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Thwaites, F. T. (Fredrik Turville), 1883-1961

[s.l.]: [s.n.], 1918-1939

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GENERAL HEADQUARTERS
AMERICAN EXPEDITIONARY FORCES
Second Section.

August 25, 1918.

Mr. F. T. Thwaites,
Department of Geology, Science Hall,
University of Wisconsin,
Madison, Wis.

My dear Thwaites:

Please send me, at the earliest possible time, the large rolled map of Germany showing industrial activity throughout the empire. I cannot recall the title of the map, but you can identify it as one which shows the distribution of various agricultural products by colors, and the distribution of various industrial centers by such symbols as a retort for a chemical industry, a keg for a brewery, etc. ~~I think~~ the map was printed in Germany.

The map is needed for military purposes, and it will be necessary for the University of Wisconsin to donate it to the Army, but you will not need to bother to take any formal action, unless it is to speak to Dr. Leith about it if he is in the city, or tell him what you have done when he returns. Please do not delay for this however. I am sure you will never get the map back.

Take the map off the rollers and fold it down to a moderately small size, so that you can send it in a flat package, unless you find it feasible to bend it to a very short roll; cut it in two if necessary. The map will probably suffer in being folded, but this will not matter as the data can be transferred for the purpose we shall put it to here.

Address the map to: Office of Air Intelligence,
 G2 - A7, G. H. Q.,
 A. E. F., France.
 Attention of Lieut. Bolling.

If you see any gain in so doing, you can put my name on the corner of the package as the sender of the map, and in that case you should write it out as follows:

From Lawrence Martin,
 Major, General Staff,
 United States Army.

Please take the package to the post-office yourself and show it to some responsible official, to insure the fact that it is properly directed for transmittal abroad. Incidentally, you may find that the Postmaster will accept the shipment without postage. If he will not, please place upon it whatever stamps are necessary, avoiding any delay in having shipment forwarded. Doubtless, you can collect postage from the Department of Geology.

I do not need to tell you, that the fact of our sending for this

(sheet 2)

map should not be known to anyone except yourself and the Chairman of
the Department of Geology and the Postmaster.

President of the University or the

Very sincerely yours,

Ramona Martin

Major, G. S.,
U.S.A.

Sept. 17, 1918.

F.T.Thwaites, Curator of Geological Museum,
University of Wisconsin, Madison.

Receipt of package is acknowledged upon slip attached hereto.
This package will be forwarded by the first Courier leaving Washington.

JCW/AL

JAMES C. WADDELL,
Major, U.S. Army,
Assistant.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
EMBARKATION SERVICE

No. 26

Date 9-17-18

Received from Lawrence Martin
Maj., Gen Staff, U. S. A. Dept of
Geology, University of Wisconsin
Madison Wis.
1 piece of mail for

delivery to Office of Air
Intelligence, G-2. A. G.
G. H. Q. A. E. D.

Attention Lt. Bolling

by first transatlantic courier leav-
ing after the above date.

JAMES C. WADDELL

Major, National Army

JCW

E.S.M132

Courier # 11.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
EMBARKATION SERVICE

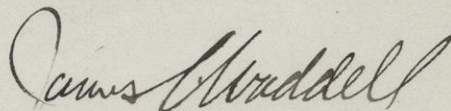
Sept. 17, 1918.

Memorandum *for*

F.T.Thwaites, Curator of Geological Museum,
University of Wisconsin, Madison.

Receipt of package is acknowledged upon slip attached hereto.
This package will be forwarded by the first Courier leaving Washington.

JCW/AL



JAMES C. WADDELL,
Major, U.S. Army,
Assistant.

Duxbury Mass.
Box-177
September 7th. 1935.

My dear friend:

Your nice letter came and I certainly was glad to get it and the clippings which you sent me. I had heard from Mrs. Hotchkiss but she had not said what Mr. Hotchkiss duties were to be at Troy, New York. I am so glad for them that they are away from Houghton for it was about the most deserted place I was ever in. I think they will enjoy Troy very much as it is nearer their children and places they like.

The other items you sent were very interesting. I am always glad to get news from Madison. I wonder if this destruction on the Florida Keys will make any difference with the Smiths plans to go to Key West. How I would love to see them and many of my nice Madison friends.

I have had a nice summer here and am sorry that it is almost over. We have been having a cold rainy few days but to-day is nice and warm and I hope we will have some nice weather so I can stay a few weeks longer. I am alone now but some friends are coming next week for a while. Mrs. Tarr from Ithaca, New York has been here for three weeks and we have had a lovely visit together. I have not seen her for over three years.

I am sorry to hear that you are not as well due to the hot weather, but hope now that the cool weather is coming on you will gain and be your old self again. I always think of you in that lovely garden and am so sorry that you are not able to do the work I well know you enjoy doing.

Dr. Bumpus planted some vegetables here but it has been most unusually hot for Duxbury and no gardens have been a success this season. Flowers have just dried up it has been so dry. Now that we do not need it for the summer garden it rains. We have a great deal to be thankful for that we have not been through what the poor people on the Florida Keys have been through.

Letters from both of the girls tell of nice weather in their city. They missed much of the Washington heat while they were here in July. I shall go to Washington from here to stay a month or more before I go to Florida. If it gets cold here I am likely to leave here any time so if you feel like writing me I think it would be better for you to send it to the Needham, Massachusetts address 727 Great Plain Ave. as I will go there from here and wherever I am my sister always knows where to forward a letter to me. I would enjoy a letter from you when you feel able to write.

*Remember me to all the family & with love to you.
As always Florence Martin.*

March 19, 1936

Mr. R. E. Milaeger
2325 North 50th Street
Milwaukee, Wisconsin

Dear Mr. Milaeger:

In reply to yours of the 17th, the Cutler-Hammer well was drilled by Gray in 1918. It shows in brief:

	<u>Thickness</u>	<u>Depth, feet</u>
Drift	220	220
Niagara	290	510
Richmond	154	664
Galena, etc.	256	920
St. Peter	160	1080
Eau Claire	210	1290
Mt. Simon	573	1863

This log requires some revision in light of present knowledge.

The water was very hard, from 2021 to 1298 parts per million total solids. A sulphur smell was troublesome and aeration was advised. The plugging back of the well to 1700 to 1800 was advised. Would now advise plugging back to 1700 and perforating between 920 and 1080. The old analyses do not give iron alone.

Very truly yours

WISCONSIN GEOLOGICAL SURVEY

By

F.T. Thwaites, Geologist in charge of
Well Records

PTT LMV

March 27, 1936

Mr. R. E. Milaeger
2325 North 50th Street
Milwaukee, Wisconsin

Dear Mr. Milaeger:

The reasons I hesitated about the removal of the 5 inch liner were (1) the expense, and (2) the fact that it may shut off a cave which we do not know about. As far as the removal of the liner through the Niagara goes, it would lower the head of water somewhat. It is an open question whether or not the amount of water thus added would pay for the expense. The chemical quality of the Niagara water is probably all right.

Very truly yours

WISCONSIN GEOLOGICAL SURVEY

By

F.T. Thwaites, Geologist in charge of
Well Records

FTT LMV

Marquette

April 9, 1936

Mr. Frank M. Gray, President
Gray Well Drilling Company
160 North La Salle Street
Chicago, Illinois

Dear Frank:

In reply to yours of March 27 and April 8, I am sending you, under separate cover, blue prints of the Youngstown Sheet & Tubing Company, Indiana Harbor, Ind. and the Republic Iron & Steel Company, East Chicago, Ind. wells. The other records mentioned we never had. The Illinois Steel Company was sent in a previous shipment. I think you probably mean the wells at Joliet, of which we never had any records.

I am also enclosing blue prints of the two cross sections requested. These are out of date but will serve the purpose all right.

In regard to Marinette, Wis., I made a study of the water situation for the Ansul Chemical Co. some years ago. I also got a full set of samples from the well of the Menominee Light & Traction Co. just across the river. The St. Peter is absent or very thin there. At present it lies at about 200'. These sandstones are found at depths of about 250'-370'. In some wells a fair sandstone comes in at 420'-460' but is absent in others. The granite is struck at 658'-800'. The main body of sandstone above that comes at 520'-560' but this sandstone is very limy and tight. The Ansul wells in the Jordan and overlying sandstone have a specific gravity of only 2. The temperature of the water is 49°-51°. We have no records of the temperature at the deep well but a number of readings on flowing wells showed a maximum of about 55°. The Traction Company well was very disappointing and they found that most of the water came from a depth of 20'. When this was shut off, they had very little water, so drilled another well to the first water later. Of course water at this depth will vary with the season. If you want water for air conditioning, I think I would try a number of test wells in the first limestone ^{down} to where the St. Peter should be before going any deeper.

I received a letter from Mr. Kunz of the Boston Store with the casing log but no data of depths at which shots were fired. However, Mr. Holran of the Du Pont Company was in yesterday and gave me the information.

We will be glad to make the tube at cost. We have a student working on this with a new design, which is very much better than the old one. The cost of the case with the tube would probably run around \$16 or \$17, and possibly a little more. I will make this up as soon as they authorize it.

Very truly yours
WISCONSIN GEOLOGICAL SURVEY

Geologist

Dear Mrs Thwaites-

I want to thank you for the Check that Bobby brought this afternoon.

I have talked to Bobby's Sister and I feel I understand him.

I enjoy working with him. He is a very willing youngster and a very interesting one.

your friend

Mrs Mae McHatten

GENERAL HEADQUARTERS
AMERICAN EXPEDITIONARY FORCES

SECOND SECTION, GENERAL STAFF.

September 19, 1918.

Mr. F. T. Thwaites,

Dept. of Geology, University of Wisconsin,

Madison, Wisconsin.

My Dear Thwaites:

Your letter of July 5th has just reached me. I heartily endorse your idea of enlisting in an Engineering organization, for I am sure that you could be of great service. I do not know anything about the 472nd Engineers or their need for men to do ~~topographical~~ work.

Before leaving Washington, I suggested to Capt. John L. Rich at the Army War College that he consider recommending you for a Commission for work in the Map room of the Military Intelligence Branch. I do not know whether anything came of this, but you might write him. He is the man who teaches Physiography at the University of Illinois.

If there is no opening there, I suggest that you get into correspondence with Major Augustus Trowbridge, Engineers, American Expeditionary Forces, France, who was formerly Professor of Physics at the University of Wisconsin, and is now engaged in Sound Ranging over here.

I have recently seen a little of the work of Sound Ranging and Flash Ranging at the front and it appears to me that you might be of decided use in one of those organizations because you are so clever at instrumental manipulation. The Sound Rangers ~~officers~~ here have at least ~~two~~³ geologists in the service. One of them is Lieut. Sturgis of Chicago, and the others ~~is~~^{are} ~~Russell Tarr~~^{Eda Hubbard and} who did some work for the Wisconsin Geological Survey.

Best wishes to everyone. I hope your mother is well.
Very sincerely yours,

Lawrence Martin

Major, General Staff.

LM
hgt

April 16, 1935

Montgomery Ward & Company,
Chicago, Illinois.

Gentlemen:

If it is not contrary to your
custom, please send me samples of the
mulberry and rose shades in the following
materials:

7107031

7107030

7106901

7107108

Yours very truly,

Marshall Field & Company, Chicago

Mrs. F. T. Thwaites

R. F. D. 4

Madison,

Wisconsin

19.00
~~18.50~~

x

10 yds. 837

Mulberry-old rose drapery
fabric, 50 inches wide at
\$1.85 per yard

50"

Mulberry-
old rose

\$18 50



MARSHALL FIELD & COMPANY

STATE, WASHINGTON, RANDOLPH & WABASH

CHICAGO

PERSONAL SHOPPING BUREAU

S-31323

April 18, 1935.

Mrs. F. T. Thwaites,
R. F. D. 4,
Madison, Wisconsin.

Dear Mrs. Thwaites:

Enclosed are cuttings of attractive drapery fabrics in our nearest to the requested shade, which we hope will provide you with a pleasing selection.

We are glad to serve you in any possible way, and anticipate further opportunities of assisting you with your shopping.

Cordially yours,

MARSHALL FIELD & COMPANY.

MB:PF

Margaret Bidwell

May 21, 1935

Mr. R. H. Milaeger,
2325 North 50th St.,
Milwaukee, Wisconsin

Dear Mr. Milaeger:

I have been engaged by Mr. J. Albert M. Robinson of Chicago to make a study of the geology of the Manitowoc water supply on which he is making a report.

I wonder if you could supply me with any information which would help in this undertaking such a logs and locations of test holes, results of tests of wells, etc. Any such information would be greatly appreciated. My report will cover primarily the nature, origin, and distribution of water bearing formations both in the drift and the bed rock as well as the quality of the waters in each kind of deposit.

Very truly yours,

F. T. Thwaites

May 23, 1935

Mr. R. E. Milaeger,
2325 North 30th St.,
Milwaukee, Wisconsin

Dear Mr. Milaeger:

Mr. Bean tells me that the Burgess Laboratories, 1015 East Washington Ave. Madison, Wis. are putting out a new type of de-ironing device for waters which is similar to a zeolite softener. He thought that you might be interested in this in connection with your problem at Manitowec. Mr. H. J. Schoenacher is the man who is working on the device.

Very truly yours,

F. T. Thwaites, in charge of well records,
Wisconsin Geological Survey

April 30, 1935

Mr. R. E. Milaeger,
2325 North 50th St.,
Milwaukee, Wisconsin

Dear Mr. Milaeger:

In reply to yours of the 24th the samples from the Milwaukee County Park well came some time ago. At present I have no assistant to unpack boxes. The samples were wet and by the time I got around to them had moulded badly. It has been quite a job to read many labels and the sorting has not yet been completed. I have to wash each label with a soft brush in order to read it and some are, I fear, gone for good. However, I will undoubtedly salvage most of them and will be able to get out the blueprint in a few weeks

Thank you for the samples and the information on the test. If you get a chance to write would like to know the location and the normal water level, also if the installing of the new liner affects capacity.

With best regards,

Very truly yours,

F. T. Thwaites

November 22, 1935

Mr. E. E. Milaeger
Well Drilling Contractor
2325 North 50th Street
Milwaukee, Wisconsin

Dear Mr. Milaeger:

In reply to yours of the 20th, we are still struggling with the samples but I have to do most of this myself. All but a few samples so far have been read but we are only half way down. The lower samples were harder to read, so may be you had better make out a driller's log from top of sandstone down. Such would be a great help to me in locating some samples. I will push this matter all I can now that field trips are over.

With regard to Manitowoc, I found that the layers of gravel are on a slant of 15° - 25° descending to the west. They run about north and south but are irregular. It is quite possible that interference with other wells might be small but nobody can tell until it is actually tested.

Very truly yours

WISCONSIN GEOLOGICAL SURVEY

By

Geologist, Well Records

FTT LMV

March 9, 1936

R. E. Millaeger
2325 N. 50th St.
Milwaukee, Wisconsin

Dear Mr. Millaeger:

In reply to your letter of the 7th, Mr. Nichols reports hardness, 240, alkalinity, 239, iron, 0.1 parts. This is about as good as you could expect. I strongly oppose going deeper. You are almost certain to find harder water with more iron and possibly salt. Besides the St. Peter was nearly dry at New Holstein and Chilton. Gray's driller logged it as "sandy shale" out at Crystal Lake. I would expect the top of the St. Peter at 986 in Elkart Lake.

Instead of shooting with great risk of loosing your tools during cleaning how about aridizing? There are companies over in Michigan which do that and use an "inhibitor" which prevents damage to the pipe.

Very truly yours

WISCONSIN GEOLOGICAL SURVEY

By

F. T. Thwaites, Geologist in charge
of Well Records

March 9, 1936

R. E. Milaeger
2325 N. 50th St. Milwaukee

In connection with the new well at Sturgeon Bay, Wisconsin, the question has been asked as to the natural artesian flow of the two largest wells in Wisconsin drilled prior to this one which supplies about 1000 g. p. m. So far as our records go, the largest well in sandstone which I recall was at Prairie du Chien-604 g. p. m. when finished. The Rockfield well described in Bulletin 35 seems to hold the record 1300 G. P. M. for the Niagara. Any additions or corrections will be greatly appreciated.

Very truly yours

WISCONSIN GEOLOGICAL SURVEY

By

F. T. Thwaites, Geologist in
charge of Well Records

FTT MA

BANK OF WISCONSIN

No. 269

MADISON, WIS.,

Mar. 28

1916

PAY TO THE
ORDER OF

W. A. P. Morris

\$1200.⁰⁰/₁₀₀One Thousand Two hundred ⁰⁰/₁₀₀

DOLLARS

BRANCH



72

W. A. Morris
By Matilda Duval



Science Hall,
August 17, 1931

Mr. E. A. Whitman, Chief Engineer,
Minneapolis, St. Paul, and Sault Ste. Marie R R.,
Minneapolis, Minnesota

Dear Sir:

I am taking some of my students to do some field work in Waushara County, Wisconsin next month. In this work we will make use of the aneroid barometer and will find it necessary to have checks on elevations. With this idea in view I would like very much to have a copy of your detailed profile which shows highway crossings from Packwaukee to Bancroft, Wisconsin.

Please send bill for cost of blueprint to me personally.

Very truly yours,

F. T. Thwaites,
Lecturer in Geology

Aug. 26, 1931

Mr. E. A. Whitman, Chief Engineer,
Minneapolis, St. Paul and Sault Ste. Marie Railway,
Minneapolis, Minnesota

Dear Sir:

I wish to thank you for the blue prints sent with your letter of the
21st.

If in return I can help you with regard to any underground water
problems you may have in Wisconsin I will be glad to do so. That is my
specialty and I have furnished advice to a number of railroads in the past.
Please feel free to call on me at any time in regard to such matters.

Thanking you again,

Very truly yours,

Lecturer in Geology

Feb. 8, 1932

P. E. Millis and Co., Well Contractors,
Byron, Illinois

Attention Mr. J. B. Millis

Dear Mr. Millis:

In reply to yours of the 5th I have gone into my information on Lake County, Illinois such as it is. Unfortunately I have no records of well tests.

I find that the village of Long Grove is situated on the south flank of the Lake Forest syncline so that the formations lie at much lower levels than they do not far south, say at Arlington Heights. We have no record of the Golf Club wells. However, I estimate that the top of the St. Peter occurs at elevation 100 below sea level and the top of the Dresbach at elevation 450 below sea level. The St. Peter is probably around 150 feet thick and the Dresbach possibly 100 feet. Not knowing the surface elevation makes it impossible to forecast depths but it seems probable that the shallower well just reaches the Richmond (Maquoketa) shale, and the deeper one passes through the St. Peter.

In view of the discouraging results of the deeper well it would seem that there is no use in going below the Niagara unless it is intended to reach the Dresbach as at Grays Lake. The Golf Club and village of Wheeling rely on Niagara wells, the former having two of them.

I am inclined to think that a larger well in the Niagara may give the desired results but as you will understand the production of any limestone formation is uncertain. You may get a dry hole alongside of a wonderful producer depending on just how you strike the crevices. I think it might also be worth while to test out the resources of the glacial drift but this a thing on which I cannot advise without seeing the ground. The Wheeling wells appear to have found no gravel but that is many miles distant. Failing production in drift or Niagara then the only sure way of getting 200 g.p.m. is to drill to the deeper formations making a well 1500 to 2000 feet deep. there are several good wells at the Catholic institutions around Mundelein. Such a well might have a specific capacity of 5 to 10. Niagara wells, where good, have far higher capacities and so do gravel wells.

Very truly yours,

Geologist in charge of well records

P. E. MILLIS & COMPANY

Oil and Gas Well Contractors

BYRON, ILLINOIS

Febr. 5th, 1932.

Mr. F. T. Thwaites,
Science Hall
Uni. of Wisc.
Madison, Wisc.

Dear Sir:-

Thank you very kindly for your wire of the 3rd inst.

Mr. Thwaites if it isn't asking to much of you I would like some additional information in regard to the water bearing strata of Lake County of Ill., especially around Long Grove which is some 8 miles north and west of Wheeling., and about 5 miles west of Halfday. It is the location of the Kildere Country Club. They have two wells now. One flows which is a six inch well about 325 ft deep and the other does not flow and that is 355 ft deep. We tested the deep well which is 14' south of the shallow well and it tested at a rate of .47 GRM per ft. of draw down.

This club is thinking some of drilling a new well and what do you suppose a 400' 15 $\frac{1}{4}$ " well would furnish. What they want is about 200 GPM and what is your suggestion as to the best place or depth to get it.

Would you be so kind as to give me an early reply in regard to this matter?

Yours truly,

P. E. Millis & Co

J. B. Millis

D or -450

D or 350

SEP or -100

SEP 750?

SEP or 750

HARVARD UNIVERSITY
DEPARTMENT OF GEOLOGY AND GEOGRAPHY
GEOLOGICAL MUSEUM

February 12, 1932

OXFORD STREET
CAMBRIDGE, MASSACHUSETTS

Mr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites:

Thank you very much for your letter recommending Mr.
Elmer W. Ellsworth. The information you send will be very
helpful to us when applications are considered in March.

Yours very truly,

Donald H. Whipple
Chairman

DEM:D

Feb. 1, 1933

Dr. Paul MacClintock,
Department of Geology,
Princeton University,
Princeton, New Jersey

Dear Dr. MacClintock:

I am enclosing herewith some preliminary blueprint copies of illustrations which I prepared last year for a proposed text on glacial geology. Owing partly to delay in getting the typing done but mainly to the well-known Depression this is still unfinished.

Now I note that you recently presented a paper on the correlation of the pre-Illinoian drifts of Illinois which gives a different interpretation from that shown in figures 58 and 59. May I take the liberty to ask if you could correct me? These drawing will not be published until after your paper and you will be given credit in the description. I recently sent the set to Leverett but then forwarded it to Leighton who has not yet returned it.

As a Depression Measure I intend to have the full set of drawings (89 figures on 40 pages) photostated down to 10 pages and to use these with mimeographed descriptions for my classes this year. Would you be interested in getting any sets of these. I think I can make the price 50 cents a set. Sample page of original drawing is enclosed.

It seems a long time since I last saw you in Urbana. Last summer I worked in western New York state but this summer will doubtless join the unemployed.

Sincerely,

F. T. Thwaites

Sept. 27, 1932

Dr. W. T. McLaughlin,
Fisk Hall,
Northwestern University,
Evanston, Illinois

Dear Dr. McLaughlin:

I wish to thank you for the copy of your paper on Atlantic Coastal Plain Plants in the Sand Barrens of Northwestern Wisconsin.

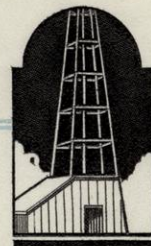
I spent the summer at the Allegany School of Natural History in southwestern New York and was able to learn some botany there by reason of going on some of the field trips and of meeting so many who were studying that science. My own job was water supplies, however.

With best regards,

Sincerely,

McCarthy
WELL COMPANY
Well Drilling Contractors,

SPECIALIZING IN WELL DRILLING
SINCE 1860



**NORTHWEST'S LARGEST
WATER DEVELOPERS**

Phone NESTOR 7566

MINNEAPOLIS & ST. PAUL

Address Reply to
670 EUSTIS ST.-ST. PAUL, MINN.

April 10, 1933.

Mr. T. W. Thwaites,
Geology Department,
University of Wisconsin.
Madison, Wisconsin.

Dear Sir:

You will recall that in the past we have cooperated with you in sending you samples of various wells drilled by us in Wisconsin, and have also drilled wells for the city of Madison, which you no doubt recall.

We are making maps and surveys of both Minnesota and Wisconsin, Iowa, North and South Dakota, and have been cooperating with Mr. Burch in Minneapolis regarding underground formations.

We were wondering if you had a large map of Wisconsin, colored, showing the various formations throughout the state, and where they are encountered first, similar to the new geology map which was recently produced by the University of Minnesota.

If you have any extra maps of this type of Wisconsin, or any information or data along these lines it would be very much appreciated.

Thanking you in advance for anything you can do along these lines, we remain

Very truly yours,
McCARTHY WELL COMPANY.

FM'D

BY

J. Fred McCarthy

April 13, 1933

Mr. J. Fred McCarthy,
McCarthy Well Co.,
670 Eustis St.,
St. Paul, Minnesota

Dear Sir:

In reply to yours of the 10th I asked them at the Geological Survey to mail you a copy of the 1928 geological map of the state, scale 1 inch = 16 miles. If this is not satisfactory I can get you an older and less accurate map on the scale of 1 inch = 6 miles.

I wish to thank you for your cooperation in the past and hope that such can be continued in the future despite drastic reduction in funds here.

Very truly yours,

F. T. Thwaites, Geologist in charge of well records,
Wisconsin Geological Survey

GRAY-MILAEGER DRILLING CO.

WELL DRILLING CONTRACTORS

DRY CORE FOUNDATION SOUNDINGS
TURBINE PUMPS

14 E. Jackson Blvd.
CHICAGO
Phone Wabash 3095

Phone MArquette 6566

F. M. GRAY, Pres.

~~610 W. Michigan~~ MILWAUKEE
2325 N. 50 St.

January 24, 1935.

Prof. F. T. Thwaites,
Science Hall, U. of W.
Madison, Wis.

Dear Mr. Thwaites:

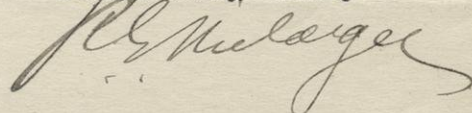
We have an opportunity to bid on a deep well in Des Moines, Iowa for a private company that want 1000 GPM.

Have you any information as to casing set in a well to 2400'. Is it possible to start 20" drive pipe and finish with 12" hole at 2400', without any underreaming.

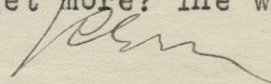
I have written to Iowa City but they have given me no information and the customer is anxious for our bid.

Your prompt attention will be greatly appreciated.

Yours very truly



The writer is drilling a well for the Milwaukee County Park Commission at Silver Spring Park. 12" drive to 128' - 12" hole thru shale and 10" hole to 1600'. A test will be made at 400' for 400GPM. We have a few sample bags and would like to know whether we could get more? The well is now 200' deep.



GUARANTEED WATER SUPPLY

Jan. 26, 1935

Gray-Milaeger Drilling Co.,
2325 North 50th St.,
Milwaukee, Wisconsin Attention Mr. Milaeger

Gentlemen:

In reply to yours of the 24th I have the records of three deep wells in Des Moines, Iowa but there are no casing logs. The deepest well (now abandoned) is that at Greenwood Park, total depth 3000 feet and bottomed in Eau Claire. 10 inch drive pipe, bottom hole 3 inches, 400 g.p.m. probably mainly from Dresbach at 2750-2880. Total solids about 171 grains, hardness about 134 grains.

Wood Bros. well is 2423 feet deep producing from the Jordan 250 g. p. m. with apparently a specific capacity of nearly 23 unless there is a misstatement in the record.

The well of the Northland Milk and Ice Cream Co. is 1355 feet deep and produces from the bottom of the Niagara where they seem to have a sandstone. The water has 246 grains total solids and a hardness of about 107 grains.

There are also a number of good wells in the sand and gravel along the river.

With regard to drilling conditions the Pennsylvanian shales which extend down to a depth of about 230 feet will undoubtedly make some trouble. From there on you have alternating lime and shale down to the St. Peter at around 1900 feet. It is impossible to tell which of at least 10 shale layers in this distance will make trouble it seems inevitable that some of them will. I should think, however, that the proposed combination of starting with 20 inch and finishing in the Jordan with 12 inch would be about right. The St. Peter is thin 39 ft., and does not amount to anything. There are a number of shale beds below that in the Prairie du Chien but I doubt if any of them cave badly.

I have not copied the detailed logs as they are very long and complicated and do not give much information on caving.

I had some sample bags sent to you this afternoon.

Very truly yours,

F. T. Thwaites

April 12, 1935

Marshall Field & Company,
Chicago, Illinois.

Gentlemen:

Please send me samples and prices of
drapery of the inclosed shade of mulberry-old

rose.

Thanking you for your attention to

this matter, I am

Yours very truly,

out

745 - Glacial geology students at Forest Bed.
April 30, 1933. 2124.11a1

Feb. 8, 1932

Professor Mather H. McLaughlin,
Department of Geology,
Harvard University,
Cambridge, Massachusetts

Dear Sir:

Mr. Elmer Ellsworth, one of my former students writes me that he is applying for the J. B. Woodworth Fellowship at your University for the coming year and desires that I write you.

Mr. Ellsworth was a good student with me. His bachelor thesis was on the varved clay deposit at Waupaca, Wisconsin. It has been published in the proceedings of the Wisconsin Academy of Science and I presume that he will submit a copy of it. His masters thesis was on the varved clays of the Grantsburg region. I do not think that it has been published. Neither thesis was under my direction. He assisted me for a time in the study of deep well records. You will find that he has a pleasing personality and will make a good record.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

Feb. 4, 1932

P. E. Millis and Co.,
Well contractors,
Byron, Illinois

Gentlemen:

Your telegram of Feb. 3, 11:07 A. M. was duly received and as soon as possible I wired reply as follows to your Byron address:

"Average probably not over three but varies greatly with thickness."

Later I received a call from the telegraph company asking why you had not received a reply. I had not returned the answer to Rockford since your telegram did not so state but thought it safer to send it to your home address. I am sorry for the delay which resulted due to this misunderstanding.

Not knowing just what your problem is I could not be more specific. I based my opinion of the known fact that most deep wells in the Chicago district do not have a specific capacity of over 5, even when they reach the Mount Simon. This condition obtains even at West Chicago although there the St. Peter is cut off. Of course, an open hole from top to bottom should do somewhat better but I am informed that many do not and that capacities of 1 to 2 are not rare. Unfortunately I have not the results of very many tests in Illinois and most of the older reports are silent on this very important matter. In this case my answer could not be anything but a rough guess. I looked over the records I have and find that at several places in the county (Lake) the St. Peter is unusually thick and rests on the Mazomanie. In these places I would expect a greater water capacity than in downtown Chicago where the formation is thin and tight. It is generally thought that in the stock yards the St. Peter is a very poor producer.

I would have received your telegram sooner but the University has disconnected my telephone on account of an economy program. The University operators do not try to help to find anyone now and so everything is mixed up. I do most of my business at home, Fairchild 1940-R

Hoping that the delay did not inconvenience you,

Very truly yours,

Geologist in charge of well records

P.E. Millis ad Co.

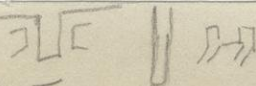
Pyrom. Ill.

Average

Probably not over three but
varies greatly with thickness

Thwaiter

Elkhorn
E 1425 base



D base
at 1060

1425

~~Coarse~~ 1520 - 1595

1595 silty shale

7'

600
FA

TD 1602

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OF THIS
MESSAGE**authorizes us
to say that a
TELEGRAPHIC reply
is desiredvia
WESTERN UNION
3938**WESTERN
UNION**

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1529 18 XU=ROCKFORD ILL FEB 3 1107A

F T THWAITES, SCIENCE HALL=

WISC UNI CAMPUS MADISON WIS=

PLEASE STATE YOUR OPINION ON SPECIFIC CAPACITY OF STPETERS
FORMATION IN LAKE COUNTY ILL WIRE REPLY COLLECT OBLIGE=

P E MILLIS & CO.

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TELEPHONE NO.

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Mrs. Thwaite

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TO DELIVER

Madison Gas & Electric Company

MADISON, WIS.

February 1, 1930

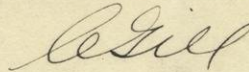
Mr. J. T. Thwaites
Turville Estate Farm
Madison, Wisconsin

Dear Sir:

Our inspector has called December 27 and January 30 to check the Connected Load at the above address, but found no one at home. We suggest that you call our Service Department--Telephone Badger 4400--as to the time convenient for our inspector to call.

Unless you notify us within ten days, all current consumed will be billed on the primary rate and no adjustment will be made on bills rendered prior to the date that such notice is given.

Yours very truly,



Service Department

CG:BL

LIBRARY OF CONGRESS

DIVISION OF MAPS

To

5-28-79

Dear Fred:

Here is one to
review for the 2nd
edition of your book
on glacial deposits.

LK.

Hand the enclosed slip to
Mr. Henderson - also the list
of my donations - adding 100 ⁰⁰
to the Com. Union - and bring
(or send) the rest of the money
next time you come out.

Naturally when they did not do that I did not think very well of it.

I am in favor of this bill. I have always been in favor of a merchant marine and have always voted for bills when they have come before Congress. I wish to encourage the merchant marine. I look upon the merchant marine as our real second line of defence in war and a great adjunct in time of peace. I think if you wish to make the merchant marine a real success you have to allow a little something to drink on the passenger ships. I am not asking that you give them very strong drink. I am asking that you give them something to drink which is not intoxicating—2½ per cent beer or light wine. You can realize that such would be very, very light wine, but a fairly palatable beer.

Mr. COLE of Iowa. Mr. Chairman, will the gentleman yield there?

Mr. LINTHICUM. Yes.

Mr. COLE of Iowa. If it is not intoxicating, would it be satisfactory to the gentleman's constituents in Maryland?

Mr. LINTHICUM. Oh, my constituents in Maryland do not drink as much liquor as some people in other States of this Union. I can tell you that. My people got along very well on 2½ per cent beer years ago. While other nations are selling intoxicating liquors on their ships, not for the purpose of intoxicating their passengers but for making the voyages a little more agreeable, we prohibit that on our vessels. If you want to make the service a success all the year round, you must conduct the service as the other nations do.

Mr. SCHAFER. Mr. Chairman, will the gentleman yield? Under your amendment can foreign ambassadors and diplomats bring in intoxicating liquors?

Mr. LINTHICUM. Oh, on that point I have wondered frequently at the stacks of boxes I see piled up in the port of Baltimore that are unloaded there for the diplomats and those engaged in the consular service of foreign countries. I have wondered why we could not have the same opportunity. I was talking to a gentleman not long ago who went abroad on the *Leviathan*. I met him at a wedding held in Maryland, and I asked how he came back from abroad, and he said, "On a British boat." I asked him why he did so, and he said that on the *Leviathan* things were so uninteresting that he took a British ship in coming back. [Laughter.]

Mr. McKEOWN. Mr. Chairman, will the gentleman yield there?

Mr. LINTHICUM. Yes.

Mr. McKEOWN. Does the gentleman think that by a speech of that character he will help to upbuild the merchant marine?

Mr. LINTHICUM. I know it will help the merchant marine if you can give them this privilege on the ocean. Nothing you can do will help the service more.

Mr. McKEOWN. The gentleman is evidently advertising foreign wines.

Mr. LINTHICUM. No. What I am asking on my amendment is not intoxicating liquor, but only 2½ per cent beer and light wine. If you want to make this service a success, gentlemen, you should be a little lenient with those on the ocean.

I am not trying to advertise any foreign lines. So long as we continue the enforcement of prohibition on the high seas on our passenger ships the foreign ships, who do not use such methods, will get the bulk of the business without advertising.

I wish to remove the liquor from the stateroom to the smoking room, to provide a nonintoxicating beverage which naturally creates better feeling and cheer among the passengers. What have we to-day? People providing their own liquors for consumption on the trip. Private parties in private staterooms, secrecy in drinking strong drinks, and I really believe more liquor consumed on a journey in secrecy than there would be in public.

When people go on a pleasure trip abroad they have little to occupy their time while on the ocean and naturally like to meet their friends, have a sociable drink, and talk and enjoy the voyage. If the American ships were allowed to sell light wines and beer, as I propose, we could have this same sociability on American ships as we now have on foreign ships, and you would not be doing anything to the injury of the merchant marine.

I repeat, if you will adopt my amendment providing for light wines and beer not exceeding an alcohol content of more than 2½ per cent you will not be furnishing an intoxicating liquor, but you will be adding to the great success of the American merchant marine. [Applause.]

The CHAIRMAN. The time of the gentleman from Maryland has expired.

Mr. LINTHICUM. Mr. Chairman, I ask unanimous consent to revise and extend my remarks.

The CHAIRMAN. Is there objection to the request of the gentleman from Maryland?

There was no objection.

EXTENSION OF REMARKS

OF

HON. EDWARD J. KING

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Friday, May 11, 1928

Mr. KING. Mr. Speaker, Mr. Wheeler W. Moore is a resident of Buena Vista Township, Schuyler County, in my district. His business is that of a farmer, and he runs and owns his own farm. He is a student of agriculture from personal study of actual conditions, in other words, "a dirt farmer." He is also a student, and the time on his farm has not succeeded in a failure to cultivate his mind, with the result that his studies in his library on the farm, coupled with the explorative trips, have led him to the firm conviction that the geologists are in error as to the real formation of the glaciers. This confronts us with a very important and startling suggestion, one that might well attract the attention of Congress and the general public when it is announced. So full of startling information is his development that I think it wise to give his theory to the world's greatest publication, the CONGRESSIONAL RECORD. The following is the theory of Mr. W. W. Moore, set out verbatim as he has sent it to me:

INTRODUCTION

With a spirit of respect to the pioneers of America who made our land one of the free and peaceful nations of all the earth, and with full confidence in believing the Congress of the United States will ever retain its good will and confidence by fair and impartial dealing with its own native inhabitants and with the world at large, I thus submit a subject of the deepest import, suggestive to the removal of a clouded title now shadowing every interest existing under man's observation.

The rising and passing of a clouded title shadowing a public school or free institute or the world's business enterprise at large is nothing more than a budding and growth of another new truth, which, in the march of events, continues to displace theories and establish facts in harmony with the Divine Providence who created all; but why delay and grope in darkness and the shadow of ignorance while an endless world of undiscovered treasures resolved under a master mind, yet remains to compensate a worthy deserver.

It seems from the tide and trend of things our vision of fame and honor is being misdirected, inasmuch as it confirms too much to the massing of great wealth and fortunes, which, while being of a noble and worthy purpose when rightly used, yet there seems to be an urgent and more demanding need for intellectual thinking and physical exertions in the open field of undiscovered realities.

Civilization, while owing much to its wealth saved from its country's earnings, its educational system and moral obligations, depend largely upon scientific discoveries and a true vision of realities. The truth along these lines is the source of peace and freedom; every new discovery is educational and intensifies an optimistic vision of the immeasurable wealth and opportunities of our land.

As proof of my convictions I will follow these pages with a few inclosures disclosing only a few of the shallow mysteries of nature now existing under our everyday observation. With a foundation based upon the truth, the phenomenon of every object will correlate with every other object and with such measurable reactions as to withstand every test and give cause for every effect.

In the very heart of our civilization we stand aghast and amazed at our own ignorance as we refresh our minds with these simple problems of vital importance. We are not responsible for what we perceive in nature or our deduction and view drawn therefrom. We ask no one for enlightenment; we accept no one's conclusions except as they conform to the laws of ethics and the geographical engraving on the trestle board.

The whole phenomenon of both land and sea is a self-explanatory history of the works of the wise Creator; every object on the map, both animate and inanimate, is observed with utiring interest and understanding as it is surveyed and marvelously measured by the power of the mind.

There is no insane wondering in the field of natural science; our mighty rivers, our expanded lakes, our snow-capped mountains, the canyon, the cataract, the high and low plains are all explanatory subjects with such measurable relations as to carry us far into the deeper mysteries of nature, which likewise surrenders their secrets.

Novel as it all seems and the endless pleasure it affords, it carries with it a spirit of the truth which enriches us with useful and valuable knowledge concerning our lands, their soil, and the importance of their conservation. Every object, animate and inanimate, only functions as an effect; the cause is that of a higher power; thus science and religion are inseparable associates, harmonizing with every spirited truth in the Bible.

A revelation of the truth is the source of inspiration by which we are guided. We are not laboring under a false illusion or confronted

they were used to the same standard of living; they came from the same family; graduated from the same college; they both offered their services to their country; the private is permanently disabled, totally disabled, drawing compensation of \$100 per month, unable to earn a dollar, while the captain has only a 30 per cent disability so receives \$30 per month compensation, but is a practicing lawyer with a large income. In spite of his relatively low disability, in so far as affecting earning power is concerned, but because he held a commission as a captain, he would under this bill draw \$150 a month for the balance of his life; while his brother, much more in need of help, would continue to draw \$100 per month. I can not feel that this would be fair. We have not discriminated between officers and privates in pensions for veterans of the Civil War and the Spanish-American War. Would we be justified in setting up these discriminations in the case of World War veterans?

Mr. CONNERY. Mr. Chairman, will the gentleman yield?

Mr. BURTNESSE. I can not yield now. Let me give a few other illustrations. Let us note the difference in the ratings between a chemist and a bacteriologist in the Veterans' Bureau. You all recall the arbitrary test of 30 per cent disability is passed upon by the Veterans' Bureau under present compensation laws—that rating is accepted as the guide for retirement under this bill.

A chemist who has his leg off at the knee is given a rating of 33 per cent, but a bacteriologist in the same predicament, wearing the same kind of an artificial leg, is rated at 29 per cent. That is the finding of the Veterans' Bureau with reference to these two occupations. Apparently they allow \$4 more to the chemist, compensating for the fact that possibly in his work he must get up from his stool or his bench a little oftener during the day than the bacteriologist. To-day such a chemist draws \$33 per month and the bacteriologist \$29, but what do the proponents of this bill say?

They say, in effect, that the difference of \$4 a month between a chemist and the bacteriologist is not sufficient, even though they suffered the same disability and may have had the same rank, and so they propose a law under which the chemist, who, we will say, is a major, shall then get \$187.50 a month for the balance of his life, while his bacteriologist friend, who may likewise have been a major, must continue to receive \$29 a month. Such discriminations can not be justified by anyone, and if this bill is passed the bacteriologist will have a right to complain and will complain.

Let us take the ratings of a bookkeeper, a cashier, a lawyer, a doctor, and a stationary engineer as applied to a specific disability. Let us assume that they have had to have two-thirds of a leg amputated. Under such a condition the bookkeeper receives a rating of 25 per cent, the cashier of 29 per cent, the lawyer receives a rating of 29 per cent, the doctor receives a rating of 39 per cent, and a stationary engineer 44 per cent. This is, of course, so whether they were officers, noncoms, or privates. Assume the case of an emergency colonel in the war who happened to be a physician as compared with an emergency colonel who happened to be a bookkeeper, a cashier, or a lawyer. What is the result? The bookkeeper, the cashier, and the lawyer, whether officer or private, will continue to receive from \$25 or \$29 per month, while the physician colonel will under this bill receive \$250 a month, or about ten times as much for the same physical disability, and a disability which under the solemn findings of the Veterans' Bureau to-day are apparently no greater to the extent of actual disability in earning power than about \$10 a month.

I submit that in all fairness we can not vote for that kind of a bill if we want to do justice not only as between the enlisted man and the officer, but as between one set of emergency officers and another set of emergency officers. Privates 100 per cent permanently disabled would draw but little more than half as much as a major only 30 per cent disabled. A first lieutenant 100 per cent disabled would draw \$93.50 per month less than a lieutenant colonel 30 per cent disabled. All officers of the same rank would draw the same allowance if disabled to the extent of 30 per cent, regardless of whether one is totally helpless and the other able to carry on a successful business or profession.

I am in thorough accord with the remarks made by the chairman of the Veterans' Committee, the gentleman from South Dakota [Mr. ROYAL JOHNSON] this afternoon, himself a distinguished disabled emergency officer. Personally, I hope the bill may be so amended that we can all support it and do justice to some of the urgent cases which will be covered by legislation of this sort. I am not going to be arbitrary in my demands of amendment before giving support, but I have retained the right as a Representative in this House to vote for each and every amendment as it comes up, and to exercise the best judgment that I have upon the occasion. I can never yield

to propaganda, no matter whence it comes, which demands that I take the bill and not amend it, but vote for it just as it is. Whenever we so yield we rock the very foundations of representative government.

Mr. JOHNSON has a proposal which seems fair and which I assume he will explain, limiting the awards largely to those suffering from actual war casualties, or to disability incurred in line of duty providing for increases with age. Mr. SIMMONS has, I understand, suggested that the percentage of disability be figured on the pay received by the officer so that the person 30 per cent disabled receive 30 per cent of such pay, the man 75 per cent disabled that percentage, and so forth. Both of these propositions are worthy of serious consideration. Personally, I should be glad to see the base of \$100 per month for total disability raised so that all totally or partially disabled, officer or private, may receive a larger amount proportionately under our compensation laws.

But why grant thousands of dollars per year to the New York judge drawing a salary for life of \$12,000 per year? Why pay thousands per year to fairly well paid men now profitably employed in the Veterans' Bureau, some of whom are paid salaries as high as \$6,200 annually? Why establish such unjust discriminations which can not help but cause great dissatisfaction? We have many fine, brave service men in this House, several seriously wounded and considerably disabled. Unless we were informed we could not tell whether they had served as privates or as officers. To-day as Congressmen they receive the same salary. Two splendid officers here having disability ratings respectively of 30 per cent and 39 per cent would, under this bill, receive retirement pay for life under this bill, but others of our colleagues who served as privates, corporals, or sergeants, though disabled as much or more, would not benefit thereby.

I repeat, let us proceed in a businesslike way to see if we can not perfect this bill so as to do more exact justice. If so, I will be glad to vote for it. If this is not done I must, under my oath and as I see the facts, vote against it, unpleasant as that duty is.

American Merchant Marine—Sale of Light Wines and Beer

SPEECH

OF

HON. J. CHARLES LINTHICUM

OF MARYLAND

IN THE HOUSE OF REPRESENTATIVES

Saturday, May 5, 1928

The House in Committee of the Whole House on the state of the Union had under consideration the bill (S. 744) to further develop an American merchant marine, to assure its permanence in the transportation of the foreign trade of the United States, and for other purposes.

Mr. LINTHICUM. Mr. Chairman, I ask unanimous consent to speak out of order for five minutes.

The CHAIRMAN. The gentleman from Maryland asks unanimous consent to speak out of order for five minutes. Is there objection?

There was no objection.

Mr. HUDSON. Mr. Chairman, will the gentleman yield?

The CHAIRMAN. Does the gentleman from Maryland yield to the gentleman from Michigan?

Mr. LINTHICUM. I do.

Mr. HUDSON. I had no intention of objecting to the gentleman's speaking a moment ago until he threatened the House that he would either be granted the right to speak or would stop the business of the House. That was the ground upon which I based my objection.

Mr. LINTHICUM. Does the gentleman never make objections except upon that ground? He made a dozen at different times when I have wanted to speak on this subject.

Mr. HUDSON. I have never objected to the gentleman's speaking on the floor of this House.

Mr. LINTHICUM. I have never objected to the gentleman from Michigan speaking, no matter what he wanted to speak about.

Mr. BLACK of New York. That is where the gentleman from Maryland made a mistake.

Mr. LINTHICUM. Mr. Chairman, I do not purpose taking up much time on this subject. I am not out of humor as some gentlemen seem to think I am. I have a right to discuss my amendment, and in all courtesy I was entitled to have gentlemen reserve their objections until I have made a few remarks.

with perturbing question which can not be understood, answered, and substantiated; neither is it possible to doubt the existence of an intelligent creator from a true knowledge of science.

Close the great open book of all the ages and cancel all its records; shadow the calendar of the whole world's activities, and from afar off into the background of chaos, try and feature the unfolding of all the marvelous wonders of creation as they now appear without a divine Creator and it can not be done.

From every angle and point of view consider the lightning and its trackless path as it flashes before our eyes and from a vision of our own we behold a helpless collection of electrons driven into seclusion and commanded to action by that same Master Mind that brought forth the beast of the fields, the fowls of the air and all the creeping things of the earth, and of which our own observing mind is a part.

Consider the ninety some odd elements of nature with their billions of infinitesimal electrons, timed, proportioned, and locked in secrecy and subject to release and made available under advancing conditions in the formation of countless living organism, and all is a ceaseless tide of evolution acting under the command of a Master Mind.

Why all this fuss and prejudice toward evolution? Is it because Darwin and his theories on the subject were not in full accord with the Divine Truth? It may best be understood from a standpoint of knowledge of that of my own experience.

My view of Darwin and his prescribed theories up to the time I was past 21, was transitory and of a skeptical and prejudiced nature, acquired in my home, the school, church, and from public opinion, and many of whom, like myself, no doubt, had no personal knowledge of what his work consisted other than that of hearsay.

In following the regular prescribed course of study in the latter part of my school days, some 38 years ago, I found it necessary to take up the study of zoology and as a matter of consequence, I frequently referred to the preface of the book (the fourth edition by A. S. Parker) in which it referred to the works of Darwin for collateral reading.

I believed him an atheist and that his work in support of his belief and to prove that man was a descendant of a monkey and the monkey from something lower and so on down the line; I thought seriously over the matter and wondered why a religious institution such as I was attending should allow a book in the school that would refer the student to an infidel's work as that of the *Origin of Species*, by Darwin.

However, deciding to carry out the instructions of the author and decide for myself as to the harmful atheist's influence that I expected to find in the work, I thus secured a book from a friend and with some fear and wonder I secretly and promiscuously scanned its pages from cover to cover, but to my surprise and astonishment I could only feature the strenuous effort of an honest man in search of the truth.

From my own point of view, his object of purpose was to prove by test the theories of evolution. He actually saw a varying difference between the species—a missing link and a whole chain gone—and set out to find it through propagation and breeding. But his method of practice was not in full accord with the Divine creation of things and his work stands in proof of his application.

Every species of the land is a relative compound made up of a certain number of distinct elements, united and commanded to action by a compelling force that demands a division and the missing link was a purpose of God.

Darwin went to the extreme limit of his ability with his tests and most of his answers were minus and negligible. Many times he detached himself from his regular course of procedure and studied his problem from a standpoint of geology. In this field he found it unexplored, misinterpreted, and a mystery, and with an open mind announced there was something wrong with geology.

But his work was not a failure; it stands as one of the greatest educational works in the support of a Divine creation and a Christian religion that ever was published; not that it is based upon the facts and conforms to the truth in all of its phases, but it reveals the lack of a divine inspiration which, as a matter of consequence, he could not vision the functioning of nature in a true science for an explanation.

Thus Darwin, honest, sincere, and an earnest student of the material things of life, should not be stubbornly condemned for his untiring efforts in proving to the world that no method of practice will ever enlighten or civilize humanity only as it conforms to the spirit and letter of a Divine Power.

The question of evolution covers a broad field and as a matter of judgment, in keeping the reader within the bounds of reason and understanding, I refrain from giving all my views to the full depth of my vision at this time.

It has now been some 10 or more years since I made these simple discoveries which I herewith disclose as only a part of the work. The whole scene was flashed before me in a moment of time as I approached a narrow gorge extending eastward of a lonely valley of which I had just passed through.

God, science, and all the wonders of the world, previous to this time to me, were bewildering and a tangled net of unrealities. I halter

with astonishment and for a few moments stood motionless, silent, and alone in solemn meditation and thought. I was not confronted with a stupendous flight of imagination in the field of endeavors. The curtains were lifted and some of the world's greatest tragedy stood before me in reality. I featured the land of promise from "Dan to Beersheba," and staged the last grand drama as played by the 10 tribes of Israel, and with new thoughts, new aspirations, and with a spirit of delight I proceeded on up through the narrow gorge of which I had previously traveled in ignorance, mystery, and wonder as to its formation.

The World War was on at that time and my first thought was something for peace and America first; but all my efforts to make a thing worth while proved futile, and instead of finding a place in our modern school curriculum it became a secret functioning barometer in a field of conflict and the author an innocent victim of circumstance.

As an American citizen functioning off the stage of action with a matter of such import as to interest every nation of the earth, I ask that every honorable Member of our Congress detach himself from his public duties at a convenient time and study this matter from an educational point of view. My composition and ways of explanation are faulty and hard to understand. Our thoughts are the only things worth while. We are all geniuses in this field if we will only think for ourselves.

If, from the meaning of the eighth clause of section 8 of article 1 of our Constitution, I should secretly withhold scientific discoveries or permit them, first, to go beyond the confines of our own borderland, then I stand as a selfish and unworthy citizen of the United States, disloyal to my family, and ungrateful to my God for a gift of intelligence.

The suppression of these facts, in so far as they have not added to my comfort or welfare or become known to the general public, they had just as well be sleeping in the silent tomb of some Egyptian king, and the world at large moving in ignorance and worshipping idols.

This long-protracted siege of silence concerning matters of such deep import and concern as to interest every nation of the world seems to be out of all reason and an insult to the intelligent acts of our early statesman, who, by an expression of their wisdom, granted certain powers to Congress as means of promoting the progress of science and useful acts by securing for limited times, to authors and inventors, the exclusive right to their writings and discoveries.

It is not so much of a question of time, energy, and expense involved in the accumulation of the required data from research and study in awakening the world to thought as it is to overcome the disqualifying effect that keeps a living truth off in the background.

However, the truth can not be suppressed only as it arises again, and without praise to myself or prejudice or gratitude to any particular party, creed, or race, I submit a minor part of my conclusion in evidence of my convictions.

In all of my physical industrial functioning and mental exertions in the acquirement of a purpose worth while, it seems to have proven futile and without success. I go back over the field and from a standpoint of my own implication I try to adjust my affairs to a more scientific and economical method of practice and every new effort seems to tide me still farther away from the things that make for success.

Where is the trouble? We try to play the game of life on the square. Is success, after all, an act of dishonesty? We are not different from that of other people except that our own immediate industry is carried on wholly within the confines of our own native land, while that of many others are national and international in scope, where we find from experience their operations are intricate and delicate—where a disorganized world seems to be making its last grand play for the natural resources of the land.

Scientific men are no different than other people, only that they stand aghast and amazed at the indifference of the jazzy, on-rushing crowd with silent tongue and thoughtless minds in the face of the facts and revelation of the Divine truth. Science sees God in all nature and to ignore the truth is to deny Him, which, as a matter of consequence, he bows and becomes a worshiper of idols in which there is no future, no fame, and no honor.

The world's evil seems to be the results of illiteracy, ignorance concerning the laws of nature. Science demands forethought, exactness, and a knowledge of the truth in every honest effort of purpose if peace and prosperity is to reign and rule in our land and in the world at large.

Science seems to have been ignored, despised, and suppressed throughout all the ages of time. Isaiah away back 712 B. C., as we read in the book, was ignored and despised. In the twenty-fourth chapter and seventeenth verse we read: "Fear, and the pit, and the snare, are upon thee, O inhabitants of the earth," and in reading the remaining verses of the chapter and we find his thoughts were based upon fact and was in evidence of the truth concerning the previous dangers of the 10 tribes of Israel and other inhabitants in similar ones throughout the region.

With a definite understanding of Isaiah's ideals, as found in his prophecies, might have enabled the Congress of the United States in 1922 to have conformed to a more definite and peaceful and practical

measure relative to their active part taken in the Illinois and Michigan canal without a comeback of just grievance by a certain cooperative group of inhabitants from the peaceful valley of the Illinois River now after more than a century of time. Congress sanctioned the act and should pay for their blunders.

Isalah's prophecies were in a manner correct, and if he had had the support of the leaders of organized societies during his time he would have walked the streets with a spirit of dignity and honor and well dressed, and the 10 tribes would have been saved from one of the most tragic deaths in the history of the world.

Illiteracy and the suppression of the truth and the loss of the multitudes throughout the land is what drove Isalah to appear as a crank or bore, and walked the streets in an old slave coat and finally condemned to death. Every public enterprise constructed and carried on in ignorance and disrespect to science and the laws of nature will function out of harmony and destroy the cooperative spirit between city, State, and Nation.

As a native-born inhabitant of the Middle West, and reared and schooled on the border of the Mississippi River, my chief prayer is that the Seventieth Congress of the United States may study, analyze, and know for themselves all the details of this age-old Indian corpse, and with skill and the aid of science control the tidewater rushing through the bowels to the good and satisfaction of the inhabitants living therein.

My school days up to the time I was 21 years of age were limited and my studies consisted only of the three R's, and from practical experience since that time I have added another R to the common curriculum, and it is only through the kind consideration of men of thought and understanding and honor that I confront with these simple interesting problems at this time.

Our aim of purpose and activities seems to be misunderstood and objectionable to the swiftly moving crowd who apparently have detached themselves from their duty and obligation and gone afar off on an exploration tour of the world, leaving us isolated, alone, and tangled in our own net, with an impression that fortune only knocks but once at a man's door in a lifetime.

But with all of our trials, discouragements, and adversities we are not without hope, promise, or opportunity. The world's geographical area at large is our vineyard. The harvest is ripe and the reapers are plentiful. Our Government officials are America's gardeners—servants of the people's choice for world service.

As an overreaching ambitious individual, delinquent in the field of conservatives, I ask our worthy captains of the vineyard to pause for a moment of time for thought, study, and consideration of this amateurish, paradoxical introduction. I urge that they detach themselves from their earthly duties at a convenient time and follow me afar off into the jungles of time, where I have frequently ventured in quest of health, wealth, and wisdom, and a remedy for the inveterate ills of a certain class of agriculturists.

As a special introduction to my observance and as a further guide into my foregone conclusions, I herewith rehearse the scenes with a new spirit of hope, confidence, and independence.

RETROSPECTION

Reviewing the scene of the past as it appeals to our imagination and vision of thought from the totality of things, and there is a reverential and awe-inspiring significance which leads us to believe the works of nature to be an act of purpose at the command of a Divine Providence.

From the sequence of events every river system of the land was once a living organ, created, dominated, and controlled by a master mind in a manner susceptible to our knowledge and understanding and explanation.

They all lived in reality, and after years of growth and preparation each gave birth to a certain type of creature, all specific in kind and nature and endowed with a faculty of defense and an instinct to act in behalf of their own common good and in the propagation of their offspring. Thus they all march in separate and distinct cooperative classes from their humble beginnings throughout the entire period of time with man and mind in the lead of the procession.

Deviating from a summary of our retrospective views to a more minute and rational point of view, we thus compile our deductions and views as it conforms to the interpretation of life from its earliest semolent awakening on the paradisaical isles of peace through a period of disaster, isolated confinement, solitudes, wars, and on up to our present era.

RIVER SYSTEMS

Research and study of the Mississippi River system throughout its breadth and length and all, reveal time perspective in which various changes are recorded, portraying the spectacular stage of action in which animal and vegetable life were brought forth and conditions made possible for a continuance of their existence, with man and mind in lead of the procession.

From every angle and point of view we conceive the entire Mississippi River system as once a molecular eroded excavation extending out from beneath the Gulf of Mexico to the extreme end of all tribu-

aries—an act of creation at a period of time in which the entire region was submerged from below sea level.

Upon the receding of the water from the highlands as the consequence of the lowering of the sea floor at the Gulf, the highest land elevation throughout the region was that of the upland plains extending out over the broad reaches of the valley lands and the groups of mounds on the invisible bluff connected therewith.

For a long period of time these upland plains remained a paradise for the peaceful abode of all the species existing thereon and created therein, but, like that of the Garden of Eden, the water level fell below a point of support and the broad plains, with their flourishing growth of vegetation, were broken down and countless living creatures were lost, including many of its tribes.

PARADISAICAL ISLAND

The history of the species from its beginning throughout the period of time in which they inhabited these upland-valley plains was one of peace and tranquility. The region abounded with a prolific growth of vegetable life, which being most suitable in kind and quality to satisfy the cravings of the beast of the field, they thus remained peaceful and harmless throughout the period.

Tree, vine, and shrub of a fruitful kind and of many desirable varieties were scattered throughout the plains and offered their wasting quantities to the full requirement and desire of man, fowl, and the creeping things thereon; and they, too, remained in peace and satisfied until the plains became submerged and broken down and all surviving the catastrophe were forced to retreat to the bordering hills where they took on a new aspect of life and fought for supremacy, food, and control.

SURVIVAL OF THE FITTEST

The surviving multitude, after a division of the lands, took refuge in caves and on high hills and on isolated structures over the tributaries, which being too limited in scope in many regions for the occupancy of its number, man, beast, and varmint all fought, suffered, and died unitedly in their struggle for existence.

In other less populated regions of greater dimensions and food in sufficient quantity for their existence, many of the species multiplied and as the water receded from the land they emigrated and replenished the earth.

LAST GEOLOGICAL ERA

The last geological era represents that period of time in which the igneous and stratified rock were polished and conditioned by nature as implements of defense for the use of man and scattered throughout the land in various assortments, which, upon the settings of the stone age, man found flint the most acceptable to his use and skill.

FIRST GEOGRAPHICAL SETTING

The first geographical era of our earth covers that period of time in which the upland plains of all our river systems existed as a suitable structure for the propagation and abode of their own created species, with a special and distinct type of man and mind, created in the image of God, in their midst. This period ended at the time their plains were broken down and the inhabitants were forced to the hills, where history, archaeology, and geology were dawning as a feature of understanding.

SECOND GEOGRAPHICAL SETTING

The second geographical setting began at the dawn of the old stone age and extended throughout that period of time in which the water was receding from the river systems and the way made passable for the multiplying inhabitants to roam the country at large. This period ended preparatory to the uniting and intermingling of the distinct species and tribes of the various river systems of the different continents.

MORaine HILLS

The Champaign moraine and the Shelbyville moraine and all moraine hills extending throughout the Mississippi River system, like that of all river systems of the land, are natural conditions contributed to the actions of a portion of the invisible atmospheric elements while confined within a subterranean channel preparatory to the receding of the water from high lands.

We vision the entire load of these terminal moraines, preparatory to the receding of the water, as an active swiftly shifting debris, slowly advancing to a higher elevation under the influence of the molecular confined forces and terminated under a diminishing pressure. The scene as it lays before us suggests itself as an unfinished product of our basic soil.

Singling out and speculating upon the altered and relative features of the moraine's rocky debris and all is a self-explanatory history from which we record our conclusion. If the debris consists principally of unworn limestone fragment, we know they were carried but a short distance and suggest that the soil extending out from the region from whence they were removed should be rich in lime. If the debris consists principally of particles of coal, slate, shale, and sandstone, likewise we know it was removed from stratas of like proportion but a short dis-

tance from below, and suggest a soil extending out therefrom as of a less value.

Every questionable feature of the whole phenomena is a revelation and acts as its own interpreter. Some moraines were released abruptly, while others were released under a slow declining pressure, suggesting a condition in which many of the great boulders throughout the land were suspended while in a balanced condition and in conspicuous places.

Propounding for a while upon the many interesting and suggestive features of the moraines, we divide our time and from the valley below make a research of relative condition as proof of our conclusions. From observation we measure the width of the valley and from their sides speculate as to the amount and kind of material detracted therefrom, and from a topographical feature of the surrounding country contiguous thereto determine with some degree of accuracy the kind of soil and the value of the land.

In conclusion, every terminal moraine is the result of advancing gases and the receding of the water under which the load was advanced, and each in their turn were consecutively suspended, beginning at the highest elevation and extending back each at a lower level.

CANYONS

All rivers of the land were eroded at the same period of time while the land surface yet remained submerged and it was during this closing period that all canyons were eroded. Canyons were eroded by the same molecular forces that eroded the river systems and under the same condition. These turbulent forces by which a canyon was created circulated their many tons of boulders and rock fragments into a sand and soil producing material beginning at the bottom of the canyon and continuing upward until the great mass was removed and crushed in a manner beyond description, except, as may be suggested by the action of the silent whirlwind which in its trackless path we observe its captured debris circulating hither and thither cushioned under the canopy of a serene, calm atmosphere which, in all its aspects, rehearses a scene of antiquity which made man an active intelligent possibility.

As all rocks and other stratified material were laid down and consolidated in water with the greatest contraction, it is evident the concentrated energies of heat accompanying the molecular forces in their subterranean advancement was the principal agent in releasing by expansion and reducing by friction and force the detracted material in the most rapid and terrific manner.

The canyon, while it exists as an endless feature of beauty and grandeur, is not without its aspects of fear and displeasures, all of which interwoven on the mind of man presents a vague conception of realities susceptible to a revelation of the divine truth.

The questionable boulder alone, scattered throughout the valleys and many suspended high upon the bordering cliffs of the canyons and apparently of but little interest to the observer, yet they present a text of the deepest thought and study; its size, shape, color, position, composition are all associated acquirement with measurable relations to that of every other material object under our observation.

The boulders of the canyon and the creeks and the tributaries throughout were implements of nature in the erosion of the rivers and in part were extended from beneath the gulfs of their rivers in which they were extended therefrom.

There is a sublime significance on the mind of every man as he looks down into the abyss of the canyons and rivers within which his own soul once united in simplicity and bliss as its architect, sculptor, and artist, and with equal dexterity and skill subjected the detracted material as elements of affinity and endowed them with life and mind as an intelligent observer and interpreter, bringing to our minds the words of St. John when he said, "In the beginning was the Word, and the Word was with God, and the Word was God."

Our minds and explanations are not limited or contented with a short version of the material aspects of the canyon alone, which, in a sense, the scene is only a prototype or design portraying the spectacular stage of action within which the activities of reality was an acquirement of necessity.

The alluring broad bands of opulent colors and varying tints extending from the tops of the canyon to their lowest depth are all explanatory features as to the dramatic actions of the material elements while perpetuating in strict obedience to the God commanding spiritual forces.

There is a reverential and awe-inspiring significance on the mind of every human being as he gazes upon the immensity of the canyons whereby we may know the elementary principles constituting our bodies were detracted participating parts of our river systems and made available as an acquirement of an ethical law which abides with us throughout all life and is the soul after death.

PERSONALITIES

From this geographical field of exploration we come out into the open and stand before the bar of human judgment, realizing that no one lives unto himself alone; consequently, our action and behavior must function within the bounds of justice and fair play. These thoughts bring us into the open field of personalities, where we all stand on an equality to judge and be judged. Each has his own

definite and distinct qualifications, known best to himself only, and it is only through an impartial trial and inquiry that we are correctly rated and classified as an acceptance in our choice of duty.

Our thoughts as compiled by the pen are in evidence as the worst that is in use, for there is a deduction to be made from much of our radical aggression, which in all is not a part of our own. I have written much, perhaps too much, but it is original—it is the outburst of a smoldering fire started and known to certain Congressmen more than 10 years ago.

From the nature and importance of these questions and my long enduring patience, I feel I am acting quite within my rights without being condemned or classified as a weakling, a crank, a bewildered hybrid acting without forethought or an object of purpose or without an ethical or ethnological anchorage.

I am not in the field as a fraud or an impostor or a shiftless non-producing entity to beg and subject myself to the grievance of my fellow men while I continue with a normal mind and a will and physical ability to put into design and carry on a desired purpose of a worthwhile effort.

Neither is it my desire to spend the remaining days of my life fighting an army of disguised atheists or other selfish aspirants seeking whom they may devour through a silent intolerant attitude of dogmatism and illiteracy, thus forcing one to appear as a subject of sympathy and an object of pity. We may be censured, condemned, and burned at the stake or run through the saw, but we will never retract or deny what we know to be the works of God.

While my object of purpose was to confine my thoughts wholly to geographical conclusions, I find myself continually diverging from the subject into the field of personalities where conduct and behavior is a demonstrating feature now on trial through the entire world—where personalities are tried, condemned, and booked as an artificial barometer and a "Fox" in the field of honest endeavors. Thus as a matter of consequence we reason and compile our thoughts from far-reaching conclusions quite apart from the subject of the text.

But inasmuch as all of the material constituting the earth's stratas were reversed upon deposition our thoughts are not entirely out of harmony with nature when we diverge from the subject and write the first as last and the last as first. Thus we continue on with our lines crossed in this unfashionable way in order to obtain the right focus for a correct understanding and a revelation of the divine truth.

CREATION

The creation of the world and that of the universe was a preconceived plan of a master mind as a place of abode to the awakening activities of all prevailing life and the soul of man as a predominating feature in control of the entire kingdom.

As the beginning of time and the extension of space is not within our scope of vision or computation, we can only interest and concern ourselves from the beginning of the earth and that of the planetary system of our universe which carries us back into a period of time when all material matter was an ever acting composition resolved under a mind-commanding force which we call God.

In all of our computation relative to the myriads of living species and their diverging difference of composition which, continuing on in the same definite proportions under normal conditions, we thus have a perfect right to feature the human family, who with a creative mind of his own, as a specific creature akin to God and created in His image.

Owing to perplexing problems of a personal nature and of a serious lingering consequence, it is only recently that I have gone over my former preface with an object of making some deductions and molding it into a short introduction suitable to the work, but as an amateur in the field of composition the finis of the subject seemed to be an acquirement of an additional thought rather than that of subtraction; thus, as a matter of consequence, I made a few revisions and continued on with the discourse in the way of least resistance and now, without further apology or comment, this concludes my text.

WHEELER W. MOORE,
Rushville, Ill.

The Second Passing of the American Merchant Marine

EXTENSION OF REMARKS

OF

HON. ARTHUR M. FREE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, May 14, 1928

Mr. FREE. Mr. Speaker, an eminent shipping expert recently declared that if the present trend continues the American flag will disappear from the seas in 16 years. This will be but an

instance of history repeating itself and will be the second passing of the American merchant marine. Before the Civil War the American merchant marine was a power on the seas and our wooden ships carried a large proportion of our export trade. The war brought changes and greater competition but still the American clipper ships successfully met the competition of foreign flags.

The advent of iron and steel ships brought about adverse conditions to the American ships, and with the power of steam entering into the marine conditions Great Britain subsidized British yards, made large payments for carrying her mails to aid the British shipbuilders and operators, while the United States Government made but one feeble effort to hold her supremacy by heavily subsidizing the Collins Line, two American steamships that were contracted for, and an agreement was made that these American-built ships should be faster and better than anything that could be built by Britain. This experiment demonstrated that the American shipyards could turn out an American steamship the equal, if not the superior, of any, and from 1850 until the United States ceased to meet the growing government aid furnished by Great Britain, the ships of the Collins Line showed their superior sailing qualities. But with the growing competition of Great Britain and the failure of our Government to pay the necessary subventions, our ships in the foreign trade practically went off the seas.

The following figures show the amount of our foreign trade carried in American ships at different periods:

	Per cent
1830	89.9
1840	82.9
1850	72.5
1860	66.5
1870	35.6
1880	17.4
1890	12.9
1900	9.3
1910	8.7
1920	42.7
1924	36.3
1925	34.1
1926	32.2

These figures show a decline in the 80 years, from 1830 to 1910, of 81.2 per cent, and in the 6 years, from 1920 to 1926, of 10.5 per cent.

In 1901 the United States had practically ceased to be a power in the foreign trade and we carried but 9 per cent of our own export trade in American ships, and in 1913, just before the World War, we were carrying practically none of our foreign trade under the American flag. The war changed these conditions, and while in 1913 we had but 1,676,152 gross tons foreign tonnage, we began to build new tonnage, and in 1915 we constructed 155,000 gross tons of new ships; in 1917, 513,000 gross tons; in 1918, 1,000,000 gross tons; and, in 1920, that had increased to 3,660,000 gross tons. By 1921 we had built 10,466,000 gross tons of new shipping and were second only to England in world construction and the second in merchant marine sea power.

The end of the war, of course, caused a slump in shipbuilding and we found ourselves with many ships and with no business for them. In 1923 the United States Shipping Board owned 1,313 steel ocean-going ships of 1,000 tons or over and the private owners 1,202 ships of 500 tons or over, the Shipping Board owning 6,370,777 gross tons, the private owners 5,243,630, or a total of 2,515 ships with an aggregate tonnage of 11,614,416 gross tons. The world tonnage in 1925-26 was 9,854 ships, with aggregate tonnage of 30,500,000 gross tons. At the end of the war we were carrying about 42 per cent of our own foreign-going commerce in American ships as the Allies engaged in carrying troops and war munitions and the American foreign-trade tonnage was carried largely by American ships.

At the end of 1926 foreign competition had become so keen that we were carrying only 32 per cent of our own foreign-borne tonnage in American ships. The amount of foreign-borne tonnage carried by American ships is steadily decreasing and according to the reports of the National Conference Board of New York, from 1920 to 1926 our tonnage in building operations has decreased 7¼ per cent while world tonnage has increased during that period 16 per cent, and of this increase Great Britain, our nearest competitor, has increased her new tonnage by 7.7 per cent.

Many shipyards, including the great Cramps yard in Philadelphia, have gone out of the shipbuilding industry since the World War and new organizations of ship operators have become noticeably less. This indicates to some degree at least that American capital is not being invested in American ships, at least in the foreign trade. Of course, the coastwise and inter-

coastal trade, a protected industry, with its 7,500,000 tons of shipping, including the Great Lakes industry, is in a fairly prosperous condition, and the large number of ships and the many companies engaged in purely domestic marine commerce, make rates fair to American shippers because of its highly competitive business basis. But when we consider the foreign trade, we have an entirely different picture.

Since 1885 foreign ships have carried over \$50,000,000,000 of our foreign commerce, and at a moderate estimate we have paid them approximately \$7,500,000,000 freight charges in that period.

Our international trade amounts to almost \$10,000,000,000 annually, with freight revenues for transporting this commerce of \$600,000,000. Seventy per cent of our international trade is carried in foreign-flag ships.

To meet the demands of this trade during the past five years the United States built 18 ships of over 2,000 tons burden, aggregating 195,191 tons, while Great Britain built 882 with an aggregate tonnage of 4,905,853 tons; Japan, 75, aggregating 333,327 tons; France, 104, with an aggregate tonnage of 630,613 tons; Italy, 87 ships, aggregating 711,499 tons; and Germany, 192 ships, aggregating 1,118,635 tons.

The trans-Atlantic passenger trade has been furnished with new and fast ships of large tonnage, and while the United States has but four ships that can steam 18 knots and but one that can steam over 20 knots, Great Britain has thirty-eight 18-knot ships and twelve 20-knot ships; France, nineteen 18-knot ships and eleven 20-knot ships; Italy, nine 18-knot ships and nine 20-knot ships; Japan, two 18-knot ships and two 20-knot ships; and Germany, two 18-knot ships and one 20-knot ship.

With the year ended June 30, 1926, the value of our foreign-bound export products was \$4,864,581,000. Our foreign exports for April, 1927, amounted to \$415,211,724, an increase over April, 1926, of \$27,238,034. Our trade on the west coast from San Francisco shows a great increase in the foreign trade with South American ports and the Orient. In the years between 1909 and 1913 the value of the products and manufactured articles amounted to an annual average of \$98,743,415. Up to 1926 there has been a continued average increase in value, as in 1926 it was \$397,213,309 from the port of San Francisco alone.

Foreign nations are alive to the value of our foreign trade, and they demonstrate their sea-minded wisdom by building ships of greater speed, greater economy of management, larger cruising areas, more refrigerated space for perishable cargoes, more luxury in equipment for the passenger traffic. As these ship-minded nations have constructed new fleets to compete with our old, and to a degree worn-out vessels, it is needless to inquire why the world trade is not being carried by American-flag ships.

Since 1921 for every ship of 2,000 gross tons and over that has been built in the United States, Great Britain has built 45, Germany 12, France 5, Italy 5, and Japan 4.

Of the total volume of American foreign commerce, export and import, American vessels today carry less than 30 per cent.

Why is it that we have not been able to compete with foreign countries in our shipping? There are various reasons for this.

First. Foreign ships are highly subsidized by their governments.

Second. Owing to higher wages paid American workmen, it costs from 40 to 63 per cent more to build a ship in American yards than in foreign yards. Seventy-eight per cent of the cost of a ship is labor.

To construct a 10,000 dead-weight ton oil-burning vessel of a speed of 14 knots in an American yard costs \$171 per ton. The cost of a similar vessel in a British yard is \$80 per dead-weight ton. This means that there is \$1,010,000 more capital tied up in the American than in the British vessel.

In the operation of a ship there are certain fixed charges on the capital invested, aggregating 18 per cent, and made up as follows: Interest 6 per cent, depreciation 5 per cent, repairs 2 per cent, insurance 5 per cent. Therefore, the American operator is at a disadvantage of 18 per cent of the \$1,010,000 or \$181,000 per year over the foreign owner, merely on account of the increased cost of building of the American ship.

Thirdly, ships under American registry carry more men and pay higher wages than foreign ships.

Capt. Robert Dollar recently said in commenting on the disadvantages of the American merchant marine: By the requirements of the seaman's act an American ship of a certain size had to carry 47 men whose wages were \$3,270, while a British steamer of practically the same size had a crew of 40 men whose wages were \$1,308, and a Japanese steamer carried 36 men and paid \$777 in wages.

Friday - September 20 2 -

"Some go up & some go down"

If this should be down and out for me - do not forget to come here at once to take the old account book away with you. In it is a copy of the last will - letters of instruction - &c - which you need to see ~~at~~ immediately.

How would you like to employ John Sprecher instead of Lawrence? I lost all respect for the latter when he used to get so drunk at Harry's during prohibition. I would like to have the whole ending kept perfectly quiet - as little in the papers as possible. You will have it in your hands entirely.

I had an uncomfortable morning but feel better this afternoon. Dr. Canann says "sit tight for a few weeks & you will be all right."

CHARLOTTENLUND
SOMMERVEJ 2

Aug. 17th 1931-

My very dear friend. -

To-day is the 25th anniversary of our wedding-day - I wanted to have all my friends here - that cannot be, but I will at least show those far off, that I think of them. One cannot have known you & Dr. Fluwaite without having been taught a lesson, a very good lesson; I am certain that this has helped me to be a better mate. - I

have not time for much writing
to-day so I shall have to answer
your very welcome letter another
day, soon. - I do hope you are
better, and that this summer
has seen you among her
flowers.

Much love to you,
dearest Mrs. Thwaites
from
Jeanette.

If you see Miss Hazeldine
please give her my cordial
greetings.

Thursday evening - Jan. 16 -

Dear Amy: I forgot to give Fred the enclosed clipping about "Jimmy"! I thought you might like to send it to someone so to fill in some time tonight - when I can no longer read & have no interesting handwork to do - and am having an unusual attack of home sickness - I am scribbling this note to you.

I finished the needlepoint yesterday morning that I began on Jan. 1 - so I must have made it ⁱⁿ about 10 days for I ran out of yarn for 4 days - & then I made 2 of these writing boards also since the 1st, and read a lot of papers & magazines. I just have to keep busy you know. & G. is going to bring me a piece of burlap & a few stockings to see if I can do hooking or not. It will not be as easy as needlepoint while lying in bed - but I want to try it.

Elizabeth writes that Aunt Florence is going to Florida with Mary in February. She will like that. She must be busy for she has not written to me for a long time. But then only being in bed out here has become an old story to most people now. I think the 'readers' have seldom met - for Mrs. Chipmoweth was lame - Mrs. Hoyt and Mrs. Bardeen sick - & then came the holidays when we never met. I must write Mrs. Hoyt, by & by, to see who I must write to in regard to the 60th reunion of our class next June! We must get all we can to come to that. Mr. Richie will come if he can - & probably Mrs. Noyes of Milwaukee - the few others are too far away & Mrs. Brown may not be able to get out. But we must do something so as to get in the Alumni Mag.!

It is not a bit nice to be old & laid on the shelf. Love to the children & all of you - from Grandma -

Tuesday, A. M. February 25, '36

Dear Fred: Please cash the enclosed check & get 5⁰⁰ bills. Take four of them - one for each of you - & bring the rest to me. You see I am going to make my gifts small & in cash. now.

I feel as I used to about the customs & will hide whatever I like. at least from the State, which allows only one

hundred exemption for a stranger
\$2000.00 for son or - - - 500.00 for nephew
or niece - or - or - with dif. rates of int.
on the dif. sums - I expect they get
very little except from real estate transfers.

We lived for many years on 1000.00 & I
made my own dresses & R's shirts & even
his neckties. & saved dollars wherever
possible - now I want to give some away -

Mr. and Mrs. Howard John Thompson

announce the marriage of their daughter

Margaret Ann

to

Mr. James Horace Upham Hughes

on Saturday, the seventh of April

Nineteen hundred and fifty-one

Shorewood, Wisconsin

HERE is another one: In February two young Madison ladies and five young Madison gentlemen will be graduated into the ranks of the alumni of the University of Wisconsin at the age of approximately four and one-half years each.

They are not child prodigies, but they are graduating more or less 'cum laude', from a school of the University of Wisconsin. . . . It is operated under the supervision of the Home Economics department and is one of Miss Abby Marlatt's pet projects . . . the Dorothy Roberts Nursery school.

The formation of an alumni association of the University Nursery school graduates is being promoted, so that records of their progress may be made in the interests of the study of pre-school education. The organization will no doubt be headed by some of the earlier graduates, several of whom have now reached the venerable age of nine years.

These seven Madison youngsters who have now reached such an age of maturity that the school has nothing further to offer them in its curriculum are: Betsy Hoak, daughter of Mr. and Mrs. Hal A. Hoak; Barbara Benedict, daughter of Mr. and Mrs. Ralph Benedict; Bobby Wheeler, son of Dr. and Mrs. Robert M. Wheeler; Jimmy Thwaites, son of Mr. and Mrs. F. R. Thwaites; Randy Durand, son of Mr. and Mrs. Loyal Durand, Jr.; Jerry Frautschi, son of Mr. and Mrs. Walter Frautschi; and Hal Lampert, son of Mr. and Mrs. Harold Lampert.

P. E. MILLIS & COMPANY*Artesian Well Contractors~*

BYRON, ILLINOIS



Complete Water Supply
Systems
Deep Well Drilling
Test Boring
Building Soundings
Well Repairing
Large O. D. Pipe
Pumping Machinery

Estimates Cheerfully
Submitted.

You are invited to take
advantage of our En-
gineering Department.

January 12, 1931.

Mr. F. T. Thwaites,
Science Hall,
University Campus,
Madison, Wis.

Dear Sir:

We have your letter at hand regarding extension of water supply for the Milwaukee Road at Bensenville, Ill., and wish to thank you very kindly for this information and trust that we may be of service to you in return for this favor.

Yours respectfully,

P. E. MILLIS & COMPANY

By

JBM/EA

P. E. MILLIS & COMPANY*Artesian Well Contractors*

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Estimates Cheerfully
Submitted.

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advantage of our En-
gineering Department.

December 31, 1930.

Mr. F. T. Thwaites,
Science Hall - University Campus,
Madison, Wisconsin.

Dear Sir:

The Milwaukee Road has requested me to submit them a report on the possibilities of getting a greater yield from their five deep wells which they now have at Bensenville, Ill., or which might be known as the Godfrey Yard.

I have a report of yours relative to water supplies from Northern Illinois and believe that you are familiar with the geological condition at this point. For your information these five wells are all cased to the approximate 1250 ft. level; thus excluding all waters above this point. Their present yield from each well varies from 75 to 125 G. P.M.

Would you recommend shooting these wells in the lower sandstone formations? If not, what would be your recommendation for an increased supply from each well. These wells as you may know are in a direct line, north and south, and are approximately 60 ft. apart.

Would you mind giving me a letter stating your version of this condition. Thanking you very kindly in advance for this favor, we are

Yours very truly,

P. E. MILLIS & COMPANY

By

J. B. Millis

JBM/EA

Jan. 6, 1931

Mr. J. B. Millis,

P. E. Millis and Co.,

Byron, Illinois

Dear Mr. Millis:

In reply to yours of Dec. 31 I have the log and records of the tests of the first well at Bensenville, Illinois. I find that the specific capacity of the first well which is a six inch hole, was just about 5.5 gallons per minute per foot of drawdown. Now this is very nearly the same as was obtained from a similarly cased well in the same district which is a 12 inch hole. I feel that the wells are much too close together. At other places they feel that wells should be at least 1000 feet apart. At Madison they are spacing wells more than that and the capacity is much higher here.

I wonder what the present pumping equipment is. Some railroads still cling to deep well pumps which greatly limits the yield. I suggest air lift or turbines.

With regard to shooting it undoubtedly increases the supply. The dangers are: (a) starting a permanent caving condition which will in time fill the wells up to the highest shots, and (b) the shots may start the casing and spoil the shut off of the upper hard waters. Bad caves in the Dresbach are reported not far from Bensenville. Injury to casing is inevitable in wet holes if heavy shots are used. I suggest light shots from 1280 to 1460 and from 1816 down to about 2100. I would not shoot below that depth as I feel that the holes may be dangerously close to salt water and increased pumping might draw bottom water into them as happens in an oil well when allowed to flow wide open. On the whole I would say that the wells are now too deep for best results.

The only things to do are the following: (a) shooting and changes in pumping equipment of present wells, (b) drilling other wells spaced farther from present wells, (c) withdrawal of casing to let in upper waters which would require installation of a water softening plant.

Very truly yours,

Geologist in charge of well records

May 27, 1930

Mr. J. B. Millis,
P. E. Millis and Co.,
Byron, Illinois
Dear Mr. Millis:

Yours of the 23rd and the sample are at hand. The sample seems to be a very dirty gravel with some stones as large as an inch in diameter. Of course, I realize that it is impossible to get a clean sample from a two foot bed.. Now the yield of water from a given bed of gravel is not fixed by the kind of well as much as it is by the chance for water to enter the gravel from the surface. A great many gravel beds are incapable of giving up any water because they do not receive any. Some bodies of gravel do not anywhere reach the surface; others may reach the surface in such a place that all water is drained from them. It is impossible to make any forecast in this case without more detailed knowledge. I would say that the bailer test looks favorable and that I recommend further testing of the hole which may be better if drilled into the rock for some distance.

The Janesville samples are not yet bottled but I will send you a log before I leave for the field.

A check of the thermometer used by Mr. Lund at Racine shows that its readings were almost exactly $\frac{1}{2}$ degree ^{F.} too high. I think this makes no important difference in the conclusions.

Very truly yours,

Geologist in charge of well records

P. E. MILLIS & COMPANY*Artesian Well Contractors~*

BYRON, ILLINOIS



Complete Water Supply
Systems
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Test Boring
Building Soundings
Well Repairing
Large O. D. Pipe
Pumping Machinery

Estimates Cheerfully
Submitted.

You are invited to take
advantage of our En-
gineering Department.

May 23, 1930.

Mr. F. T. Thwaites,
Science Hall,
University of Wisconsin,
Madison, Wisconsin.

Dear Sir:

When you have a log prepared from the samples of the well that we drilled at the Blind School at Janesville, will you please forward us a copy.

I am sending to you in a separate package a sample of a two foot vein of gravel (unwashed) that was taken from a test hole at Elgin, Illinois, and would like to have you tell me what the possible yield would be from a properly developed well 12" in diameter from a vein of sand and gravel approximately twelve feet thick, of the same character as the enclosed sample.

This gravel vein from which the sample was taken was encountered at the 57 foot level, and rock was encountered at the 59 foot level. There was no water in the blue clay above this vein and when the drill encountered this gravel the water rose 31 feet. A short bailer test was made which neither lowered the water nor cleared it up.

The City of Elgin, Illinois is in quest of a large supply of water from their gravel strata and at the present they have five wells scattered over the town, all of which are Kelley wells, and the combined yield is approximately 1000 gallons of water per minute. The City has called us in to learn whether or not these thin veins of gravel from two to ten feet in thickness would give them from 200 GPM and up. Therefore, we are sending you this sample in hopes that you will be able to tell us what we might expect from these veins of gravel. An early reply would be greatly appreciated.

Yours truly,

P. E. MILLIS & COMPANY,

By

J. B. Millis

JBM:GC

gravel seems to over 1 inch - very dry

March 27, 1931

Mr. O. E. Meinzer,
U. S. Geol. Survey,
Washington, D. C.

Dear Sir:

In reply to your circular of March 6 I am interested in some of the subjects listed, especially numbers 12, 13, 14, and 23

My work has been mainly the examination of samples from wells and correlation of the formations. I have never been able to do much on the chemical quality of waters although much interested in the matter. I had two students write theses on underground waters. Of these one reached quite definite results of considerable economic importance. However, lack of financial support for chemical work and field investigations has prevented following up the problems suggested by this work.

I do not quite see just how the suggested program will help but am willing to be shown. It is quite impossible for me to go to any meetings so far from home.

Very truly yours,

Geologist in charge of well records

UNIVERSITY OF NOTRE DAME

Notre Dame, Indiana

Air Mail

COLLEGE OF SCIENCE
DEPARTMENT OF GEOLOGY

AIR MAIL

May 31, 1956

Dr. Fredrik T. Thwaites
41 North Roby Road
Madison 5, Wisconsin

Dear Dr. Thwaites:

It was a real pleasure to meet you and Mrs. Thwaites on the recent Friends of the Pleistocene trip. I was also happy to learn that you have my proposal for a NSF grant to continue my research in the area under consideration.

Regarding this, you might be interested to know that Dr. Zumberge has also seen the proposal and urges me to continue my work by all means. Inasmuch as I worked in the area before he, he is discontinuing his studies in the two counties under discussion. I have a wealth of material not brought by the trip or his paper and also feel that some of the conclusions he reached need further examination.

The Michigan State Geological Survey is trying to arrange some financial help for this summer and is planning to publish the results. There are also plans under discussion for my continuing my research, under its auspices, into the Upper Peninsula with the specific aim of trying to throw more light on the Valders drift. I tell you these things to that you might consider that the publication of the Spurr and Zumberge article should be no serious impediment to the National Science Foundation supporting my efforts.

I am gradually building up a collection of separates on mid-western glacial geology and would therefore be deeply grateful if you have any on this area which you'd care to send.

My mind is open to any lines of investigation you might suggest to help solve some of these perplexing problems. Do you suppose that it would be possible for me to visit you for a day or so next fall to visit some of the critical locations in Wisconsin?

Sincerely yours,

Archie J. MacAlpin

Archie J. MacAlpin, Head
Department of Geology

AJM:kh

Jan. 23, 1932

Mr. J. B. Millis,
P. E. Millis and Co.,
Oil and Gas Well Contractors,
Byron, Illinois

Dear Mr. Millis:

In reply to yours of the 20th I find here no information about La Crosse, Wisconsin, which is newer than that of Bulletin 35 which appeared in 1915. The river waters, particularly that of Black River, are the softest waters in that country. It is just about a toss up between waters in the surface sand and gravel and those in the underlying sandstone. From experience at Sparta I judge that the lower sandstone waters are very high in iron. I presume that was one reason for abandonment of deep wells by the city in favor of shallow screen wells. Cost of pumping may have also been a reason. I find that the C. B. and Q. R. R. is credited with owning a 471 foot well which would certainly be in rock. Reason for abandonment in favor of a screen well is not known to me.

With regard to salt content I wonder if they mean common salt or sodium chloride, or all "salts" or total hardness. 330 p. p. m. would be high in any case for hardness alone. 50 p. p. m. would be high for chlorine; this is equal to about 82 p. p. m of sodium chloride. If salt (sodium chloride) is what they really mean then marked local contamination is evident and the well should be abandoned.

Quality of water from deep wells is not bad, about 2 pounds encrusting solids per 1000 gallons with only a little permanent hardness. As mentioned above I fear iron in deep wells and in shallow wells which are close to deep wells. This is the experience at Sparta.

The only record of the capacity of wells gives a specific capacity of 30 for three wells combined. These were at the brewery. For a new well I would hardly hope for much above 10 particularly if the lower sandstones are avoided.

I certainly would like to find out more about the locality before reaching a definite recommendation.

Enclosed please find the only log we have of a well at Burlington, Wisconsin. Although I am almost certain that this is not the one you wish it may be of value. You can keep the blue print if you wish.

Very truly yours,

Geologist in charge of well records

P. E. MILLIS & COMPANY

Oil and Gas Well Contractors

BYRON, ILLINOIS

Jan. 20th 1932.

Mr. F. T. Thwaites,
Science Hall
Uni. of Wisc.
Madison, Wisc.

Dear Mr. Thwaites:

We have been requested by the C B & Q Ry to submit a proposal for the drilling of a well at N. La Crosse for their plant at that point. They also state that they have a shallow 4" well about 130' deep and that the water from this well contains about 330 pp million of salt. We would like to know if this salt condition is local or whether it might be expected in the lower formations. The above mentioned well is a gravel well.

What would ^{you} suggest the formations and the possible yield would be from a well 10" x 450' at this point? Would there be the same salt condition at that depth as the smaller well?

Would you be so kind as to send the writer an early reply, it certainly will be greatly appreciated.

Yours truly

P. E. Millis & Co.

J. B. Millis

P.S.

Could I have log and casing record of the Jefferson St. well at Burlington, Wisc. Will return same within a few days.

Nov. 15, 1933

Mr. Henry Michels,
Henry Michels Seed Co.,
Fond du Lac, Wisconsin

Dear Mr. Michels:

I was very glad to get yours of the 7th and to answer your questions as well as I can without seeing some of the localities mentioned. I am always happy to find someone who is interested in geology. It seems to me that your observations are well worth while and several of them confirmed my conclusions by a somewhat different line of thought, a comforting check on the correctness of my views.

With regard to the terminal moraine of the Red Drift I feel confident from the size of the ridge that the red material must coat an older moraine of gray drift. Anyhow, nowhere else is there a real terminal moraine at the edge of this drift.

Where the thin edge of the red till rests on older deposits there is not everywhere any evidence of plowing up by the ice. Your suggestion that the older deposits were frozen may explain some of the phenomena. Another thing is that (for instance in Sec. 7, Empire which was visited last summer by the International Geological Congress party) the first deposit in advance of the oncoming "red" ice was clay on which the ice later slid. Shove seems to depend mainly on the shape of the underlying deposit and occurs mainly where the later ice found a face or steep slope to push against. In places, as at the Forest Bed near Two Rivers, great masses of the underlying drift were picked up and may be seen within the red till. I have considered various high level lakes but at present reject the idea that lake waters ever stood more than about 100 feet above the present lake level (850 maximum as shown by beach gravels in Sec. 16, Taycheedah). I fail to see that a lake is needed to explain some of the localities of no ice shove. Moreover, I feel sure that no lake in this district older than the present Lake Winnebago ever stood long enough to allow the waves to plane off very much of an island. I too have found places within the red till area where the red material is lacking. Some such are explicable by sliding of the clay when first deposited and very wet, others by later erosion. I would like to see more of these overridden gravel banks before deciding definitely about them but I may have given you some other explanations to think about.

I have seen many exposures of the base of the red till and at only a very few of them is there any evidence of soil formation or plant growth. One of these is the Forest Bed mentioned above. The time interval was relatively short and the climate unfavorable to weathering as it was cold. Underlying clean gravels are certainly not outwash of the red drift.

Your description and explanation of the hole at the base of the red drift interest me very much and the same applies to your description of the valleys. Your conclusion that there was a pre-red drift lake Oshkosh is a good one. Alden in 106 suggests that there was one and I have found definite evidence of such. I cannot answer your suggestion of the margins of red drift on the two sides of the valley without seeing it in the field but the suggestion is interesting.

The flatness of the Lake Oshkosh basin is the result of several phenomena. The early Lake Oshkosh received much clay which settled to the deeper parts and levelled the floor. Then the clay drift of the "red" ice flowed while still wet making a level deposit on top. Then the deposits in

later Lake Oshkosh finished the job. I agree with you that the levelling work of the waves was unimportant.

I am much interested in your statement of an eight foot stage of Lake Winnebago. I wonder if there could have been a drift obstruction below Neenah, say at Appleton which held this up.

The tree in the red drift was probably transported by ice. At the Forest Bed such are common.

With regard to the local thick red till I feel confident that such spots represent fillings of kettle holes in the underlying gray drift. At most places the red till does feather out gradually.

Your suggestion with regard to pre-red drift valleys is most interesting but I hardly feel like passing upon it without more study in the field particularly outside the surveyed area.

Your suggestions with regard to Lake Delevue and Leonards Pond seem to be good but I would like to see more of them before deciding.

The fact that there is no outwash from the red drift is a consequence of the slope of the land toward its margin. At the maximum of this ice there was a small lake south of Fond du Lac and the later Lake Oshkosh. By the way, northwest of Lake Winnebago I found good evidence of a 825 foot stage of later Lake Oshkosh and wonder if you can find any evidence of such at Fond du Lac. I have never noted any but this beach is much weaker in development than the lower or 805 one. Probably was short lived and the lake was filled with ice.

The sample of veins sent shows that they consist of calcium carbonate. One of them seems to have followed the former course of a root.

In my teaching at the University I have stressed the fact that Alden's explanation of the red drift is not enough. The clays on which it lies are not everywhere very red. My studies to the northwest showed that the ice which deposited the red drift came from north of Lake Superior and not from Labrador. In so doing it passed by the Marquette, Gwin, and Menominee Iron Ranges. The source of the red material is then obvious although further spreading by water must be called into account.

I feel that my answers are somewhat unsatisfactory because I have not seen several of the places you mention. I am sending herewith a copy of the guidebook which I prepared last summer for the International Geological Congress. This gives in brief some of my ideas which were excluded from the published guidebook because they were not orthodox. However, I found that the members of the party received them very well and agreed with me in most things.

It occurs to me that you might like to join my class when we make our spring field trip to the Forest Bed. We go out through Hartford on a Saturday, spend the night at Two Rivers and return through Fond du Lac the next day. Date of the trip is not yet fixed.

If I have not made myself clear or if you have other questions to ask please do not hesitate to write me.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

Science Hall,
Madison, Wisconsin
November 17, 1933

Montgomery Ward & Company,
Chicago, Illinois.

Gentlemen:

Last summer I bought a blue and white seersucker suit for a little boy in size four. At that time you also had such suits in green and white. I now would like to buy one or two of these suits but find they are not listed in your large catalog. These were listed in one of your small summer catalogs. Do you have any of these suits left in sizes four and five? If so, under what number are they listed and at what price are they quoted?

Thanking you for this information, I am

Yours very truly,

Mrs. F. T. Thwaites

J. B. John, President & Genl. Mgr.

E. J. Maguire, Vice Pres. & Treasurer

Chas. C. West, Vice President

P. G. Dawson, Secretary



MEDUSA

Medusa Portland Cement Company

1002 Engineers Building

Cleveland, Ohio May 2, 1932.

*Annual Capacity
3,000,000 Barrels*

*Plants at
Bay Bridge, Ohio
Toledo, Ohio
Dixon, Illinois
York, Pa.
Wampum, Pa.
Newaygo, Mich.
Manitowoc, Wis.*

Mr. F.T. Thwaites, Lecturer in Geology,
The University of Wisconsin,
Science Hall,
Madison, Wisc.

Dear Sir:

Your letter of April 28th addressed to our Manitowoc Plant and asking for our consent to your class in Glacial Geology inspecting our clay pit on the morning of Sunday, May 8th, has been referred here by our Mr. Town, Superintendent at Manitowoc. We are glad to advise that we have no objection whatever to your taking the class to the clay pit and enjoying the phenomena that may be seen there. Please be careful that none of your students take any chance of accident while there.

Very truly yours,

E. J. Maguire
Vice-President & Treasurer

EJM:S

"Concrete for Permanence"

M

April 21, 1933

Mr. E. J. Maguire, Vice-President and Treasurer,
Medusa Portland Cement Co.,
1002 Engineers Bldg.,
Cleveland, Ohio

Dear Sir:

I am planning to take my class in Glacial Geology to the clay pit belonging to your company at Manitowee, Wisconsin on Sunday, April 30.

We also are considering taking an excursion of the International Geological Congress to the same place on Sunday, August 6. Both parties are small, probably not over 15 or 20 at the most.

Renewal of your kind permission to do this contained in your letter of May 2, 1932 will be greatly appreciated. It is understood that all members of the parties will visit the pit at their own risk and that those in charge will take proper care that nobody is exposed to danger.

Very truly yours,

F. T. Thwaites, Lecturer in Geology
Science Hall, University of Wisconsin,
Madison, Wisconsin

April 28, 1932

Manitowoc Portland Cement Co.,
Manitowoc, Wisconsin

Gentlemen:

I am writing for permission to take my class in Glacial Geology to your clay pit on the morning of Sunday, May 8. It is understood that we will go there at our own risk and that I will take all due precautions against accidents. Your permission will be greatly appreciated as the pit shows a number of interesting phenomena.

Very truly yours,

F. T. Thwaites, Lecturer in Geology,
Science Hall,
Madison, Wisconsin

Apr 30
Aug 6

Feb. 17, 1933

Dr. Paul MacGlinck,
Department of Geology,
Princeton University,
Princeton, New Jersey

Dear MacGlinck:

I wish to thank you very much for yours of the 13th with enclosed maps and corrections. I will make the suggested changes and will be glad to send you a complimentary copy of the set as soon as I get out the temporary edition. I have a class of about 10, slightly below normal size but the same as last year. My other classes, have fallen off, however, but partly because of new restrictions on entrance.

Messers Mead and Leith urge the printing of my proposed text that goes with this set of maps and block diagrams but so far we have been unable to finish the typing. Besides this the future of the University looks so black at present that one just can not get up much enthusiasm over anything!

Thanking you again,

Sincerely,

Feb 13 '33

Dear Swanton; -

I have sketched on your maps my interpretation. Also enclosing rough copy of my figures. The evidence that comes out of the pebble study seems quite convincing to me of the drift in Central, Southern, + Eastern Ill. as being Kansan. The boundaries of course are far from accurate but seem to be the best we can now do.

I shall be delighted to get a set of your blue-prints next time you have a batch made. They look damned good.

Best ever

Paul Weiss.

Nov. 1, 1934

Mr. A. E. McMahon,
A. E. McMahon Engineering Co.,
Menasha, Wisconsin

Dear Sir:

In reply to yours of the 25th we do not have the log of the
Canning Company well at Hilbert. I have a log of an old well which I
presume to be that of the railroad company which I am giving
Log of well at Hilbert

	Thickness	Depth	Feet
Clay	47	47	
Sand	5	52	
Hardpan	6	58	
Lime	30	88	
Shale	44	132	total depth

The nearest deep well of which I have a record is that on the Thiel
farm $\frac{1}{4}$ mile east of St. John.

Log of Thiel Farm well, Sec. 35, T. 20, R. 19 E.
J. J. Faust and Sons, drillers

	Thickness	Depth	Feet
Surface	14	14	
Lime and iron ore	17	31	
Shale and lime, should be cased	316	347	
Lime, Galena-Platteville	210	557	
Lime, Lower Magnesian	169	726	
Lime, red and gray, Trempealeau	38	764	
Sandstone, limy, water	59	825	total depth

At Brillion the city well got a thick layer of sandstone between the
Platteville and the Lower Magnesian. This is more commonly present than
absent so that I assume that you will get enough water at Hilbert from
a well about 650 feet deep without going to the lower formations. The
Thiel well would have had to gone deeper if a large amount of water had been
needed.

Will be glad to get samples and records of the well when you
drill and will be glad to furnish sample bags and supply a detailed log
on completion

J. W. MURPHY

ATTORNEY AT LAW

CUBA CITY BANK BUILDING

PHONE 65

CUBA CITY, WIS.

October 3, 1934.

F. T. Thwaites
211 Science Hall Building
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites,

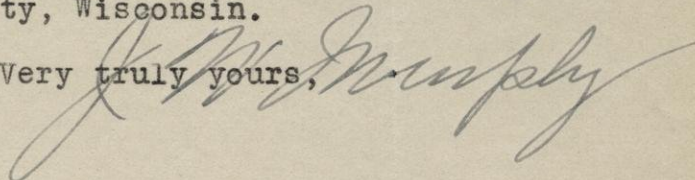
Your letter came stating that you could come out on the Mineral Springs proposition sometime I presume this week but I have been away and unable to write to you since I saw the other parties.

The terms you set out in your letter were agreeable to him and he stated that he could meet you in Mount Ida which is West of Fennimore if you could set some date.

In order to save time on this as I would have to let him know the day before, perhaps you had better wire to me at my expense, the date you could come and I will have the parties here call him by phone and then he could be prepared to meet you in Mount Ida.

In wiring to me you would have to send a wire so that it would reach me here before four o'clock as it comes over the North Western Rail Road telegraph lines and if it came later I would not get it until it came from Dubuque and would be delivered next morning by mail. My address is simply J. W. Murphy, Attorney, Cuba City, Wisconsin.

Very truly yours,



JWM:MF

Oct. 8, 1934

Mr. J. W. Murphy,
Cuba City Bank Bldg.,
Cuba City, Wisconsin

Dear Mr. Murphy:

Reply to yours of Oct. 3 was delayed until I could know my plans. So far as I can now see the best date for me to come down to Mt. Ida to meet your clients is on Monday October 15 I will make the trip regardless of any weather unless it snows heavily.

If this is not satisfactory please advise me.

Please advise me just where in Mt. Ida to meet your clients. As the day before is Sunday will not be able to wire then.

Very truly yours,

F. T. Thwaites

P. E. MILLIS & COMPANY

Oil and Gas Well Contractors

BYRON, ILLINOIS

May 31st. 1932.

Mr. F. T. Thwaites
Science Hall
Uni. of Wisc.
Madison, Wisc.

Dear Sir:-

The subject of this letter is the 950' well for the Kildere Country Club, Long Grove , Ill. about 8 miles north and west of Wheeling.

We installed a 30I' turbine pump in this well and it delivers water at the rate of 100 gpm but it takes about 5 hrs for this water to clear up, and that seems to be the case every time the pump is started. This cloudy material is very fine and silty, and will stay in suspension for an hour before it will settle in a bottle. This operation has been going on for about a month now , and we would like to have your opinion as to what could be done to correct this condition.

We would greatly appreciate an early reply from you.

Yours truly

J. B. Millis

July 22, 1932

McVicar Photo Service,
723 University Ave.,
Madison, Wisconsin

Dear Mr. McVicar:

Enclosed please find six developed panchromatic films from which I wish three prints of each. Please call Mrs. Thwaites, Fairchild 1940-R when these are ready. We developed the films here for fear they would spoil and I had no box to send them home in. There may be some finger prints on the backs.

My work from here has to go to the State Museum at Albany.

With best regards,

Very truly yours,

HENRY MICHELS SEED CO.

Golden Glow Farm

HIGH GRADE FIELD SEEDS

OUR SPECIALTIES
Wisconsin Grown
Clovers
Kiln Dried Seed Corn
Pedigree Grains
Certified Grimm Alfalfa
Northern Common Alfalfa

Fond du Lac, Wis.,
November 7, 1933.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Prof. Frederik T. Thwaites

Madison, Wis.

My dear Sir:

You may recall that I visited you about a year ago and asked a good many questions about our local glacial deposits. You were good enough to give me a great deal of information and at your suggestion, I procured a copy of The Quaternary Geology Of Southeastern Wisconsin which I perused with a great deal of interest, particularly the discussion of the red clay deposits in the Fox-Winnebago Valley. It is in connection with these formations that I wish now to make some further inquiry. In addition, I wish to present some of my own observations for your interpretations. I am hopeful that my opportunity for frequent excursions into the field may be the means of obtaining data that will permit you and others to work out the geology of this region in somewhat greater detail than has been permitted heretofore.

I am not a geologist. I have not had even elementary training in that science. Nevertheless, it has much appeal for me and in recent years have read considerably on our local formations. While, therefore, I may be ^{more} fully informed on them than the average layman I am still only an amateur which

fact I trust you will bear in mind in weighing the data which I present.

Some of the aspects of our red clay deposits have puzzled me very much and I have not found in any literature on the subject any discussion which clears them entirely.

On the Soil Map of Fond du Lac County, there is a loop around the south end of Lake Winnebago designated as "Superior Clay, Rolling Phase". This, I believe, is what geologists interpret as the terminal moraine of the last advance of the ice into this region. On the east side of the lake, this deposit overlaps the Miami Gravel which Bulletin No. 106 refers to the St. Anna Moraine. Wherever the junction between the clay and the gravel is exposed in pits, the division between the two is very sharp. Where the overlying clay is deep enough so that the relationship has not been disturbed by frost or vegetation, the boundary can be determined within a quarter inch or less. There is no intermingling. Moreover, much of the gravel is nicely stratified in domes or banks of comparatively small size and the stratification has not been disturbed in the least. In some cases, the topmost stratum of gravel is rather coarse; in others, it is a fine silt. But nowhere does it show the slightest contamination with clay. There is one such exposure in Sec 7, Empire, and in Taycheedah there are two in Sect. 29 and one each in 20 and 16. Two of them are nearly a half mile from the eastern edge of the clay. (I infer from the manner in which the clay lies in this sector that its direction of transportation at its terminus was more easterly than southerly). Since all of the clay lying to the east of the pits must have been transported over the sites of the pits, it is difficult to understand how this rough pushing could have been accomplished without wrecking at least

lake clay on beach

the upper strata of gravel and without considerable commingling. If it be assumed that the gravel was frozen at the time and thus protected, it would involve the existence of a lake at the 920 foot level (one of the pits is at this elevation) and it must have been frozen to the bottom to support the tremendous weight. why 3

The theory of the existence of a lake meets with some objection. If the clay-bearing ice had merely slid over the older ice, one would expect that its melting back would, everywhere, leave a deposit of clay till as ground moraine, which, however, is not the case. There are a number of places below the 800 foot contour where the underlying Ordovician Shale is scraped almost bare indicating that the ice slid directly over this formation. Moreover, there are occasional stones in the red drift which I have referred to the shale formation. If I am correct in this, then the ice must have slid directly upon the shale somewhere in its course and the nearby locations would seem the most probable. A lake extending over the high pitched domes of sand and gravel would have levelled them off *by wave action*. no

That the prominent banks of gravels standing frozen without being submerged could have endured this thrust seems out of the question.

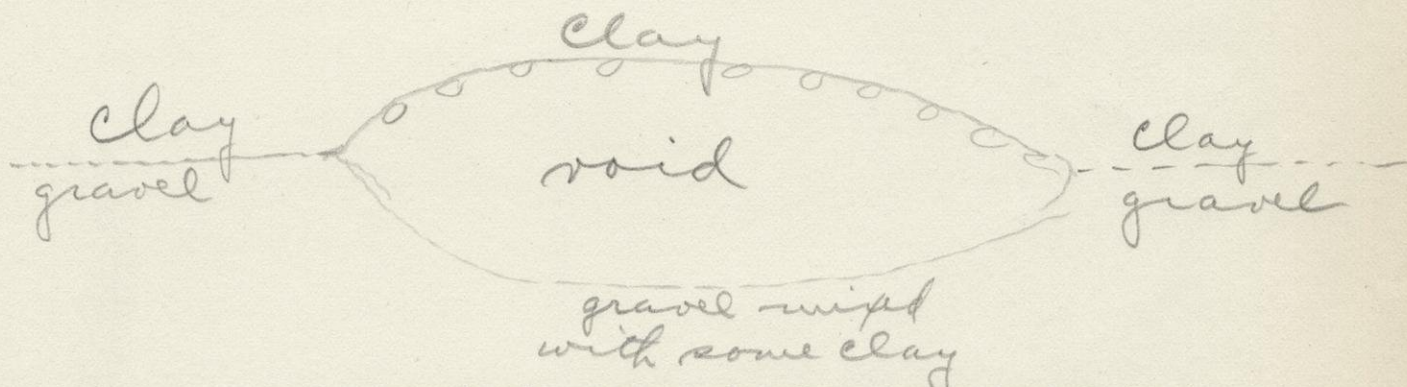
The crest of one hill in NE $\frac{1}{4}$ of NW $\frac{1}{4}$ Sec. 29 Taycheedah attaining an elevation of around 870 feet did not receive this covering of clay though the latter extends to higher levels to the east, to the south and to the north. Its area is so small that it is not shown on the soil map.

The gravel and sand in one pit in Sec. 29, Taycheedah show much cross-bedding, some at high angles.

It would seem that the gravels immediately underlying the clay till cannot be referred to the earlier deposited St. Anna Moraine. If this gravel had been exposed to the weather for even a few years, at least the topmost layers would show some washing and other evidences of erosion. If this be correct; i. e., if the underlying gravel were deposited in point of time, immediately before the red till, it raises the further question as to how the two could be so totally different unhappy

in character of material and in manner of deposit. The gravel is clean, without the slightest trace of red clay and most of it is nicely stratified. If it were outwash from the front of the clay-bearing ice it would necessarily contain some clay discoloration. The clay is not stratified and contains, everywhere, stones of various sizes - igneous, limestone and shale. But there is no gradation in the base of the clay from gravel to silt. The clay till seems to be of very uniform composition over large areas.

About three weeks ago, a situation came to notice which seems to bear out the assumption that the gravel (in point of time) was deposited immediately before the clay. Workmen in stripping off nine feet of clay from the gravel in Sec. 29, Taycheedah came upon a lenticular hole about three feet in diameter and one foot deep in the center. The sketch below shows a cross section.



I examined, rather closely, the material just below the hole and found it somewhat mixed with clay to a depth of 20 inches in contrast with the exceptionally clean gravel at the same level just beside it. A few gravel stones adhered to the bottom of the clay as it arched over the void.

My interpretation is that a block of ice about two feet thick and somewhat smaller than the hole in lateral dimensions was deposited with the gravel and within a few inches of

the top of it. Before it began to melt, the clay was laid down over the whole and it (the clay) settled sufficiently before the ice block melted that it formed a self-supporting arch while the gravel caved in. It was noted that the bottom of the clay in the high point of the arch was two or three inches higher than at the edge. Differences in settling may account for this. The owner of the pit (my brother) recalled that on a previous occasion, stripping disclosed a plug of mixed clay and gravel intruded into the gravel directly beneath the clay but no void was noticed above it. *shove*

In Sec. 29, Taycheedah is a valley which presents some peculiarities. *This valley is indicated on the Soil map as a Clyde clay area.* (The pit in which the hole was found is in the side of this valley). It appears that the valley existed before the advance of the clay for it does not seem that the present small stream could have eroded it. If it had, the valley should be full of residual boulders which is not the case though there are a few. The valley is steep-sided until it descends to the 800 foot contour (post-glacial lake beach line) from which point it courses the mile to the lake with barely enough channel to confine its water though the grade is steep. The clay laps down over the gravel sides and appears to have been deposited like that originally but there is no clay on the floor of the valley where the steep-sided phase exists. Why was this valley not filled? The fact that the steep sides of the valley turn away from the stream so abruptly at the Lake Oshkosh beach seems more than a co-incidence. Was there a predecessor to Lake Oshkosh at the same level before the clay was brought down? *yes*

The valley is wider but also steep-sided farther upstream. The right or north bank averages higher than the south. Is it possible that the sides of the valley represent more or less distinct moraines of the clay? If so, must

we also conclude that the underlying gravel likewise was deposited as two moraines and at exactly the same places? (It is not known that the south bank is underlaid by gravel until the upper part of the valley is reached).

Another puzzling feature of our region is the remarkably flat character of the whole of the Lake Oshkosh basin. If this plain is ground moraine, how is its uniformity explained? The material everywhere is the same - red clay till, sparsely but fairly uniformly mixed with stones. This condition prevails also over the floor of the present lake. True, hydrographic maps indicate the bottom ^{of Lake Winnebago} variously as "stony", "gravel", "clay", "mud", etc. but rather extensive examinations I have made in the southern one third of the basin show that these characteristics are only superficial and that the real bottom is clay. The lake is singularly free from shoals and also from deep spots. The depth of the water increases very gradually to about 20 feet from the south end to a point about ten miles north of Fond du Lac. Then the 20 foot depth is constant throughout the rest of the basin except, of course, near shore. The maximum depth is only 21 feet. flow

Somewhere, I have read that this flat character is due to a leveling by wave action when the water covered the plain. This cannot be true. If the surface had originally been undulating, then the leveling would have left residual stones after the clay had silted out. There are no such residual stone patches on the Fond du Lac Plain nor elsewhere except at a few places on the east shore. The "Clyde Fine Sand" areas also were developed when the lake stood for a time at a stage eight feet above the present. The "stony" and "Gravel" beds on the floor of the present ^{lake} doubtless owe their origin to such action by waves. Had irregularities on the Fond du Lac Plain been thus levelled off, similar beds would exist here. X

In the preceding paragraph, mention is made of an eight foot stage of Lake Winnebago. This beach is rather well defined at a number of places. Can you suggest what held the water at that point? The limestone at the outlet is not eroded appreciably and the red clay which lies upon it does not seem to be resistant enough to have held back the water for any length of time. *outlet* *founder*

A year ago, a crew in excavating a sewer trench in the north east section of this city came upon a tree buried under $10\frac{1}{2}$ feet of red drift. Unfortunately, they did not realize its significance and immediately reburied it in closing the trench. It was only by accident that a small fragment escaped and came into my possession. Prof. Wilson of the University identified this as black spruce. The men said the tree lay with its top to the south but since there appeared no trace of organic matter elsewhere in the trench at that depth, it is likely that the tree itself was part of the drift. Yet it seems remarkable to find it at this position underlain by 50 of clay similar to that above it. *see*

The outer margin of the red clay thins out abruptly. Numerous localities indicate a thickness of 40 feet or more within thirty or forty rods of the edge. A well now being drilled for a school house in the southwest corner of Sec. 20, Calumet penetrated 70 feet of red drift. Yet it is less than a half mile from the outer edge. At that, its location is in the embayment of both the Niagara Limestone and the red drift where one would expect it to feather out more gradually.

The drainage of this area as influenced by the red drift is of interest. From its source near Rosendale, the Fond du Lac River, West Branch, flows in a generally easterly

direction until it encounters the moraine where it turns abruptly southward and hugs it closely until it reaches a point past the southern end of the lake before it finds a place to break through. The Manitowoc rising in Sec. 10, Taycheedah crowds the moraine until near its exit from Fond du Lac County. Here it is met by a small tributary from the northwest which also follows close along the clay. There is not a vestige of red clay on the opposite bank of either of these last two streams ^{nor} of the Fond du Lac before it enters the moraine. They Valley of De Nevue Creek through the moraine in Sec. 24, Fond du Lac is very like the valley in Sec. 29, Taycheedah already mentioned. Is it possible that these are parts of an old valley existing in pre-red- drift times ^{both} the one flowing into the old lake, the other emptying it? Also, ^{seems} is it not possible that this De Nevue Valley rather than the valley of the East Branch of the Fond du Lac carried the waters from the red-drift-bearing ice? The Fond du Lac Valley seems much younger and it would seem that the present stream could easily have eroded it. If contour maps were available for the area south of the Fond du Lac Quadrangle, they might shed some light on this.

Bulletin No. 106 suggests Lake De Nevue was formed by the melting of a buried block of ice. Referring to the Fond du Lac County Soil Map, does it not seem more likely that it is water trapped in between the red moraine on the west and the Niagara limestone and St. Anna moraine on the east? A bar extending nearly across the lake from northeast to southwest interferes with the buried ice theory. A similar relationship exists between the red clay and the limestone forming Leonard's Pond in Sec. 18, Empire and several other like depressions are found in the interval between pond and lake.

They are indicated on the map as Clyde Clay.

Does it not seem remarkable that there is no outwash on the outer margin of the red clay - at least in Fond du Lac County? The Poygan Clay south and west of the moraine may be such but there seems to be an entire absence of fluvial gravels. *slope of land*

In Sec. 29, Taycheedah occurs a pit in which there is almost nothing but an exceedingly fine sand at least 30 feet deep. This is water laid and the strata are roughly dome shaped. Traversing these strata are several veins of calcareous material. The veins average about an inch in thickness and appear to be concentric domes or, at least, sections of concentric vertical cylinders. They are symmetrical but cross the sand strata at all angles. The calcareous material is lace-like in form rather than a uniform sheet. It is very fragile and will stand up only two or three inches when the sand is excavated. The outside dome would have a radius of roughly ten feet and there are three or more concentric shells. I am sending you a few fragments under separate cover. A few less symmetrical but otherwise similar deposits have been found in neighboring pits. Can you suggest the origin? *deep from ground water*

This letter has become much more lengthy than I had intended. I assure you, however, that the subject is of intense interest to me. Even so, I should hesitate to burden you with this volume of detail except for the hope that some of it may aid you to some extent, however slight, in further deciphering the geological history of this region. I wish to say, further that if, at any time, I can be of any help in obtaining field data for you, that I shall be only too glad to cooperate. It seems to me that the distinctive character of this red drift

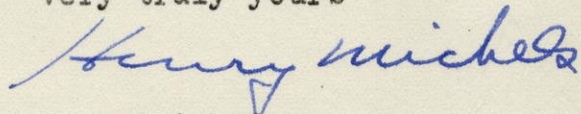
with its sharply defined boundaries, both vertical and horizontal, should make it an exceptionally interesting field for the professional geologist and that it can be made to yield the key to the solution of many of the mysteries which still enshroud our glacial deposits.

I have discussed this subject on several occasions with Dr. Ira Edwards of the Milwaukee Museum. About two months ago he came here for a day at my invitation and I pointed out to him the conditions I have mentioned here. Upon his departure, he said he wished to consider the data further before suggesting interpretations but to date, I have not heard from him.

I have no material interest in this subject but I find that it adds much to my appreciation and enjoyment of my own surroundings to know something about them. Besides, I am invited, frequently, to give talks before various groups in the city and elsewhere and, naturally, I wish to have my material as accurate as possible.

Any information that you may give me will be very much appreciated.

Very truly yours



Henry Michels.

What is the latest theory as to the origin of the red clay?

May 31, 1932

Dr. Raymond E. Murphy,
Dept. of Geology,
Pennsylvania State College,
State College, Pennsylvania

Dear Raymond and Marion:

I am afraid that your letter of January 21 has been in the folder on my desk for a long time but you know how things which do not just have to be done at once get let slide during the school year. We were both very glad to hear from you. Now Zellmer is gone we did not have any news.

Now I have taken a day off (Decoration Day, for I date letters ahead for mailing) to catch up on a lot of personal letters.

I was busy all last summer and all year on a revision of the Glacial text. It has proved much more of a job than I supposed particularly the illustrations although a ruling machine and some Write lettering guides have simplified much of that. We were typing it for mimeographing by the Edwards Brothers of Ann Arbor but when Leith saw the manuscript he wanted me to get it printed on account of the greater circulation and prestige that allows. So the matter is up in the air although we are plugging along on the latter half of the project. It has been a big undertaking but will be worth it, I am sure.

Tommy is well except for spells of eczema which come on whenever he gets a new tooth. However, he already has 8 out of the 20 so we have hopes that he will get over it. I can only take pictures of him between spells. He has grown well despite this handicap and is very good natured.

I go to Allegany State Park to teach and work on ground waters for two months this summer. Amy has decided to stay here as it is hard to take care of Tommy in camp. If you are travelling around would be glad to have you look me up. I will not have any time for travel either before or after. The old Tomah-Sparta report is to be disinterred from what I had regarded as its last resting place in Washington and I will probably have to work on that when I get back, that is if I have finished the Glacial Geology.

We were both interested to hear of your research problems and trust that they prove interesting.

Amy joins me in sending best regards to both of you,

Sincerely,

THE PENNSYLVANIA STATE COLLEGE
SCHOOL OF MINERAL INDUSTRIES
STATE COLLEGE, PENNSYLVANIA

DEPARTMENT OF GEOLOGY

January 21, 1932

Dear Fred and Amy:

We were delighted with the Christmas card and everyone seeing it has commented on the sweet baby. Congratulations!

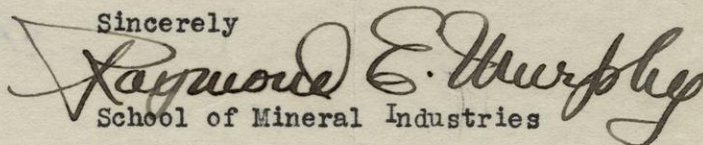
I must apologize for not having written last year. The truth of the matter is that I wasn't exactly proud of my job. I had planned on university teaching but got into a small teacher's college instead, and didn't know but what I'd have to stay there. Hence we didn't do much writing. Now that the year is over we don't regret the experience. We were just in the eastern edge of the Plateau, within a short drive of several important coal mining districts and within two or three hours' drive of the Folded Appalachians to the east. Apparently we're destined to follow the edge of the Plateau. Here in Pennsylvania we're in the Folded Appalachians but within less than two hours' drive of the Allegheny Front. The country around State College is beautiful -- but perhaps you've seen it.

No doubt Loyal has told you something of the position I have here. So far I'm doing no teaching but am, instead, spending full time on a study of the economic aspects of Pennsylvania's mineral industries. It's not exactly the research problem I should have chosen but it had been decided upon before I received the appointment. I find the problem interesting, however, and I should finish it sometime this summer. After that I have been assured that I can plan my own research. Although we are giving no geography this year, I'll teach in Summer School and next fall will begin the development of geography in the regular school year. The College has an enrollment of nearly 5,000 and there should be quite a demand for geography once it is begun.

We both like living in State College. The people are very friendly and there's more opportunity for social activity than I, at least, really want.

Marion joins me in sending kindest regards. We'll be delighted to hear from you any time and hope that some day you'll make a trip over this way and make your headquarters at State College with the Murphys.

Sincerely


School of Mineral Industries

Dec. 20, 1932

Dr. Walter E. McCourt,
Department of Geology,
Washington University,
St. Louis, Missouri

Dear Sir:

Mr. R. H. Dana has assisted me for the last two years in the care and study of well samples collected by the Wisconsin Geological Survey. Last spring he also took Geology 11, Mapping, with me.

Mr. Dana has always proved a good worker and I am confident that he would make good at your University.

Very truly yours,

F. T. Thwaites, Lecturer in Geology;
Geologist in charge of well records,
Wisconsin Geological Survey

Science Hall,
Madison, Wisconsin,
November 17, 1932

Manager,
Montgomery Ward & Company,
Chicago, Illinois.

Dear Sir:

Have been trying since the last week in October to get an extension safety gate and the inclosed form letter indicates that I am still unsuccessful. Let me give you a brief history of this order.

On October 24 I sent in an order for an extension safety gate but neglected to inclose a check. When I discovered my error I sent a check the next day together with a slip which repeated the essentials of the order and stated that I had neglected to inclose the check with the original order. The next day my order was returned. I did not send it back as the check and a repetition of the essentials of the order had already gone forward. In a day or two I received a slip similar to the inclosed. I was disgusted and did not send it back immediately. This week I put in colored pencil on each side of this sheet a notation similar to this: "Please return check," and also inclosed a new order covering additional items and a check to cover same. Today instead of receiving the goods I receive another slip. Apparently the clerk who attends to my orders thinks that I always make mistakes because I made one!!!

Will you please see that my new order is filled at your earliest convenience and that the first check is returned.

Yours very truly,

F. T. Thwaites
Science Hall
Madison, Wisconsin.

Mrs. F. T. Thwaites

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Chicago

Mr. F. T. Thwaites,
Science Hall,
Madison, Wis.

November 19, 1932

Dear Mr. Thwaites:

As soon as I read your recent letter I immediately referred to our records to see if we were still holding your credit in our special file. I found that this credit had been released and that the Adjustment Department had arranged to take care of an adjustment for you on November the 18th. Possibly this was in reply to a recent letter they received from you.

The complete file is not available at the present time, so I am not able to give you any definite information but I feel certain by the time you get this letter you will have all the merchandise in your possession. If not and there is anything more I can for you I will be glad to have you write me.

Thank you for addressing this letter to my personal attention. I am always interested in the experiences of our customers and assure you if the adjustment has not been satisfactorily taken care of I want to know about it.

Sincerely,

K. E. Root
Manager

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Fond du Lac, Wis.,
November 5, 1932.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Prof. F. T. Thwaites

Madison, Wis.

My dear Sir:

I want to thank you again for the courtesies shown me on my visit with you yesterday. May I impose upon you further?

I am sending four fragments of rocks under separate cover. Will you please classify samples one and two. Can you tell from examination, what formations three and four represent and where their native beds are likely to be? All four specimens come from the drift east of Winnebago.

A quarry near Valders shows a large area of very fine ripple marks. Somewhere, I have read that ripple marks are preserved only where formed in fresh waters as the tides eliminate them in the ocean. Is this correct?

A considerable area in a quarry south of Chilton shows a peculiar pattern much like the markings on an alligator travelling bag except that they are larger. The patterns are rectuangular and while I did not measure them, appear to be about 8" by 18" in the largest size but the graduate down to a much smaller size at a point 25 feet away, still preserving about the same rectuangular proportions,

2.

however. The suggestion, of course, is that they are ancient mud cracks which were filled in but the shape seems to be unusual. Can you suggest the origin?

I will thank you for answering these questions and if, at any time, I can be of service to you I hope that you will command me.

Yours very truly,

Henry Michels

1 diorite

2 sheared porphyry - Keweenaw

3 weath ls.

4 amy basalt

Nov. 14, 1932

Mr. Henry Michels,
Henry Michels Seed Co.,
Fond du Lac, Wisconsin

Dear Mr. Michels:

In reply to yours of the 5th Mr. Aldrich of the State Geological Survey helped me look over the four specimens you sent. No. 1 is diorite, an igneous rock. No. 2 is a porphyry (igneous) which has been subjected to great pressure. It is very like some of the rocks near the Gogebic Iron range in northwestern Wisconsin and may possibly have been brought by the successive glaciers first southeast and then south to where it now is. No. 3 is a weathered limestone and may not have been moved far. No. 4 seems to be an amygdaloidal basalt and might have come from the same route as No. 2. These surmises as to source are only guesses for our knowledge of the distribution of Canadian rocks is limited and none of these is at all common in the drift of the Green Bay lobe.

With regard to ripple marks I have seen many in undoubted marine deposits so that the idea that tidal currents always destroy them is undoubtedly an error.

Your description of the mud cracks in limestone is accurate. Much of the Niagara limestone formation seems to have been deposited in very shallow water for both ripple marks and mud cracks, the latter formed when the water went away for a time, are abundant. We have specimens of these in the Geological Museum but I did not have time to show them to you.

Please feel free to write to me at any time. I may get up to Fond du Lac in the spring and will try to look you up then.

Very truly yours,

F. T. Thwaites,

Lecturer in Geology

Nov. 7, 1932

Dr. G. R. Mansfield,
Geologist in Charge,
Section of areal and nonmetalliferous geology,
U. S. Geological Survey,
Washington, D. C.

Dear Sir:

In reply to yours of the 20th the manuscript and illustrations of the proposed Sparta-Tomah folio arrived and I wish to thank you for them.

As I understand it Colonel Martin never took the material for any work on it.

I read the comments with much interest. I see the point of many of them but with some others I cannot agree. It is very interesting to note that detailed surveys by others have almost wholly sustained the views of Dr. Tschafel and myself against those of Dr. Ulrich. This matter is to be taken up in a field conference the latter part of this week. In spite of this fact the progress of science in the ten years which have elapsed since I sent in the manuscript plus the new exposures made in road grading and my greater experience in field photography will necessitate many changes in both text and illustrations.

I note that the Survey rules obliged us to leave the lettering of the illustrations in pencil. For that reason we were not able to keep blueprints for our personal files. In resubmitting this material would it be all right to letter the drawings with Wrico lettering guides?

Another point is whether or not we are obligated to resubmit the entire report or could we elect to have it published in parts elsewhere?

Very truly yours,

F. T. Thwaites, Lecturer in Geology

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WASHINGTON

October 20, 1932.

Dr. F. T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, W i s c o n s i n.

My dear Doctor Thwaites:

Colonel Martin, under date of October 17, has requested the Director to have sent to you the whole text and illustrations of the Sparta-Tomah folio. This material, together with comments by Survey critics, is being forwarded under separate cover by registered mail.

You will recall from the Director's letter of May 20, 1932, to Doctor Twenhofel, copy of which was sent you, that this manuscript was placed subject to Colonel Martin's call for reference to the authors and that permission was given for its resubmission to the Survey for possible publication as a bulletin after such revision as was deemed necessary.

Very truly yours,

G. R. Manfield
Geologist in Charge, Section
Areal and Nonmetalliferous Geology.

May 1, 1934

Mr. E. J. Maguire, Vice President and Treasurer,
Medusa Portland Cement Co.,
Cleveland, Ohio

Dear Sir:

As in former years I would like to visit your clay pit at Manitowoc, Wisconsin, with my class in glacial geology. I plan on making the trip on Sunday, May 5 but had overlooked writing before. It is understood that all persons in the party enter the property at their own risk and that I will take all possible precaution against accident. Your kind permission will be greatly appreciated as it has been in former years.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

DEPARTMENT OF GEOLOGY AND GEOGRAPHY
MILWAUKEE-DOWNER COLLEGE
MILWAUKEE, WISCONSIN

April 28, 1934

Mr. F. T. Thwaites
Dept. of Geology
Univ. of Wis.
Madison, Wis.

My dear Mr. Thwaites:

Thank you for letting me know about the field trips. I shall reach Manitowoc by train at 10:12 P. M. Saturday, May 5 and go to Hotel Hamilton, Two Rivers, from there. I shall hope to meet your class next morning for the trip to the Forest Bed. If there is any chance of my not being able to get the 2:55 from Manitowoc that afternoon, however, please let me know, as I must be back on Sunday night.

Sincerely, Carol Y. Mason

Moran and O'Brien attorneys

Delaware Wis.

Please have Borg pump running in morning
need another reeding. time
Thwaites

B4321

F1940 R

April 16, 1934

Mr. C. F. Mahnke, Editor,
National Well Drillers' Digest,
Moose Lake, Minnesota

Dear Sir:

Yours of March 5 has been on my desk a long time awaiting action. It proved to be impossible to comply with your request for an article on the water situation in Wisconsin by the date specified. However, I will have more time during the next two months and so I hope to be able to get out the two articles asked for. If you could indicate the length you need it would help. I am very sorry that I could not meet your request at the time and wish to say that I appreciate your request very much.

Very truly yours,

F. T. Thwaites, In charge of well records,
Wisconsin Geological Survey

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OUR SPECIALTIES
Wisconsin Grown
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Northern Common Alfalfa

Fond du Lac, Wis.,
April 14, 1934.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Dr. F. T. Thwaites

Madison, Wis.

My dear Sir:

Thank you for describing the concretion. This was brought in by another party for identification, and while I knew it was not organic, yet I could not name it.

I appreciate very much your invitation to accompany your field party on the 5th and 6th of May. I certainly want to go and hope that our season may be near enough through by that time so that I can meet your party at Slinger. If that is not possible, I shall join you at Two Rivers on Sunday. I shall inform you as to my decision shortly before the date.

I assume that it will be agreeable to you if I bring two or three additional people with me.

Very truly yours,

Henry Michels

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 LCO = Deferred Cable
 NLT = Cable Night Letter
 WLT = Week-End Letter

The filing time as shown in the date line on full-rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

Received at 1609 Washington St., Two Rivers, Wis. Phone 4431

~~HA~~UX 9

MILWAUKEE WIS 208P MAY 5 1934

FREDRIK T THWAITES

HOTEL HAMILTON TWORIVERS WIS

UNAVOIDABLY DETAINED VERY SORRY CANNOT JOIN FIELD TRIP SUNDAY

CAROL Y MAHON

212P

MINUTES IN TRANSIT

FULL-RATE	DAY LETTER
-----------	------------

DEPARTMENT OF GEOLOGY AND GEOGRAPHY
MILWAUKEE-DOWNER COLLEGE
MILWAUKEE, WISCONSIN

May 14, 1934

My dear Mr. Thuwaites:

I am very
sorry that I could not get to
Two Rivers for the trip to the
fossil forest. I was all ready
to go when unexpected things
happened at the College and I
could not leave. But thank
you very much for inviting me.

Sincerely yours,

Carol Z. Mason

LAW OFFICES
MORAN & O'BRIEN
CITIZENS BANK BUILDING
TELEPHONE 734

J. ARTHUR MORAN
JOHN N. O'BRIEN

DELAVER, WIS.

July 10, 1934

Professor F. T. Thwaites
Science Hall
Madison, Wisconsin

Dear Professor Thwaites: Re: Borg Well

On the 5th of July about seven thirty o'clock in the evening, an explosion occurred in the pump house of the above well, of sufficient intensity to blow the cover which consisted of a man-hole weighing about seventy-five pounds, a distance of about one hundred feet and also tore away a large portion of the concrete roof. There was no gasoline or any similar substance in the pump house, but the man-hole cover had been left on for several hours due to the fact that it had been raining quite heavily.

We are wondering whether or not the explosion could have been caused by an accumulation of gas coming from this well, and if so, we are wondering what kind of gas it would be. We are informed that hydrogen sulphide gas is ordinarily not explosive.

I thought perhaps you would be interested in knowing of this occurrence and making such observations in connection with it as you believe pertinent.

Yours very truly,

MORAN AND O'BRIEN

JAM:BA

BY

Arthur Moran

Madison, Wis.,
July 16, 1934

Moran and O'Brien, Attorneys,
Citizens Bank Bldg.,
Delavan, Wisconsin

Gentlemen:

Reply to yours of the 10th was delayed because I have been working in Marinette County on a grant from the Penrose Fund of the Geological Society of America and through oversight my mail was not forwarded. I did not receive the letter until I came in for the week-end.

Despite the information given to you hydrogen sulphide is explosive under proper conditions. My old text book says "If mixed with oxygen in the proportion of two volumes of hydrogen sulphide to three volumes of oxygen, and ignited, the mixture explodes with violence." It also states: " It acts as a powerful poison ----- and even (when inhaled) when largely diluted with air it gives rise to dizziness and headache."

Your description of the effects of the explosion and the fact that it took place in daylight seem to preclude foul play. A low powered explosive is suggested. I also considered the possibility of an explosion of heated lubricating oil. I think there are no compressed air lines in the pit so that an explosion of air and oil is not possible.

Very truly yours,

F. T. Thwaites

HENRY MICHELS SEED CO.

Golden Glow Farm

HIGH GRADE FIELD SEEDS

OUR SPECIALTIES

Wisconsin Grown
Clovers
Kiln Dried Seed Corn
Pedigree Grains
Certified Grimm Alfalfa
Northern Common Alfalfa

Fond du Lac, Wis.,

June 7, 1934.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Dr. F. T. Thwaites

Madison, Wis.

My dear Sir:

Thank you very much for the photographs and Mrs. Thwaites' paper on the change of stream outlet.

I am sure that I enjoyed my trip with your party very much and I am also grateful to you for the patience you have shown on several occasions in the past in elucidating matters relative to our glacial geology.

I am sorry to learn that you will be unable to stop here when you go to Marinette especially as I believe you would enjoy a day's fishing in addition to your excursion to the moraines. Fishing now is very fair and will probably continue so until about the end of the month. However, if you are unable to spare the time now, I will be very glad to see you upon your return in September.

Sincerely,

May 31, 1934

Mr. Henry Michels,
Henry Michels Seed Co.,
Fond du Lac, Wisconsin

Dear Mr. Michels:

I have been intending to write you and thank you for helping transport our party on the recent glacial geology trip. We all greatly appreciated having you along.

Enclosed is a copy of Mrs. Thwaites' paper on the changein outlet of one of the Two Creeks which I hope you will find interesting, also copies of two of the photographs I took that day of which I find extra prints.

~~Mr. Bays~~ and I will probably leave for Marinette County on June 19 but will have to go right through. If we have time on our return in September will try to stop to see more of the drumlins east of Fond du Lac and will then look you up.

With best regards to you and your family,

Sincerely,

F. T. Thwaites

DEPARTMENT OF GEOLOGY AND GEOGRAPHY
MILWAUKEE-DOWNER COLLEGE
MILWAUKEE, WISCONSIN

May 24, 1934

My dear Mr. Thwaites:

Thank you very
much for the reprint of the account
of the Two Creeks forest bed. I
hope to be able to drive up to
see it some time.

Sincerely yours,

Carolyn Mason



MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE
RAILWAY COMPANY

OFFICE OF CHIEF ENGINEER
MINNEAPOLIS, MINNESOTA

August 21st, 1931.

Mr. F. T. Thwaites,
Lecturer in Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Sir:

As per request in your letter of the 17th, I am sending to you today, under separate cover by parcel post, profile of our line from Packwaukee to Bancroft, Wisconsin.

There is no charge for these prints, but we kindly ask that you remember us when you or your friends have occasion to travel in the vicinity of our lines.

Yours truly,

E. A. Whitman
Chief Engineer.

a simple will. This might be added as a codicil and nobody knows it but you and I - and as you are executor you will get the fees from that & only have a lawyer to pay. Think about it & fix something up only the first part

MRS. R. G. THWAITES
R. F. D. 4
MADISON, WIS.

Dear Fred: This is what I would like to add to my will - \$1000.⁰⁰ each to George, Helen and Harry - also \$⁵⁰⁰~~1000~~.⁰⁰ each to Richard, Elizabeth, William and Allen Toole - and the same to Henry Q. Turvill. This is because my last report from the Trust Company gives the total of investments at \$109,000.⁰⁰ - without the Bankshares, or the Trust Co. shares. and of course without the 75 or 80 or more shares in the Turvill Estate. What you and I have promised to give away is only

about 11,000.⁰⁰ - so the whole of this would only make it about 16,500.⁰⁰ - which still would leave you some 7,000.⁰⁰ - Inheritance tax & other expenses would lower it & we will say, ^{to} 80,000.⁰⁰ - which would have brought in formally about 4,000.⁰⁰ a year - today we will say about 3,000.⁰⁰ - and many of the poor investments will come back later -

This makes no account of Oklahoma stuff either - which you might get something from later - I now hate to think I am leaving out all the other relatives - because times are hard and Helen I hear is very hard up - & of course H. is - and G. has only 5 or 600 a year to live on after I leave (as far as I can find out)

Being the executor you ought not to have very large expenses in settling such

- You see you will
have a lot to take
care of and to make good
use of - some of mine is
in Carleton Corp. bonds 4000.

Fed. Farm Mort. " " 2500.

Home Owners Loan " " 5025.

Northwestern Terminal Co. " 900.

Raulf Realty Corp. " 500.

Tenney Bldg. Co. " 2790.

Twin City Trading Co. " 925.

West Texas Util. " " 897.50

Grace & Bessie Myers apt. house 2300.

Delta Delta Delta	2660.37
Steinland Bldg. Co.	3000.
	<hr/> 25,497.50

These are the best that keep paying - a house renting for 50⁰⁰ a month - & some others including some of the farms - rented or still paying int. Then you know of the Jewellers' bldg; State & Wash. Bldg - Match Corp. - in wh. there are over 7000. Farms carried as real estate 17,326.⁵⁰ -

But most others are in the same boat. Tell me what you think when you come in.

Oct. 13, 1934

Mr. J. W. Murphy,
Cuba City Bank Bldg.,
Cuba City, Wisconsin

Dear Mr. Murphy:

I have received no reply to my letter of Oct. 8.

It is, therefore, impossible for me to come down to Mt. Ida on Monday
as I do not know who I am to meet or where.

Work has now piled up to such an extent that it hardly
seems possible for me to come down this fall.

Very truly yours,

F. T. Thwaites

Oct. 13, 1934

Mr. J. W. Murphy,
Cuba City Bank Bldg.,
Cuba City, Wisconsin

Dear Mr. Murphy:

As I failed to get any reply to my letter of Oct. 8
stating who and where to make contact with your clients naturally

Mr. J. W. Murphy,
Cuba City Bank Bldg.,
Cuba City, Wisconsin

Dear Mr. Murphy:

Enclosed please find copy of report on Rocky Dell Spring
made for Mr. Steinbach on Oct. 15. Mr. Steinbach has paid me in full
for the work.

Very truly yours,

F. F. Thwaites

Sept. 5, 1934

Col. Lawrence Martin,
Division of Maps,
Library of Congress,
Washington, D. C.

Dear Col. Martin:

Mr. Kayson of the Conservation Commission informed me that the War Department has made a detailed survey of Menominee River between Wisconsin and Michigan. He told me where to obtain a copy but I neglected to note this down as I thought that Bean would have a copy. I now learn that he does not so would like to know how to obtain one. I have written to our Congressman also.

I spent the summer working in that region and have now almost completed the mapping of the Green Bay Lobe up to the State Line and west of Green Bay and Fox River. The final map will be finished this winter I hope. The completion and publication will be financed by the Penrose Fund. The survey of the river is badly needed both to complete the township plats but also to furnish elevations to check our aneroid readings. Incidentally, the results with the new aneroids plus rapid transportation now render our readings of real value. Your aid in obtaining this survey, provided the Congressman does not get it for me, will be greatly appreciated.

Sincerely,

F. T. Thwaites

J. W. MURPHY

ATTORNEY AT LAW

CUBA CITY BANK BUILDING

PHONE 65

CUBA CITY, WIS.

September 14, 1934.

Mr. F. T. Thwaites
211 Science Hall Building
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites,

I am writing to you in regard to a spring of water located near Werly, in the North end of Grant County. Werly is West of Fennimore and near Mount Hope and this spring is in that territory between that and the Wisconsin River about half way between the East boundary of Grant County and Boscobel towards the Northwest.

I have a client, a Mr. Steinbach who holds a lease on this spring which spring is located on his brother-in-laws land and he has had the spring water analyzed by a Michigan Chemist who pronounced it commercial water. Mr. Steinbach and others have formed a corporation at Detroit, Michigan and have since applied to operate in Wisconsin as a Foreign corporation. The corporation is a small one but the purpose is to sell the water from this spring.

We were in Madison yesterday talking over the proposition with the Public Service Commission and it was suggested that we have an engineer examine this property and make some kind of a report which I imagine would cover the flow of water, the contour of the ground and possible rocky structures that the water flows through so that the Commission would have something upon which to base the value of this lease.

We talked with Dr. Nicholas at the University and he suggested your name as an engineer who would understand this kind of a proposition.

I might state to find your way to the property you follow 18 from Madison past Dodgeville, Montford and on to Fennimore from Fennimore on to Mount Ida at Mount Ida you turn towards Werly and the spring is about three miles out of Werly. Our parties could arrange to meet you at Mount Ida on a definite date if we came to terms.

Could you give me an estimate as to what your charges would be to go out and examine this property and when, if at all, you would be available for this service. When I have this information I can

J.W. MURPHY

ATTORNEY AT LAW

CUBA CITY BANK BUILDING

PHONE 65

CUBA CITY, WIS.

P.2

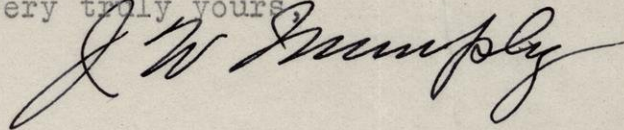
F.T.Thwaites.

take it up with the parties and then could let you know as it will take some time writing back and forth a week or a week and a half at the least would have to be allowed so I could contact with the parties.

We were at your office in Science Hall yesterday but you had left and we could not spend more time in Madison so regret we did not have an opportunity to talk over the proposition with you in person.

Would appreciate hearing from you in regard to the matter. It might be that you could obtain from the Commission something more definite as to what kind of a report they would expect to be made and this would assist you in determining what will have to be done in the matter.

Very truly yours,

A handwritten signature in cursive script, reading "J W Murphy".

JWM:MF

Sept. 18, 1934

Mr. J. W. Murphy,
Attorney at law,
Guba City Bank Bldg.,
Guba City, Wisconsin

Dear Sir:

In reply to yours of Sept. 14 my charge at the present time is twentyfive (\$25.00) dollars a day out of which I pay travelling expense and cost of preparing a limited number of copies of the report.

I am now occupied with a problem for the P. W. A. drought study work which will take all of this week. After that school starts but I could arrange to get away for a day whenever decided upon.

Very truly yours,

F. T. Thwaites

MEMORIAL UNION BUILDING ASSOCIATION
The University of Wisconsin

UNION BUILDING, MADISON, WISCONSIN

October 4, 1934

Mrs. Fred Thwaites
R. F. D. # 4
Madison, Wisconsin

Dear Mrs. Thwaites:

I am very glad to enclose your life membership card,
No. 5910.

Sincerely,

J. L. Skillern

June 2, 1932

Mr. J. B. Millis,
P. E. Millis and Co.,
Well Contractors,
Byron, Illinois

Dear Mr. Millis:

Yours of May 31 is at hand. Were it not for your statement that the well of the Kildore Country Club, Long Grove, Illinois clears up after several hours pumping I would put down the trouble as uncased or improperly cased Maquoketa shale. However, if such were the case I would not expect the water to clear up at all judging from experience elsewhere. It seems more probable that fine clay is caving into the hole either through a crevice in the limestone or under the drive pipe. I suggest that during the time the well is idle caving goes on but the rate is so slow that pumping exhausts the supply. Probably this did not cause any trouble with the older pumping equipment because the well was then produced at a much lower rate. If I could see a sample of the mud it is possible that I could tell by microscopic examination where it comes from although such is not always possible particularly where there is no accurate record of the well.

Very truly yours,

Lecturer in Geology
Geologist in charge of well records, Wisconsin
Geological Survey

May 31, 1932

Miss Shirley L. Mason,
Dept. of Geology,
Harvard University,
Cambridge, Massachusetts

Dear Madam:

I wish to thank you the separate of the paper on Asymmetric Valleys and climatic Boundaries.

There are a number of asymmetric valleys in glacial drift and Coal Measures northeast of Vandalia, Illinois as well as elsewhere in southern Illinois. I have always explained these as due to retention of material by forest roots on the south sides making these the steeper sides.

Very truly yours,

F. T. Enckes, Lecturer in Geology

May 1, 1934

Mr. Henry Michels,
Henry Michels Seed Co.,
Fond du Lac, Wisconsin

Dear Mr. Michels:

In reply to yours of the 27th we expect to eat lunch in the little park on the south side of Slinger. Last year our stop there was from 11:55 A. M. to 12:45 A. M. This year, having a smaller class we might be earlier and then might not eat until farther on. I suggest that you meet us at Kowaskum where we turn from going north on 55 to going east on 28. Just to the east we turn north onto S. This would be a good place to wait. Last year we were at that point about 2:30 P. M. but will certainly be earlier this year, possibly by 12:00 noon, and certainly not later than 2:00.

At Two Rivers we stop at Hotel Hamilton where we arrive for supper. Last year we left for the Forest Bed at 8:20 A. M. Sunday morning. This would probably be the best place to meet. Details of route are often changed and with a smaller group we will make better progress than last year. Last year we reached Fond du Lac at about 5 P. M.

Mary thanks for the invitation to come up to Fond du Lac. I will see what I can do after school is out.

Hoping that you meet us all right,

Sincerely,

F. T. Thwaites

HENRY MICHELS SEED CO.

Golden Glow Farm

HIGH GRADE FIELD SEEDS

OUR SPECIALTIES

Wisconsin Grown
Clovers
Kiln Dried Seed Corn
Pedigree Grains
Certified Grimm Alfalfa
Northern Common Alfalfa

Fond du Lac, Wis.,
April 27, 1934.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Dr. F. T. Thwaites,
Science Hall,
Madison, Wis.

Dear Sir:

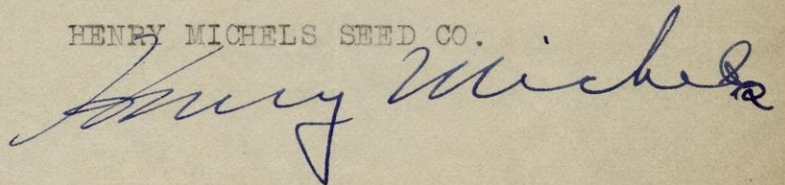
With the lateness of the season it does not now seem likely that I will be able to join your group on Saturday but will do so on Sunday. Will you, therefore, please inform me where I can make contact with you at Two Rivers and at what hour do you propose to leave? If convenient, also please indicate where you will be at noon on Saturday and if matters should so adjust themselves that I can meet you at Slinger I will be glad to do so.

Since you will be returning here on Sunday afternoon I wonder if you would not be interested in spending a day or so checking over the Moraine deposits concerning which I wrote you on November 7th. If you can do this I will be pleased to take you to the various places. There is, also, the matter of the old shore line of Lake Winnebago at an elevation of Approximately eight feet above the present lake which I think might be of some interest to you. And there is also a very strongly developed modern ice rampart extending unbrokenly for a distance of three miles on the east shore of the lake.

If you can not spare this time now perhaps we can get away for a day or two later in the summer after class work is over. I will be glad to have you spend this time here as my guest and in case you are interested in fishing let me suggest that we have some very fine sport here the latter part of June. I have an able cabin cruiser in which we can spend the time if you can get away.

Sincerely yours,

HENRY MICHELS SEED CO.



HM:VM

4-3-35

A. E. McMAHON ENGINEERING COMPANY

Consulting - Designing - Supervising Engineers

Telephone 876

MENASHA, WISCONSIN

August 30, 1935.

Rib Lake,
Water & Sewer
Deep Well

Mr. F. T. Thwaites,
Department of Geology,
Madison, Wisconsin.

Dear Sir:-

The Village of Rib Lake, in Taylor County, Wisconsin is contemplating a Waterworks System.

Will you please send us all the information you possibly can in regard to our drilling a well for this Village. In anticipate drilling a 12" Well to bear about 400 G.P.M.

Thanking you in advance for this favor, we are

Yours respectfully,

A. E. McMahon Engineering Company

M. O. Clinton

moc/v

July 8, 1938

Mr. Gaylord O. Mickelson
212 S. 6th Street
Mt. Horeb, Wisconsin

Dear Mr. Mickelson:

Sorry I will be unable to meet you Saturday. On account of the serious illness of my mother I don't know when I will be able to get off.

Sincerely,

F. T. Thwaites

Aug. 8, 1938

Mr. Gaylord O. Mickelson,
212 South 6th St.,
Mt. Horeb, Wisconsin

Dear Mr. Mickelson:

As my mother is still so poorly I have been
unable to get out to see you. It is a marvel she has held
out so long and it is terrible to see her ~~ding~~ by inches.
In the meantime all we can do is to stay near.

We have had one after another incompetent
maid for the last two years. It occurred to me that in
your going around the country you might be able to
find some girl who would not mind working in the country
as out place is. We would pay not less than \$6.00 a
week for the right sort who is clean, industrious, and
good with the boys. If you don't find anyone could you
place an advertisement in your local paper and we will
pay for it! There is just no use here for all you
get from ads or employment bureaus is floaters who
never work or stay long.

If you can't do anything for us please drop me
a card and we will look elsewhere.

Hoping to be able to get out to see you
before long, I am

Sincerely,

MILWAUKEE-DOWNER COLLEGE
MILWAUKEE, WISCONSIN
March 31, 1934

Mr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites:

Since you suggested that I do so I am writing to remind you that I should like very much to accompany your class on its field trip to the buried forest at Two Creeks this spring. I am not sure that I shall have a car at my disposal, but if you will let me know where and when it would be convenient to have me meet the group I shall try to go, unless there is some obligation that keeps me from leaving the College on that week-end.

Sincerely yours,

Carol Y. Mason
Carol Y. Mason

HENRY MICHELS SEED CO.

Golden Glow Farm

HIGH GRADE FIELD SEEDS

OUR SPECIALTIES

Wisconsin Grown
Clovers
Kiln Dried Seed Corn
Pedigree Grains
Certified Grimm Alfalfa
Northern Common Alfalfa

Fond du Lac, Wis.,
April 5, 1934.

WE GUARANTEE ALL SEEDS PURCHASED OF US TO PROVE SATISFACTORY TO THE CUSTOMER IN EVERY RESPECT OR THEY MAY BE RETURNED AND WE WILL REFUND FULL AMOUNT PAID WITH FREIGHT CHARGES BUT WE WILL IN NO CASE BE RESPONSIBLE FOR ANY GREATER AMOUNT NOR WILL WE MAKE ADJUSTMENTS AFTER SEEDS ARE PLANTED AS THEY ARE THEN BEYOND OUR CONTROL

Dr. F. T. Thwaites

Madison, Wis.

Dear Sir:

I will thank you to identify
the specimen in the attached sack.

Would like to have this returned
which can be done in the same sack merely pasting
the gummed label over the first address on
the envelope. Postage is already affixed to
the label.

Yours very truly,

Henry Michels

April 11, 1934

Mr. Henry Michels,
Henry Michels Seed Co.,
Fond du Lac, Wisconsin

Dear Mr. Michels:

Reply to yours of April 5 was delayed because I was out of town with my mapping class.

The specimen is Niagara dolomite which contains a number of concretions which appear to be silica. The concretions are inorganic and are not fossils.

I am returning the specimen as requested.

The trip to visit the Forest Bed near Two Rivers will be held on May 5 and 6. We leave here early Saturday morning, eat lunch near Slinger, and reach Two Rivers for the night. In the morning we visit the Forest Bed and then return via Fond du Lac which is reached about 5 P. M. Should you be interested in going please advise me. The party will be met at the Forest Bed by Mr. L. R. Wilson of the Botany department who has made a detailed study of the deposit. I hope that you will be able to accompany us as I am sure you would find it very interesting.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

Science Hall,
Madison, Wisconsin.
March 5, 1934

Montgomery Ward and Company,
Chicago, Illinois.

Gentlemen:

I am returning herewith the following:

18A736	1	Chair Set		0.53	0.53	2 oz.
71A5680	4	Cottage Sets	Green	0.59	<u>2.36</u>	2 lbs. 0
					2.89	

In place of the above I am asking you to send the following:

71A5617	4	Cottage Sets	Green	0.69	2.76	2 0
					<u>0.10</u>	POSTAGE
					286	

Thanking you for your attention to this exchange,
I am

Yours very truly,

FTT-T

F. T. Thwaites

LIBRARY OF CONGRESS
DIVISION OF MAPS
WASHINGTON

December 14, 1933.

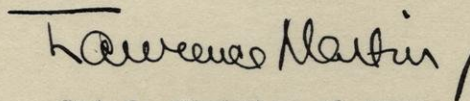
Mr. F.T.Thwaites,
Science Hall,
Madison, Wisconsin.

Dear Fred:

Thank you for your activity and that of
Twenhofel in connection with my list of December 5,
which Bean passed on to you.

I am hoping to have a glimpse of you at
Chicago or Evanston the last week in December.

Very sincerely yours,

A handwritten signature in dark ink, appearing to read "Lawrence Martin", with a horizontal line above the first few letters and a long, sweeping flourish extending to the right.

Chief, Division of Maps

MONTGOMERY WARD & CO.

FIRST NATION WIDE DISTRIBUTORS OF QUALITY MERCHANDISE
OPERATING NINE GREAT MAIL ORDER HOUSES
AND HUNDREDS OF RETAIL STORES

CHICAGO Dec. 6.

Mr. F. T. Thwaites
Science Hall
Madison, Wis.

Dear Mr. Thwaites:

Thank you for your remittance of \$0.18 which has enabled us to mark your bill paid. You will hear no more about this.

If your order could have been sent in one package, thus saving postage, we of course, want to make the proper adjustment. However, we must ask you to return the papers covering the order before we can do anything about this.

Your orders are appreciated, and it is our constant aim to help you save money on every one you send us.

Yours very truly,

ED SZ

MONTGOMERY WARD & CO.

PRINCETON UNIVERSITY

PRINCETON NEW JERSEY

Department of Geology

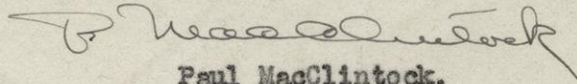
November 1, 1934.

Dr. F. T. Thwaites,
Wisconsin Natural History Survey,
Madison, Wisconsin.

Dear Sir:

The officers of the Paleontological Society are planning a symposium on Early Man in North America at the coming Christmas meetings. They have suggested that a joint symposium with the G.S.A. to cover Pleistocene stratigraphic problems as well would be more interesting. If there should be enough interest in such a symposium Dr. Berkeley has assured it a place on the program. They asked me to write to the men working on glacial studies to see if they have any papers "on the fire" which they might care to present at such a symposium. If you should know of anyone who has been doing work which should be presented, let me know for I may have missed him in sending out this letter.

Very truly



Paul MacClintock.

PM:DM

*You must have some good dope
for such a meeting?*

Postcard Dec 10

The Regents of the University of Wisconsin
Madison

M. E. McCaffrey
SECRETARY

JUL 18 1934

Mr. F. T. Thwaites
Science Hall

Dear Sir:

In considering the budget for 1934-35 the Regents of the University of Wisconsin have placed your salary on the same basis as for the year 1933-34.

Yours very truly,

M. E. McCaffrey,

Secretary.

April 16, 1934

Miss Carol Y. Mason,
Milwaukee-Downer College,
Milwaukee, Wisconsin

Dear Miss Mason:

Yours of March 31 arrived just as I was starting to Devils Lake with my class in Mapping and it is only just now that I have been able to answer it.

The trip to Two Rivers is scheduled for May 5 and 6. On the Saturday we leave here at 7:30 in the morning and eat lunch in the park at Slinger. We arrive at Hotel Hamilton, Two Rivers at dark. In the morning we will visit the Forest Bed and will be guided by Mr. Wilson who has made a special study of it and has made some new discoveries. We will also visit the drainage change described by Mrs. Thwaites. If you do not have a car it will be all right as the class is just too large for one car and is too small for two and I am, therefore, on the lookout for visitors. My class was very small this year, only half of last year. We will be very glad to have you join us especially as one girl wants to go and there are no girls in the class.

We are also making a one day trip to the Oconomowoc, Eagle, Lake Geneva district on Saturday, April 28 which you might be interested in. We pass through Delafield on the way out.

Hoping that you will be able to join us in a visit to this very interesting locality(the Forest Bed),

Sincerely,

F. T. Thwaites

LAW OFFICES
MORAN & O'BRIEN
CITIZENS BANK BUILDING
TELEPHONE 734

J. ARTHUR MORAN
JOHN N. O'BRIEN

DEHAVAN, WIS.

April 30, 1934

Professor F. T. Thwaites
Science Hall
Madison, Wisconsin

My dear Professor Thwaites:

Enclosed herewith is my check for \$25.00, representing balance of your fees in the case of Borg vs Downing.

I know it will be of interest to you to learn that the verdict as rendered by the jury gave us judgment for the full amount of the advance payment we had made - \$4867.00, less \$1000 which the jury found to be the value of the extra pipe installed in the well. Inasmuch as the jury found in a preceding question that under the contract Mr. Downing was required to furnish all necessary casing, it leaves us with a judgment for \$4867.00 against Mr. Downing.

There is no question that your testimony in this case was of vital importance and was certainly very valuable to our client.

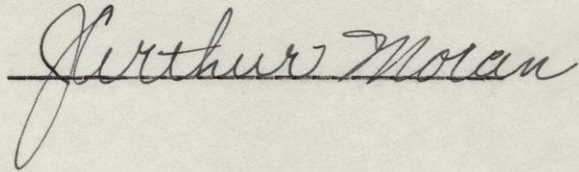
We wish to extend to you our very sincere thanks for your co-operation in this matter, and if in the future we or any of our friends have any matters pertaining to drilling wells, they most certainly will be referred to you.

Professor F. T. Thwaites -2- April 30, 1934

It is possible, of course, that this case might go to the Supreme Court and sent back for new trial, although I consider this not very probable. In that event, of course, we will expect you to testify on any future proceeding that might be had.

With kindest regards, I am

Yours very truly,

A handwritten signature in cursive script, reading "Arthur Moran", written over a horizontal line.

JAM:BA
ENC.

J. B. John, President & Genl. Mgr.

E. J. Maguire, Vice Pres. & Treasurer

Chas. C. West, Vice President

P. G. Dawson, Secretary



MEDUSA

Medusa Portland Cement Company

1002 Engineers Building

Cleveland, Ohio May 2, 1934.

*Annual Capacity
3,000,000 Barrels*

*Plants at
Bay Bridge, Ohio
Toledo, Ohio
Dixon, Illinois
York, Pa.
Wampum, Pa.
Newaygo, Mich.
Manitowoc, Wis.*

Prof. F.T. Thwaites, Lecturer in Geology,
University of Wisconsin.
Madison, Wisc.

Dear Sir:

There is no objection to your taking your Glacial Geology Class to visit our clay pit at Manitowoc, Wisconsin on Sunday, May 5th, as requested in your letter of the 1st inst. and especially with the understanding that any one in your party does so at his or her own risk, and that we will not be held responsible for any accident which may occur to any of these individuals. There is no reason why anyone should get hurt if ordinary care is exercised in walking about the premises. You may therefore act accordingly.

Very truly yours,

E. J. Maguire
Vice-President & Treasurer

EJM:S



"Concrete for Permanence"

Chetek, Wis., June 17, '37

Mr. F. T. Thwaites
Dept. of Geology
Science Hall, University of Wisconsin
Madison, Wisconsin

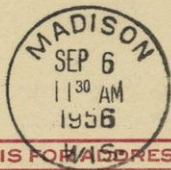
Dear Mr. Thwaites:

Just a short note to ask a couple of favors of you. I find that I have thoughtlessly neglected to bring along enough graph paper, and since it is impossible to obtain such here I wonder if you could bring up a batch when you come. I have used the few I had until all the curves are beginning to look the same! Secondly, I forgot to bring along the Tuscobia-Park Falls profile from the Survey files and would appreciate it if you would bring that as well.

I seem to be getting along slowly and reasonably surely. Poor weather delayed me somewhat at first but we've had blazing summer now for a few days. I must confess, however, that all the things I see are not quite as clear as they might be and I am looking forward eagerly to your arrival. I think I am able to decipher topographic evidences well enough, by and large, but I do have trouble determining the age of the drifts!

Yours very truly,

John Matheson



THIS SIDE OF CARD IS FOR ADDRESS

Mr and Mrs F.T.Thwaites
41 North Roby Road
Madison 5 Wis.



Dear Friend,

Thank you for signing my nomination paper for re-election to the State Assembly. Your support is greatly appreciated. I believe it is an endorsement of my record of five years on the City Council and my work in the State Legislature. During this campaign I hope to meet as many of my constituents and friends as possible to discuss that record with them.

I will look forward to your continued support in the Primary Election on September 11th.

Carroll Metzner

July 20, 1937

Mr. John T. Mathieson,
Chetek, Wisconsin

Dear Mr. Mathieson:

I received yours of the 11th with enclosed report and sketch but delayed reply until I could send you prints of the photos which I took when up with you.

The report has been read and an incomplete card turned in.

With regard to the area to be covered I fully agree that thoroughness should not be sacrificed for speed. When I worked I was often forced to do this and it is bad practice. However, I feel that the discovery of a relatively few critical exposures both of bed rock and soil profiles may clear up the problems of a considerable area. For instance the collar at Reeve gave us a definite idea, namely that there is no marked B horizon and that therefore the drift is younger than its erosional topography formerly suggested. This seemed to check with the soil exposed in the Almota cut and the presence of rare enclosed depressions. The point is that exploration ought to cover enough ground to be reasonably certain of finding critical exposures. I feel that you might omit parts of townships which are definitely known to be the later Wisconsin but include the new cuts on U. S. 8. That is I would like to see at least a part of Range 14 included. However, I am inclined to omit the rugged sandstone area southwest of Reeve (or is it southeast?) as well as the far northwestern part of Barron Co. This would make a T shaped rather than a square area but that does not matter. The rugged country is another problem entirely as I see it. Am now inclined to think that the Dresbach (Galesville) cliffs are what we saw a river level around Prairie Farm. I also note that your and my present opinion on the drift of the recent angle checks almost exactly with Weidmans view as given in Bull. 16, p. 434! Here he shows what he called Third Drift down to near the edge of the Colby soils in Barron County. This does not check with Leverett as you will note but he used mainly erosion phenomena and paid little attention to weathering.

In conclusion, don't try to cover more than you can do well but I certainly would like you to study the fresh cuts on U. S. 8. Hope I can come up again later to see some of the good places you find.

With best regards to all,

Sincerely,

Box 593, Chetek, Wisconsin
Aug. 25, 1937

Mr. F.T. Thwaites
RFD 4, Madison, Wis.

Dear Mr. Thwaites:

As you probably know, I was in Madison a few weeks ago on a short over-night trip, called your house, and was sorry to find you out of town. I was told that you would be back soon and suppose you are in Madison now. By the way, I have forgotten, I fear, to thank you for the pictures, much less pay for them. Since so much time has already elapsed it will perhaps be all right to let it go until I see you again---and thanks very much.

In spite of a long series of unavoidable interruptions I have managed to cover quite a bit of territory since I last wrote to you, including several towns in range 14 and a few forays into range 15---and I'm very glad I did, for there's ~~smuch~~ that is new and novel in that region! However, all that I have found has been in topography---no exposures that have meant anything to my limited senses, at any rate. I have traced a well-marked and unquestionably ~~you~~ moraine from near Poskin southwest well into the town of Vance Creek and ~~imagine~~ I can follow it still farther. This is all within Weidman's Colby region although strikingly different from the so-called Colby region north of Barron and west of Rice Lake, which I have become quite convinced is of earlier Wisconsin age and largely ground moraine and eroded outwash. Well, there's no use going into all this now, for I hope to have the pleasure of seeing you before too long. Have you any idea of when you can come up? As far as I can tell, any time is convenient for us, but it would be well to know a short time in advance because there has been some serious illness among our near relatives which might possibly take a turn for the worse at any time and thus take me away from work for a few days. But I certainly am looking forward to having you up---it seems to me that I've been making progress pretty slowly of late and could stand to have some new slants on the problem---especially such things as the soils, which still seem, horribly nebulous.

Otherwise everything and every one are well here. Remember me to your family, and Mrs. Mathiesen sends her regards.

Sincerely,

John Mathiesen

*P.S. The only other
time when it might be
inconvenient for you to come
would be Labor Day - the earliest
that you'd wish to be on the road then anyway*

August 26, 1937

Mr. John T. Mathiesen,
Box 593,
Chetek, Wisconsin

Dear Mr. Mathiesen:

Yours of the 25th arrived this noon.

I hardly know what to say about coming up. Our maid is away for a week which ties me down considerably. The new Green Bay well is to be tested soon and they want me there if possible. Besides, Tommy starts school soon and that will probably mean a lot of running again. The northeastern Wisconsin project has lagged again and it was only yesterday that I was able to touch the big map.

All things considered, I would much prefer not to come up this fall unless there is something of vital import. I am not at all sure that I could add much to the soil profile matter beyond what we worked out last spring. Indeed, I am now wondering if all Golby soils are not early Wisconsin or later. You know that there is a large area of Golby within the Cary moraine of Taylor County. I am going to change the text of my report so as to hold this matter open. It is still a long way to proving this, much less explaining the nature of Golby soil profiles. I am basing this conclusion mainly on the lack of a definite B horizon in the Golby profile. In fact, this makes the Golby soil essentially limited by Weidman's original Third drift border. It is a notable fact that Weidman was more nearly correct in the first work he did and his later ideas were the ones which were incorrect!

I certainly would like to be able to come up and talk over these matters with you and to visit some of the other Golby localities but I just cannot see where to get in the requisite four days this fall. I forgot to mention the logging of the Tri-State Conference which must be done soon as it is on Oct. 2-3.

With best regards,

Sincerely,

F. T. Thwaites

February 10, 1938

Dean of the Graduate School
Princeton University
Princeton, N. J.

Dear Sir:

In regard to the application of John Mathiesen for a fellowship, I can say that he has been a student of exceptionally high quality. He has taken physiography, glacial geology, mapping, and his thesis with me and the work was uniformly of excellent quality. I can recommend him very highly.

Very truly,

F. F. Thwaites

THE UNIVERSITY OF WISCONSIN
MADISON

COMMITTEE ON LOANS AND
UNDERGRADUATE SCHOLARSHIPS

April 5, 1938

Mr. F. T. Thwaites
Science Hall

My dear Mr. Thwaites:

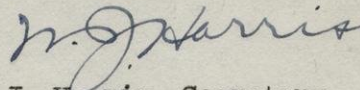
Thank you for your recommendation of Gaylord O. Mickelson for a University scholarship. You may be assured that the Committee will give every possible consideration to his application.

If we may be of further service to you at any time, we will be glad to have you call on us.

Sincerely yours,

COMMITTEE ON LOANS AND UNDER-
GRADUATE SCHOLARSHIPS

by



W. J. Harris, Secretary

WJH:EB

February 18, 1938

Chairman of the Committee on Fellowships
Graduate School of Arts and Sciences
23 University Hall
Cambridge 38, Massachusetts

Dear Sir:

In reference to the application of Mr. John Mathiesen,
I can say that he has taken physiography, glacial geology,
mapping, and a thesis on glacial geology under me. His work
has been uniformly of high quality and I have no hesitation in
recommending him very highly.

Sincerely,

F. T. Thwaites

PRINCETON UNIVERSITY

PRINCETON NEW JERSEY

June 12 '04

Department of Geology

Dear Brewster

Delighted that you are going
to get out your book on glacial
geology. I don't see how we could
use it as a text but I shall certainly
want one and we shall need one
in our departmental library. If we
should ever start a course in
glacial geology it would be invaluable

Best

Paul Hays

Jan. 5, 1934

Dr. Paul MacGlinck, Jr.,
Department of Geology,
Princeton University,
Princeton, New Jersey

Dear MacGlinck:

I wish to thank you for the separate of your paper on "Correlation of the pre-Illinoian drifts of Illinois" which came some time ago. Had hoped to see you at Chicago so did not write.

I now have a chance to get out an edition of 100 lithoprinted copies of my text of glacial geology. These will probably cost \$2.25 retail. I asked a good many persons about the probability of getting rid of these in a reasonable length of time and met with much encouragement some thinking they might be able to use over 30 copies. I am wondering if you also would be interested. The books would be ready some time in February.

By means of this preliminary edition I will be able to get criticisms and suggestions which I would not be able to obtain otherwise and it seems to me a very wise step before having the book printed.

With best wishes for the New Year,

Sincerely,

F. T. Thwaites

STATE OF MISSOURI
GEOLOGICAL SURVEY
AND
WATER RESOURCES
ROLLA, MISSOURI

H. A. BUEHLER
STATE GEOLOGIST
H. S. McQUEEN
ASST. STATE GEOLOGIST

December 31,
1935

Dr. F. T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin

Dear Dr. Thwaites:

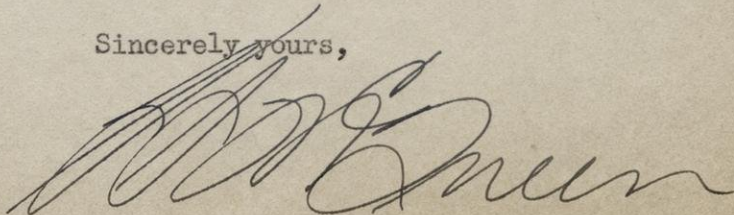
I am glad to have your letter of recent date, and extend to you my apologies for not returning the originals of the Wisconsin part of the regional cross section which you prepared for the Kansas Geological Society. I had hoped to obtain from Workman, by this time, his part of the section, but, as you know, he has been in very poor health and I understand has spent but little time in the office. I have had prints made, however, of your portion of this section and I am returning the section to you under separate cover.

I hope that your study of the samples by the insoluble residue method will progress to your satisfaction and that eventually you will publish a paper covering the results. We are more than satisfied with the results that we have obtained to date and, in fact, treat all well samples in this manner. The method is now a matter of routine in this office.

I note that studies of the Niagaran fail to give any positive results. We apparently have been more successful with the Silurian rocks and find that the insoluble residue method has been helpful, particularly in zoning comparatively thick sections of Silurian dolomite. In the preparation of our residues, we do not weigh the samples, nor do we wash the residues onto watch glasses or filter papers. The entire procedure is carried on in a 250 cc beaker and after digestion with acid has ceased, the sample is washed and the fines decanted. We find that this treatment is perfectly satisfactory for our purpose and enables us to handle a comparatively large amount of material daily.

I recently had the pleasure of a field trip with Joe Bridge, during the course of which we had an opportunity to study certain Ordovician problems and to apply to our local stratigraphy the results obtained during the recent Kansas Society trip.

Sincerely yours,



McQ P
sent 12/31/35

Dec. 19, 1935

Dr. H. S. McQueen, Asst., State Geologist,
Rolla, Missouri

Dear Dr. McQueen:

In reply to yours of the 16th I will be most pleased to get the samples from Trempealeau which you mention and wish to thank you for letting me know about them.

Last fall I sent you the original tracings of the Wisconsin part of the Wisconsin-Missouri cross section which I got up for the K. G. S. If you are through with these I would be glad to get them back although I took the precaution of having a vandyke negative made before I loaned them. There is no rush about this, for the only thing I might ever need the tracing for is to make changes on it for publication and this could almost as well be done on a vandyke positive.

I have started on a program of making and storing insolubles but we have only completed one run so far. I am devoting particular attention to the residues of the Galena-Platteville and the Prairie du Chien-Trempealeau. My feeling is that the best results will be obtained with these formation. Karges found that the Niagara was a washout. I am not spending any time on weighing but use the same volume of cuttings each time. I am using filter paper to catch the residue instead of a watch glass. This seems to work best with the help I have. Any suggestion you may have would be appreciated.

Ransch, Bays, Joe Bridge, and I all went to Limestone Mountain after the Field Conference. The results were quite a jolt as we found that the formations are folded. The structure is similar to the Des Plaines syncline in Illinois and the Glover Bluff structure in this state. I expect you have the reports on these. I am wondering if the complimentary structures to these which are commonly called "cryptovolcanic" may not be in fact related to these local synclines.

With the best wishes of the season,

Sincerely,

F. T. Thwaites

September 3, 1935

Mr. M. O. Ointon,
A. E. Mollahan Engineering Company,
Menasha, Wisconsin.

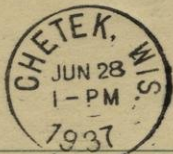
Dear Sir:

In reply to your letter of August 30, 1935 I have
no more detailed information concerning Rib Lake than that
contained in Bulletin 35 of the Wisconsin Geological Survey:

"This village has a population of 1,018, and is
located on the west bank of Rib Lake. The elevation of Rib
Lake is 1,456 feet above sea level. The formation is glacial
drift, with sandy loam surface soil and sandy gravelly drift
subsoil. Most of the private wells in the village are from
10 to 30 feet deep. One deep well at the hotel is 130 feet
deep, wholly in the drift. The city water supply, used for
fire protection only, is obtained from Rib Lake through a
12 inch intake reaching about 50 feet from the shore."

Yours very truly,

A. M. Thwaites



THIS SIDE OF CARD IS FOR ADDRESS

Mr. F. T. Thwaites
Science Hall.
U. of Wisconsin
Madison, Wis.

Chetch, June 27

Dear Mr. Thwaites:

Received my
grades from the Univer-
sity today and note
I am listed as receiving
"B" in Geography 180,
which must have been
my so-called independent
work, consisting largely
in thesis preparation. It is
just curious to know
why the "B" — being under
the impression that I had
done satisfactory work
at least up until school
closed, and would appreciate
it if you would look into
the matter and see if
an error has been made.
Sincerely,
John Mathieson

July 1, 1937

Mr. John T. Mathieson,
Chetek, Wisconsin

Dear Mr. Mathieson:

Your card of June 27 reminded me that I had forgotten to discuss with you the matter of "Independent" research. They called me from the Deans office about it and assigned the course number 180. They also stated that a report had to be turned in. I told what you had been doing and that the report would be in the thesis next year. However, I felt that it was safest to record the grade as B with a note "no report".

Now if you want to write a page or two in summary of what you did, mainly what was accomplished rather than a summary of the views, if any, of Samuel Weidman, then I could turn in a incomplete card giving you the grade of A which you undoubtedly deserve on the preparatory work.

I ordered blueprint logs of the Bloomer, Chetek, Cameron, and Clear Lake wells which I will send at an early date.

The photographs have not yet been developed. Tommy is all right again and will begin summer school on Tuesday. Now they tell me I must have the same thing done so that will delay matters for some time longer.

With best regards to all at the lake,

Sincerely,

June 28, 1937

Mr. John T. Mathiesen,
Chetek, Wisconsin

Dear Mr. Mathiesen:

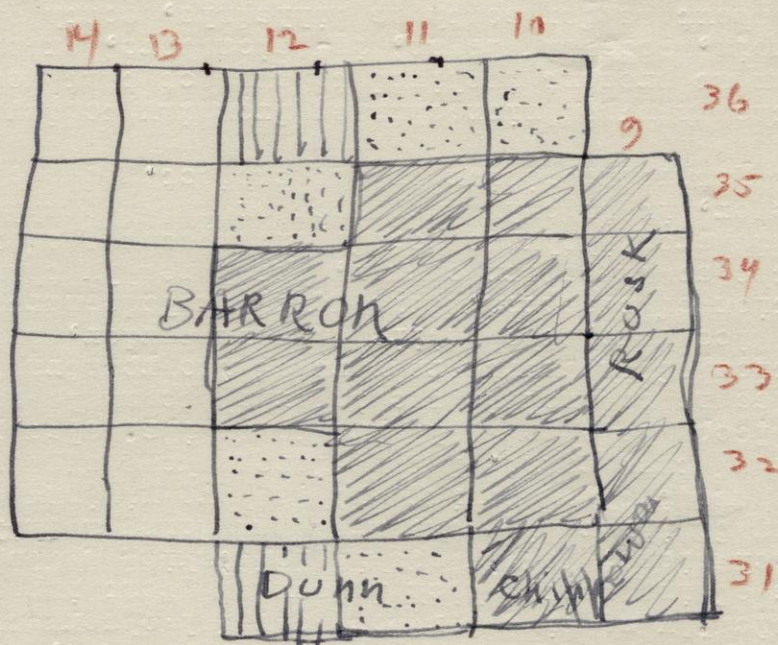
We arrived safely before 5 last Thursday after lunch at Tomah and a detour to visit a cave at New Lisbon and another to visit the new Lyndon well. Friday morning Tommy had his tonsils removed. He took it like a man and is recovering rapidly although he lost a lot of weight. We hope he will pick up a lot more now as Dr. Nesbit said his tonsils were in bad shape.


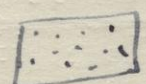
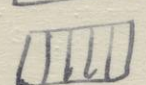
I am sending the Leverett map under separate cover. If you care to write him for more information I am sure he would be glad to help you. The address is Frank Leverett, 1724 S. University Ave., Ann Arbor, Mich. You will note that he includes the lake west of Rice Lake in the Wisconsin but excludes Poskin Lake etc. ~ Hope we will be able to settle these matters.

Have not had time to develop photos yet.

Best regards to all at the Lake.

Sincerely,



-  maps completed
-  maps partly completed
-  maps upon which some work has been done + which I suggest be completed.

In addition to this I think certain townships toward the west might be included.

Chetek, Wisconsin
July 11, 1937

Mr. F.T. Thwaites
R.F.D. # 4
Madison, Wisconsin

Dear Mr. Thwaites:

I'm taking advantage of this exceedingly warm Sunday morning to answer your letter of the 9th and to thank you for the various data which you sent and which were gratefully recieved. I am also sending a one-page summary of the 180 course---it's very short but I feel that I've said all there is to say in that respect without becoming verbose.

I am also going to bother you once more with some matters regarding my work; I feel that I am imposing upon you altogether too much with my constant interrogations, but for one who is so thoroughly a novice as I am it is practically unavoidable!

I have to date completed inked maps of ^{six} fifteen townships and nearly finished five more, with, of course, scattered strips in several adjoining townships. The enclosed rough sketch shows their location, which, as you see, comprises more or less of a block with Chetek eccentrically located. Yet this represents less than half--indeed barely a third--of the area which we had originally planned to cover, and the summer is more than a third gone. Now, I am sure that I could finish all the maps before school starts by really plugging as hard as possible between now and then, but it means that I have practically no time for more careful observation of more local points of interest, which I deem of great importance in making definite conclusions, to say nothing of taking photographs and otherwise becoming familiar with the area and doing a fairly thorough job. As it is, I have to keep moving with a bare minimum of stops in order to cover all of the ground. I therefore make a suggestion to the effect that I complete several more townships (also indicated on sketch map) so as to include the interlobate angle north of Brill, a cross-section of the northern part of the reentrant through the vicinity of Rice Lake, the entire eastern border, and a block of the central portion of the area. This would exclude part of the western border and the southwestern corner, but I really think it more advisable and more likely to be of value because of its greater detail. However, it is only a suggestion and I shall proceed as before until I get your opinion on the subject.

Although my opinion changes from day to day with new observations, I am at present inclined to suspect that we may have had an early Wisconsin, possibly Iowan, invasion here, extending across the entire area about as far south as Hillsdale, south of which eroded remnants of outwash of the same age may be found. I also think that an earlier advance of the same ice which formed the major eastern moraine extended well west of Rice Lake, probably joining a lobe from the west somewhere north of Barron. Such evidences of moraines as exist are poor and later outwash has much obscured the situation. I still know less than nothing about the older drift in the southern

part, other than to feel that considerable areas of fairly fresh deposits in valley bottoms and in some cases on uplands are probably Illinoian, while others again would seem to be older. Some sections look practically unglaciated.

The temperature has exceeded 90 here every day since the Fourth usually the highest nineties or low hundreds, too. There has been no rain in the section for two weeks and the roads are terribly dusty.

Well, I guess that's all I have to offer at this point. I hope that you have completely recovered by this time. Mrs. Mathiesen sends her regards.

Sincerely,

John Mathiesen

Chetek, Wis.
July 5th, 1937

Mr. F.T. Thwaites
R.F.D. No. 4
Madison, Wis.

Dear Mr. Thwaites:

I am finally getting around to thanking you for your letters and for the glacial map which I was happy to receive. I am pleased to note that the boundaries located by Leverette are not so radically different from those which I have tentatively mapped, more or less in my mind, at least in the eastern portion of the area. At the present time I have "finished", if there is such a thing, twelve townships and completed varying amounts in about as many more. As you know it can only be done so fast and no faster without sacrificing thoroughness. It becomes increasingly obvious that the problem will demand all of my time until the end of the summer and even then the matter will be far from a closed book! Nevertheless, I hope that certain of the questions involved will be a little less nebulous than they are now.

The fact that today is a holiday combined with the much more impressive fact that it is blistering hot has induced me to spend the day in the office catching up on draughting, correspondence, and sundry other odd jobs, including, I hope, getting a start on the report which you suggested I make for "Geog. 180". Last semester--the first of the year, that is, I investigated certain lines of Scandinavian geographical literature for Durand and made out a similar report for him. I am afraid that it will be a bit difficult to write anything particularly informative or valuable about that which I did this past semester, in view of the fact that it consisted almost entirely of assembling data and materials for the summer's field work, but I shall try to summarize it in brief as best I can and hope it meets with your approval. I'll send it on as soon as possible.

We were all glad to hear that Tommy's tonsilectomy was a success and hope that yours will follow suit.

Mrs. Mathiesen wishes to be remembered, and my regards to your family.

Sincerely,

John Mathiesen

July 9, 1937

Mr. John T. Mathieson,
Chetek, Wisconsin

Dear Mr. Mathieson:

Was glad to get yours of the 5th while recovering. I did not get off so well at Tony, of course, for my infection was of many years standing. Old Dr. Foxall who was part Indian tried the operation long ago with the sole result that he concealed the true facts from casual examination. Think I am feeling better already and trust the improvement will continue. The Doctor discharged T. from observation this morning.

Am enclosing some subsurface and structural data. When you get tired of glacial work you might try your hand at some cross sections. Next time, when you have located some decent exposures, if such exist, we will try to add to the surface geology. I would not lean too strongly on Lees. His work for a masters at Iowa would not equal many bachelor theses here if I can tell after trying to use it! The drillers logs I copied without checking but think them O.K. Cumberland is an enigma so I left that out. Maybe you can get more subsurface data. Any that you can will be appreciated.

I seem to have mixed up the entire matter about the "Individual Research". Must see Loyal II and then turn in a correction as soon as got a report so I can certify that I had one.

With regard to the glacial situation I feel a Weidman fog creeping over the area at times! When nothing would surprise me. But I do seriously think it is possible that we had a pre-Gary Wisconsin which overlies an older eroded drift being thickest in old valleys. Maybe it is really Iowan. Anyhow I am looking forward to some studies of pebbles and boulders which we had to omit in June. I figure that by September would will have located the best critical places to concentrate on. Meantime you seem to be making wonderful progress and I offer best wishes.

With regards to all,

Sincerely,

248 Hawthorne Avenue
Princeton, N.J.
Jan. 4, 1938

Mr. F.T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

I was pleased to find your letter of December 22 awaiting me upon my return from a week's trip up into New York state, and especially to hear that you are recovering from your illness, about which Mrs. Nelson had informed me. I was in New York City for a few hours during the G.S.A. meetings, just long enough to exchange greetings with a few of the Wisconsin men present and to hear further of your improved condition and the fact that they expected you to return to active duty in the near future.

I wish to thank you and Mrs. Thwaites for bringing my request to the attention of Dr. Winchell. No doubt I shall receive the desired papers before long. In the mean time I'm going to impose upon you still further for any advice or suggestions you might wish to offer in regard to a new problem somewhat akin to the first.

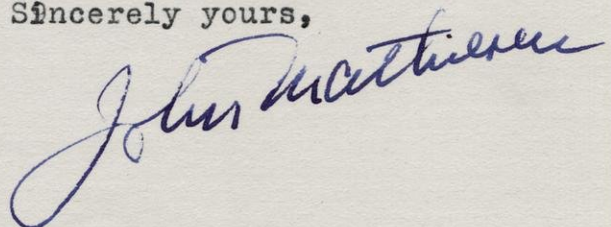
In my previous letter I indicated that it would be advantageous in various ways for me to return to Wisconsin next year. Now, if the department there cannot offer me anything, so that I must perforce remain here at Princeton, I should at least like to work up a thesis problem which would enable me to be in Wisconsin during all or part of the next two summers or so, in order that I might attend to my personal affairs as well as possible at the same time. I am wondering whether there are any problems which you feel are worthy of special attention and would form suitable thesis material, such, for instance, as the peripheral areas of Wisconsin and older drifts adjacent to the area I worked in before, the "Colby" of central Wisconsin, or the like. I am reasonably confident that if a worth-while problem could be found, Dr. Macclintock and the others here at Princeton would be willing to see me tackle it.

I might add that I had a talk with Macclintock this morning about his plans for this coming summer. As you probably know, he, Flint, and Twenhofel are laying plans for a joint attack on glacial problems ~~in~~ (and physiographic ones) in Newfoundland, long a favorite stamping-grounds for Princeton men in general and graduate students in particular. Macclintock's idea is for me to act as his assistant this next summer, thus getting the lay of the land, so to speak, and then have me work on an independent ~~thesis~~ problem the next year. However, interesting and attractive though the proposition sounds, there are several drawbacks, the most critical being that I would thus be away from Wisconsin entirely for a couple of years, which would be extremely difficult if not impossible to arrange. Furthermore, I am not sure that I can cope successfully with the physical problems which Newfoundland presents, although Macclintock assures me that most of our work will be done from boats, canoes, and the like, with relatively little foot work, and that I will be more or less able to take my time. However, I have told him of my desire to work in Wisconsin, and since an immediate decision is not needed, I have time to look for a good problem out there.

In your last letter you mentioned that the fact that I majored in geography as an undergraduate would make it somewhat more difficult for me to get into the geology department there, a fact of which I am fully aware. I hope, however, that the fact that I have been ~~so~~ in the geology department here this year, thus filling in some of the gaps left open at Wisconsin, will help in some measure.

With best wishes for the new year and for your speedy recovery, I remain

Sincerely yours,

A handwritten signature in blue ink, reading "John Matthews". The signature is written in a cursive style with a large, looping initial "J".

January 18, 1939

Dr. A. N. Winchell
Science Hall

Dear Dr. Winchell:

In connection with the application of John T. Mathiesen for a fellowship in the Department of Geology, I may say that Mr. Mathiesen was one of the most brilliant students I have had. He is a very good worker and did a remarkably good job on his thesis in northwestern Wisconsin. At the time I had him he had had mostly geography courses and I understand this defect has been remedied at Princeton. His great handicap is his lameness. He can usually get around alright although slowly, but I noticed at Devils Lake that very prolonged walking led to considerable trouble. I think, however, that he can handle most field work if there is not too great need for hurry or the going is not as bad as at Devils Lake. He is planning on taking up a study of the Colby soil area in northern Wisconsin - a continuation of the same problem which he worked on for his master's thesis.

Very truly yours,

FTT:N

F. T. Thwaites

248 Hawthorne Ave.
Princeton, N.J.
January 15, 1939

Mr. F.T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

It seems that I'll have to trouble you once more, for Mrs. Nelson tells me that the usual formal letters in regard to my application for some sort of aid in the Geology Department should be submitted. I should appreciate it very much if you would write a letter to the chairman of your department on my behalf.

I have very briefly discussed the Colby matter with MacClintock, who also feels that it presents a worth-while problem. In case I stay on here at Princeton I'm sure he will consider it a good thesis subject, though just what financial aid I'll be able to muster for work on it remains a question.

Again thanks for your time and trouble,

Sincerely,

John MacClintock

Oct. 19, 1937

Mr. A. E. McMahon,
City Hall,
Menasha, Wisconsin

Dear Mr. McMahon:

Last August 6 I delivered the tube of the
Allouez city well to your office. Previously I had sent
a statement of its cost, \$26.40 if I recall correctly.

I have not heard anything further from this
although one of your men in the office said a bill had been
sent to the Village.

If there are any vouchers to make out or
other papers to sign in order to secure payment please
advise me and I will take care of the matter.

Prompt payment would be greatly appreciated
as I have to prepare other orders and must advance
money on them.

With best regards,

Sincerely,

JAMES H. MCGRAW, JR.
CHAIRMAN OF THE BOARD
MARTIN M. FOSS
PRESIDENT
JAMES S. THOMPSON
VICE PRESIDENT
CURTIS W. MCGRAW
VICE PRESIDENT AND TREASURER
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SECRETARY & ASST. TREASURER

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March 30, 1938

Professor F. T. Thwaites
University of Wisconsin
Madison, Wisconsin

Dear Professor Thwaites:-

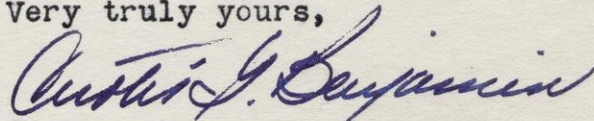
We have had pleasure in sending you with our compliments a copy of PHYSIOGRAPHY OF EASTERN UNITED STATES by Nevin M. Fenneman, Professor of Geology, University of Cincinnati.

This new book is a companion volume to Professor Fenneman's PHYSIOGRAPHY OF WESTERN UNITED STATES, published in 1931. The aim of this text is to establish order in the vast amount of geologic literature on the eastern United States and to organize the knowledge in an attempt to interpret the physiographic history of this area.

For your information, the list price of PHYSIOGRAPHY OF EASTERN UNITED STATES is \$6.50.

When you have examined this new book, we should be glad to have your opinion of it, and we shall be particularly interested to learn whether or not you find it satisfactory for use in your classes.

Very truly yours,



Curtis G. Benjamin, Manager
College Department

CGB:CC

May 5, 1938

Mr. Curtis G. Benjamin, Manager,
College Department,
McGraw-Hill Book Co.,
330 West 42nd St.,
New York, New York

Dear Sir:

I wish to thank you for yours of March 30 and the copy of Fenneman's Physiography of Eastern United States. This will be used as a text in my course next fall.

On the whole the book is an improvement over the earlier companion volume. More geological data and cross sections add much to its value. A slightly more definite attitude in respect to controverted points is evident.

That a few of the more recent papers have been overlooked in such a vast field is to be expected. I feel that if the references had been placed at the end of each chapter it would be a great help.

The least satisfactory feature is the maps. It is encouraging to have the boundaries shown on them but they are a very marked retrogression from the excellent ones of Western United States drawn by Gay-Harold Smith. In many places the dot pattern is entirely meaningless and gives the student no definite idea whatever. The half tones are many of them much poorer than where first published, a result of the difference in paper.

The faults mentioned above, are, however, of a relatively minor nature and I will be glad to find how the book works in class. I can well realize the vast amount of labor that went into this work which fills a long-felt want.

Sincerely,

George K. McConnell, born Nov. 27, 1862, died Sunday afternoon at a local hospital after an illness of a week. Until 1904 he was associated with his later father, W. T. McConnell in the grocery business. His mother was ~~the late~~ Mary H. Turvill and died in 1923. He was born on a farm near Lake Waubesa. From 1910 to 1918 he was in the automobile business as a partner in the Spooner-McConnell Motor Car Company. Since that time he has lived with his aunt, Mrs. R. G. Thwaites on the Turvill Farm near Olin Park. Services will be at the Fitch-Lawrence funeral parlors at 2 P. M. Tuesday

PLEASE GET INTO NOON EDITION

George K. McConnell, 75, died Sunday afternoon at a local hospital after an illness of a week. His father was W. T. McConnell with whom he was associated in the grocery business until 1904. His mother was Mary Turvill who died in 1923. A sister, Anna died in 1917 and a brother, Frank in 1925. Mr. McConnell never married and was the last of his family. From 1910 to 1918 he was in the automobile business as a partner in the Spooner-McConnell Motor Car Co. Since that time he made his home with his mother's sister Mrs. R. G. Thwaites on the Turvill Farm near Olin Park.

Services will be at the Fitch-Lawrence Funeral Parlors at 2 P. M. Tuesday

B-3720

ADMINISTRATIVE OFFICES
SUPERIOR STATE TEACHERS COLLEGE
SUPERIOR, WISCONSIN

JIM DAN HILL
PRESIDENT

July 1st 1936.

Mr. F. J. Thwaites,
University,
Madison, Wis.

My dear Mr. Thwaites:

I am publishing a booklet on the local geology of the Lake Superior region and would like your permission to use your drawing of a terminal moraine as used in your book on Glacial Geology.

I have gotten this up primarily for use in an elementary course in geology in this college and it is based on the field work that we do in that course.

Very cordially yours,

J. A. Merrill.

Post card July 17, 36

March 16, 1937

Professor J. A. Merrill
22 Billings Drive
Superior, Wisconsin

Dear Professor Merrill:

In reply to yours of March 9th the limestone fragment which you refer to might have come from Niagaran limestone of the Hudson Bay region. As the principal advance of the ice seems to have been from the north during the last glaciation. It is possible, however, that there are two other sources: one is the Niagaran of the Winnipeg region, and the other in the vicinity of Lake Temiskining on the Ontario-Quebec line. There is also Niagaran at Limestone Mountain near Houghton, Michigan, but I doubt that this fragment could have come from there.

I talked the matter over with Professor Shrock and he said he did not know of any way by which we could tell just which area the specimen came from. Even if found in the last drift, it might have made part of its journey during an earlier glaciation. The distribution of drift copper strongly suggests that earlier glaciation from the northwest, so it is almost impossible to trace back any given fragment to its source. However, if you would like to have us try, you might send us the specimen and we will see what we can do from the fossils.

Yours very truly,

PTT:N

F. T. Thwaites

22 Billings Drive,
Superior, Wis.
Mar. 9th 1937.

Professor F. T. Shwaites,
Madison, Wis.

My dear Prof. Shwaites:

I wish to thank you most heartily, though I have been very tardy about it, for permission to use one of your cuts of the front of a glacier from your Glacial Geology. Unfortunately the first hundred copies of my booklet was issued without giving you credit for the cut, but I caught it in time to insert due credit to you in the succeeding issues. The booklet is an attempt to explain this interesting region to the general reader and would be of no value to a scholar. I have tried to make it accurate but not scientific in a technical way.

Recently there has been found, in a gravel pit, a piece of limestone weighing about two pounds. It is a mass of honey comb and cup coral fossils with a few brachiopod casts. It must have been brought in the last Wisconsin advance but I am puzzled to know where this mass of, seemingly, Niagara fossils came from. I wonder if you have seen similar masses of limestone in this drift and if you have solved the problem of its source. If you would be interested in seeing this rock, I shall be pleased to send it to you.

Very cordially yours.

J. G. Merrill.

Prof. Thwaites:

The incomplete removal card which you sent to us for John T. Mathiesen in Geography 180 was referred to Dean Sellery. He has returned it to us marked "Not approved" which means that our record for the student still stands as a grade of B.

Registrar's Office

170 Bascom Hall --window 5

8-4-37



Dear Mr. Thwaites:

When I saw the Carabao on the picture I was reminded of the hero who lifted the calf every day until it became a bull, and his strength increased so that he could lift the bull. Has Tommie succeeded yet in lifting Bays?

We've got a few little problems out here in physiography. In order to do the job up right we need

Seasons Greetings
from the
Philippines

Ward Benjamin Meek

maps. Ever maps made by
the mapping class or with
the U. S. G. S. "Beer bottle
alidade" would be much
better than what we have.

Best wishes for a happy
future,

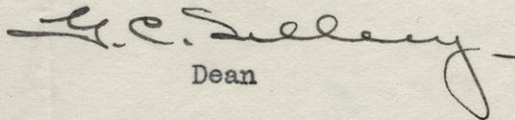
Ben H. Meek

COLLEGE OF LETTERS AND SCIENCE—MEMORANDUM

Mathiesen, John T. BA 3

May have examination in Geology 130
at a date subsequent to the regular
examination date, at a time convenient
for Prof. Thwaites and the student.

June 2, 1937


Dean

081 .5010 NOT TAKEN

The work which the writer undertook for this course during the second semester of the school year 1936-37 consisted almost entirely of gathering data and preparing materials for investigations to be conducted in the field in the region generally known as the "reentrant angle of older drift" in northwestern Wisconsin during the summer of 1937.

Probably the greatest amount of time was devoted to examining the unpublished field notes taken by Weidman, Hall, and Thwaites for the Wisconsin Geological Survey between 1900 and 1917. In all approximately 65 books were covered, chief emphasis being given to factual data, such as well records, pebble counts, and the like, over four hundred of the former being copied. Matters of interpretation were also considered, however, and, whenever the writer deemed them of immediate use or importance, recorded; and in addition to the notes concerned with the field area proper, those dealing with the railroad cuts between Eau Claire and Hudson, Wisconsin, were investigated.

Following completion of the abovementioned work, base maps of the counties involved (Chippewa, Dunn, St. Croix, Polk, Barron, Washburn, Sawyer, and Burnette) were secured from the State Highway Commission and fifty township maps on a scale of one inch to a mile constructed from them. Profiles of the several railroads within the region were then obtained and the lines and elevations plotted on the said township maps (the railroad elevation data were subsequently checked against a USGS benchmark and modified accordingly).

Copies of Bulletin 77A, Kellogg's study of Wisconsin soils types, and of Weidman's soils map of northwestern Wisconsin were secured and studied for their bearing on the soils and drift of the field area, and, lastly, a brief survey was made of published works on the region by Weidman, Leverett, Chamberlin, and Strain, and a certain amount of time, both in and out of class, devoted to a very general review of certain of the principals of glacial geology.

The work which the writer undertook for this course during the second semester by the school year 1936-37 consisted almost entirely of gathering materials for investigations to be conducted in the field in the region generally known as the "resistant angle of older drift" in northwestern Wisconsin during the summer of 1937.

Probably the greatest amount of time was devoted to examining the unpublished field notes taken by Weidman, Hall, and Thurston for the Wisconsin Geological Survey between 1900 and 1917. In all approximately 65 books were covered, chief emphasis being given to factual data, such as well records, pebble counts, and the like, over four hundred of the former being copied. Matters of interpretation were also considered, however, and whenever the writer deemed them of immediate use or importance, recorded; and in addition to the notes concerned with the field area proper, those dealing with the railroad cuts between New Claire and Hudson, Wisconsin, were investigated.

Following completion of the aforementioned work, base maps of the counties involved (Chippewa, Dunn, St. Croix, Polk, Barron, Washburn, Sawyer, and Ironstone) were secured from the State Highway Commission and fifty township maps on a scale of 1:25,000 to a mile constructed from them. Profiles of the several railroads within the region were then obtained and the lines and elevations plotted on the said township maps (the railroad elevation data were subsequently checked against a USGS benchmark and modified accordingly).

Copies of Bulletin 77A, Keller's study of Wisconsin soil types, and of Weidman's soils map of northwestern Wisconsin were secured and studied for their bearing on the soils and drift of the field area, and, lastly, a brief survey was made of published works on the region by Weidman, Everett, Chamberlain, and Britton, and a certain amount of time both in and out of class, devoted to a very general review of certain of the principles of glacial geology.

41 Roby Road

March 20, 1939

To whom it may concern:

When I purchased the residence at 41 Roby Road last October I was given to understand by the salesman for Paul M. Stark Co. that the location was in a zone where fraternity houses were barred. Had we known that there was danger of the zone being changed so as to allow such noisy neighbors who would depreciate the value of adjacent property we might not have purchased the house.

Mickelson

March 28, 1939

Dr. E. T. Miller, Chairman,
Dept. of Geology,
Lehigh University
Bethlehem, Pennsylvania

Dear Sir:

In reference to the application of Mr. G. O.
Mickelson for a fellowship at your University I have
found him to be a very good and hard-working student.
He has a pleasing disposition and seemed to get along well
with the others in camp. I am confident that you would like
him.

Very truly yours,

Feb. 11, 1939

Mr. Ben W. Meek,
Bureau of Mines,
Manilla, P. I.

Dear Mr. Meek:

Ever since your letter came a year ago Christmas we have intended to answer it for we realize how lonesome it is in foreign parts.

Well, as long as we stayed at Turvillwood and especially while my mother was so ill there just did not seem to be any time at all to write personal letters.

Shortly after my mother passed away on Aug. 14 we discovered accidentally that secret moves were being made to deprive us of any voice in the management of the place. It ended in Harry Turvill buying us out and in our moving to this house on University Heights.

Unfortunately I was taken ill on the day we started to move. Amy had to carry the whole burden of moving and buying the house which thanks to our selling for cash over there is now actually paid for. It is much nicer for the youngsters for we are only two blocks from the school. We also seem to have much more free time and more energy so that we are actually answering letters now!

Best wishes from both of us,

11-23-38

218 Guyot Hall
Princeton, N.J.
November 15, 1938

Mr. F.T. Thwaites
Dept. of Geology
Science Hall
Madison, Wis.

Dear Mr. Thwaites:

I am taking the liberty of writing to you at this time in regard to certain matters which might more properly be brought to the attention of the chairman of the department. However, I feel that I know you better than the other men on the Geology faculty at Wisconsin, and that you are more immediately familiar with my "case history" than they.

Before going further I might say that Mrs. Mathiesen and I are now well settled in Princeton, and although the social life of the community is not altogether to our liking, I have found the Geology department itself a congenial and well-equipped place. My time is pretty well taken up by twenty or more hours each week of departmental work, in addition to a full academic schedule. Most of the latter is devoted to certain fundamentals which I had missed as a Geography major, including paleontology, mineralogy, and some review in chemistry. The only purely graduate course I am taking this semester is one in advanced structure. During the first semester, at least, I will be too busy with routine matters to start any research.

The one serious difficulty which confronts me at this time is the consideration of what plan to follow next year. The department here apparently wishes me to return, and is willing to provide somewhat more substantial monetary aid than at present. Unfortunately, however, a number of personal reasons probably will make it next to impossible for me to be this far from home next year, and I should like to know whether or not there would be any chance for me to secure an assistantship, fellowship, or other form of aid at Wisconsin. In case you do not wish to make any definite statements or suggestions in this regard yourself, perhaps you could bring the matter to the attention of the proper authorities within your department--providing of course such does not cause you too much inconvenience. If it appears that a suitable opening might exist I shall make formal application through the regular channels and at the proper time.

With best personal regards,

Sincerely yours,
J. H. T. Mathiesen

----- 41 Roby Road

Dec. 22, 1938

Mr. John T. Mathiesen,
218 Goyot Hall,
Princeton, New Jersey

Dear Mr. Mathiesen:

Yours of Nov. 15 arrived while I was suffering from a severe bronchial cold which kept me in bed for six weeks, four of them in the hospital. I am still confined to my room although my temperature is now practically normal.

However, Mrs. Thwaites took the letter to Dr. Winchell who promised to send you application blanks. I know very little about such matters myself although I fear that it will be harder to get into geology after having been a geographer than is you had majored in geology as an undergrad. Nevertheless I will try my best for you if I can do anything.

Please note the change in address above. My mother passed away last August after a six months illness. Shortly afterward it became apparent that secret efforts were being made to oust us from any say in the management of the place. This culminated in our being bought out on Oct. 14 and in moving

on Nov. 8 just after I was taken ill,

8036 Watkins Dr.
St. Louis, Mo.
Dec. 27, 1938

Dear Mr. Thwaites,

I was very pleased to learn that you had returned home, and surely wish for your rapid complete recovery.

This vacation I've spent some time making further profiles, both in Iowa and Missouri.

I hope that George was able to correct the reports satisfactorily, and presume you have been in touch with him.

Please remember me to Mrs. Thwaites and the boys, and I wish to extend the season's best wishes to all of you,

Sincerely
Arnold C. Mason

Have had an interesting time reading your Bulletin 25 thoroughly.

February 9, 1939

Mr. Curtis G. Benjamin, Mgr.
College Department
McGraw-Hill Book Company, Inc.
330 West 42d Street
New York, N. Y.

Dear Sir:

In reply to yours of January 6th, I have read "General Cartography". It is an excellent book for geographers and gives much information not easily obtainable elsewhere. But it treats details too briefly to have much value to geologists and is not at all suitable for my course in geological mapping.

Some of the author's statements, such as his condemnation of lettering guides, I cannot agree with.

Thank you for the book.

Very truly yours,

F. T. Thwaites

JAMES H. MCGRAW, JR.
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JOSEPH A. HYLAND
PRODUCTION DEPARTMENT
HUGH J. KELLY
TRADE DEPARTMENT

January 6, 1939

Professor F. T. Thwaites
University of Wisconsin
Madison, Wisconsin

Dear Professor Thwaites:

We have been pleased to send you a complimentary copy of GENERAL CARTOGRAPHY, by Erwin Raisz, Institute of Geographical Exploration, Harvard University.

This is the first American textbook on cartography which presents the subject matter in a form expressly designed to meet the needs of the college student of geography. The author says in his preface:


"The field of cartography is a wide one. While it has definite contacts with such varied studies as history, mathematics, and art, it comprises within itself a well-rounded course, without trespassing upon other branches of geographical science and without taking in the special subject of surveying."

Simplicity is the keynote of the book. Every effort has been made to present the subject of map making in clear, understandable terms, with a minimum of mathematics. Strictly up to date, the book includes the results of the International Congress of Geography of 1938. New material is presented in the chapters on American cartography, and there are interesting and original treatments of physiographic methods of relief, map drawing composition, cartogram, land use maps, and scientific maps.

For your information, the list price of GENERAL CARTOGRAPHY is \$4.00.

When you have had an opportunity to examine this new book, we shall welcome your opinion of it, and we shall be especially interested to learn whether you find it suitable for use as a text in your course.

CGB:HO

Very truly yours,

Curtis G. Benjamin, Manager
College Department

reply over

In reply to yours of Jan 6 I have read
"General Cartography". It is an excellent book
for geographers and gives much information
not easily obtainable elsewhere. But it
treats details too briefly to have much value to
geologists and is not at all suitable for my
course in geological mapping.
Some of the authors statements such as his
condemnation of lettering guides I cannot agree with.
Thank you for the book.

MAGNOLIA PETROLEUM COMPANY

A SOCONY-VACUUM COMPANY

PRODUCING DIVISION

S. A. THOMPSON
CHIEF GEOLOGIST

W. W. CLAWSON
ASSISTANT CHIEF GEOLOGIST

HENRY C. CORTES
GEOPHYSICAL EXPLORATION

DALLAS, TEXAS

December 12, 1938.

Mr. F. T. Thwaites,
Department of Geology,
Science Hall,
Madison, Wisconsin.

Dear Sir:

Mr. Joseph T. Drindak has applied for a position as geologist with Magnolia Petroleum Company and has given your name as a reference.

We would be pleased to have your opinion of Mr. Drindak's professional ability and his record as a student. As you probably are aware, we can use only men with adaptable personalities, as it is necessary for our geologists to work in large groups with men from all stations in life. Any information you can give us will be greatly appreciated.

Thanking you in advance, I am

Very truly yours,

S. A. Thompson

SAT/d

In reply to yours of the 12th Mr. T. T. Brundage
 has always proved a good, careful and dependable
 worker. He is thoroughly reliable and I have no
 hesitation in recommending him very highly. His personality
 is good and everyone likes him.

DALLAS, TEXAS
 December 12, 1938.

H. A. THOMPSON
 CHIEF GEOLOGIST
 W. W. CLAWSON
 ASSISTANT CHIEF GEOLOGIST
 HENRY C. CORTES
 GEOLOGICAL EXPLORATION

Mr. T. T. Brundage,

Department of Geology,
 Science Hall,
 Madison, Wisconsin.

Dear Sir:

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 position as geologist with Magnolia Petroleum Company
 and has given your name as a reference.

We would be pleased to have your opinion
 of Mr. Brundage's professional ability and his record
 as a student. As you probably are aware, we can use
 only men with adaptable personalities, as it is
 necessary for our geologists to work in large groups
 with men from all stations in life. Any information
 you can give us will be greatly appreciated.

Thanking you in advance, I am

Very truly yours,

[Handwritten signature]

5/TAB

41 Roby Road

Dec. 20, 1938

Mr. S. A. Thompson,
Producing Division,
Magnolia Petroleum Company,
Dallas, Texas

Dear Sir:

In reply to yours of the 12th Mr. J. T. Brindak
has always proved a good, careful, and depenable
worker. He is thoroughly reliable, his personality
is good and everyone seems to like him. I have no
hesitation in recommending him very highly.

Very truly yours,

Agreement for House Heating Gas Service

(Available to Residential Customers in urban territory who use gas
as major fuel in central house heating equipment)

Agreement entered into this Ninth day of November, 1938,
between the MADISON GAS & ELECTRIC COMPANY, hereinafter called the Company and
Frederick T. Thwaites, hereinafter called the Customer, both of Madison, Wisconsin.

The Company agrees to furnish to the Customer, and the Customer agrees to take from the Company during the period
of one year, beginning November 8, 1938, gas for his entire heating requirements at the
premises known as 41 Roby Road.

The agreement shall continue in effect for one year after the expiration of said one-year period unless either party shall
give written notice to the other, at least thirty days prior to the expiration of said one-year period of its desire not to continue
the same, and thereafter shall continue in effect for successive periods of one year each unless like notice be given at least
thirty days prior to the expiration of any such yearly period.

Customer agrees to pay for said service to be furnished by the Company according to the following rates and provisions:

First 400 cu. ft. or less per month	Gross \$.60, Net \$.55
Next 1,600 cu. ft. per month per M. cu. ft.	Gross .95, Net .90
Next 3,000 cu. ft. per month per M. cu. ft.	Gross .90, Net .85
Next 5,000 cu. ft. per month per M. cu. ft.	Gross .85, Net .80
Over 10,000 cu. ft. per month per M. cu. ft.	Gross .65, Net .60
Minimum Monthly Charge—Gross \$.60, Net \$.55	
Annual Minimum Charge—\$100.00 net	

The 60c rate for gas used in excess of 10,000 cubic feet is subject to reductions depending upon the price of No. 3 fuel
oil, as shown in the following scale of price relations. For the purposes of this clause the price of oil shall be the average of
the daily prices for the calendar month preceding the billing date, determined from the quotations to the public by the Stand-
ard Oil Company of Indiana for No. 3 fuel oil delivered in City of Madison to customers' premises in 150 gallon lots. The
price of gas for consumptions in excess of 10,000 cubic feet per month shall not be more than 60c net nor less than 45c net
per MCF. The company will notify the customers of and file with the Public Service Commission any changes in the billing
price of gas under this oil clause provision.

SCALE OF PRICE RELATION

Gas	Oil	Gas	Oil
\$.60	\$.102	\$.52	\$.087—\$.086
.59	\$.101— .100	.51	.085— .084
.58	.099— .098	.50	.083— .082
.57	.097— .096	.49	.081— .080
.56	.095— .094	.48	.079— .078
.55	.093— .092	.47	.077— .076
.54	.091— .090	.46	.075— .074
.53	.089— .088	.45	.073— .072

The difference between the bills computed at the gross rate and at the net rate will be allowed as a discount if the bill is
paid within the discount period of approximately ten days as indicated on each bill.

Gas used for other purposes will be combined with house heating for one billing under this schedule.

This schedule does not permit the remetering or the redistribution of gas to tenants or others for household or any other uses.

In all matters not specifically mentioned, the rules and regulations of the Company, a copy of which is on file with the
Public Service Commission of Wisconsin, shall be deemed applicable.

Amy M. Thwaites
41 Roby Road
Customer
Address

MADISON GAS AND ELECTRIC COMPANY

B. J. Johnson
Vice-President and General Manager

----- 41 Roby Road

Jan. 7, 1939

Mr. John Mathiosen,
248 Hawthorne Ave.,
Princeton, New Jersey

Dear Mr. Mathiosen:

Yours of the fourth is at hand. I checked up today and found that Mrs. Nelson had never sent the application forms. I waited until I saw here put them into an envelope so hope they reach you this time.

I am back at work, rather shaky and apt to perspire at the least exertion or excitement but looking and feeling quite well. However, I must be very careful for some time to come and the doctor wants another X-ray before final discharge.

In regard to a problem in this state I think the Colby question would be fine. I did a few hours work on it last summer in western Langlade County and now support Weidman in his young Third Drift. In fact I am showing the Third Drift as Wisconsin in the 1939 edition of the Outline on which I am now working as rapidly a health and duties will permit. I admit it is premature and probably unjustified but it is all I can do just now. I feel that a final answer must depend upon studies over the entire Colby area and certainly hope that you can undertake this work.

In regard to Newfoundland I share your views and feel that only the hardiest should undertake much foot exploration in that country. I am afraid that you would feel compelled to try to keep up with the others and so overdo. However, maybe my personal desire to get you to work on problems I am interested in may warp my judgment!

I will do my best for you here but fear that will not be much in view of past experiences!

With best regards,

Sincerely,

248 Hawthorne Avenue
Princeton, N.J.
April 21, 1939

Mr. F.T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

With the Summer season coming closer (though we'd hardly suspect it here) I have given a little more thought to the impending field work and looked through such literature as is available, which, needless to say, isn't much. I have also written to the Wisconsin Highway Department for maps to make base-maps from, so that I can get them started, at least, before I leave Princeton, although I have relatively little spare time to devote to the matter.

It seems to me that the most likely place to start work will be in western Clark and southwestern Taylor Counties, say in the block of twelve townships from R.2 W. to R.4 W. and from T.27 N. to T.30 N. Here one finds not only the Colby proper, but all four of Weidman's drifts as well, condensed in a relatively short cross section. I should like to know if city well logs are available for the towns in that area, namely Eidsvold, Thorpe, Withee, Owen, and Greenwood, and would appreciate it very much if copies could be obtained.

I would also appreciate it very much if you would let me know whether the railroad profiles for this section are in the Survey files. The ones concerned would be the Soo Line Marshfield-Gilman, Chippewa Falls-Abbotsford, and (for subsequent use) Marshfield-Medford, the C. & N.W. Marshfield-Wausau and Neillsville-Marshfield, and, lastly the old Fairchild & Northeastern (I'm not sure what that is now.)

Other wells which will be valuable later, if they can be obtained, are those at Medford, Dorchester, Colby, Abbotsford, Unity, Spencer, and Marshfield.

I am trying to arrange my affairs here so as to be able to leave around the first of June. It's still very doubtful, however, and it may be two or three weeks later. The sooner I get there the more time I can put in in the field, and I certainly am anxious to get started. Incidentally, will it be possible for me to borrow a Paulin and a Brunton from you again this year?

I look forward to hearing from you in the near future, but there is, of course, no hurry about any of it.

Sincerely, J. H. Mathews

May 4, 1939

Mr. John T. Mathieson,
248 Hawthorne Ave.,
Princeton, New Jersey

Dear Mr. Mathieson:

I was glad to get yours of April 21 but am afraid that I cannot supply you with many well records. I have a log of a well at Colby and a few others, mostly very poor records.

I note that we have profiles of the Soc as far east as Ladysmith, also Abbotsford-Athens, Athens-Goodrich, and Owen-Ladysmith. Think these are all detailed but did not have time to look at all of them. On the Northwestern we have Antigo-Pelican, Foxwood-Wausau, Marshfield-Foxwood, Ormsby line. Have not checked these on maps but we can get whatever we need within a short time. I have a map somewhere but have mislaid it which shows just which lines we had detailed profiles for at time it was made.

Your choice of a place to start is all right so far as I can see. You can get instruments whenever you want them. I intend to go north in August to visit farms we have acquired or are selling.

Some counties have now W. P. A. maps but have not found out which.

248 Hawthorne Avenue
Princeton, New Jersey
April 3, 1939

Mr. F.T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites:

Events during the past few days have taken a surprising, if pleasant, turn. I must confess that I have been in a bit of a quandry, for on the same day I recieved the offer of a fellowship from Wisconsin and one from Princeton. Now, as I had previously said, there are many reasons why I'd prefer to be at Wisconsin, and I am very happy that a chance to do so has come my way. As a matter of fact I was practically amazed; at least I had not expected such a liberal offer. Here at Princeton they very kindly offered me a fellowship which pays \$400 over and above all fees, and also offered to provide about \$100 toward field expenses this summer. However, the trips to and from Princeton would no doubt more or less cancel the advantages of field expense aid, so that I'll still be ahead financially at Wisconsin. Another factor is that I would be assured of at least as good an appointment the following year at Princeton. On the other hand I suppose I am justified in believing that, providing I aquit myself properly, I will be able to get something out there, too. As far as purely academic factors are concerned I'm sure there is little to chose from between one place and the other, but at Wisconsin you would be much more immediately concerned with the work I'm doing than MacClintock could be. I also feel that it is unwise for a man to put in his entire scholastic career at one institution, but now that I've been away for a year I have at least been exposed to other influences and had the advantages of certain new points of view. Lastly, both Mrs. Mathiesen and I are definitely partial to Madison as a place to live, though I hasten to add that as far as the Department of Geology at Princeton is concerned, a more happy and satisfactory place to work could not be imagined. Professor MacClintock and the others here have been most considerate and helpful, and it is truly fine to know that I leave with their blessings and good wishes, so to speak. So, the upshot of all this is that I am accepting the offer at Wisconsin and look forward to starting my work there in the not-distant future.

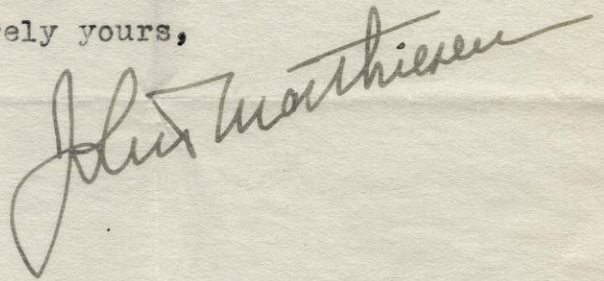
Before I had made any of these decisions I talked

at some length about my thesis plans with MacClintock. He agrees that the "Colby Question" is a fine one to tackle. The way things look now I hope to be able to put in about six to eight weeks in the field this summer. I intend to stop over in Madison on my way out to talk things over with you, and, if possible, lay out a plan of attack, get together such data as can be gotten in Madison, etc. The system which I've had in mind (I'd appreciate any suggestions you might wish to make on the point) is to devote the first summer to rather intensive study in one or more typical, representative type localities, if such can be found upon preliminary reconnaissance, and then try to apply whatever principles are thus evolved to the area as a whole later.

I am unfortunately unable to tell just when we will get back to Wisconsin, although I am certain it will be after the middle of June, and probably not until the end of the month. I should appreciate it if you would, at your convenience, let me know if and when you will be in Madison, so that I may get in touch with you as soon as possible.

With best personal regards,

Sincerely yours,

A handwritten signature in cursive script, reading "John MacClintock". The signature is written in dark ink and is positioned to the right of the typed name "Sincerely yours,".

March

Glenn D. Roberts
John Ernest Roe
W. Wade Boardman
Gordon Sinykin
Frederick C. Suhr

Law Offices of
ROBERTS, ROE & BOARDMAN
SUITE 512, ONE WEST MAIN STREET
MADISON, WISCONSIN

Telephones
Badger 130 and 131

March 27, 1939

Mr. F. T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

Your statement regarding the purchase of your premises has been forwarded to me by Mrs. Morehouse.

I have revised the statement and drafted it in the form of an affidavit. If you find the affidavit to be satisfactory, I would appreciate your signing and returning it to me.

Very truly yours,

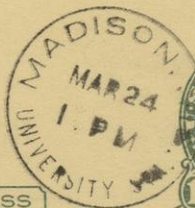
ROBERTS, ROE & BOARDMAN
By

Frederick C. Suhr

FCS:FR
Enc.

Frederick C. Suhr

THIS SIDE OF CARD IS FOR ADDRESS



1939

Prof F. T. Thwaites
48 Roby Road
Madison, Wis.

March

HEARING POSTPONED

At request of Guardian Life the hearing on its application to sell 1820 Summit Avenue as a fraternity scheduled for noon, Monday, March 27th has been postponed. We will inform you when a new date is arranged.

March - Glicksman - Morehouse

November 6, 1939

McGraw-Hill Book Company Inc.
McGraw-Hill Building
330 West 42th Street
New York, New York

Dear Mr. M. M. Gallagher:

In reply to yours. I have not yet been able to read all of the complimentary copy of Lobeck's GEOMORPHOLOGY for which I wish to thank you. As far as I have gone, I was much pleased with it. However, it does not quite meet the needs of a text for Physiography of the United States although I am using it as a reference book. The students seem to find it a great help in this way. But for a text, I am still using Fenneman's book in spite of their vagueness and length.

Very truly yours,

F. T. Thwaites

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November 3, 1939

Professor F. T. Shwaites
University of Wisconsin
Madison, Wisconsin

Dear Professor Shwaites:

May we bring to your attention at this time Lobeck's GEOMORPHOLOGY, a complimentary copy of which we sent you on publication in June? This book has been so well received in other institutions that we want to make sure you do not overlook it when selecting textbooks for your second semester courses.

Enclosed is a sheet which contains several specific comments we have received, and below is a representative list of the twenty-two colleges and universities which have already adopted the book:

California Institute of Technology	Ohio State University
University of Pennsylvania	Clark University
Cornell University	Columbia University
University of Utah	Syracuse University
University of Washington	Vassar College

We should like to have your own comments about Lobeck's GEOMORPHOLOGY, and especially your decision regarding its adaptability to use in your course.

Very truly yours,

M. M. Gallagher
M. M. Gallagher
College Department.

MMG:DS

In reply to yours I have not yet been able
to read all of the complimentary copy of *Physical
Geomorphology* for which I wish to thank you.

As far as I have gone I was much
pleased with it. However, it does not quite

meet the needs of a text for Physiography
of the United States although I am using
it as a reference book. The students
seem to find it a great help in this way.

But for a text I am still using

Fenneman's book in spite of their vagueness,
and length.

Very truly yours,

M. E. Gallagher
College Department.

~~xxxxxxxx~~ 41 Roby Road,

Aug. 6, 1939

Mr. F. L. Musbach,
State Experimental Farm,
Marshfield, Wisconsin

Dear Mr. Musbach:

Yours of July 7 has been on my desk a whole month waiting my decision as to when to go north.

I now think I will be able to leave here on Monday, Aug. 14. I have to go to Morrill first and depending on what time it takes to inspect one farm there I should reach Marshfield either on the afternoon of the 1 Tuesday and certainly by Wednesday morning.

I will greatly appreciate a conference on the Colby soil problem with both Nelson and you. I figure on two to two and a half days in the field. I then want to make some more inspections of farms in Polk and Barron Counties and get home either on Saturday or Monday.

Very truly yours,

Box 80, Curling, Nfld.
July 30, 1939

Dear Mr. Thwaites,

Dr. Twenhofel, joined by Dr. McClintock of Princeton, has had a busy time climbing many of the flat tablelands hereabouts in his study of glaciation. He has had me working on the Humber River drainage for my master's thesis.

Coming ahead of the others to the Humber Arm, a beautiful fjord, I had opportunity to study the lower Humber in its narrow gorge before Franz Dykstra was detailed to accompany me down the swirling rapids of the flood-swollen Upper Humber. From Deer Lake we went eastward to make a complete loop about Grand Lake, and visited the Am. Smelting and Refining Company's large Buchans lead-zinc mine.

Bill Twenhofel has spent the last several weeks working on the stratigraphy of the Humber Arm series for his Bachelor's thesis, and Dyke plans to do the same for the north side of the Arm. We will leave towards the end of the summer just before Labor Day.

Please remember me to Mrs. Thwaites, and with best wishes for a pleasant summer,

Sincerely,

Arnold

UNIVERSITY OF WISCONSIN
COLLEGE OF AGRICULTURE
MADISON, WISCONSIN

DEPARTMENT OF SOILS

MARSHFIELD, WISCONSIN

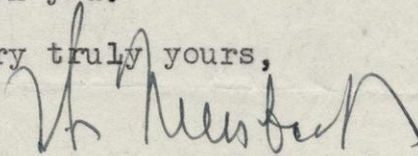
July 7, 1939

Professor F. T. Thwaites
Science Hall
University of Wisconsin
Madison, Wisconsin

Dear Professor Thwaites:

Mr. Lewis Nelson, one of your former students, informed me that you plan to be in Central Wisconsin in the near future to look over some of our geological formations. I should like very much to be here when you plan to come. Will you please let me know in advance a few days of your coming so that I can make arrangements to spend a little time with you?

Very truly yours,



F. L. MUSBACH.

FLM:LD

XXXXXX

April 10, 1939

Mr. John Mathieson,
248 Hawthorne Ave.,
Princeton, New Jersey

Dear Mr. Mathieson:

I was very glad to get yours of the third and to learn that you intend to return to Wisconsin and work on the Golby problem.

We are now almost settled in the new house and do not expect to be out of town except for field trips and the A. A. S. at Milwaukee in June until August. I will be able to see you almost any time in June except for the time of the meetings at which I have to conduct at least one field trip.

Things are not going well for the University, however. We are faced with a flat 10 percent cut at once and all purchases have been held up. What will happen next year we have no idea but it will be a cut anyhow.

In August I expect to go to Barron County to visit some of the farms we have unwillingly acquired. One of them, the A. A. Dahle place is not far from Rice Lake.

Sincerely,

BENJAMIN L. MILLER
A. HENRY FRETZ
LAWRENCE WHITCOMB
DONALD M. FRASER
ROBERT D. BUTLER

LEHIGH UNIVERSITY
DEPARTMENT OF GEOLOGY
BETHLEHEM, PA.

April 8, 1939.

Professor F. T. Thwaites,
41 Roby Road,
Madison, Wisconsin.

Dear Professor Thwaites:

I wish to thank you for your letter recommending Mr. Gaylord Mickelson for the New Jersey Zinc Company Fellowship in Lehigh University. We received a number of applications from extremely promising persons so that the decision was a difficult one to make. Mr. G. A. Rynearson, a graduate of the California Institute of Technology, was finally selected.

With best wishes.

Very sincerely yours,

Benj. L. Miller
Benj. L. Miller.

BLM:T

XXXXXX

May 26, 1939

Mr. John Mathieson,
248 Hawthorne Ave.,
Princeton, New Jersey

Dear Mr. Mathieson:

I now find that I will have to visit some of our farms in Polk and Barron counties before July 1 in order to pay up at least one year's back taxes to protect titles.

Now I had to sell my Chevy as I had no place to keep it here. At the same time we turned in the old Buick on a new one. And I do not think it would look well for me to visit that district in a new car.

I was wondering if you will possibly be a Chetok about the last week of next month and could either take me around for it is not far or introduce me to someone who would do so.

I have a soils man in Glacial who is working on agriculture on the Colby soil. He is stationed at Marshfield and says he will be glad to cooperate with you and furnish all data they have there. His name is Nelson. I will also be up later in the summer.

Withbest regards to both of you,

XXXXXX

June 8, 1939

Mr. John T. Mathioson,
Chetek, Wisconsin

RFD 2

Dear Mr. Mathioson:

In reply to your letter I had Miss V. order the
Soo profile from Abbotsford to Ladysmith. It will be
sent here and I will have to get it to you later.

In regard to coming up I am in a bad jam as
they advanced the date of the A.A. A. S. meetings at
Milwaukee to June 19 and 20. I am to give a glacial
trip out of there on the 20th and will return to
Madison by train from Walworth. Now this leaves so
little time between my last exam and the meeting that I
am afraid there would be no time to go out with you.
But if I put it off until after the meetings then I am
afraid you will not have the time. I will have to
come up by bus during the day as it is useless to sit
up all night on the train both ways and thus not feel
like anything the next day.

Please advise me what is best from your standpoint.

Sincerely,

XXXXXXX 61 Roby Road

June 23, 1939

Mr. John Mathieson,
Chetek, Wisconsin

Dear Mr. Mathieson:

I think that you could not have received my last letter as I have had no reply.

The profiles came today and Miss V. was to forward them to you. She wants them back when you are through with them.

Owing to a change in the date of the A. A. A. S. field trip, which drew the magnificent number of eight, I was unable to get up north. However, I decided to use some of the cash in my mother's estate to pay up all the back taxes on the four farms. They had run six years!

The boys start summer school next week and I have several rush jobs on well records. We now have two good records at Dorchester, by the way.

When would suit you best to have me come up and go over your area as well as the farms? *Prefer August*

Best regards to both of you,

Sincerely,

101 Ely Place,
Madison,
May 27, 1939.

Mr. F. T. Thwaites,
41 Roby Road,
Madison.

Dear Mr. Thwaites:-

No decision on selling 1820 Summit Avenue to a fraternity has as yet been given by the Board of Appeals. About forty-five neighbors attended the hearing and it was generally felt that our attorney, Mr. Suhr, made a good presentation of our case. In addition, Mr. Kirchhoff, the new state architect, stated that in his opinion property values in the neighborhood would be adversely affected if the house goes to a fraternity.

Mr. Suhr's fees for handling the case through the Zoning Board are \$190. Fourteen neighbors have contributed ten dollars each which leaves a deficit of \$50. We are attempting by means of this letter to reach a few others who might be sufficiently interested to make some contribution. If you are able and willing to help, please make out your check to Roberts, Roe and Boardman for whom Mr. Suhr works and send to the above address.

Sincerely yours,

Harry Glickman

H. W. March

E. W. Morrison

George S. Wehrwein

101 Ely Place
Madison, Wisconsin
October 14, 1939

Dear Neighbor,--

I am closing the books, permanently I hope, on our zoning fight to prevent the Garrison house from going to a fraternity and want to send a statement to all contributors.

On April 24, 1939 Building Commissioner Gordon Nelson denied the application of the National Guardian Life Insurance Company to sell to a fraternity. The Guardian Life then appealed this decision to the Zoning Board of Appeals. At this hearing Mr. Suhr represented the neighborhood. The fee for his work and appearance before the Board was \$190 and was met by the following contributors:

Dr. R. W. Huegel	Mr. A. P. Gale	Mrs. R. E. Burns
Mrs. A. J. Riker	Mr. Harry Glicksman	Mr. George S. Wehrwein
Mr. Chancey Juday	Mr. Wm. H. Kiekhofer	Dr. G. F. Kennedy
Mr. A. W. Schorger	Dr. O. O. Meyer	Mr. Philip Kuehne
Mr. R. S. Hartenberg	Mrs. J. M. Kloststad	Mr. Harry D. Tiemann
Mr. Raymond J. Roark	Mr. Paul F. Clark	Mr. E. W. Morehouse
Mr. Michael Guyer	Mr. H. W. March	

The Board of Appeals on July 28, 1939 reversed Mr. Nelson's decision and gave the Guardian Life permission to sell to a fraternity. We then appealed this decision and on August 19, 1939 Judge Reis of the Circuit Court reaffirmed the Building Commissioner's decision, saying that the non-conforming use of the property had been discontinued during the Garrison occupancy and it could now only be used as a single family residence. The cost of this appeal was \$117.37 - \$105 for legal fees and 12.37 for incidental expenses.

This bill was met by the following people:

Dr. John Harris	Mrs. Margaret Glicksman	Mr. George Wehrwein
Dr. O. O. Meyer	Mr. S. S. Hartenberg	Mr. A. P. Gale
Dr. Ray Huegel	Mrs. Wm. W. Marling	Mr. H. W. March
Mrs. O. A. Kloststad	Mrs. R. E. Burns	Mr. Roger C. Kirchhoff
Mr. Chester Lloyd Jones	Mrs. A. J. Riker	Mr. E. W. Morehouse
Mrs. Margaret M. Roark	Mrs. J. W. Jones	<i>M. F. T. Thwaites</i>

and one anonymous contribution. Sherman Morris, in lieu of a financial contribution, gave legal and other help.

We hope the matter is definitely settled but the Guardian Life has six months in which to file an appeal and I hear a rumor from time to time that they may do so. If nothing is done by February 20th, the decision rests and cannot be altered.

We are deeply appreciative of the splendid interest and cooperation, financial and otherwise, shown by you all. Anyone wanting more detailed information on the financial set-up may get it by calling me.

Sincerely yours,

Anna E. Morehouse

Anna E. Morehouse
For the Committee
March-Gale-Glicksman-Wehrwein-Morehouse
Morehouse

Deshpeming, Michigan
September 15, 1939

Dear Professor Shwartz,

I'm very sorry I never wrote to you sooner. I was appointed to the half-time assistantship at Michigan State College. I told Alfred Fischer to ask you if you would write me a letter of recommendation for the assistantship and I presume you did. I intended to see you before I left but I signed up for a geologic field course and had to hurry up here to Deshpeming.

This course has been very interesting. Rozinn is in charge; you probably remember him - he got his doctor's at Wisconsin in '33 and did his thesis on this area. We are mapping the Pre-Cambrian metamorphics of the Marquette Syncline. The peridotite and iron-formations are quite magnetic and so we have to use sun-compasses to make our traverses. Last week it was quite cloudy so we took several field trips. We went into the Morris Mine (Inland Steel) at Deshpeming; the chief engineer took all morning to show us around. There is also a lot of structure in this area.

I think this course is very much worth the time and money spent; possibly some of the fellows down at Wisconsin might be interested in it next fall. This is the first year they have had it and it has turned out to be quite successful. For the 15 days here it has cost us only eleven dollars for board and room and only ~~seventy~~ seven-fifty for fees.

Well, thanks for your letter of recommendation; I certainly will try hard to do my best. There is one other assistant coming from M. I. T. and two new instructors from Harvard.

Best wishes

Gaylord Mickelson

101 E. Place
Madison,
Sept. 17, 1939.

Dear Mr. Thwaites: -

Thank you for your contribution toward the legal fees which arose as a result of the attempt of the Guardian Life to sell the Garrison House to a paternity. We also appreciate the interest in the welfare of the neighborhood as evidenced by your help.

I had hoped that the affair was closed after the Circuit Court decision denying them permission to sell to any but a single family. Now I hear rumors of an appeal by them. When there is a final settlement I will send a complete statement of our transactions to all contributors.

Again thanking you, I am
Sincerely yours,
Anne Threlhouse

R.F.D. # 2, Chetek, Wis.
June 24, 1939

Mr. F.T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

Your letter of the 23rd came today. You are quite right in assuming the previous one never arrived!

I am sorry your plans to come up this way fell through, and hope you will be able to make the trip soon. Practically any time will be all right as far as I am concerned, providing I am notified a few days in advance. If August is best for you I am sure a time can be arranged then.

My progress has been very considerably hampered by bad weather. We have had a lot of rain--heavy rain--at least two days out of three. When we do get a nice day the back roads are still in tough shape. However, I have covered several townships in the Cadott-Stanley area and expect to get going at a better rate now if we continue to have good weather. We have had several high winds, by the way, which did much damage in the neighborhood but left us more or less untouched, fortunately.

The profiles came through from Miss Veerhusen. Unfortunately, I apparently didn't make myself clear to you--it was the Soo west of Abotsford to Chippewa Falls that I wanted, and not those north on the Ashland line (I have these already, from the Survey files). I have written to Miss Veerhusen about it and will send the other profiles back to her. In the mean time I'm using what controls I have, and the results can be checked against the profiles when I get them.

It is obvious that I have a hard nut to crack this time. It's too early to draw any conclusions, of course, but I do think (as did Leverett) that there is much Wisconsin drift outside the big moraine in this area, too. So far I do not think I have seen anything older than possible Illinoian.

Starting next week I plan to set up semi-permanent headquarters down in the area. I am having a little trouble with finances this summer, but will make things stretch as best I can.

Mrs. Mathiesen sends her regards. I hope it won't

be long until we see you
Sincerely yours
Wm. T. Mathiesen

Chetek, Wis.

Aug. 9, 1939

Mr. F. T. Thwaites
41 Rolly Road,
Madison, Wis.

Dear Mr. Thwaites:

I have yours of the 6th, and am
pleased with the plans for next week.
I shall plan to meet you at the
experimental farm sometime after
lunch on Tuesday — say 1:30 p.m. —
unless I hear otherwise from you in the
mean time.

Sincerely,

Glenn Nielsen

~~XXXXXXXX~~ 41 Roby Road

Aug. 12, 1939

Mr. J. T. Mathieson,
R. 2, Chetek, Wis.

Dear Mr. Mathieson:

In reply to yours of the 9th I plan on leaving early enough Monday morning to get through with my visit at Merrill to make Marshfield for the night. I will go to Hotel Charles. At the latest I should get there some time Tuesday morning earlier than the hour first given. My intention is to save Thursday and Friday to visit the six properties in Polk, Burnette, and Barron counties and go home on Saturday. I do not know where I will stay during this time, probably Fredric or Rice Lake would be most central. but you will probably know.

Tommy is in bed with a fever and sore throat- hope it's not measles. If not able to go I may bring Billy who is good when alone!

Sincerely,

~~XXXXXXXXXX~~ 41 Roby Road

Aug. 6, 1939

Mr. J. T. Mathieson,
R. F. D. 2,
Chetek, Wisconsin

Dear Mr. Mathieson:

Yours of the 3rd is at hand.

Tommy and I expect to leave Madison early on the morning of Monday, Aug. 14. We should with the aid of the new Buick arrive in Merrill early in the afternoon and should be through with my inspection long before noon the next day. I am sure we can reach Marshfield on the 15th and meet you at the experimental station or wherever else you suggest on the morning of the 16th. I think that I can allot two days to work with you i.e. Wednesday and Thursday. This will, however allow only one day to visit the four farms in Barron and Polk counties. However if this is not enough I may decide to postpone return to Madison until the following Monday, Aug. 21. If that is the case I might allow another day to field work. I am writing Muebach about when I may be expected

Sincerely,

P. S. On second thought I might be able to meet you at Marshfield about noon of Tuesday.

~~xxxxxxxx~~ 41 Roby Road

Aug. 1, 1939

Mr. John Mathieson,
R. F. D. 2,
Chetek, Wisconsin

Dear Mr. Mathieson:

I am afraid that you will have decided by now that I am either lost, strayed or stolen for I have been so neglectful in answering your letter of June 24.

At last summer school is over (they older boys have been in laboratory school), the problems of liquidation and reinvestment of my mother's estate have been largely settled, I am fairly well up on well records, and the way is clear to go north on or about the 14th, that is if Tommy does not come down with measles or other misfortune turn up in the meantime.

I had a letter from Musbach saying that he and Nelson want to meet us and have a field conference.

Now I have to go to Merrill first to see a man who is buying a farm from me. Then I will meet you wherever you designate.

Hope you got the second set of profiles and that they were the right one.

Please let me know so I can notify Musbach and Nelson.

R.F.D. #2, Chetek, Wis.
August 3rd, 1939

Mr. F.T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites:

I have your letter of the 1st and am pleased that we will be able to get together soon. I have no calendar handy, but if my calculations are correct the 14th falls on a Monday. If it suits your convenience, I could meet you in Marshfield either the 14th or the 15th, depending upon how long it takes you to transact your business in Merrill. I should think Marshfield would be a convenient place to meet, for then we could get in touch with Musbach and Nelson at once. When we finish up there we could come back up to the Cadott-Stanley area where I have done the most work so far. I am quite certain that any date which will suit you will be fine for me (i.e., any week-day), so let me know when you have decided which is the better. Also, if you would rather meet me at some place other than Marshfield, just name the place.

I certainly am anxious to have you see some of the things we have to deal with, as well as to get Musbach's opinion on certain matters. To say the least, I think we have an involved problem on our hands. The hard-rockers can laugh if they will, but I for one am convinced that some of the hardest nuts to crack come in the Quaternary!

Family, business, and climatic complications have slowed me down much more than I ~~xxxx~~ had expected, but things will no doubt work out all right in the end. We have finally gotten some good weather, and I hope it keeps up. I understand it has been dry in the southern part of the state--which seems hard for us to believe here, for it continues to rain several days out of the week.

The second set of profiles came through and are the right ones. Thank you for the trouble.

I expect to hear from you soon as to the final plans.
Sincerely yours,

F. T. Thwaites

XXXXXXXX 41 Roby Road,

Sept. 23, 1939

Mr. Gaylord Mickelson,
Mt. Horeb, Wisconsin

Dear Mr. Mickelson:

I was very glad to get yours of Sept. 15. The fact then became apparent that Fischer forgot to ask me for the letter of recommendation! I asked him and he admitted it but if you get the job anyway it's all right. I would have been glad to send one if I had been notified.

I am glad you liked the field course. Either we always want to charge too much for field courses or all of students can get summer jobs or else all of them are too hard up but we never get any honest-to-goodness geology students to take a field course. Another mistake may be to only offer a course at Devils Lake which everybody has seen so often that it is stale. When I offered to take out students on research problems I was interested in without salary it was voted down. Probably the others thought that then they would have to do the same but that is exactly what they must do elsewhere.

School is just starting and I have 33 in the only class offered.

Best regards and wishes for the new job.

AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE

December 1, 1939

SECTION ON GEOLOGY AND GEOGRAPHY (E)
OFFICE OF THE SECRETARY

88 CRESCENT STREET
NORTHAMPTON, MASS.

Dr. F. T. Thwaites
Dept. of Geology
University of Wisconsin
Madison, Wisconsin

Dear Dr. Thwaites:

For your reference I am sending you a list of the papers which will be read at the glacial-geomorphic session of Section E at Columbus. Although I made a bid for an entire glacial program, only five papers came through -- four of them listed as the first four titles in the session. The fifth just reached me at noon today, and I have not yet had an opportunity to incorporate it in the lists which I am sending out.

I realize that you will find much more to interest you at Minneapolis, but I would like you to have the information about Section E in case any other members of the department or any of your students may find it more convenient to be in Columbus.

There are five other sessions dealing with a variety of subjects; and if you want me to send you the full list, I will be glad to do so.

With the best of personal regards, I am,

Very sincerely yours,

Howard A. Meyerhoff
Howard A. Meyerhoff.

HAM/w
Encls.