designed to encourage soil conservation. William H. Kircher, writing in a recent number of "The Farmer", points out that "land is now being purchased in the Whitewater Valley. Of 52,000 acres finally to be included in the area, 9,000 acres have already been bought. Two-thirds of the total may ultimately be used as a public hunting grounds, and one-third as a game refuge."

MEMBERSHIP DIRECTORY ADDITIONS

Acher, Chas. F.	623 Ramsey St. N. E.	Mpls. 13
Biron, Robert H.	5112 Belmont Ave. So.	Mpls. 9
Carroll, Arthur	923 5th Ave. S. E.	Rochester Minn.
de Neui, William	2170 Carter Ave.	St. Paul
Hollingsworth, Mrs. Ralph	747 Madison St. N. E.	Mpls. 1
Holthe, O. A.	Mgr. Farmers Lbr. Co.	Wanamingo Minn.
Johnson, John C.	Std. Salt & Cement Co.	Duluth Minn.
	237 Lake Ave.	
Kellerman, Dr. & Mrs.	1682 St. Clair Ave.	St. Paul 5
Minor, Elizabeth	2225 N. E. Taylor	Mpls. 18
Niles, M. F.	Box 384	Custer S. Dak.
Cleon, Ray	4100 W. 44th St.	Mpls. 10
Schroeder, Wm. F.		Excelsior Minn.
Skrukrud, Baldwin		Sacred Heart Minn.
Topper, Leslie	1819 Elliott Ave.	Mpls. 4
Wassing, O. M.	5505 Logan Ave. So.	Mpls. 19
Winick, Arthur	1818 10th Ave. So.	Mpls. 4

BULLETIN BOARD

LECTURE PROGRAM

MONDAY, APRIL 18, 1949 - Annual dinner meeting and election of officers.

MONDAY, APRIL 25, 1949 - This will be our last meeting of the 1948 - 1949 lecture season. We are pleased to introduce to you the newest faculty member of the Department of Geology of the University of Minnesota, Dr. S. S. Goldich who is replacing Dr. Frank Grout in the department. Subject : Geologic Exploration in the Palau Islands, Pacific Ocean area.

1949

TENTATIVE FIELD TRIPS

MAY 15 ----- Twin Cities and gravel pit.

MAY 28-29-30 - Camp Douglas in Wisconsin, Baraboo, Wisconsin Dells and Devils Lake State Park.

JUNE 12 ----- North bank of St. Croix near Sunrise.
LEADER - Dr. Leslie O. Dart.
PURPOSE - To study concretion.

JUNE 26 ----- Fossil hunt along Mississippi river.
LEADER - Dick Marshall.

JULY 17 ----- East Morrison County. Return by way of Isle and Waukon.
PURPOSE - To view and study grey granite and schist.

JULY 31 ----- Picnic at Miss Noerenberg's Lake Minnetonka estate.
Talk by Mr. & Mrs. Henry Sommers on their trip to Africa.

AUG. 6 & 7 --- Fossil collecting trip to Iowa.
LEADERS - Dr. W. C. Bell and Miss Elsie Hinchley.

AUGUST 21 --- Redwood Falls and vicinity.

SEPT. 17 & 18 - Jay Cooke State Park, Duluth area, Pattison State Park.
PURPOSE - To study faults and south shore sandstone.

OCT. 2 ----- Pine City.
PURPOSE - To study lava flows, copper deposits, Snake River sandstone and Kettle River.

45. Geology of Mongolia by Berkey & Morris	\$ 4.75
46. Papers of Economic Character. U. S. G. S.	2.00
47. The Aborigines of Minnesota. Minn Historical Society	3.00
48. Geology of Black & Grand Prairie Texas. U. S. G. S.	1.00
49. Papers of a Theoretical Nature. U. S. G. S.	2.00
50. Economic Geology. U. S. G. S. 1895-1896	2.00
51. Directors Report 1895-1896 U. S. G. S.	2.00
52. Complete set of Winchells reports on Minnesota (6 vols.)	5.00

THE TRUSTEES DESIGNATED IN OUR CONSTITUTION TO HAVE CHARGE OF THE
DISPOSITION OF THE SPECIAL FUNDS OF THE SOCIETY ARE :

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Jos. W. Zalusky	Comptroller-Secretary
Chas. H. Preston	
Hal E. McWethy	

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Lawrence W. King	Chairman of geological signs division

DELEGATES TO THE SCIENCE MUSEUM SOCIETY

Dr. Edward H. Mandell

Chas. H. Preston

Geo. A. Rickert, alternate delegate.



WILMA MONSRUD
S255 DUPONT AVE. N.
MINNEAPOLIS 12, MINN.

