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April 2, 1936

Mr. C. L. Harrington
Conservation Commission
State Capitol

Dear Mr. Harrington:

In response to your telephone conversation yesterday, my party will go to Devils Lake on either April 17 or 18. The number will probably be sixteen. We could get along either in the old hotel or in the Hopkins house.

Thanking you for your courtesy, I am

Very truly yours,

FTT:M

F. T. Thwaites

SYRACUSE UNIVERSITY
SYRACUSE, NEW YORK

DEPARTMENT OF
GEOLOGY AND GEOGRAPHY

CHARLES H. RICHARDSON, EMERITUS
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ERIC H. FAIGLE
JAMES E. MAYNARD

April 2, 1936

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

Dear Thwaites:

Perhaps you will recall a brief excursion in the Finger Lakes Region of New York in company with Professor Floger and myself. It was at the close of your work in Allegheny State Park a few years ago. At that time you expressed an opinion regarding the eastward extension of a moraine from the vicinity of Olean. If I remember correctly, you believe that it trended east or north-east rather than south-east as is shown on the map of the terminal moraine.

I am continuing the study of the New York moraines as opportunity offers, and at the present time I am endeavoring to trace a moraine which appears to cross the Genesee Valley (in south-western New York) near the southern boundary of the state. In preparation for further field work, I am assembling all the data I can on the possible correlation of this moraine. Leverett's U.S.G.S. Monograph, number 41, is somewhat vague as to the possible moraines in that part of the region west of the Genesee. It has occurred to me that perhaps you could suggest something as to the location of moraines, which might be of help in my problem. If therefor, you would care to make any suggestions of this kind, I assure you it would be much appreciated. The region is quite a ways from Syracuse, and since I must finance my field work myself, I wish to locate ahead of time the most probable areas for detailed investigation.

I missed seeing you at the G.S.A. meeting in New York last winter. Of course by this time you have heard all the details of that event. I trust that your work is progressing satisfactorily.

Very sincerely yours,

Chauncey D. Holmes

CDH:L

April 13, 1936

Prof. Chauncey D. Holmes,
Dept. of Geology,
Syracuse, New York

Dear Holmes:

Yours of April 8 has been on my desk for some time waiting a chance to answer as I have to get out such letters myself.

While working in New York I discovered several things which made me suspect serious errors in the older mapping of the Pleistocene. Since then I have talked with both Textor and Atwater but have not seen their maps.

I am confident that the moraine shown near Little Valley north of Salamanca is merely a remnant of the older terrace and I think that I convinced Ploger that this is correct. With regard to moraines northeast of Salamanca I was also doubtful and for that matter I still am. It is very easy to be deceived by ravines and ice-marginal or kame terraces.

Anyhow I had a hunch that the big moraine at Steamburg does not make a reentrant but instead continues east making the southern of the two morainal belts of the Finger Lake region as mapped by Fairchild. In fact I have shown this in my Outline of Glacial Geology in Figure 68. I may be all wrong but it will take more work than has been done to convince me that it is not a good suggestion.

A short time ago I finished writing up my work on the Finger Lakes and associated phenomena and send in the manuscript to Adams. He promised to send it to Ploger to see if he has any objections to publication if it seems to be worth publishing. It is what W. M. Davis would have termed "an outrageous hypothesis" but it is on such that science grows. I hope you get a chance to look it over if he sends it on.

I can see that it will be difficult to study this region at personal expense. I still have to complete my northeastern Wisconsin survey and have nearly exhausted my Penrose grant so will have to dig down in my own pocket to finish.

The G. S. A. meetings were out of the question both from the financial standpoint and the necessity of getting out another edition of the "Outline". How that will be financed is also a question!

With best regards,

Sincerely,

F. I. Thwaites

May 4, 1936

Hotel Hamilton

Two Rivers, Wisconsin

Gentlemen:

I am bringing my class to Two Rivers next Saturday. There will be either eleven or twelve in the party. I will want a single room with bath for myself, and another for the one or two girls. The others will, I think, all go two in a room without bath.

We would like to all have the same meal both at night and in the morning the same as in previous years. The bills will be paid in a lump sum as usual. Please advise me as to rates so that I can get a proper deposit in advance. *will want a lunch for Sunday also*

I will advise you shortly before our arrival just when we will be in.

Yours very truly,

FPT:N

F. T. Thwaites

Milwaukee, Wisconsin
March 24, 1936

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

Dear Dr. Thwaites:

I received your very interesting letter of March 5 and have been giving your suggestions consideration both with respect to my abilities to cooperate and the difficulties to be met in research of this kind.

Though the matter of elevations did not at first occur to me, I appreciate the handicap of inaccurate locations and altitudes. In my past work in Oklahoma, though the companies maintained intricate data on all sections and employed every facility for obtaining engineering information, it occasionally happened that errors had been made which caused a lot of trouble and rechecking. Probably no other section of our country has been so carefully surveyed and mapped as the oil field country with so much economic importance dependent upon it. Engineering parties sometimes worked day and night when discrepancies in the office data meant large loss or gain.

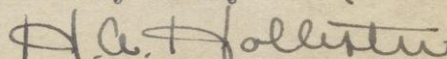
The problems here are much more complicated. In addition to the above there is the matter of securing anything like adequate samples. Part of my work in Oklahoma was to train the drillers in habits of collecting samples regularly, regardless of any apparent change in formation. Of course any sample may yield something of mineralogical or paleontological interest. But subsurface mapping requires much more than this.

It did occur to me that I might make some progress in the field of micro-fauna and flora without any attempt at correlation but it is problematical whether anything of interest could be accomplished which has not already been done elsewhere. Perhaps I am underestimating the significance of this particular type of work.

I will try to run out to Madison in the near future as you suggest at which time we can cover the subject to greater advantage.

Thanking you for your letter and with my regards to Mrs. Thwaites, I am,

Yours very truly



H. A. Hollister

5702 W. Galena Street

March 5, 1936

Mr. H. A. Hollister,
5702 W. Galena St.,
Milwaukee, Wisconsin

Dear Mr. Hollister:-

I have been delayed in answering yours of the 25th. As I have so little time to give to subsurface geology and no funds for field work I will be glad to have you cooperate in this research if it is of advantage to you.

We have a lot of well samples from the vicinity of Milwaukee and the cities to the south down to the Illinois line. The samples are in storage here and all have been given sufficient examination to fix the formation boundaries but not the finer subdivisions. I am starting on a restudy of some logs by means of insoluble residues but have not got very far as yet. Some work on heavy minerals has also been done.

What I lack more than anything else is the map locations of many wells and authentic elevations. Without this I cannot construct either structure maps or cross sections.

I also know that there are many well drillers in the region who have collections of drillers logs which I have never had time to inspect.

Mr. Leonard Filaseta who is a graduate student here from your city is just starting a study of the subsurface geology on Milwaukee County for his Masters Thesis. I had promised him this subject some time ago as he has worked in the Milwaukee City Engineers office and so has easy access to all elevation data.

I suggest that possibly you might do some similar work on the district either to the south or the west of Milwaukee County. Or it is quite probable that the job will prove so big that two can work at it. It is also possible that being on the ground you might be able to secure samples from shallow wells which we do not obtain. The problem of the Devonian and Mississippian in this state is still in need of much more data.

Possibly you could get out here and talk things over with me. I fear I will not get to Milwaukee soon.

Mrs. Thwaites remembers you very well as she was on the trip with you in the summer of 1925 when you went out west with Dr. Lobeck.

Very truly yours,

F. T. Thwaites

Milwaukee, Wisconsin
February 25, 1936

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

Dear Sir:

I am taking the liberty of writing you for advice on a problem which, I trust, may evolve into a project of mutual interest.

I wish to participate in some phase of geological research within the limits of my ability and interest. This presentation necessitates essential details of personal history which I will relate as briefly as possible.

In 1923 I was graduated from Beloit with a major in geology completed under Dr. G. L. Collie. In the year 1926-1927 I taught geology at Natrona County High School, Casper, Wyo., having taught other subjects elsewhere in the interim years. From 1927 to 1929 I was employed as field geologist and scout by the Mid-Continent Petroleum Corp., Tulsa, Oklahoma. During the past four years I have been connected with a manufacturing concern.

While employed in Oklahoma I devoted much time to the study of well cuttings, not only as a phase of routine duty but also because of my interest in micro-paleontology. I became an associate member of the Association of Economic Paleontologists.

Fate and fortune both have prevented my consistent endeavor in the field of my choice during the period of the depression, but I now find myself in position to begin again.

Some time ago I discussed with Mr. Ira Edwards (Milwaukee Public Museum) the possibilities of further study in this state through the medium of water well cuttings in obtaining surface and subsurface correlations. I received his enthusiastic encouragement and have referred to the papers on this most absorbing subject. It is my earnest conviction that I can be of service in research of this kind though, I must confess, I would require and greatly appreciate guidance and cooperation from those with far greater local experience.

It is my immediate purpose to complete and publish research material in a cooperative capacity in order to identify myself further in the field. I would pursue such course somewhat as a diversion for the present while compelled to obtain subsistence through other sources.

My qualifications briefly may be summarized as follows:

B. Sc. degree, major Geology, Beloit, 1923, G. L. Collie, Thesis: Potsdam Contacts in Southwestern Wisconsin, Northern Illinois and Northeastern Iowa.

Teacher of History and Civics, High School, Gladstone, Michigan, 1923-1924, C. H. Teague, Principal.

M. A. degree, Teachers College, Columbia University, 1924-1925, major Administration, Methods, no thesis, Thomas H. Briggs.

Physiography in the Rocky Mountains, summer 1925, A. K. Lobeck.

Assistant in Education, University of Wis., 1925-1926, A. S. Barr.

Teacher of Geology and Science, Natrona County High School, Casper, Wyoming, R. S. Hicks, Principal, 1926-1927.

Field Geologist and Production Scout, Mid-Continent Petroleum Corp., Tulsa, Okla., 1927-1929, Chief Geologist - A. L. Beekly.

Secretary, Dairy Refrigeration Co. Inc., Mfgs. Milk Cooling and Storage Equipment, 1929-1934.

It is therefor my ultimate intent to obtain either technical or teaching employment in the field of my choice. In view of my training and experience in the study of well borings and your considerable research in local geology from this source, I hoped I might be of service to you in completing some project for publication. I understand the preparation of manuscripts, compilation of data, preparation of cuts, bibliography, source materials etc.

I would, of course, prefer to devote the greater part of my time and resources available to gathering data and making laboratory determinations.

Your frank reactions and suggestions will be most gratefully appreciated.

Yours very truly
H. A. Hollister

5702 W. Galena Street
Milwaukee, Wisconsin

H. A. Hollister

222 Lakeland
Madison, Wis.
Tuesday, Afternoon.

My dear Mr. Thwaites,

After leaving your office Monday afternoon I became quite ill with a cold that settled in my ear. Upon consulting the University Clinic, I was advised to remain indoors until this condition was improved. As a result I was unable to take the final in Dec. 130.

Enclosed is a medical excuse which explains my absence. As soon as I am able to go out I shall come to your office to get information concerning the make up examination.

Sincerely
Robt. Hursh

University of Wisconsin
DEPARTMENT OF STUDENT HEALTH

M Robert Hunt

College Lvs Class 2

{ has been under my care

{ has given satisfactory evidence of illness _____

{ reports illness _____

necessitating absence from _____

All University Exercises 2-4-34 to _____ incl.

Specific Classes _____ to _____ incl.

Military Science _____ to _____ incl.

Physical Education (Athletics) _____ to _____ incl.

Date 2-3-36 W. Thomas

Physician Student Health Dept.

February 3, 1936

Mr. C. H. Hehl,
507 Jackson Street,
Waterloo, Wisconsin.

Dear Sir:

Please give me Gertrude's address
at your earliest convenience. Professor
Cooper wants to send Ike a bulletin and it
is impossible for him to do so without a
specific address.

Yours very truly,

FTT-T

STATE OF WISCONSIN
CONSERVATION DEPARTMENT

FILE REFERENCE:

P
State Parks

MADISON

October 7, 1935

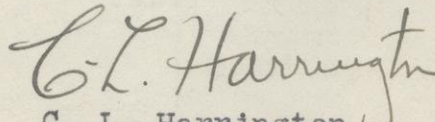
Mr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Mr. Thwaites:

Reference is made to your letter of recent date concerning the Hopkins house at Devil's Lake.

It is not our intention to tear this house down, at least until we can arrange for more suitable and adequate quarters for groups of students and others who from time to time go to the Devil's Lake State Park. The National Park Service recognizes as a project the construction of what are known as "group camps" and we are in hopes that next year we may be able to have approved a project for one of these group camps where from 50 to 100 persons could be accommodated with full facilities but where a lesser number of people could also be accommodated. In other words, these camps are built up on the basis of units of about eight persons, and we feel that at the southeast shore of Devil's Lake a good opportunity exists for the development of a group camp of this kind, and when that would come to pass, it would be our purpose to tear down such places as the Hopkins house, the old dining room now used as a pavilion and perhaps even the hotel itself.

FOR THE DIRECTOR



C. L. Harrington
Sup't of Forests & Parks

CLH:LHS

CC: Wm. J. Breen

Sept. 30, 1935

Mr. C. L. Harrington, Supt. of State Parks,
Conservation Commission,
State Capitol,
Madison, Wisconsin

Dear Mr. Harrington:

When I was at Devils Lake arranging for the visit of the Kansas Geological Society I was informed by Mr. Merquart that the matter of the disposition of the Hopkins House was again under discussion.

I would like to put in a word for its preservation. I have used this house since 1925 with the exception of 1935 for my class in Mapping which goes to the lake in April when most of the buildings there are too cold for use. We have had ~~as many as 30~~ ~~in this great, grand old~~ ~~of these~~ buildings are too small.

Prof. Shrock is planning a field course in geology for next summer and tells me that he is much interested in getting the use of this house as headquarters.

With regard to financing repair and maintenance I feel that it would be fair to charge every student who uses the house a certain sum per day to be devoted to its care. We have always charged them for electric light.

Both Prof. Shrock and I have tried to telephone you in regard to this matter for the last month but have always missed you. Anything which can be done in securing for us the use either of ~~this house~~ ~~or~~ ~~other~~ ~~buildings~~ ~~used~~ ~~at~~ ~~the~~ ~~lake~~ will be greatly appreciated.

Very truly yours,

F. T. Thwaites

Herbster

Sept. 20, 1935

Mr. John Kuechler,
8152 Vernon Ave.,
Chicago, Illinois

Dear Sir:

Yours of Aug. 10 went first to S. A. Witzel, Extension Agricultural Engineer, thence to E. F. Bean, State Geologist and thence to me, so the long delay.

There is no such thing as a "water indicator". The only way to find underground water is to dig or drill for it. Those who claim to be able to find the location and depth of underground waters by means of forked sticks, etc. are the victims of self-delusion. Some experiments have been made in locating water by electrical devices but the results are uncertain and the method is still experimental.

Without knowing the legal description of your property I cannot give any advice. Many wells in that region have failed because a thick body of silt was encountered. Others have not been properly constructed. A few have found salt water in the red sandstone. Some on the high ground are not deep enough.

I suggest that you get in touch with a good well driller who has operated in that region. I have not had any contact with drillers in the far north of this state for 10 years. At that time there was a firm of good drillers in Washburn but times up there have been so bad since then that I am not at all sure they are still operating. In selecting a driller I would not be influenced by his prices but rather by the kind of work he has done for others. The low-price man is often if not usually the most expensive in the long run.

If you want to send me the location of the land in question I will see if I can dig up any more information or make some suggestions.

Very truly yours,

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

623 Fifth Street
Baraboo, Wisconsin
June 6, 1935

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

My dear Mr. Thwaites,

I am inclosing a tentative paper on some fossil pollen work, which is to be published in "Ecology" in the future. There are some statements in regard to glacial geology which I wish you would check and either verify or throw out. I can send only sveral of the figures, but the main points are in statement form. I plan to revise it and get it ready for publication this summer, but would not dare to have it published without a geologist checking for errors. I think that the pollen spectrums of the two bogs bear out pretty well the differences in age of the two sites . Please do not inconvenience yourself, if you do not have the necessary time. Thanking you, I am

Very truly yours,

Henry F. Haas

June 20, 1935

Mr. Henry P. Hanson,
623 Fifth St.,
Baraboo, Wisconsin

Dear Mr. Hanson:

Reply to yours of the 6th was delayed because I have been ill much of the time since then. Prof. Facett sent me some diagrams which are, I think, included herewith.

I agree entirely with your conclusions although I think it would be well to restate a few things. In the first place, I now prefer the terms "Gary" and "Mankato" for the Third and Fourth-Fifth Wisconsin glaciations. These subdivisions of the Wisconsin STAGE of glaciation should be termed SUBSTAGES. I tried to make appropriate changes in the text. Leverett still holds out for Early, Middle (Gary) and Late (Mankato) Wisconsin but I feel that such a classification is still more rigid and objectionable than is my temporary numbering of the substages.

On page 3 I objected strongly to your use of the word till. Till is a direct glacial deposit. The so-called Driftless Area contains water and wind transported drift but no till.

On the same page I suggest the rewording of your alternative explanation of the Dells bog gorge. To me the physiographic setting with youthful sandstone cliffs is alone enough to prove the recency of occupation of the gorge by the Wisconsin River.

On page 5 I suggest the elimination of remarks on drainage changes near the Baraboo bog. The preglacial flow was at a much lower level. Drainage to either west or south could only have occurred while the area was deeply flooded with water and so had no significance. It seems clear that bog formation began when the ice front cleared the east end of the Baraboo Range and the present type of drainage began.

I am very glad to have had an opportunity of seeing your manuscript and hope I have been of help to you.

Sincerely,

F. T. Thwaites

SUN OIL COMPANY

SOUTHWEST DIVISION

J. EDGAR PEW, VICE PRES.
GENERAL DIRECTOR
PHILADELPHIA, PA.
M. B. SWEENEY, GENERAL AGENT.



FIRST NAT. BANK BUILDING
DALLAS, TEXAS

J. H. PRESSLEY
MGR. OF LAND DEPT.
J. N. O. G. PEW
ASSISTANT MANAGER

1030 Milam Building,
San Antonio, Texas,
April 29, 1935.

Prof. F. T. Thwaites,
Department of Geology,
Science Hall,
Madison, Wisconsin.

Dear Fred:

I have been rather slow about getting the few separates I have distributed, but I want you to have one and am inclosing it. It represents part of the work done last year in Arkansas.

I began work for the Sun about a month ago and am engaged in doing surface geology out of the San Antonio office. I find the work interesting, but of course somewhat different from the more indurated and structurally more complex rocks in which I have been working.

I imagine that you will be seeing Gertrude within a few weeks when she stops off for a visit with her folks before joining me down here.

Give my regards to Amy and the boys,

Yours sincerely,

J. M. Hansell.

May 28, 1935

Mr. J. M. Hensell,
Sun Oil Co.,
1030 Milam Bldg.,
San Antonio, Texas

Dear Ike:

I have been meaning for some time to thank you for yours of April 29 with the enclosed separate.

The other day I made free to use your name on a map of the Amnicon Falls for the Kansas Geological Society. I dug out quite a bit from your notes and incorporated it with my map of 1910. This project is keeping us out of mischief as Amy and I have done almost all the work on it ever since about a year ago.

We are all well. Tommy weighs 31 pounds and Billy 26. T. likes the nursery school at the University very much. He says he is "Daddy's boy" and B. is "Mother's boy." He now explains that "B. is a wild Indian but I'm getting big." Between them and the K. G. S. project we do not have much time to spare.

Hope to see Gertrude soon,

With best regards from both of us,

Sincerely,

F. T. Thwaites

May 1, 1935

Mr. E. H. Way, Prop.,
Hotel Hamilton,
Two Rivers, Wisconsin

Dear Mr. Way:

I have had to advance the date of our annual trip to your city to this coming Saturday, May 4.

My party will be the same in size as last year, namely six all told. I would like to have the same accommodations last year, supper, rooms, breakfast, and a lunch put up for the next noon. We expect to arrive about six o'clock on Saturday and to leave about 8 on Sunday morning.

Very truly yours,

F. T. Dewart

March 12, 1935

Mr. Henry P. Hansen,
Instructor in Botany,
Capital University,
Columbus, Ohio

Dear Mr. Hanson:

I have delayed answering yours of February 22 while I made a new map of the drifts in Wisconsin. As yours was enlarged from maps with no county boundaries it was not very accurate. Moreover, I have changed my opinion about the correlation of some of the substages of the Wisconsin. The Fourth Wisconsin rarely if ever shows an endmoraine so that I have abandoned the idea that the outermost Wisconsin drift of northwestern Wisconsin is of that age. This view, is however, not without objections.

Enclosed please find:

Blueprint of tentative map of drifts in Wisconsin compiled from the latest available information.

Correction page for 1934 edition of Outline of Glacial Geology.

The exposed bogs cannot very well be older than the drift on which they rest unless the cover has been eroded. Bogs may, however, be younger because a later outwash or other deposit has obstructed the drainage. It seems to me that the cause of each particular bog must be ascertained before reaching an opinion.

With regard to the two bogs near the Dells that in the abandoned river bed is certainly much younger than the one on the drift. These old channels were occupied by the river until quite late in postglacial time. There is, of course, a possibility that the channel was formed in interglacial time, abandoned, filled with bog, buried, and then reopened by postglacial waters. I hardly think this alternative is probable although it is possible. Apparently the pollen study supports the first interpretation.

You are at liberty to use this map to show location of bogs provided it is clearly stated that it is tentative and "subject to change without notice". It represents my present opinion only. The boundary of the Wisconsin drift and all the boundaries in eastern Wisconsin are well established.

Hope you get back to take Glacial. This year it has fallen off to only three! The average for 14 years was over 12. If I can help you at any time please let me know.

Very truly yours,

F. T. Thwaites

CAPITAL UNIVERSITY
COLUMBUS, OHIO

February 22, 1935

DEPARTMENT OF BIOLOGY

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

My dear Mr. Thwaites

I am taking the liberty of writing to you in quest for some information. First I am sending to you a rough and probably inaccurate map of the drifts in Wisconsin. I wonder if it would be possible for you to correct the general boundaries of these drifts if possible. I drew the maps from your figures from "Glacial Geology Outlines", and from Antevs. If there are any other maps which might help I would greatly appreciate if you would tell me where they could be obtained.

Second, I should like to know what you think of the relative ages of bogs on the various drifts. Would it be at all correct to assume that the age of the bogs on these drifts could be correlated with age of the drift? I am planning on making a fossil pollen analysis of bogs located on these drifts with the idea of correlating them with the age of the drift as well as plant succession and other problems. I suppose that bogs existing on the Illinoian drift for instance at the time of the 4th Wisconsin, were covered and destroyed by glacial outwash from the Wisconsin stage, and the same in each of the other cases.

Third, I have made a pollen analysis of the small bog in Rocky Arbor, about three miles out of Wisconsin Dells on the new highway to Mauston. This bog is just inside the Juneau County line, west of the Milwaukee R.R. I presume that this site (of the bog) is located in one of the former courses of the Wisconsin River. If this is so, was it before or after the 3rd Wisconsin? I also have made an analysis of a bog a few miles northeast of Baraboo on the 3rd Wisconsin drift. This shows a much different pollen spectrum. Do you think that it is logical to assume the latter bog older than the other in view of the fact that the plant succession indicates this theory?

Would you have any objections if I used your map of the drifts in Wisconsin to illustrate location of bogs, etc? I know that this is rather an imposition to ask you to take time to answer these questions, but I would greatly appreciate any information that you can give me that would help me. I hope that every thing is going well at Wisconsin. I am hoping that I can get back and take your course in Glacial Geology. Thanking you, I am

Very truly yours,

Henry P. Hansen

Instructor in Botany

May 6, 1932

Mr. R. H. Way, Prop.
Hotel Hamilton
Two Rivers, Wisconsin
Dear Mr. Way:

In reply to yours of April 29th.

So far as I can see, my party will number
only thirteen. We will arrive shortly after five
o'clock on Saturday.

Yours very truly,

FTT:H

F. T. Hwaites

Referred to
F. T. Thwaites
A. A. W.

2309 Rosemont Ave.,
Chicago, Illinois.
Sept. 13, 1930.

University of Wisconsin,
Madison, Wis.

Gentlemen: Attention: Geology Dept.

I am the owner of 160 acres of land in Oklahoma. I recently returned from a visit to my property and brought back with me some mineral stones from the canyon on my land.

*all
specimens
except 4
which is
quartzite*

I would greatly appreciate your kindness in examining these stones and in giving me as much information as possible in regards to their contents and, mostly, in regards to the land on which they were found.

Exhibit 1, 2, 3, 4, & 5 were taken from my land, while No. 6 was found on some land nearby. I am mailing these samples to you today under separate cover, in the hope that you will be able to give me the desired information, which I think you are capable of doing well.

Thanking you in advance, I remain

Yours truly,

Paul E. Holm

April 21, 1933

Mr. E. H. Way, Prop.,
Hotel Hamilton,
Two Rivers, Wisconsin

Dear Mr. Way:

As in previous years we plan to bring the Glacial Geology class to your hotel for Saturday night, April 29. The total party will not exceed 11. There is only one girl and she is the wife of one of the class.

A change this year, partly to reduce expense and partly to save time, will be to take lunch with us Sunday. I would like two sandwiches each, cookies, and one or two oranges. Will provide a box for the same also a jug in which to take coffee. I will provide the milk, sugar, cups and spoons for the latter so you do not need to figure on them.

Several of the boys are pretty hard up having come back to school after having lost good jobs so I would like to keep prices to the minimum. I take it I can assure them that costs at the hotel will be no higher than last year. We are also economizing by crowding more into each car. As before we would like the same meal served to all. We will probably not arrive until about 6 o'clock.

Very truly, yours,

F. T. Thwaites, Lecturer in Geology

Trustees:

ROY J. CULL
H. O. HORNBURG
HERMAN KRAUSE
T. F. MALLOW
R. J. MARSHALL
E. H. NILES

Village of Hartland

R. M. OVERBAUGH, President

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Hartland, Wis., Jan. 10th. 1932 _____ 193

*Prof. Tufts
Capitol Bldg.
Madison
Wis*

Dear Sir;

Kindly submit one of the attached vouchers properly executed in support of bills paid to you by the Village of Hartland, Wis.

This applies to bills to be paid in the future and bills which have been paid but were not supported by a voucher.

Thanking you for your cooperation, I remain,

Yours very truly,

Frank C. N. Jones

VILLAGE CLERK

*1860
780*

THE UNIVERSITY OF WISCONSIN
COMMITTEE ON HIGH-SCHOOL RELATIONS

Sent _____

To be returned by _____

Recommendation of Teachers
To _____

Teacher in _____

B. J. Houser

, (Major _____)

STATEMENT WHICH MAY BE SUBMITTED AS A WHOLE OR IN PART TO SCHOOL OFFICIALS

COPY

FOR PERSONAL FILE

	Very Inferior	Inferior	Average	Superior	Very Superior	Additional Comment
I. SCHOLARSHIP						
II. GENERAL QUALIFICATIONS						
1. Personal fitness						
2. Physical fitness						
3. Force of character						
4. Voice						
5. Sympathy						
6. Tact						
7. Vivacity						
8. Affability						
9. Enthusiasm						
10. Conscientiousness				✓		
11. Originality						
12. Initiative						
13. Leadership						
14. Capacity for work						
15. Promptness						
16. Openmindedness						
17. Judgment (common sense)						
18. Use of English						
19. Interest in teaching						
III. PROBABLE TEACHING ABILITY						
IV. GENERAL MERIT (SUMMARY)						

V. CHECK THE KIND OF POSITION FOR WHICH THE CANDIDATE MAY BE RECOMMENDED.

Teacher in

Elementary school.....

Small high school.....

Large high school.....

County training school.....

County agricultural school.....

Normal school.....

College.....

Principal of

Elementary school.....

Small high school.....

Large high school.....

County training school.....

County agricultural school.....

Supervisor.....

Superintendent.....

VI. STATEMENT WHICH MAY BE SUBMITTED AS A WHOLE OR IN PART TO SCHOOL OFFICIALS.

Mr. Hugen took Geology 11, Mapping, and Geology 130, Physiography of the United States, under me. His work in the former was good but he failed to do as well in the latter. I am confident, however, that he would make good.

FOR PERSONAL FILE

	Very Superior	Superior	Average	Inferior	Very Inferior
I. SCHOLARSHIP					
II. GENERAL QUALIFICATIONS					
1. Personal fitness					
2. Physical fitness					
3. Force of character					
4. Voice					
5. Sympathy					
6. Tact					
7. Vivacity					
8. Affability					
9. Enthusiasm					
10. Conscientiousness					
11. Originality					
12. Initiative					
13. Leadership					
14. Capacity for work					
15. Promptness					
16. Open-mindedness					
17. Judgment (common sense)					
18. Use of English					
19. Interest in teaching					
III. PROBABLE TEACHING ABILITY					
IV. GENERAL MERIT (SUMMARY)					
Name.....					

Date.....

Department.....

Quaker Bridge, Aug. 21, 1932

Mrs. A. E. Hubbard,
30 Radcliffe Road,
Buffalo, New York

Dear Mrs. Hubbard:

I wish to thank you for the two photographs of Peter which you kindly sent via Miss Eno. I am forwarding them to little Betty who will be much interested, I'm sure. Betty now has a fungus infection in the mouth. She has certainly had a hard time- whooping cough, measles, tonsillitis, appendicitis, and now this! It must be hard on her mother. They have been staying with Mrs. Thwaites all summer. It is expected that Betty will have a sister or a brother in October so they will all stay with us until some time late in the fall.

This is my little boy's birthday and I am not there to help celebrate it. He is learning a lot of new tricks but I have not heard of his walking yet. They have had a hard summer at home with almost no rain since July 3. It will be quite a change to go back to the desert from this moist forest.

Before I leave I am going over to visit the Finger Lakes. Mr. Mayer is going with me and I will then take him to Columbus when I return. Tonight I am invited out to dinner by the Deputy Health Commissioner at Salamanca. He is coming after me at 5.

We all miss you here. Please give my regards to Dr. Hubbard.

Sincerely,

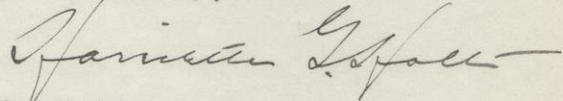
December 6, 1932

Dear Mrs. Thwaites:

Our bill for the Sigma Delta Epsilon meeting is:- 28 refreshments at 35¢, or \$9.80, which would make it \$1.96 for each of us five.

I thought it was a very nice party and I'm so glad the others thought so too.

Very sincerely,



Committee:

H. G. Holt

Miss Effie Doering
Miss Amelia Frank
Miss Olive Thomas
Mrs. Fred Thwaites
H. G. Holt

*Paid Dec 9, 1932
AMT*

9-1-32

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

#1930 E. Newberry Blvd
Milwaukee, Wis
August 25, 1932

Dear Sir:

Under separate cover I am sending you a copy of Data Sheet I recently had copyrighted and I feel is going to be a big help to all of the Geologists in obtaining data on drilled wells.

It will now enable your department to request the owner or Well Driller to fill out one of these Data Sheets and forward same to your department after Test is completed. With these Test sheets on hand your records will show where the water level is in various wells, also the draw down working level and what these wells will deliver in Gallons per Foot Draw Down.

When you receive ground samples for making out Blue Print Log you can make this request for my Data Sheet properly filled out. This sheet will give the owner a good permanent record, also the well driller and your department a fine record.

Your department has been very kind to me in giving me information when asked for and I sincerely hope my sheet will be of good service and in a small way help to repay for past favors received. At your convenience I will appreciate hearing from you regarding this sheet and what your opinion is regarding its usefulness for all the Geologists in our various Universities.

Have you the names of the Geologists in charge at our various Universities, if so I will appreciate having them and will send them copies of this sheet and it may help them also in obtaining the records of Tests and in this way give them further and complete data as to capacities, draw down and working water levels in deep wells.

I shall anticipate a favorable reply as to the merits of this Data Sheet. Trusting this finds you in the best of health and happiness. With best personal regards and wishes I am

Yours very truly
 Jim Hamilton.

4823 Woodlawn
Little Rock, Ark.
June 15, 1932

Dear Amy:-

Am trying to get all of my correspondence fixed up before this 3¢ postage takes effect.

Little Rock is a very beautiful city of about 80,000. I imagine that included the colored people too. We live about 2 miles from the capital on the west part of the city. This section is called Pulaski Heights. We have a 4-room apt. (furnished) on the second floor of a big house which has recently been remodeled. The other apt. up here is unfurnished and a newlyweds have that. Only been married about 2 months. The living room has 3 piece over-stuffed set & a solid walnut writing desk. The bedroom has a pretty 3 piece set in that. We brought ^{our} cedar chest and radio. The kitchen is large and airy and has a cream & green gas stove and a big G.E. refrigerator. Guess if you had to buy ice here you'd be bankrupt. Utilities run about \$2 a month.

while in Madison^{#5} covered about everything
Rent is much cheaper here our place costs
us \$36 a month, garage included.

When we first were here the welcome
wagon called and left: a loaf of bread,
cake, milk, tickets to movie, free greasing
job, a week's subscription to one of the
papers, and a fingerwave. I was quite
surprised and pleased.

Have been out with Ike several times
but climbing these 600 ft. hills don't
especially appeal to me. Last time
we were out I bought a Persian kitten
(red). He's very much a gentleman and
lots of company and maybe a nuisance
Ike likes animals and thinks he ought
to have a dog too but the landlady
hates dogs and I'm glad of it.

People down here talk quite different
than back home. Always calling you "honey"
and say "yew all", "sure thing", etc. One of
the girls said "Mrs H. you all have such
clean pigs in your country." I sure laughed.

The Branners are very nice. They have 3 children, I imagine the eldest is about 10 or 11. All girls. Mrs. B. is very pretty and young looking. They invited us over for supper one night and we had ravioli, (that's a pastry filled with spinach, etc., tastes soapy to me), toasted rolls, jam, sliced tomatoes and strawberry charlotte. Mrs. B. has a colored maid. They feel they can't afford her but with 3 children there seems to be too much to do.

I have a darkey do my washing & ironing. They do beautiful work. I prefer to do my own cooking & what's more we're too poor to do as ~~other~~^{they} southerners do.

We got our income tax bill the other day and about passed out. Now we'll have to worry how we're going to pay that.

I still keep the state journal and so I'm up on the N.Y. news, political and otherwise.

Heard that they have a new girl in the

Survey. Well I'm not saying a thing.

How's Tommy? If you have any very recent pictures of Tommy I'd appreciate one. Is he walking or creeping?

It's been blistering hot down here and the only relief I find is to shed every stitch of clothing except my dress & shoes & take a couple of baths a day. I bought a new spring coat before I left Madison and I've never worn it here. Had to hurry down town and buy some cool dresses and a straw hat.

Noticed that Andy Leith & Dick Lund are married. Didn't think so much of the picture of Mrs. Leith which was in the Journal.

Haven't missed my work or shall I say the Survey?

Please write soon

Sincerely,
Gertrude

P.S. When does Fred leave?

STATE OF ARKANSAS
ARKANSAS GEOLOGICAL SURVEY

ROOMS 443-447 STATE CAPITOL
LITTLE ROCK, ARK.

GEORGE C. BRANNER
STATE GEOLOGIST

May 5, 1932.

Prof. F. T. Thwaites,
Department of Geology,
Science Hall,
Madison, Wisconsin.

Dear Fred:

It is planned to organize some sort of a system here whereby we can orderly store well samples, and also a system for filing well records, plotted well logs, etc. I believe I am pretty familiar with your methods of handling the material for the Survey -- namely assigning a series of specimen numbers to the various samples from a well, maintaining a continuous numerical order from well to well, and filing these samples in systematic order in the trays provided for that purpose. Specimen numbers are tabulated on the logs of the wells and are filed by town and range. Reference can then always be had to a sample by referring to well records which penetrate the formation in question. I do not believe that you maintain an accession list for samples as we did for mineral land specimens. Logs may be drawn ^{diagrammatically} systematically or merely tabulated with proper separations in the latter case at various formations. I believe that you find a 5-foot sample interval satisfactory for the average well record. Sample bags are furnished to drillers by the Survey and the Survey pays express costs on the samples, I believe.

If I have not completely covered your procedure or if you can make suggestions for an even more modern and efficient system of filing, I would greatly appreciate it.

I would also like to know where you get your sample bags and their cost. As a matter of fact, I would greatly appreciate your sending me one of your sample bags as a sample. In this connection I would also like to know the name and place of purchase of the liquid you use in etching the sample bottles.

Prof. F. T. Thwaites
Page 2

5-5-32.

All suggestions that you care to make regarding the above matter will be greatly appreciated. A complete file of all well records available, both wells for water supplies and for oil, is an important department in any Survey office and I wish to get it started right at the beginning.

I began work here Monday and to date my impressions of the organization are of the best. Both Gertrude and I like Little Rock and the people we have met. I imagine Gertrude will be writing Amy as soon as she gets a little more settled. Until then, I send regards from both of us.

Sincerely,



JMH-ML

J. M. Hansell.

May 11, 1932

Mr. J. M. Hansell,
State Geological Survey,
Little Rock, Arkansas

Dear Ike:

I was very glad to get yours of the 5th and have tried to answer it as soon as field trips permitted.

If I were starting a filing system of well samples again I would do differently and would not assign a serial number to each specimen to only to the group of samples. On account of deepening jobs it is not possible to keep all samples from the same hole together unless you are prepared to do a lot of moving. Samples would be filed in numerical order and each would have both serial number of group and depth marked on it. I use Etcholite which is sold by W. A. Bittner Co., 422 First Ave., Pittsburg, Pennsylvania. It costs over \$5.00 a pint. Sample descriptions are typed (by Amy) and several carbons made. The original is filed in numerical order in a series of books which correspond to accession lists. Another copy is filed with the blueprint log in the town and range file. Another is kept by me as is my pencil notes original. Tracings are filed in numerical order. I also keep a map with locations of wells on it.

We buy our sample bags from Chase Bag Co., Milwaukee, Wisconsin. Last (1929) prices were \$9.30 per M in lots of 5000 and \$8.50 per M in lots of 10M. In cities where tobacco is packed you will probably find bag manufacturers. I decided (like the Illinois Survey) against attached tags as they spoil when wet. Last cardboard tags cost \$13.77 for 5M. The bag I am enclosing is an old one with attached tag. Try crumpling when wet and see what happens! The caution about pencil to be used is important.

I have a system of filing of my own invention which I like very well. It is adapted from the Illinois system and has several advantages over it. Its main point is stating the big unit first and so on in logical order instead of the reversed order we used to use. I have kept my personal notes this way since last September.

In Arkansas you have (so far as a casual glance at the map shows) only four major groups of township numbers around a common center point. To each of these assign a letter. Say call all towns north and ranges west A, towns south, ranges west B and so on. Put the town and range into a four figure number, say T. 1 N., R. 23 W will be denoted A0123. After a decimal point give the section with a 0 before its number when less than 10. Then give the 10 acre tract within the section according to the system used in Illinois. Since this system starts at the SE corner it applies also to odd shaped and odd sized sections. The location of the point on the sketch would then be recorded as A0104.26f6 This may look formidable at first but it seems to me much superior to the reversed order of NW $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 26, T. 1 N., R. 4 W. which is the time-honored method of giving land descriptions.

I also keep a job sheet with notations on sample bags sent out, when returned, when examined, when tracing made, when logs sent out, etc.

Am glad to learn that you both like the South. We are both well,

Science Hall, May 3, 1932

Miss Ethel B. Hansen,
Dept. of Botany,
University of Michigan,
Ann Arbor, Michigan

Dear Madam:

Your letter and photos are at hand. I am sorry to learn that you went so far and did not see the Forest Bed. The deposits which you photographed are the weathered remains of a tan bark landing which was made when Two Crocks (Noro P. O.) was a thriving port. The exposures all lie either south or north of the old dock. Those to the south (see enclosed map) have been more commonly visited. As with all exposures in unconsolidated materials they vary much from time to time. After a long dry spell you might see almost nothing. After a northeaster exposures are apt to be good although a heavy rain soon causes slump and hides them. At times we had good exposures in the new mouth of the little creek.

Another and better exposure lies one and a half miles north of the dock just north of the Keweenaw County line. Here the bed lies on sand instead of clay. The beds have all been much crumpled to the north. When exposures are good as they were in 1930 much ice disturbance is found.

The Forest Bed has been under investigation by Mr. L. R. Wilson of our Botany Department. His report is now in press in the Transactions of the Wisconsin Academy. He found 19 species of mosses, several species of mollusks, as well as beetle excavations, fungi, mites, and several kinds of trees. You can easily recognize the old wood for it checks when dry in a way that no modern wood does.

I am going to the Forest Bed this coming Saturday evening, May 7. If you care to join us you can meet us at the Hotel Hamilton, Two Rivers about 5 o'clock on that day.

The Forest Bed is also exposed (or was exposed in 1925) on Little Lake Butte Des Morts near Appleton. It is known in wells over a wide area.

Mr. Wilson is carrying on his studies for his doctor's thesis.

I am returning your photographs and am also enclosing an old one of mine which you may keep, also a copy of Mrs. Thwaites' paper on the district.

If there is anything else I can do to help you please write again.

Very truly yours,

Lecturer in Geology

Dep't. of Botany,
University of Michigan,
Ann Arbor, Michigan,
April 30, 1932.

Professor F. T. Thwaites,
Dep't. of Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Sir:-

Last summer Dr. Trewartha sent me a copy of your instructions for your northern trip to Two Rivers, Wisc., in answer to my request for information concerning a fossil forest bed near there. The forest bed which I have in mind is that described in "The Abandoned Shore-Lines of Eastern Wisconsin", Wisc. Geological and Natural History Survey Bull. No. XVII, Scientific Series No. 5, pp. 61-62, 1907. This deposit is two miles south of Two Creeks, and shows the forest bed lying on laminated red clay and covered by 12 feet of stony red till. I was unable to find this or any indication of it. It was probably covered over by sand.

The deposit which your class visited, I believe I found. Photograph No. 1 represents the section as I saw it just a little north of the old dock. Is this a part of the old forest bed?

Photograph No. 2 was taken perhaps the distance of one-half block south of the old dock. A log is protruding from between the Wisconsin till at the base and several feet of brown, ground up wood. At this place the ground up wood extends clear to the surface of the section.

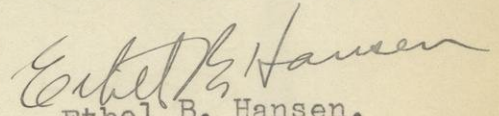
In photograph no. 3, a few yards farther south, we have a layer of fine tan-colored sand resting on top of the ground up wood, and over a foot of ground up wood on top of the sand. Is this the same spot which your class visited? Would you consider this spot to be of the same age as that described by Goldthwait two miles south of Two Creeks, and what explanation would you give for the ground up wood? Have you ever seen similar exposures anywhere else along the shore? I have taken the liberty of asking all these questions because I am very much interested in the study of such fossil material. I collected quite a number of specimens of the wood while I was there last summer.

Professor F. T. Thwaites.

If I have not found the right spot, and you know of other exposures of the same thing, would you be willing to have me meet you at Two Rivers when you bring up your class, if you have not already done so? I should like to visit the spot with the class and to talk to you about it.

Assuring you that any information you may give me will be greatly appreciated, I am,

Very respectfully,


Ethel B. Hansen.

EBH/W

Enclosure.

April 27, 1932

Hotel Hamilton,
Two Rivers, Wisconsin

Gentlemen:

I plan to bring my class to your hotel the night of May 7, Saturday. Arrangements will be same as last year that is we would like an early supper soon after 5:30 if possible, will then go out again and return after dark. We would like Sunday breakfast at 7:00 A. M. if possible. The number will be 13 or more including two girls. I would like room with bath for them and probably for myself also. Payment will be in lump sum and I would like the same meal served to all with no extras for individuals unless they pay for them in cash. Please inform me if you can take care of us and your best prices. I will inform you of the exact number in the party the day before we leave here. The trip will be made regardless of weather.

Very truly yours,

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

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Madison General Hospital
Madison, Wisconsin

OFFICE OF THE
SUPERINTENDENT

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BADGER 5320, 5321, 5322, 5323

March 25, 1932

Prof. & Mrs. F. T. Thwaites
R. # 4
Madison, Wisconsin

Dear Prof. & Mrs. Thwaites:

Your membership in the Hospital Association is a most valuable asset to this institution, because it means much more than financial assistance. We have mailed our 32nd Annual Report for your examination. It will give you a picture of the many activities of this Hospital during 1931.

Anticipating your continued support we enclose the renewal membership blank for the annual dues of \$5.00. Please use your influence to interest some good friend in the charity needs of the many unfortunates who come to us and if you can secure one new member in the Madison General Hospital Association, you will have performed a most valuable civic service.

Very truly yours,

MADISON GENERAL HOSPITAL ASSOC.

By

E. J. B. Schubring

President

W. A. Hastings

Secretary - Treasurer

NJ

March 12, 1932

Mr. Robert G. Hamilton,
Geology Department,
University of Iowa,
Iowa City, Iowa

Dear Sir:

In reply to yours of the 8th I regret to state that I have so few left of the separates on the "Development of the theory of multiple glaciation in North America " that I cannot send out any where it is possible to borrow copies from the library.

You may be interested in the text book of glacial geology which I am now preparing. Date of publication (lithoprinting) is uncertain on account of the Depression. It may appear in the fall at a price of \$2.25 postpaid. Advance copies of the illustrations for mountain and continental glaciers (block diagrams and drawings, 16 pages figures and about 6 pages mimeographed description are now for sale at 50 cents postpaid.

Very truly yours,

Lecturer in Geology

Geology Dept.
University of Iowa
Iowa City, Iowa
March 8, 32

Dr. F.T. Twaites,
Curator of Museum,
Madison, Wisconsin.

Dear Dr. Twaites,

I am enrolled in Dean Kay's Pleistocene Geology course and have had reference to your paper, The Development of the Theory of Multiple Glaciation in North America, and wish to obtain a copy of same.

If there are duplicates available for sending out, I would thank you very much for a copy of your paper.

Respectfully,

Robert G. Hamilton

Robert G. Hamilton



Hotel Hamilton

E. H. WEY, Proprietor

100 Rooms 20 With Bath European Plan

Electric Lights, Steam Heat, Telephones

Two Rivers, Wis.

April 22

Dear Sir

Your letter rec'd. and will
look for you party on the 29th
at 6 PM

Will have supper on your ar-
rival.

Your lunch will be look
after as you directed.

The rates will be better than
last year. and every thing
will be satisfactory to you
& your party

Hotel Hamilton

E. H. W.

Nov. 10, 1931

Mrs. Carl Hansen,
R. 1,
Loganville, Wisconsin

Dear Mrs. Hansen:

I was up to see the Falls on Sunday, November 1 and we did not find anyone at home. Enclosed is check for \$1.50 for the 15 persons in our party. Would have sent this sooner but had to wait until Mr. Wanomacher was up to get your correct address.

At the University we always call the Falls WEIDMAN FALLS because Samuel Weidman who was one of the geologists at Madison for over 30 years was born a few miles north and was the first to mention the place in print to my knowledge. We didn't notice any special name applied to them so got into this habit. We have all been very glad to have the road built so that visits to this interesting spot are now easy and pleasant.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

Oct. 21, 1931

Mr. K. G. Hoald, Chief Geologist,
The Gulf Companies,
1161 Friek Bldg. Annex,
Pittsburg, Pennsylvania

Dear Mr. Hoald:

I have at last secured some money from the Department of Geology to replace some of our obsolete surveying instruments. It has been suggested that some of the oil companies now have surplus equipment of this kind which is in good condition. If you can put me in touch with anyone who wishes to dispose of any alidades, plane tables, barometers, hand levels, etc. the information will be much appreciated.

Very truly yours,

F. T. Thwaites, Lecturer in Geology



Hotel Hamilton

E. H. WEY, Proprietor

100 Rooms 20 With Bath European Plan

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Two Rivers, Wis.

April 29/32

Dear Sir

Letters rec'd and replying will state that the rates will be.

Rooms - 1⁰⁰ Each Double
with Bath Single 2⁰⁰ Double 3⁰⁰
Supper & Breakfast \$1⁰⁰ Each

Can serve you supper @ 5³⁰
& Breakfast at 7⁰⁰

Hoping to hear from you I
remain

Yours

Hotel Hamilton
E. H. Wey Prop

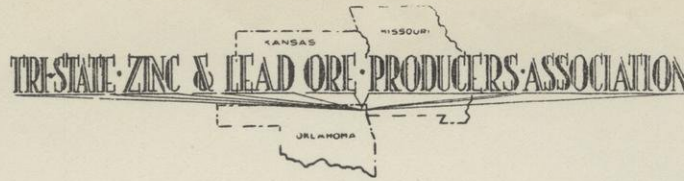
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PICHER, OKLAHOMA

ADDRESS ALL COMMUNICATIONS TO
BOX 95, MIAMI, OKLAHOMA

Sept. 11, 1933

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

Dear Fred:

George Fowler was just in my office this afternoon and told me that you were in Joplin last Thursday after your trip with the Kansas Geologists. I am sorry you did not have time to come down to the field and look me up, for it would have been a pleasure to have shown you around.

I had expected to see you again in Madison, but the evening we called on Mrs. Turville there was no one at home at your house and we had to leave Madison the next morning. My wife had wanted particularly to see your mother also.

I received the booklet on Glacial Geology and thank you very much for it. Mr. Fowler said that he wants to send for one also.

Next time you are down this way, don't fail to look me up. With kindest regards, I am,

Very sincerely yours,

M. D. Harbaugh

MDH rc



Oct. 6, 1933

Mr. James F. T. Hamilton,
2936 North Oakland Ave.,
Milwaukee, Wisconsin

Dear Mr. Hamilton:

I wish to thank you for copies of your data sheets for testing wells which you left with Mr. Deming some weeks ago. I should think that they would be very useful to engineers and water superintendents but, with things as they are, we can do no testing ourselves. The best we are able to do is to struggle along with what information comes in to us and to hope for the better before long.

With best regards,

Very truly yours,

F. T. Thwaites

Oct. 5, 1933

Mr. M. D. Harbaugh,
Box 95,
Miami, Oklahoma

Dear Doc:

Yours of Sept. 11 has been on my desk a long time, but today I am cleaning up all matters which can be so will answer it.

I was sorry you were not on the Kansas Society trip. Joe Wannamacher was. I was greatly indebted to Mr. Fowler for taking me back from Spavinaw to Joplin. On this trip it was impossible to pass through Miami and I did not feel that I could postpone my return especially as I had to make the trip for as little as possible anyhow. In partial return for Mr. Fowler's kindness to me I have sent him several of my reprints including a copy of the glacial illustrations of which I have only been able to give away a very few as expense on them is still not far behind income.

It is too bad you did not get in to see us when at Mrs. Turvill's. I am positive we were at home but maybe you did not see the light or else looked at my mother's house instead of ours. Billy is growing fast but Tommy has just had an attack of tonsillitis. Can hear him talking now so he must be better.

With best regards from both of us,

Sincerely,

THE UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

Central State Teachers College
Stevens Point, Wisconsin
November 6, 1933

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

My dear Sir:

I am inclosing the two dollars to take care of the field trip. I have tried to find you in Madison several times but have not been able to find you, so I thought I had better send the money. I am sorry if this has caused you any inconvenience,

Very truly yours,

N. P. Hansen

Nov. 9, 1933

Mr. H. P. Hansen,
Department of Botany,
Central State Teachers College,
Stevens Point, Wisconsin

Dear Mr. Hansen:

Yours of the 6th with enclosed currency in amount of \$2.00 came yesterday. We made the trips within the \$5.00 deposit each and refunded \$0.50 each. The books are now closed and the matter adjusted to the satisfaction of everyone. This being the case I am returning the \$2.00 enclosed with the thanks of everyone concerned. Your generosity in sending this was greatly appreciated.

I hope you like your new position. We are trying to do the best we can here under present shortage of funds and with small classes.

Sincerely,

F. T. Thwaites, Lecturer in Geology

THE UNIVERSITY OF WISCONSIN
MADISON

OFFICE OF THE REGISTRAR

December 10, 1931

Mr. F. T. Thwaites
Science Hall

Dear Mr. Thwaites:

In order that we may complete our check on the fees for this semester would you kindly inform us whether or not the laboratory fee in Geology 130 should be assessed Mr. Kenneth Rawson ?

Very truly yours,

Wilfred J. Harris

Dec. 11, 1931

Wilfred J. Harris,
Registrars Office,
Bascom Hall

Kenneth Rawson registered for Geology 130, attended a few days and then dropped the course to audit it. He appeared one day after that since when I have not seen him. I am sure that he should not pay the fee.

Very truly yours,

J. T. Thwaites, Lecturer in Geology

THE GULF COMPANIES

GEOLOGICAL DEPARTMENT

FRICK BUILDING ANNEX

PITTSBURGH, PA.

GULF PRODUCTION COMPANY
GULF REFINING CO. OF LA.
GYPSY OIL COMPANY
WESTERN GULF OIL COMPANY

EASTERN GULF OIL COMPANY
MEXICAN GULF OIL COMPANY
SOUTH AMERICAN GULF OIL CO.
VENEZUELA GULF OIL COMPANY

K. C. HEALD
STAFF GEOLOGIST

November 3rd, 1931.

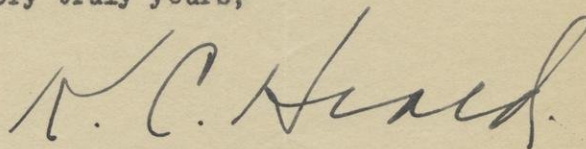
F. T. Thwaites, Lecturer in Geology,
The University of Wisconsin,
Madison, Wisconsin.

Dear Mr. Thwaites:

I am sorry that my reply to your letter of October 21st has been delayed. I have just gotten back to Pittsburgh after a two weeks' absence.

I am writing certain of our companies to inquire if they have equipment of the nature that you wish, to dispose of. If they have, some appropriate official of the company involved will get in touch with you direct.

Very truly yours,



K. C. Heald.

May 15, 1930

Mr. E. H. Wey
Hotel Hamilton
Two Rivers, Wisconsin

My dear Mr. Wey:

In reply to yours of the 14th., we will stay at your hotel this coming Saturday night, May 17. I think we will want six rooms for two at \$1.00 each, two single rooms, and one room with bath (for two). We shall want breakfast at seven.

Sincerely yours,

FTT/B

F. T. Thwaites

Science Hall

May 12, 1930

Hotel Hamilton,
Two Rivers, Wisconsin

Gentlemen:

I expect to bring my class in Glacial Geology to your hotel this coming Saturday evening, May 17. There will probably be 16 in the party. We expect to arrive after dark and will therefore not wish dinner. We would like to get breakfast at 7 o'clock Sunday morning. Please advise me as to charges so that I can collect in advance and pay in a lump sum.

Very truly yours,

F. T. Thwaites

May 7, 1931

Mr. A. H. Way,

Hotel Hamilton,

Two Rivers, Wisconsin

Dear Sir:

In reply to your recent letter our party arriving Saturday night will number 10 men and one lady. I will want room with bath for her, also if I can have room with bath and twin beds will go in that with one of the men. Others will go two in a room without bath. As mentioned before we will arrive early and have supper at your hotel. I will try not to let the party go to their rooms before supper unless we are early so as to be able to get them out promptly for the evening excursion. Sunday we will have breakfast at 7 so as to be able to get them started by 8. Rates are quite satisfactory.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

May 7, 1931

Hotel Hamilton,
Two Rivers, Wisconsin

Attention Mr. Wey

Dear Sir:

In reply to yours of recent date the rates will be quite satisfactory.

The latest indication is that the party will number 11. I will want room with bath for the single lady of the class.

STATE HISTORICAL SOCIETY
Madison, Wis.

4/10/31

Dear Member:

The Advisory Committee desires to call your attention to Bill No. 198S which aims to divorce the Historical Society from all control over the Historical Library, sequester its property, and turn over the management of the Library to a proposed central Board of Education. I enclose a summary of the arguments against the plan.

Submitted for the Committee by

Joseph Schafer,
Superintendent.

WHY THE STATE HISTORICAL LIBRARY
SHOULD REMAIN UNDER THE CONTROL OF
THE STATE HISTORICAL SOCIETY

1. The Society's management of the Library for more than three quarters of a century is acknowledged to have been completely successful.
2. This is due to its being controlled by men who were interested, capable, and disinterested.
3. Waiving all legal questions, the Society's equities, which certainly the Legislature will not wish to ignore, ramify throughout the institution.
4. The Manuscript Collections which, if priced by dealers, would be worth several million dollars, have been built up wholly on the good will the Society has established, and the moneys given by men like Draper and Thwaites who were interested in their development. Practically no state money has gone into these collections.
5. It was the Society's good will which brought in to the Library the vast aggregations of Keyes papers, Wendell Anderson papers, Vilas papers, Bishop Fallows papers, Kemper papers, Fairchild papers, and La Follette Papers.
6. It gave the Library the incomparable Commons Collection of labor newspapers.
7. This good will brought special publication funds from the S.A.R. and the D.A.R. The Colonial Dames of America for Wisconsin have contributed for the care of certain classes of manuscripts.
8. The endowments, amounting to some \$600,000 and yielding an income of \$30,000, were made to the Society and are likewise to be credited to the good will created by it.
9. The museum, up to four years ago, used no state money for the purchase of specimens. All were either donated or bought from the Museum Fund based on gifts and fees of members.
10. The good will of the Society is to be credited likewise with a very large proportion of the library of Americana, the huge pamphlet collections, the newspapers, and public documents.
11. This good will which is of incalculable value to the state, would be sacrificed by divorcing the Society from the control of the Library.
12. The Historical Library is a great research library for the social sciences as the State Library is for Law. Its relations to the public are in part of a sensitive, confidential nature, which it can maintain most successfully in its long established and universally known character.



Hotel Hamilton

E. H. WEY, Proprietor

100 Rooms 20 With Bath European Plan

Electric Lights, Steam Heat, Telephones

Two Rivers, Wis.

May 14 / 36

Dear Sir

Yours Price Regarding Rates
for Rooms are as follows;

Single Room 1²⁵ 1⁵⁰
For Two in One Room 2⁰⁰ - 1⁰⁰ Each

Rooms with Bath

Single 2⁵⁰ Double 3⁵⁰

Restaurant

clwy Bkfst runs from
35¢ to 55¢

also ala Carte at popular
prices.

If satisfactory let me
know so I can have employees
here at 7 - as our DR does
not open until 8 -

Yours
Hotel Hamilton

In reply to yours of 14th we will
 stay in your hotel this evening
 I think we will
 100 Rooms 20 With Bath, European Plan
 Electric Lights, Steam Heat, Telephone

14th we will
 stay in your hotel this evening
 I think we will
 for two
 a room at \$1.00
 breakfast at 7 o'clock.

was a ~~single~~ ^{double} room
 (out of). Breakfast at 7 o'clock.

Dear Sir

16
 14
 13
 for Rooms are no farther;

single Room for 1.00
 the two in the Room 2.00 - 1.00 each

Rooms with bath
 single 2.75 double 3.00

Partners
 each night same price
 3.00 to 3.50

also the rate as before
 price.

of participating in our
 there as I can have employees
 there at 7 - on our old days
 but from until 8 -

Hotel Hamilton

April 30, 1931

Hotel Hamilton,

Two Rivers, Wisconsin

Gentlemen:

I am planning to bring my class to your hotel on the night of Saturday, May 9. There are 9 men and one lady in the class. Possibly some visitors will also come along. I desire a room with bath for the lady. The rest will go two in a room except that if the number is even I do not care to go in the same room with one of the men of the class unless it has twin beds.

The program will be changed this year so that we will have supper in Two Rivers. We would like to finish supper by six O'clock so as to be able to make a trip to Two Creeks in the evening. Another change will be that the same meal will be served to all. We would like breakfast at seven Sunday morning and again will have same meal served to all. As usual I will pay for the party in a lump sum.

Please give rates for above arrangement and I will let you know the exact number of the party the day before we leave here.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

THE HOME SAVINGS AND LOAN ASSOCIATION

INCORPORATED SEPTEMBER 11, 1895

NO. 2 SOUTH CARROLL STREET

MADISON, WIS.

OFFICERS

G. J. CORSCOT
PRESIDENT

FRANK W. HOYT
VICE-PRESIDENT

R. R. KROFF
SEC'Y-TREAS.

R. H. FARNESS
ASST. SEC'Y-TREAS.

H. H. PUETZ
ATTORNEY

DIRECTORS

G. J. CORSCOT

R. R. KROFF

FRANK W. HOYT

GEORGE KRONCKE

A. J. OELMILLER

R. H. FARNESS

H. H. PUETZ

ANTON METZ

W. H. ORVIS

March 23, 1931.

TO THE STOCKHOLDERS OF THE HOME SAVINGS AND LOAN ASSOCIATION,
MADISON, WISCONSIN:

The directors of the Home Savings and Loan Association assure you that your investment in that association is in no way affected by the temporary position in which the Joseph M. Boyd Company finds itself. The affairs of your association are in excellent condition, and in no way connected with the matters of the Boyd Company.

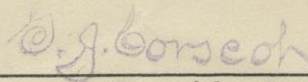
As you undoubtedly know, this association is under the supervision of the State Banking Department, and all of its funds are kept in the officially designated depositories, the State Bank of Wisconsin and the First National Bank, of Madison, Wisconsin.

Until further notice, your payments are to be continued to be made at the office of the Treasurer, at 2 South Carroll Street, Madison, Wisconsin.

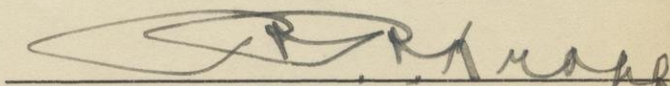
Very truly yours,

THE HOME SAVINGS AND LOAN ASSOCIATION

by



President



Secretary

Sept. 29, 1930

Mr. Paul E. Holmes,
2309 Rosemont Ave.,
Chicago, Illinois

Dear Sir:

Your letter of the 13th to the Department of Geology of the University of Wisconsin and the specimen of rock were given to me for reply. The rocks are all sandstones with the exception of No. 4 which is a quartzite. I cannot see that they contain anything of value. Without knowing the location of your property I am helpless in giving any opinion as to its mineral resources. Oklahoma is a large state with very varied geology and these rocks might have come from anywhere in a very large area. In determining the value of any property the character of the bed rock is not the sole guide but one must also know the manner in which the rock lies. If you will send me the legal description of your property by section, town and range I can give you a much more detailed report.

Very truly yours,

F. T. Thwaites

C. W. HENNEY
2d DIST. WISCONSIN

D. W. HARTMAN
SECRETARY

COMMITTEE:
FOREIGN AFFAIRS

HOME ADDRESS:
PORTAGE, WISCONSIN

Congress of the United States
House of Representatives
Washington, D.C.

Portage, Wisconsin
Nov. 10, 1934

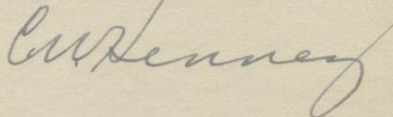
Mr. F. T. Thwaites
Route 4
Madison, Wisconsin

My dear Mr. Thwaites:

I am pleased to inform you that I have written to the Superintendent of the House Document Room in Washington requesting that he send direct to you the publications requested in your letter of November 3. These should reach you very shortly.

Assuring you that it is a pleasure to be of service to you in this respect, I am

Very truly yours



Sept. 5, 1934

Dr. G. W. Henney, Member of Congress,
House Office Bldg.,
Washington, D. C.

Dear Sir:

I wish to thank you for the publications you had sent to me last March. However, I did not receive U. S. Geological Survey Bulletin 840 but instead some other number. If this was an oversight could you please have it rectified?

I have learned that the War Department has made a survey of Menominee River between Wisconsin and Michigan. Could I please obtain a copy of this?

Thanking you for past favors,

Very truly yours,

F. T. Thwaites,

R. F. D. 4,

Madison, Wisconsin

R. F. D. 4, Madison, Wis.

Nov. 3, 1934

Dr. C. W. Henney, Member of Congress,
House Office Building,
Washington, D. C.

Dear Sir:

Could you please secure for me the following Government publications:

U. S. Geological Survey Water-Supply Paper 417

U. S. Geological Survey Water-Supply Paper 658

House Document 146, 67th Congress, 2nd Session (survey of Fox River, Wisconsin).

Thanking you for past favors, I am,

Very truly yours,

F. T. Thwaites

C. W. HENNEY
2d Dist. WISCONSIN

D. W. HARTMAN
SECRETARY

Congress of the United States
House of Representatives
Washington, D.C.

COMMITTEE:
FOREIGN AFFAIRS

HOME ADDRESS:
PORTAGE, WISCONSIN

March 5, 1934.

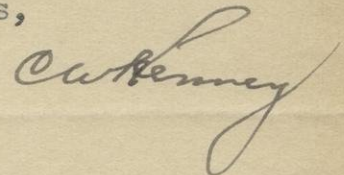
Mr. F. T. Thwaites,
Route 4,
Madison, Wisconsin.

Dear Mr. Thwaites:

I am pleased to tell you that I have asked the Department of Interior to transmit to you the publications you requested in your letter of March 1. If these publications are available, I am sure you will receive them at an early date.

In the event I can be of further service do not hesitate to inform me.

Very truly yours,



March 1, 1934

Dr. C. W. Henney, Member of Congress,
House Office Building,
Washington, D. C.

Dear Sir:

Could you kindly secure for me the following Government publications:

U. S. Geological Survey Bulletins 839, 840, 845, and 858.

U. S. Geological Survey Water Supply Papers 639 and 656.

Very truly yours,

F. T. Thwaites,

R. F. D. 4, Madison, Wisconsin

not sent
not sent no 840



Hotel Hamilton

E. H. WEY, Proprietor

100 Rooms 20 With Bath European Plan

Electric Lights, Steam Heat, Telephones

Two Rivers, Wis.

Dear Sir

Your letter recd and replying
with state, that I will make the
rates of \$1.00 each with bath \$2.00

Meals Supper & Bedjet for each will
be \$1.00 making a rate of \$2.00 for
each person with bath \$3.00

Can serve you as you re-
quest

Hoping to early reply

Yours

Hotel Hamilton

EHW

April 26, 1934

Hotel Hamilton,
Two Rivers, Wisconsin

Attention Mr. E. H. Wey, Prop.

Dear Mr. Wey:

I expect to bring my class to your hotel the night of Saturday, May 5. The class has reached a record low in numbers so that all I can be sure of is six including myself. We may, however, have some visitors but some of these will not be paid for by me as they are not students. Otherwise I would like to have things as previously with an early breakfast on Sunday and lunch put up for Sunday noon. I will wire you of the exact number some time on Saturday afternoon.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

THE PAUL E. STARK COMPANY

Realtors
Offer to Purchase

Madison, Wisconsin October 3, 1938

To Nellie M. Brown
Owner of Property Described Below

The undersigned hereby offers to purchase your property known as No. 41 Roby Road
Street, Madison, Wisconsin, more particularly described as follows: Part of Lot 8 and all of Lots 9 and
10 University Heights.

and agrees to pay you therefor the sum of ~~Twelve thousand Six hundred~~ (\$ 12,600.00)
Dollars, as follows: Four thousand (\$4,000.00) Dollars cash and the balance in a mortgage for
three years at 5 per cent interest with the privilege of paying \$100.00 or any multiple
thereof on the principal at anytime.

All taxes, including installments for special assessments, for the years prior to the current year shall be paid by the
Owner. Taxes, including installments for special assessments, for the current year are to be pro-rated between the
Owner and Purchaser as of the date of possession. All installments for special assessments for years subsequent to
the current year are to be assumed by the Purchaser, and all taxes and special assessments hereafter levied are to be
paid by the Purchaser.

Existing insurance policies are to be assigned to the Purchaser and the unearned premium refunded by the Pur-
chaser to the Owner. Purchaser agrees to carry sufficient fire and windstorm insurance to protect all parties in interest
and assign the policies accordingly.

Conveyance to be (by land contract) (by Warranty Deed), subject to any and all zoning ordinances, building
and other restrictions imposed by law or ordinance, and all easements and restrictions of record affecting the property.

Purchaser is to have possession on the 1st day of December, 1938, from which day
all rentals therefrom shall be payable to the Purchaser.

This offer may be accepted not later than 12:00 o'clock noon of the 12th day of October,
1938, by delivering to THE PAUL E. STARK COMPANY, or to the Purchaser, the acceptance form provided below
duly signed by the Owner and his wife (if any).

Purchaser has handed to THE PAUL E. STARK COMPANY the sum of ~~Five hundred~~
(\$500.00) Dollars, with instructions that the same be paid to the Owner as an earnest money payment
upon the purchase price of the above described property when this offer is accepted. Thereupon, this memorandum
shall constitute a binding contract between the Owner and the Purchaser. In the event that this offer should not be
accepted, the earnest money payment shall be returned to the Purchaser.

Upon the acceptance hereof the Owner agrees, within a reasonable time, to provide the Purchaser with an Ab-
stract showing merchantable title to said property free and clear of all liens and of all encumbrances except as above
mentioned. The Purchaser shall have a reasonable time within which to examine the abstract, whereupon the transac-
tion shall be consummated as above provided.

F. W. Jewaites
Purchaser
Amy M. Jewaites
Wife of Purchaser

The foregoing offer is hereby accepted and receipt acknowledged of the sum of _____
(\$ _____) Dollars, being an earnest money payment on account of said purchase, this _____ day of
_____, 19____. The undersigned Owner agrees to pay to THE PAUL E. STARK COM-
PANY the commission for the sale in accordance with the schedule set forth in THE PAUL E. STARK COMPANY
listing agreement.

Owner

Wife of Owner

Devils Lake Wis

Tues P.M.

My dear Mrs Thwaites. - It was nice of you to think about supplies for me on Saturday. I thank you so much. I had no idea just when we would return and so had not worried or given the subject a single thought. I think eating is least in my thoughts these days for I sure never have seen so much to eat since my days on the farm, when we used to cook for threshers - and your nephew sure knows how and plan such a nice variety. However I will need a loaf of white bread (large), and a little 15¢ coffee cake, also order 1 quart milk and $\frac{1}{2}$ pt coffee cream, and ^{one} ~~one~~ lb butter at A+P. I am sending herewith 1.00 to pay for same and do hope it will not be too inconvenient.

Tommy is just fine and sure is a sturdy traveler. he is out all day nearly and does seem to never get tired until after supper when he goes to bed.

I just read some "funnies" to him and now he is out playing with a little girl who lives across the tracks. He was very happy with his easter bunny ect.

The boys here enjoyed your cake as well as us girls. It was sure good. They voted you a nice "thank you".

over

The weather has been most freakish, having had almost the "57" varieties, but so far the building has been fairly comfortable. So you eat at Lorraine when your husband is away. now isn't that nice. please remember I am just joking.

I like miss Chamberlin a lot, she is so vivacious and unaffected the type of girl I like, we get along fine.

well I'll be seeing you soon when we go back Saturday.

love

Mr. Holcher.

excuse mistakes, my fountain Pen acts up.

May 24, 1938

Mr. E. H. Wey
Hotel Hamilton
Two Rivers, Wisconsin

Dear Mr. Wey:

In reply to yours of the 22d, I realized as soon as
Mr. Fiedler ^{told me} that some mistake had been made in figuring the bill.
I am enclosing a check for \$1.50. I am sorry I was not present
at the time the bill was paid or I might have detected the error.

Yours very truly,

ftt:m

F. T. Inwaites

Enc.

Status of furniture - Mother + George
gas stove with Peate - go ahead but
leave georges

Refrigerator ^{Some stuff} personal

Oil burned part of house
wood personal

Repair on roof near chimney
matter to U.T. Co

Green cottage belongs to W^{co}

offer stock ??

insurance on TT home. let go
our " don't ask
let them ask for taxes - insurance effect
no stock accepted

death or disability - stay home play
safe close in Jan.

we could ^{tear down} garage in rt of way
rengr as beamer but not
as director yet
offer ^{our} home to co for care

11:00 office Sat morning

Type of roof - tar shingle

Astern - Water softener (~~is~~) ^{is} ~~is~~ sure

Fruit cellar - dark room

Heating plant - coal boiler (?) on when the
sept 4 yrs

First down payment

Terms 4000 down 500 to 300 per
long deal

Taxes for present year. ^{now} agree

Owners (?)

time after date 1

no property or regular
rooming house but
can rent 1 or 2 rooms

buy - make small

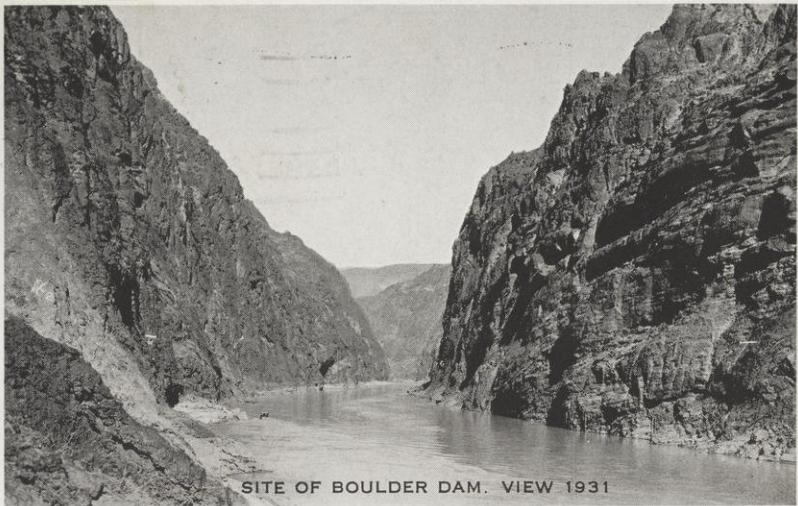
payment

claim for proration
of taxes

30 days notice to

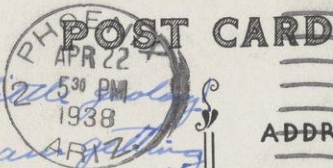
terminate - best to put off offer

to Jan 1.



SITE OF BOULDER DAM. VIEW 1931

MESSAGE



ADDRESS

MR. F. T. THWAITES
GEOLOGY DEPT.
UNIVERSITY OF WISCONSIN
MADISON
WISCONSIN

Have a little geology
Certainly are getting
plenty of it out here.
We had a very interesting
trip up to see the Dunes.
Have you seen it?
Certainly is beautiful
and I would so like
to return soon and
stay a while.
Betty Hagberg



HOTEL HAMILTON

E. H. WEY, PROPR.

ROTARY 12:15 MONDAYS--LIONS 6:15 WEDNESDAYS

TWO RIVERS, WISCONSIN

May 22, 1938

Mr. F. T. Thwaites

Department of Geology

University of Wisconsin

Dear Sir:

After your party had checked out with me Sunday morning I discovered that I had made an error in the calculation of your room account and neglected a charge of a \$1.50. There were eleven boys @ 75¢ or \$8.25; one lady for \$1.50 and yourself and son for \$1.50. This totals \$11.25, but I only charged the party with \$9.75 for room bill.

If you could fix this up without too much difficulty, we would greatly appreciate it.

Sincerely yours,

E. H. Wey

New Haven, May 23, 1938.

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

Dear Prof. Thwaites:

Thank you very much for the very interesting papers I have received from you some months ago. Especially I was interested in your paper about multiplied glaciations in North America. - I have seen here your "Outline of Glacial Geology". This book should be very valuable for me and I wish to get into possession of it. Therefore I presume to ask you where the book mentioned is to be bought. I am going to leave New Haven in June for field work. In some future occasion I plan to make an excursion to West and should be very happy to meet you and to see the known University of Wisconsin.

Sincerely yours

Esa Hyppä

May 11, 1938

Hotel Hamilton
Two Rivers
Wisconsin

Dear Sirs:

Our annual field trip to Two Rivers will be on May 21st. The party will apparently number 13. We would like essentially the same accommodations as last year, that is, supper, room, breakfast, and a lunch put up for Sunday. I will stop at the hotel during the afternoon on our way north and advise you as to the correct number.

As before, we would like the same meal served to all. Payment will be in a lump sum by the treasurer.

Very truly yours,

FTT:N

F. T. Thwaites

July 1, 1937

Mr. Bernard Hougen,
Box 1025,
Ft. Stockton, Texas

Dear Mr. Hougen:

I am afraid that I have been a long time answering yours of June 13 but you know how it is at the end of the school year! At last I was able to talk over the matter with Dr. Winchell.

His advice is that it is scarcely worth while to come back unless you can stay long enough to get a Ph.D. He also says that it is improbable that you could get any single job which would pay \$60 a month partly because your scholastic record before was as you say not very able but also because the amount of time required would necessitate a reduced schedule and so a longer time to get a degree. Even the N. Y. A. jobs which do not pay over around \$40 a month are given only to students with good scholastic records. The fact that you are married also complicates matters in working for board and room. On the whole it would seem better to wait until you have saved more and then stay longer than a year. I realize, of course, that you will now be able to do better work than as an undergraduate but that will not help at first.

With regard to lines of study I fully realize that just now geophysics is all the rage and a knowledge of physics and math is much to be desired. On the other hand the supply of anticlines is getting limited and there may very soon be such an overturn in the oil finding business as there was when they shifted from planotabling surface geology to core drilling and geophysics. Some think the next shift is to detailed sub-surface stratigraphy hunting for other pools like East Texas. Anyway more geology would be a good idea.

I hope that you will be able to see your way to coming back for it is those who have worked for a time who get the most out of University studies.

Sincerely,

Box 1025
Ft. Stockton, Texas
June 13, 1937

Dear Prof Thwaites:

I was certainly pleased to receive your interesting and newsy letter and to hear the news of the developments in the department and in your family as well. Also I am very grateful to you for sending that very excellent paper of photography and for having the "Outcrop" sent to me. I have read your paper thoroughly, and enjoyed the Outcrop immensely.

I might say that the processes of evolution are plainly visible in the "Outcrop", I mean the final disappearance, after years of expansion, development, and growth, of Prof. Winchell's goatee !!

Perhaps you can give me some advice and assistance on a matter which I have been considering a great deal of late. As you know I am working on an electrical short period Suess torsion balance and have been for nearly two years after having been engineer's assistant on a seismograph, followed by several months as "hut buster" of a Bamberg torsion balance party. I state this to show how much of my time has been spent in geophysics instead of geology as I had hoped and planned. Also my mathematics and physics are not sufficient for the advancement which I would hope to eventually enjoy in geophysics, at least that is my fear.

Now the question before me is this; should I go back to school for more geology, math, and physics, not go back, or only take geology and acquire a MA degree in a year, or study only subjects which will better enable advancement in geophysics? I went to the U. of Minn. for a year and a quarter taking only geology courses after leaving Wis. so that I could get my MA in a year I think. Is a reading knowledge of either French or German absolutely essential for a MA in geology? Do you think it might be possible for me to find some employment as assistant, dishwasher, or whatever there may be around the department which would pay say \$60. per month while attending school? It would be essential to have such remuneration for without such I could not afford to leave my position from which I would get nine months leave of absence to attend school. Another thing, I have a wife to support now or I could do as I formerly did and find odd jobs, etc. to suffice.

If I go back to school I would like to return to Wis. and take some petrography, paleontology, and perhaps major in sedimentation - or some such program.

With that in mind perhaps you may determine what opportunities, if any, may be open. I realize that in former days my record as a student was not enviable, but now with a known object to seek, having been out working for a time, and having added responsibilities I assure you that my time would be spent seeking pleasure in pursuing knowledge rather than social delights.

Anything that you may do on my behalf and any information you may be able to give will be much appreciated.

Greet Twenhofel and such other of the staff and students whom I formerly knew. Again thanks, and train Bobby, Tommy, and Billy to be good geologists - I'll bet that you really have a time, and a good time with the tikes.

With best regards,

Bennhard Hougen
Bennhard Hougen

May
April 8, 1937

Dear Professor Thwaites:

You may have forgotten having me in some of your classes in Physiography and Mapping several years ago, but I have not forgotten, nor have I forgotten the fact that you used to take such good photographs of geologic formations, landscapes, etc. Therefore when I saw that article which you had written for the Geological Society Bulletin of a past date I thought of writing to you to see whether or not you might have some reprints of that article. I have not remembered which number of the magazine the article was in, and do not have any of the issues but would like to have a copy of your article. If you have a spare copy would you please send me one? If not could you please give me the number and year of the magazine in which it appeared? I am an inexperienced but avid amateur photography, and since I do take numerous pictures and many of them of geological formations and landscapes I might just as well do them properly and take advantage of your greater experience.

You probably have heard that for the past two years I have been employed by the Humble Oil and Refining Company of Houston, Texas in the geophysical branch of the geological department. I have worked for a short time on a seismograph in south Texas along the Gulf Coast, on a Bamberg torsion balance along the bayous of southern Louisiana among the "Cagins" who cannot speak or understand English, for a short time on a gravimeter - which I predict will eventually replace all other forms of gravity oil finding instruments - , and now I'm in West Texas working on a Suess electrical short period torsion balance as an operator of that very tempermental machine.

From all that I have heard it seems that the geological field is not so crowded as when I finished school, though even now many of the boys find employment in the geophysical department as in geology. Geophysics is rapidly - I think and hope - gaining prestige so that it may soon be on an equal footing with the geological departments instead of a subsidiary with less opportunity for its members. However, something should be done to give the fellows who are leaving school some idea about the various types of geophysical instruments and at least the general idea of their operation. I know that I had no conception of what a torsion balance was before being put on a party operating them. I had heard of seismographs for the detection of earth quakes but had only heard of its use as a means of discovering oil structures, and I do not think that I was the only one thus uninformed and ignorant of this ever-increasingly important method of discovering future oil reserves. The physics departments can teach the theory of the various methods, but the geology departments should instruct its students at least in the

names of the various methods and a smattering of their methods and theory. Just how to do this is a problem because there have been but few books published on geophysics, so that the only manner that I can think of is to have some one who has had field experience give lectures.

Another thing came into my mind, something more personal. Last year I sent my small contribution of \$1.00 to the chap who was editor of the Outcrop at that time with a note to send me a copy - I am still waiting. Could you please send me a copy of this year's Outcrop if it is being published?

I will thank you very much if you will give me the information I seek as soon as is convenient for you.

Give my best regards to Twenhofel, Winchell, Emmons, Shrock, and to Grace Bogart if she is still librarian.

With my very best regards and good wishes, your former student,

Bernie Hougen

Bernhard Hougen
Box 1025
Ft. Stockton, Texas

May 29, 1937

Mr. Bernard Hougen,
Box 1025,
Fort Stockton, Texas

Dear Mr. Hougen:

I was very pleased to get yours of the 8th (misdated April, I think). I had a reprint of the paper on photography mailed to you at once but I was too busy with field trips to be able to get around to answering until tonight. Besides, Bobby who is now eight months old has usurped my study for sleeping quarters and I have to have help to move him whenever I need to work there in the evening! The only time I can work is after the tow others, Tommy and Billy have gone to sleep so that curtails efforts at home work.

Last year's outcrop was published and I will see if I can get a copy sent to you. I do not expect that the one this year will be, at least have no heard that it will be.

Head took Grace to Boston last fall and this year Shrock goes to the same place. Otherwise things are going on pretty much as per usual. Andy Leith is in the Phillipines and Franche and Meek are going out to join him soon. Classes are larger. Physiography started with 38 in the fall and 23 are still on the roll. Mapping started with 35 and 23 went to the Lake including two feminine mappers, the second time in history. Out party numbered 27 all told and we pretty well filled the old hotel.

Since Head left there is, I think, no instruction in geophysics but a course is planned as soon as they get somebody to give it. Have not heard that anyone has been secured, however. I have long urged its importance but nothing was done. There is danger, however, of running out of anticlines and then the geologists proper will come back in searching for the "elephant pools" as Loverson calls them (East Texas type). But that will be a few years yet anyhow.

With best regards,

Sincerely,

April 30, 1937

Hotel Hamilton
Two Rivers
Wisconsin

Gentlemen:

I expect to bring my class to Two Rivers for the night of Saturday, May 8th. We would like to arrange for accommodations as in previous years, including a lunch for Sunday noon.

I would like room and bath for the one girl in the class, and also for myself.

I will stop at Two Rivers on Saturday on our way north and let you know the number. There should be twenty.

I think it would be best to serve the same meal to all both night and morning.

Very truly yours,

FTT:N

F. T. Thwaites

12⁰⁰ noon

Hello Fred —

Sorry to miss you
but am due in St.
Louis tonight so
must go on. Best
regards to you & the
family — Harbaugh

The Northwestern Mutual Life Insurance Company

OF MILWAUKEE, WIS.

HOWARD S. HATFIELD, C. L. U., PRODUCTION MANAGER

W. J. MACK, GENERAL AGENT

1204 CAREW TOWER

TELEPHONE MAIN 2814

CINCINNATI, OHIO,

January 13, 1937.

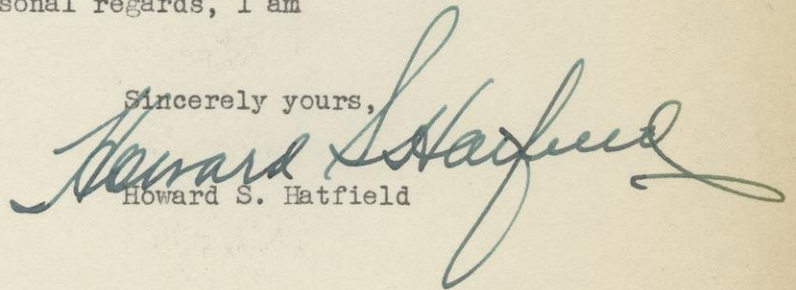
Mr. F. T. Thwaites,
Wisconsin Geological & Natural History Survey,
Madison, Wisconsin.

Dear Sir:

Your "Field Photography for Geologists" came this morning. I have taken the time to glance through it and know that there are many comments in it that I will want to think about. I appreciate your favor very much, and thank you for sending this to me.

With kindest personal regards, I am

Sincerely yours,



Howard S. Hatfield

HSH:S



June 27, 1936

Dr. George D. Hubbard,
125 Woodland Ave.,
Oberlin, Ohio

Dear Dr. Hubbard:

Mr. Edwin Wenberg writes me that he is applying for an assistant-Scholarship at your college next year.

Mr. Wenberg was in my class in Physiography of the United States this past year and made the grade of "A". I found that he was a very good student and pleasant to get along with. I expect to do some field work in northern Wisconsin with him at an early date when I intend to finish the mapping of a large area on which I started 10 years ago. I chose Mr. Wenberg for this work largely because I was very much pleased with his mapping for his thesis.

I am confident that Mr. Wenberg would make good if he is appointed.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

CHAS. HAWKS, JR.
WISCONSIN

HOME ADDRESS:
HORICON, WISCONSIN

COMMITTEES:
INSULAR AFFAIRS
IRRIGATION AND RECLAMATION
CENSUS

Congress of the United States
House of Representatives
Washington, D. C.

2 February, 1939.

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

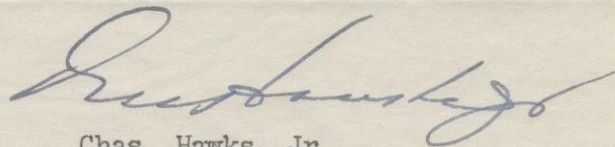
Dear Mr. Thwaites:

Please note from the enclosed letter the limitations on supplying you with all of the desired publications, from the United States Geological Survey. The bulletins furnished will be promptly forwarded out to you, as soon as they reach my office.

I sincerely trust the information furnished will be found useful as well as of interest; and please feel free to call on me at any time for publications or any desired information.

With cordial best wishes, I remain

Yours very truly,



Chas. Hawks, Jr.

encl

17 UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON

FEB -1 1939

Hon. Chas. Hawks, Jr.,

House of Representatives.

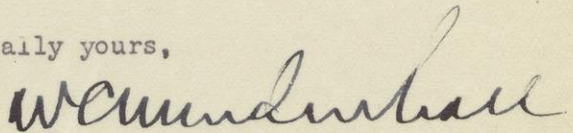
My dear Mr. Hawks:

In response to your letter of January 28:

I have directed that a copy each of Bulletins 891 and 896 and Professional Papers 188 and 189-B be sent to you through the Office of the Superintendent of Documents. The book reports of the Geological Survey are not available for general free distribution, the copies furnished having been withdrawn from the small stocks reserved for official and special uses.

Because of the unusually high publication cost of Bulletin 896, Lexicon of Geologic Names of the United States, and the heavy demands upon the limited official-use stock, it is necessary to advise those who desire personal or additional copies that the report is regularly obtainable from the Superintendent of Documents, Government Printing Office, this city, price \$2.50 for the two volumes.

Cordially yours,



Director.

March 28, 1939

Mr. W. J. Harris,
Committee on loans and undergraduate scholarships,
Bascom Hall

Dear Mr. Harris:

Mr. Don Miller has asked me to write you in regard to his application for a legislative scholarship. I have found him to be a very good and hard-working student who is interested in his studies. I have not yet had him in camp but so far he has proved pleasant to get along with.

Very truly yours,

May 8, 1939

Hotel Hamilton
Two Rivers, Wisconsin

Gentlemen:

I expect to arrive for my annual field trip this coming Saturday afternoon. There are 24 students, one visitor, and myself. Five of the party are girls and I would like rooms with bath for them; also a room with bath for myself. I will stop at the hotel on the way out and inform you of the exact number during the afternoon. We will want the same meal for all, as usual, also Sunday breakfast and a lunch put up for Sunday noon.

This year the party is traveling by bus. I suppose the driver will also want a room but I do not know about this. Also, he will want to know where he can store the bus.

In reply can you give us prices so that the treasurer can collect the correct amount?

Very truly yours,

FTT^{ON}

F. T. Thwaites

HOTEL HAMILTON

E. H. WEY, PROPR.

ROTARY 12:15 MONDAYS--LIONS 6:15 WEDNESDAYS

TWO RIVERS, WISCONSIN

May 9, 1939

Mr. F. T. Thwaites
The University of Wisconsin
Madison, Wisconsin

Dear Sir:

We are happy to quote you the same rates per person as in previous years. For two in a room with lavatory, 75¢ apiece; single room \$1.00; three in two bed room, \$2.25 total. Room with bath for Mr. Thwaites--\$1.50. Connecting rooms, three, with bath for five girls, \$5.00 total.

Supper @ 60¢, breakfast 35¢ and lunch at the usual rate.

Hoping that you have as beautiful a spring day next Saturday and Sunday as today, I am

Sincerely yours,

E. H. Wey

THE UNIVERSITY OF WISCONSIN
MADISON

COMMITTEE ON LOANS AND
UNDERGRADUATE SCHOLARSHIPS

April 4, 1939

Mr. F. T. Thwaites
Science Hall

My dear Mr. Thwaites:

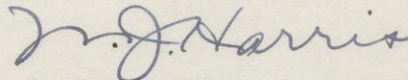
Thank you for your recommendation of Donald F. Hiller for an undergraduate non-resident tuition scholarship. You may be assured that the Committee will give every possible consideration to his application.

If we may be of assistance 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:MF

615 National Road West,
Richmond, Indiana ,
April 6, 1939.

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

Dear Professor Thwaites:

Owing to serious
illness at home I shall be away from the
University for several days. Could you
forward my Glacial Geology examination in
the enclosed envelope.

Sincerely yours,

Francis D. Hole

Francis D. Hole

HARLEY, HAYDON & Co., INC.

INVESTMENT SECURITIES

FIRST NATIONAL BANK BUILDING

MADISON, WISCONSIN

May 2, 1939

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

Dear Prof. Thwaites:

Enclosed herewith are schedules of what appear to be the most attractive investments at the present time in view of the price factor.

The recommendations with regard to operating Public Utility preferred stocks have been confined to utilities in Wisconsin, Michigan and Minnesota.

The schedules of bonds have been set forth according to industrials, utilities, rails, municipals and governments. I have purposely omitted recommendations on bonds carrying an A1 or A1+ rating for the reason that most of the issues are currently selling from $1\frac{1}{2}$ points to 2 points above their call price. Most of such issues are callable on thirty days notice and it seems to me that the risk of buying high grade bonds substantially above the call price is too great. Every bond recommended herein is eligible as a bank investment, and in view of the present prices, appears to be more attractive than bonds carrying a higher rating and selling at present high prices.

I do not feel that I am close enough to listed common stocks to make specific recommendations, although it would seem that if one confined investments in common stocks to those such as appear in the well managed investment trusts, that a satisfactory return could be obtained on such invested funds. However, if there is some particular common stock that has some particular appeal to you, I should be very pleased to obtain current financial information and also a review of the future earnings possibility of those particular companies.

Today an industrial preferred stock of the Compo Shoe Machinery Corporation came on to the market and it appears to be a good conservative stock. The earnings of the company since it was organized have shown an increase for each successive year. The issue is convertible into common stock and carries a

Prof. F. T. Thwaites:

-2-

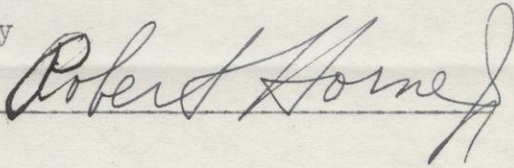
May 2, 1939.

dividend rate of 5%. The offering price is \$50.50 per share. It is rated "A" by Poor's Rating Service and is currently being recommended as a preferred stock to be bought as a sound investment.

Very truly yours,

HARLEY, HAYDON & CO., INC.

By

A handwritten signature in cursive script, appearing to read "Robert Horne", is written over a horizontal line.

RHjr-ES

Encs.

INDUSTRIAL BONDS

	<u>Standard Statistics Rating</u>	<u>Approximate Current Price</u>
AMERICAN I. G. CHEMICAL 5½'s, 1949	B1+	102¼
ANACONDA COPPER CO. 4½'s, 1950	B1+	105
ARMOUR & CO. (DEL.) 4's, 1957	B1+	96¾
BETHLEHEM STEEL CO. 3½'s, 1952	B1+	98
KOPPERS COMPANY 4's, 1951	A	99½
LOEWS, INC. 3½'s, 1946	A	100½
REMINGTON RAND 4¼'s, 1956	B1+	101
SIMMONS CO. DEB. 4's, 1952	B1+	96½

UTILITIES

CALIFORNIA-OREGON POWER CO. 4's, 1966	B1+	97¼
CENTRAL ILL. PUBLIC SERVICE 3¾'s, 1968	A	100½
GATINEAU POWER CO. 3¾'s, 1969	A	98¼
ILLINOIS POWER & LIGHT CO. 5's, 1956	B1+	96¾
MONTANA POWER CO. 3¾'s, 1966	A	97¾

RAILS

ATCHISON, TOPEKA & SANTA FE 4½'s, 1948	B1+	101
BANGOR & AROOSTOOK 4's, 1951	A1	
CHESAPEAKE & OHIO RY. "D" 3½'s, 1996	A1	98 7/8
CHICAGO, BURLINGTON & QUINCY 5's, 1971	A	91
CLEVELAND UNION TERMINAL 5½'s, 1972	B1+	86¼
GREAT NORTHERN RY. SERIES G 4's, 1946	B1+	91

MUNICIPALS & GOVERNMENTS

	<u>Moody's Rating</u>	<u>Yield</u>
DOMINION OF CANADA 3's, 1967	AA	3.00%
DETROIT, MICH. (Non-Optional) $4\frac{1}{4}$'s, 1956	Baa	3.85%
LOS ANGELES, CAL. DEPT. OF WATER & POWER ELECTRIC PLANT REV. $3\frac{1}{2}$'s, 1969	A	3.40%
METROPOLITAN WATER DISTRICT OF SO. CAL. $4\frac{1}{4}$'s, 1956	A	3.25%

OPERATING PUBLIC UTILITY PREFERRED STOCKS

<u>Company</u>	<u>Rate</u>	<u>Dividend Dates</u>	<u>Past Div. Record</u>	<u>Call Price</u>	<u>Approximate Current Price</u>	<u>Yield</u>
1.COMMONWEALTH TEL.CO.(WIS.)	6	J, A, J, & O. 15	Regular	110	99	6%+
2.CONSUMERS POWER CO.(MICH.)	4½	J, A, J, & O. 1	Regular	105	96	4.68%
3.LAKE SUPERIOR DIST. POWER CO.	7	M, J, S, & D1	Regular	110	103	6.79%
4.NORTHERN STATES POWER, MINN.	5	J, A, J, & O. 15	Regular	110	107	4.67%
5.WISCONSIN ELECTRIC POWER CO.	6	M, J, S, & D1	Regular	110	105	5.71%
6.WISCONSIN GAS & ELECTRIC CO.	6	J, A, J, & O. 15	Regular	103	106	5.66%
7.WISCONSIN MICHIGAN POWER CO.	6	M, J, S, & D. 15	Regular	110	108	5.55%
8.WISCONSIN POWER & LIGHT CO.	7	M, J, S, & D 15	Irregular	110	88	5.96%
9.WISCONSIN PUBLIC SERVICE CO.	7	M, J, S, & D 20	Irregular	110	105	6.66%

Suggested InvestmentAnnual
Income

\$4,000 ✓	U. S. Savings Bonds	\$120.00
1,000.	California-Oregon Power Co. 1st 4 1/2 '66 A	40.00
1,000.	^{Canada} Gatineau Power Co. 1st 3 3/4 '69 A	37.50
1,000 ✓	Michigan Consolidated Gas Co. 1st 4 1/2 '63 A	40.00
1,000	Montana Power Co. 1st 3 3/4 '66 A	37.50
1,000 ✓	Milwaukee Gas Light Co. 1st 4 1/2 '67 Baa	45.00
1,000 ✓	Armour & Co. 1st 4 1/2 B '55 Baa	40.00
1,000 ✓	^{Canada} Koppers Co. 1st 4 1/2 A '51 A	40.00
5 shs.	Commonwealth Tel. Co. Pref. Stock (6%)	30.00
5 shs.	Lake Superior Dist. Pwr. Co. Preferred (7%)	35.00
5 shs. (114)	Wisconsin Public Service Co. Preferred (7%)	35.00
5 shs. (98)	Consumers Power Co. (Mich.) 4 1/2 %	22.50
5 shs. (100)	Wisconsin Public Service Co. 7%	35.00
5 shs. (108)	Northern States Power ^(min.) Pref. 5%	25.00
35 shs.	Boston Fund (Dividend in 1938) (14.70)	24.85
30 shs.	Incorporated Investors (Dividend in 1938) ^(15.18)	28.50
		<u>\$635.85</u>

<u>Issue</u>	<u>Par</u>	<u>Cost</u>	<u>Market</u> 5-16-39	<u>Unrealized</u> <u>Appreciation</u>
Federal Farm Mortgage Corp. 3 $\frac{1}{2}$ '49	500	510	546.80	36.80
" " " Corp. 3 $\frac{1}{4}$ '64	2,500	2,500	2,743.75	243.75
Home Owners Loan Corp. 3 $\frac{1}{2}$ '52	7,075	7,075	7,730.83	655.83
U. S. Treasury 2 $\frac{3}{4}$ '54.	2,500	2,497.66	2,715.00	217.34
U. S. Treasury 2 $\frac{7}{8}$ '60.	2,000	2,011.56	2,178.60	167.04

3 1/8

Total \$14,075. 14,594.22 15,914.98 1,320.76

Income \$434.75

Wisconsin Operating Utility Preferred Stocks

<u>Issue</u>	<u>Rate</u>	<u>Dividend</u> <u>Rate</u>	<u>Yield</u>
Commonwealth Telephone Co. (Wis.)		6	6.00%
Lake Superior Dist. Power Co. (Wis.)		7	6.73%
Wisconsin Gas & Elec. Co.		6	5.60%
Wisconsin Public Service Co.		7	6.54%
Wisconsin Electric Power Co.		6	5.66%

10,000.

2.90

10,000.

Boston Fund ----- 15.15

Incorporated ----- 16.39

Mass. Fov. Trust ----- 20.94

Bonds

Morby
Rating

A California-Oregon Pwr 4 $\frac{1}{2}$ '66 ----- 98 $\frac{3}{4}$ ✓

A Chicago, Burlington & Quincy, genl 4 $\frac{1}{2}$ '58 ----- 96 $\frac{7}{8}$

A Gatsineau Pwr Co. 1st 3 $\frac{3}{4}$ & '69 ----- 98 $\frac{1}{2}$ ✓

✓ A Mich. Consolidated Soc, 1st 4 $\frac{1}{2}$ '63 ----- 99 $\frac{7}{8}$ ✓

A Montana Power Co. 1st 3 $\frac{3}{4}$ & '66 ----- 99 $\frac{3}{8}$ ✓

Baa Cleveland Union Terminal 1st 4 $\frac{1}{2}$ & '77 ----- 72 $\frac{1}{2}$

Baa Great Northern Series B 4 $\frac{1}{2}$ '46 ----- 92 $\frac{1}{2}$

✓ A Koppers Co. 1st 4 $\frac{1}{2}$ A '51 ----- 100 $\frac{1}{4}$ ✓

✓ Baa Wheeling Steel, 1st 4 $\frac{1}{2}$ & A '66 ----- 93 $\frac{1}{2}$

✓ Baa Milwaukee Gas Light Co. 1st 4 $\frac{1}{2}$ & '67 ----- 98 $\frac{5}{8}$ ✓

✓ Baa Armour & Co. 1st 4 $\frac{1}{2}$ B '55 ----- 98 $\frac{1}{8}$ ✓

A Chi. & Western Ind, Cons. 4 $\frac{1}{2}$ '52 ----- 88 $\frac{1}{2}$

Preferred Stocks

Commonwealth Telephone Co. 6%. ----- 100

Consumers Power Co. (Mich.) $4\frac{1}{2}\%$ ----- 98

Lake Superior Dist. Pwr. 7%. ----- 104

Wisconsin Electric Pwr. 6%. ----- 108

Wisconsin Pwr & Lt. 7% ^($\frac{3}{4}$) ----- 95

Wisconsin Pub. Service $6\frac{1}{2}\%$ ----- 103

Land + Bldg. (appraised value) --- \$8,300.
Shorewood Hills

Amount of Loan desired --- \$4,000.

Rate - 4 7/8 Maturity - 10 years.

Borrower wishes to provide for \$200.
or more per year payment on
principal, and desires to pay debt
in full prior or by maturity date.

Security - Six room house of recent
construction in Shorewood Hills.

Borrower is an assistant professor
in law school.

offered 4 1/2 15 yrs

where & who

B6492

1136 Shorewood Blvd.

home - this house ^{part school} ^{next NW} ^{turn left} ^{below Phillips} ^{Modernistic}
"cubist" style w/f. will be painted ^{Teratsky} ^{this now}

B 6492

ROBERT HORNE, JR.

HARLEY, HAYDON & CO.
INVESTMENTS

FIRST NATIONAL BANK BLDG.
MADISON, WISCONSIN

assessed valuation

Land & Bldg - - - - - \$ 6,800

1500x 5,300

9,300.

Cost - - - - - \$ 9,200.

\$ 4 1/2 to 5 yrs. old.

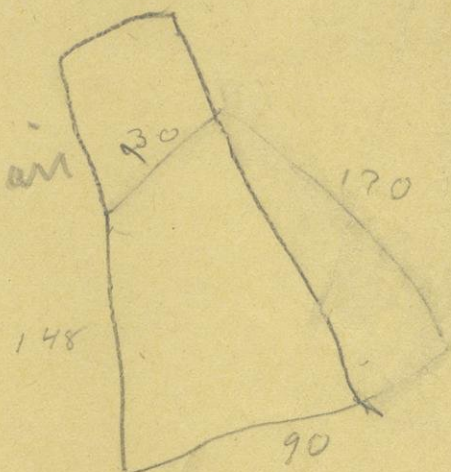
J.H. Benzler
Anna Puff

Well insulated, with Celotex
House bolted to concrete foundation.

Built in China closet.

Stoker. Forced ventilation. hot air

2 car garage.



90-170-148-30

~~Hardwood~~ Oakwood flooring. Birch workbench.

7 rooms.

RECEIVED

May 21, 1939

Mr. Robert Horne, Jr.,
Harley, Hayden and Co.,
First Central Bldg.,
Madison, Wisconsin

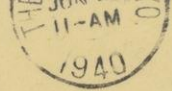
Dear Mr. Horne:

After careful discussion of the list of securities you offered as substitutes for the U. S. bonds in the estate of my late mother, Mrs. Thwaites and I have decided not to make any changes at the present time.

We are unalterably opposed to all forms of investment trusts and so many of the other offerings meet with our disapproval that I feel the situation is hopeless at present.

As I shall be very busy for the last weeks of school I will not have any opportunity to discuss these matters but will appreciate it if you will kindly return the list I lent you.

Very truly yours,



THIS SIDE OF CARD IS FOR ADDRESS

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

Dear Mr. Thwaites -

We are now discussing religion on the banks of Wind River, in Thermopolis Wyoming - The valley itself is nice, but as for the rest of the Big Horn Basin Fennewan can have it - We crossed the Big Horns and they were beautiful - but I still think the Black Hills top everything. We spent a day there, and an afternoon in the Badlands - My Physiography comes in mighty handy - Egad behaving wonderfully - We see Beonie and the Fischers tomorrow at Lander - Ten Sleep canyon would even make "Babe the Bumptious" wear out his soles -

Best Regards Don and Tom

HARLEY, HAYDON & Co., INC.

INVESTMENT SECURITIES

FIRST NATIONAL BANK BUILDING

MADISON, WISCONSIN

May 23, 1939

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

Dear Prof. Thwaites:

In accordance with your request, I am returning herewith the list of security holdings in the Estate of your late mother.

I am at a loss to understand what so completely changed your opinion of the list of prospective investments submitted to you by myself. The list was very carefully selected with every consideration being given to security and continuity of income.

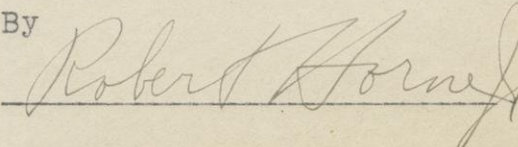
Inasmuch as the list has not met with your approval, may I suggest that we are at all times in a position to purchase any type of investment that you may desire in the current market. You will recall that it was my original suggestion that the government obligations be sold and that the profit be taken. We seem to agree completely on that point. Perhaps it would be well to let us sell your governments and have the proceeds deposited to your bank account pending the selection of investments that meet with your complete approval.

I shall be very pleased to be of service to you in the future on your investment problems.

Very truly yours,

HARLEY, HAYDON & CO., INC.

By



RHjr-ES

Enc.

Madison Wis Sept 1-39

Dear Mrs Thwaites: I thought you might like to hear how things are at home so will send this to Pt Arthur and you may or may not receive it. All is well here and its moving day in Madison. Vans to the right of us, Vans to the left of us, on to new homes - move the 400. There was a heavy rain storm with wind Tues night, lights were all out and Phones out of order also our radio fades out and cant be heard. I miss it so much being here alone so I called Gas Co this am to come and see whats wrong. Others in the neighborhood are also out of commission. I was rather Panicky until I found a flash lite in the Kitchen drawer and hunted for candles. I used to keep mine in the fruit cellar to keep them from melting in summer and after a frantic search sure enough I found not only candles there, but that you and I do the same things sometimes. There is no mail that seems to be of importance except a legal type envelope from C. H. Womner Almena Wis, to Mrs Thwaites. I had a call from Edna Lansing that Mrs Peake

called there and said there was a special Del letter
there as well as several others so I had to go out
yesterday morning and get them. the special was
from my niece at Waupun who was coming down
to get me Sat and take me with them on their
vacation trip up around the northern lakes. I urged
her not to come as I couldn't go now. I really don't
care as they are young and Peppy and I usually
can't keep up their lively pace. I am enjoying
this rest here more than anything I could do during
this heat. When I came back from peaks the Puppy
was missing and I was much worried. I went all
around the neighborhood and no where could I find
him. I called the Humane Officer and the Police to call our
number should he be turned in or phoned about.
I knew Tommy would feel very badly and never
love me any more for letting his dog get lost, but
about 4 o'clock 5 hrs later I went out again to call him
and look some more and there he was on the lawn
with a big grin as happy as could be and I too
was sure happy. He misses the children and so I
play with him a good deal and he plays with
Peter too much as he may get hurt crossing the St.
Poor Bobby does he still miss his bed. was pleased to
get your letter. Haven't seen or heard anything of Fern
Do hope you are having a nice time. Love Mrs Holscher

OREGON STATE COLLEGE
SCHOOL OF SCIENCE
CORVALLIS, OREGON

DEPARTMENT OF BOTANY

Nov. 27, 1939

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

Dear Sir:

Again I come to you for help. I have recently completed a pollen analysis of two bogs near Vancouver, B.C. One is on a delta island at the mouth of the Fraser R. and the other on glacial drift about ten miles in from the saltwater (Strait of Georgia). In the lower levels I find the high percentage of lodgepole pine which usually occurs in bogs out here. Then this is rapidly replaced by Sitka spruce which is a fog belt tree. Grows abundantly on the west side of the Olympic peninsula. This is followed by the climax forest of Douglas fir and hemlock. In my previous papers on this region I have interpreted the initial forests of lodgepole pine as indicative of a cool and moderately dry climate, in spite of the proximity (perhaps) of receding Vashon ice. In this case I have the problem of the proximity of the ocean to

the bog. Would the winds perhaps blow away from the ice toward the ocean, thus making an early ^{part of the} postglacial period dryer than it would become later on after the ice had entirely disappeared. Then as the ice disappeared and its influence gone, would perhaps the winds resume their normal direction and blow off the ocean again? I realize that this is a complicated problem and can not be answered in a few words, but I was wondering if there was a general statement concerning the directions of winds in relation to the glacier, which would be modified by the proximity of the ocean. I am enclosing a graph of one bog to show the forest succession, which you may discard when you have seen it.

I came here this fall from the U of Wash., and hope it is a permanent position. Thanking you, and hoping it will not cause you too much inconvenience, I am,

Sincerely yours,
Henry P. Hansen

xxxxxxx 41 Roby Road,

Dec. 1, 1939

Dr. Henry P. Hanson,
Dept. of Botany,
Corvallis, Oregon

Dear Dr. Hansen:

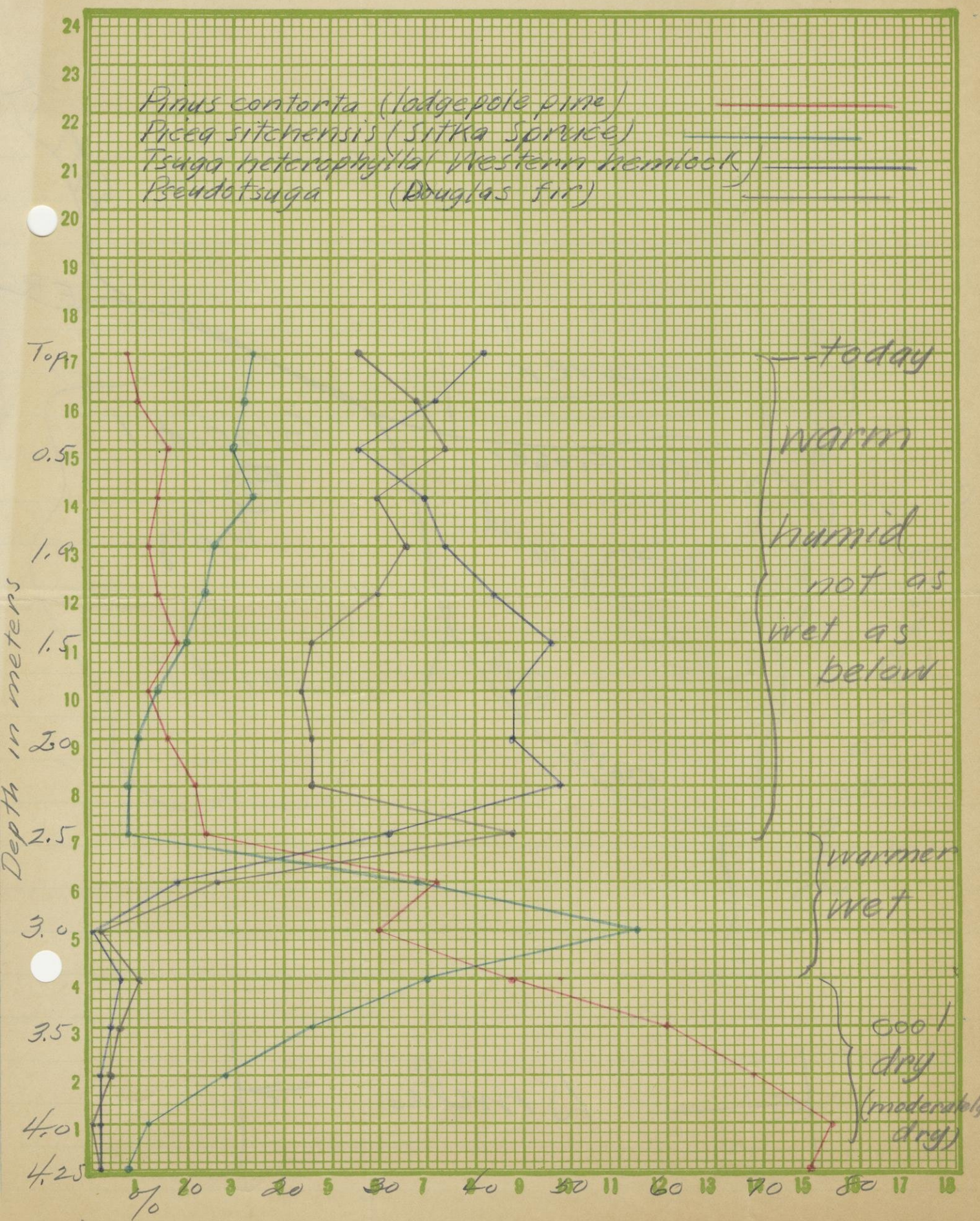
Your very interesting letter and diagram of Nov. 27 are at hand. It seems to me that your explanation is interesting but it does not convince me. When in Glacier Bay in 1913 we found the wind was prevailing down off the ice but it was most miserably cold and damp. Of course, this surface air drainage did not affect the higher winds and we were in a place not exposed directly to the ocean. Somehow, I just can not seem to see how such air drainage could make a dry climate. Compression of the air due to descent is supposed to warm it but I didnt notice much warmth in Glacier Bay. I am, however, not familiar enough with the flora there to compare it with conditions during the ice melting farther south. May there not have been a climatic change due to other causes, possibly a shift in ocean currents?

Another thought, probably not worth much, is the climatic effect of a lower ocean level due to glaciation or again, to changes in level as shown by abandoned beaches.

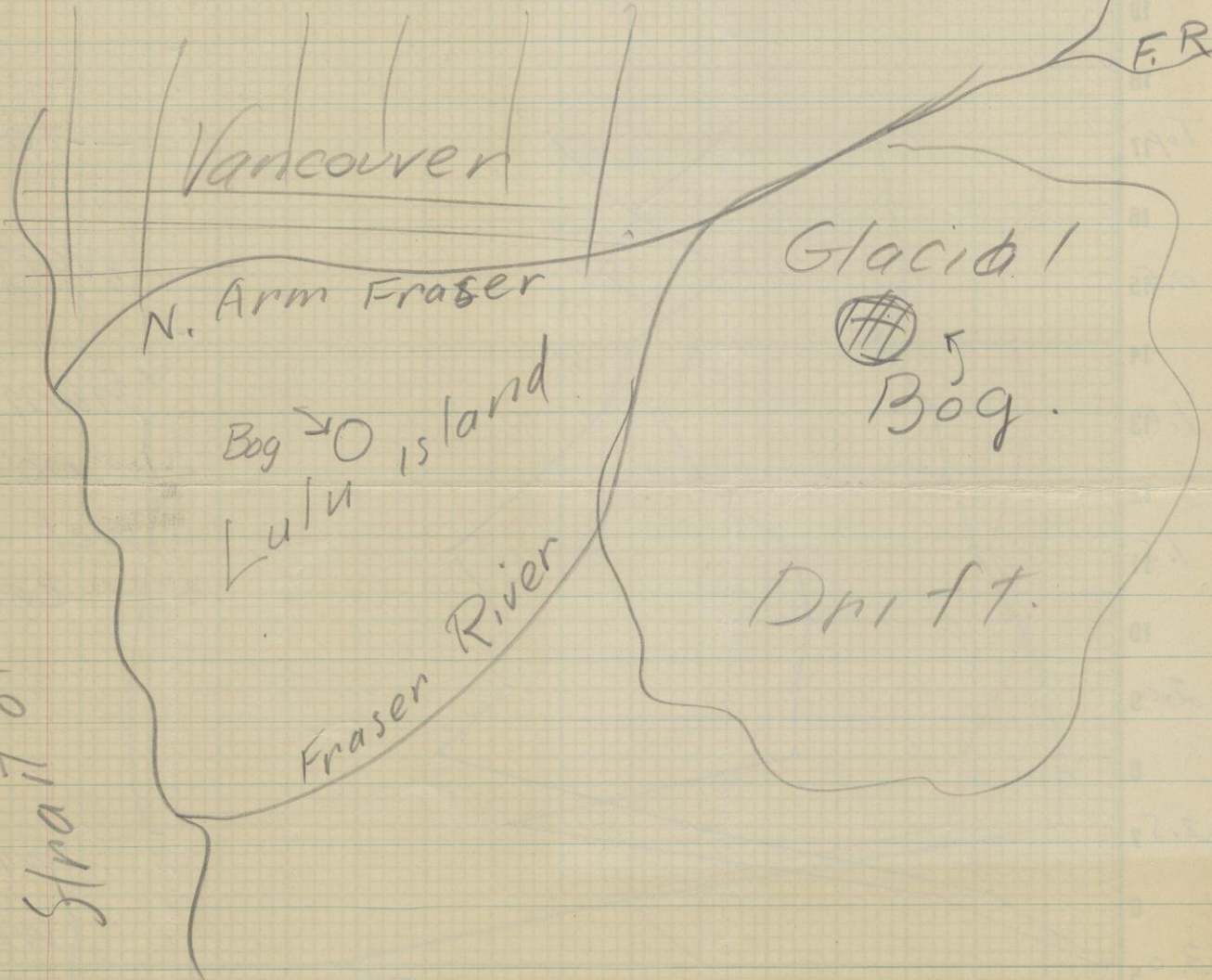
In Wisconsin I have thus far been unable to prove effect of the ice on wind directions very far from the margin of the ice.

Best regards, Sincerely,

Bog near Vancouver, British Columbia.



Straits of Georgia



← 15 miles →

Announcing



3 C 1040

VOLLAND

PRINTED IN U.S.A.



The Arrival of
Charles Robert Howell
on April 24 - 8 P.M.
Corpus Christi, Texas
8 lbs - 10 oz.

Hansell

~~XXXXX~~ 41 Roby Road

December 16, 1939

Dear Gertrude:

We received the notice of the birth of Charles Robert Hansell last spring and I went to congratulate you. Dorothy Durend is bound to have a daughter and last July she had her fourth boy. By the time the second and third baby arrives in a family one is at a loss to know what to send it and I am, therefore, sending its mother a handkerchief.

Florence Burkman has built a new home in East Lansing, Michigan.

Miss Veerhusen's mother passed away during the summer.

Last summer Mr. Bean struck some fresh oil while he was driving. His car was a complete wreck and he received a broken collar bone.

I'll bet you have been some busy with the two babies.

Sincerely,

A

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF GEOLOGICAL SCIENCES
BERKELEY, CALIFORNIA

January 30, 1940

Professor F F Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Professor Thwaites:

I wish to thank you for sending the copy of your outline on glacial geology, and I enclose a check for \$2.50 in payment.

I hope that you will be able to develop this into a book in the near future and that Prentice Hall Company, for which I am editing a geology series, will print it. I am sure that this will make a splendid book and one which will interest many people. I realize, of course, that the workers in glacial geology are relatively few, but I think that there are many others who would find it worth reading.

I also wish to thank you for the various copies of your papers which came out a little later. I am very glad to have these for my files.

It was a pleasure indeed, to meet you while I was in Madison and to talk over several matters which we did. I hope that I may visit there again in the not too distant future, and I welcome you to our Department in case you should come to this part of California.

With kindest regards, I am

Very sincerely yours

Norman E. A. Hinds

N E A Hinds

NEAH/CGC

xxxxxxxx 41 Roby Road,

March 7, 1940

Mrs. A. C. Holscher,
304 N. Carroll St.,
Madison, Wisconsin

Dear Mrs. Holscher:

In reply to your inquiry of recent date I can state that I can identify my signature on the lease executed by your late husband and yourself with the Turvill Estate Company on May 8, 1936. I filed a copy of the same lease in the letter file belonging to said company of which I was at that time secretary and treasurer. I remember very clearly the discussions of the terms of the lease and that Mr. Holscher typed the clause in regard to removal of the cottage just before we signed the papers. Later after discussing the matter with all members of the Turvill Estate Company who resided in Madison we struck out the provision that the cottage was to be located between the two other cottages.

I trust that this will answer your questions.

Sincerely,

OREGON STATE COLLEGE
SCHOOL OF SCIENCE
CORVALLIS, OREGON

DEPARTMENT OF BOTANY

January 20, 1940

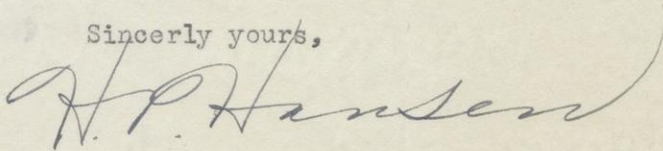
Mr. F. T. Thwaites
41 Roby Road
Madison, Wisconsin

Dear Mr. Thwaites,

I wish to thank you for your letter before Christmas giving me your opinion concerning the initial postglacial climate in B. C. I have come to the conclusion that the lodgepole pine is not necessarily indicative of a dryer climate than at present. Apparently the coastal form of this species likes a damper climate than the interior form, in Wyoming for example. The recently deglaciated areas at Glacier Bay, Alaska, I understand are invaded first by a conifer forest of Sitka spruce, which is certainly a wet climate indicator.

Again thanking you, and with best regards, I am,

Sincerely yours,



Henry P. Hansen
Instructor in Botany

41 Roby Road,
Madison, Wis.,
Feb. 22, 1940

Miss Mary Emogene Hazeltine,
109 Price St.,
Jamestown, New York

Dear Miss Hazeltine:

Your card sent at Christmas has been in my "require attention" folder a long time but tonight I will take advantage of a lull in the preparation of income tax papers to answer it.

We now seem to have the new house, that is new for us, very well fixed up and going smoothly. The gas heat is functioning smoothly this year after I worked out what was wrong with it. The whole place has been painted and a sleeping porch added. We think we can soon turn on the heat on the downstairs porch and begin to use that again. We miss it very much.

We have never regretted leaving Turvillwood for the atmosphere of strife there was just too much to endure any longer. We all seem to get so much more done in town than when we had also the strain of going back and forth from the country. The boys seem at last to be getting along in the new school very much better now that a certain disturbing influence is gone. Billy was much disturbed by the fact that having acquire four girl-friends he was uncertain which one to marry. At last he seems to have decided on the little girl across the street. Today she was promoted ahead of him in school so he too has come to "home work". to keep up with her!

I sometimes get over to see Mr. Dudley who has been confined to his bed for a long time. He was up for a time last summer but that ended in a fall and a broken leg. Now the trouble, lack of circulation seems to be spreading. I really must get over there again but home demands must have first call and there is no use going there with any of the children.

Mr. Doane who took Mr. Smith's place lives just across the street and his little boy who is younger than Billy and older than Bobby is often over when the weather is warm.

Miss Nunnis now lives only a few blocks from us but just as we thought we might get to see her she came down with a heart attack. But it is over a quarter of a century since one doctor said that she could not live another year so we just can not seem to worry. Last year I used to often ride in the same taxi with Miss Beecroft but this year I either walk or use the bus so I do not seem to hear much from the library unless I happen to meet either Mr. Doane or Mr. Brown who lives just across from Doanes.

This year I have been hiring help myself to get my laboratory reports read so as to use the time in finishing a report which is long overdue. I am actually making progress albeit slowly and when it is done can take on any new projects that come up.

Bobby is just learning to talk but as the older boys will not play with him the progress is slow. But there is nothing electrical in the house which he can't connect up and use nor is any cubbord too high for him to climb to! That just keeps somebody on the jump all day long.

Any and I seem to be all right except for colds. We hope you are ^{well} ~~the same~~
Sincerely,

615 National Road West,
Richmond, Indiana,
March 6, 1940

Professor F. J. Thuwates,
Department of Geology,
The University of Wisconsin,
Madison, Wis.

Dear Professor Thuwates:

You have doubtless heard from Professor Minchell the reason for my continued absence from the University, namely that my father is ill with acute influenza and has asked me to teach his geology classes, here at Earlham College, until he has recovered. I am of course glad to help him any way I can, although this interruption of my work at Wisconsin is serious. I do intend to begin thesis work in Wisconsin this summer. I hope to be able to be back to discuss plans for this work with you, not later than early April.

I hope that you have escaped influenza and that your family is well.

Sincerely yours,

Francis D. Hole

~~xxxxxxx~~ 41 Roby Road,

March 25, 1940

Mr. Francis D. Hole,
615 National Road West,
Richmond, Indiana

Dear Mr. Hole:

I was just about to answer yours of the 6th and tell you how lucky we had been in respect to illness this winter when Bobby came down with bronchitis and was in bed for a week.

No, I had not heard of your father's illness although I had noticed that you were not around. I was sorry to hear of it but the practice will be good for you.

Mapping numbers 29 and keeps me busy. There are 31 in physiography but glacial fell to only 8. We go to Devils Lake on the 12th of April and so far there is little sign of spring. Will be glad to talk over things when you get back.

Sincerely,

Apt. C, 642 State St.,
Madison, Wis.,

April 16, 1948

Dear Professor Thwaites:

I have been sorry to hear through Ray Wilcox of your illness. It is too bad for the mapping class, as well as for you. The weather, however, seems to have been favorable thus far this week for out-door work, and it will be fine if it continues so. I hope you have a speedy recovery and will be out again soon.

Very sincerely,

Francis D. Hole

~~XXXXXX~~ 41 Roby Road,

May 9, 1940

Hotel Hamilton,
Two Rivers, Wisconsin

Gentlemen:

I expect to bring my class to Two Rivers for the night of the 16th of this month, that is a week from Saturday. The total count is much less this year than last for there will apparently be only ten ~~in all~~ in all. We would like to get accommodations as before, namely dinner for all, two rooms with bath preferably those in the middle of the house, breakfast, and a lunch for Sunday noon. The seven men students will want rooms without bath.

Very truly yours,

615 National Road West,
Richmond, Indiana,
June 23, 1940 .

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

Dear Professor Thwaites:

I caught the 4:50 P.M.
train to Chicago and arrived here at 3:00 A.M.
today. I wore my geology hammer all the way
down, to amuse the natives.

I hope that Tommy's rock garden is flourish-
ing.

Please give my regards to Mrs. Thwaites.

Thank you again for a very memorable trip.

I hope to see you again soon.

Very sincerely yours,

Francis D. Hole

75 ROOMS--15 WITH BATH
HOT AND COLD WATER

EUROPEAN
STEAM HEAT--PHONES

HOTEL HAMILTON

E. H. WEY, PROPR.

ROTARY 12:15 MONDAYS--LIONS 6:15 WEDNESDAYS

TWO RIVERS, WISCONSIN


May 12, 1940

Mr. F. T. Thwaites

Dear Sir:

Accommodations will be provided as you
requested.

Very truly yours,

A handwritten signature in cursive script, appearing to read "E. H. Wey". The signature is written in dark ink and is positioned below the typed closing "Very truly yours,".

~~XXXXXXXX~~ 41 Roby Road,

Oct. 29, 1940

Mr. Henry Hamusa,
R. F. D. No. 1,
Loganville, Wisconsin

Dear Mr. Hamusa:

When we visited the Falls Saturday there was nobody at home. There were 34 in my party so I am sending check herewith for \$1.70. No receipt is needed as I will have the cancelled check.

With best regards,

Sincerely,

~~xxxxxxxx~~ 41 Roby Road,

June 25, 1940

Mr. Francis D. Hole,
615 National Road West,
Richmond, Indiana

Dear Mr. Hole:

Thank you for the note telling me that you got home all right.

Your were right. Tony was all broken out with measles when we got home. The spots are almost gone now and he feels all right but we are quarantined again and will give serum to the others so they will also have it light as did Tony.

Developed the pictures last night and am having some prints made for you which I will keep until you return.

I have been figuring the cost of the trip and find the cash outlay, that is aside from wear and tear of the car was roughly \$22 so think you paid too much and will settle up with you on your return.

Think you have had measles if I remember correctly. I am sure Tony did not show it at noon.

Sincerely,

Marshfield,
July 5, 1940

Dear Professor Thwaites:

Arrived yesterday
morning, bored at the roadside cut
at the Farm, taking samples from the
surface down 14 feet. Water Table at 10 feet
Vigorous effervescence with HCl at 11 ft.

Got room in evening. P.O. address = Box 5.

Today bored near the windmill 14.5 ft. and
got only very mild effervescence in a dark clay
at 11 feet. Water at 6.5'

Sincerely, Francis W. Hole



THIS SIDE OF CARD IS FOR ADDRESS

Professor F. J. Mwaites, Dept. Geology
Science Hall,
U. of Wis.,

Madison, Wisconsin

XXXXXXXX 41 Roby Road,

July 8, 1940

Mr. Francis D. Holo,
Box 5, Marshfield, Wisconsin

Dear Mr. Holo:

I was very glad to get your card of the 5th and learn you had checked the well record. However, I do not quite see how leaching extends below water table. Take it that water is high because of the heavy rains. Wonder if you could get any logs of the city wells. They did a lot of testing and must have kept log. The farmer at the Station told me that he hit the buried soil at his home. He also can tell you more about the deeper well behind the barns.

Finished the map I was working on when you went through. It seems to show an area of concealed calcareous drift in northern Langlade and southeastern Lincoln counties. This may correlate with the Marshfield drift. I put all known marl deposits on the map. They occur only where water is close to or above 100 p.p.m. of CaCO₃. Now I am working on historical diagrams which is more fun but harder.

Hoping you keep on getting such good results. We have been released from quarantine but Billy and Bobby never came down at all. The shots were too strong, I think.

Sincerely,

July 5, 1940
 Bot #5, Marshfield
 Wis.

Dear Prof. J. Thurston:

Here are some data on Boring:

Date	Total depth Counting road- cuts	Ease of Boring	Reaction	Locality	Color
7/4	15'	Easy: wet till	Calc. at 11'6"	Marsh. Exp. Sta.	red-brown
7/5	4'	gravel - natural at 3'	non-calc.	" E. of windmill	"Black"
7/5	15'	Easy: wet till	"Black clay" Calc. faintly to in spots at 11'6"	" Exp. Sta. E. of windmill	"Black" (dark grey)
7/5	15.1'	Very difficult. Hard stony till	non-calc. Some gravel in till	T 25N, R 3E 17/20 sec. line 17/20	limonite Brown
7/6	8.35'	stony: fair ease	Calc. in gray just below red; 2 calc. at 6.36'	T. 25N, R 3E sec. line 18/19	grey benalake
7/6	7'	Hot Rocks	non-calc	T 25N R 2E 13/24	red
7/6	11.0'	auger broke at 11.5'	non-calc	same	red

→ Have been digging for the auger all day! F.D.H.



THIS SIDE OF CARD IS FOR ADDRESS

Professor F. T. Shwaites,
Dept. Geology, Science Hall,
University of Wisconsin,
Madison, Wis.

41 Roby Road,
Madison, Wis.,
July 16, 1940

Mr. Francis D. Hole,
Box 5,
Marshfield, Wisconsin

Dear Mr. Hole:

Yours of the 14th crossed my reply to your second card. Glad to hear you are making progress and especially to get the records of the test holes.

First, I want to say that I realize the problem is hard, very hard, in fact. It is confused rather than aided by Weidman's old conclusions, ones he repudiated in the later unpublished report. There is, of course, a basis for his opinions but it may prove invalid as to age. I am prepared for the possibility that all the drift south of the moraine is no older than Iowan and, in fact, the moraine might as well be Tazewell as Cary despite my conclusions of 1928 in Langlade County. Another possible thing is that differences in local conditions, especially the presence of sandstone bed rock may obscure age differences.

But it seems as if certain conclusions are already established. First, the drift around Marshfield is calcareous at depth and so must have come from the northwest. Second, the depth of weathering is very considerable and some of the soils on low ground closely resemble gumbotil although they may not actually be of Illinoian age. The Iowan in Iowa is leached some 8 feet if I recall correctly. You get depths of leaching up to more than 15 feet which is rather suggestive of age. This raises the question if on high ground the oxidized "Second Drift" might be mistaken for the primary red of the "Third Drift"? I have also suggested that Weidman's Second and Third Drifts may be the same with a margin to the south somewhere near to the supposed "Marshfield Moraine" or even south of it in places. I note you struck rock in the moraine which tends to support Bean's interpretation as a rock divide. Second, it seems assured that the Third and Fourth Drifts came from the north or northeast. Therefore, there ought to be a difference in contained rocks as shown in pebble counts. This drift is certainly non-calcareous throughout. Third, the similarity of soil inside and outside the moraine suggests close relation in age as well as in source of the till. Fourth, the logs of the test holes south of Marshfield show pre-drift alluvial deposits which seem from the buried soil to be distinctly older than the surface till (ground in the logs) but have not yet been proved to lie on an older till.

Don't get discouraged if nothing seems proved at first. I worked over two months on the Lake Superior sandstone before I could see any conclusions whatever and then it was rapidly cleared up and nobody has been able to contradict me in 30 years! It seems as if the greatest difficulty is going to be securing samples from below the depth of weathering, especially enough to make pebble determinations. But laboratory tests may well show up more than we now suspect. Anyhow, let's carry on and hope to get a clue somewhere.

We are all well now with Tommy and Billy both in summer school.

Best regards,
Sincerely,

Box #5, Marshfield, Wis.,
July 14, 1940 .

Professor F.T.Thwaites,
Department of Geology,
The University of Wisconsin.

Dear Professor Thwaites:

Thank you for your recent letter. I enclose data on test holes which I could get, though I cannot see that they can be of much use, except to show the complexity of materials here.

Weather was favorable for field work all last week except Thursday morning when rain spoiled the morning. I have gone out once with Dr. Louis Nelson. I generally start out about 6:30 and return about 8:00 in the evening. I have been examining the soil about every 0.4 mile along roads as far south as Cary Mounds, and as far north as Abbotsford. Saturday I went west of Westboro in the Cary drift and could not tell the difference between the Colby soil there and the Colby soils to the south. I have also found no difference in color of drift...the red stoney till occurring on the "2nd", "3rd" and under the Colby in the Cary area, alike, as far as I can see. South of the "Marshfield Moraine" so much sand comes in that sandy soil replaces the red boulder clay, though I have found smooth very red stone-less clay one place south-east of Cary.

I enclose a series of rough diagrams on the basis of Kellogg's analyses of these soils, with which you are of course entirely familiar, in order to indicate how I am trying to go about finding a means of seeing a difference between the Colby soils on the 3 or 4 drifts. The ~~lack~~^{lack} of calcareous parent material, and the shallow profile, caused by so much silt causing poor drainage, make it seem unlikely that analyses will show a reliable indication of differences between these Colby soils. And yet, if no difference is visible in the field, some samples should be taken from the various areas, to see if analysis won't show something.

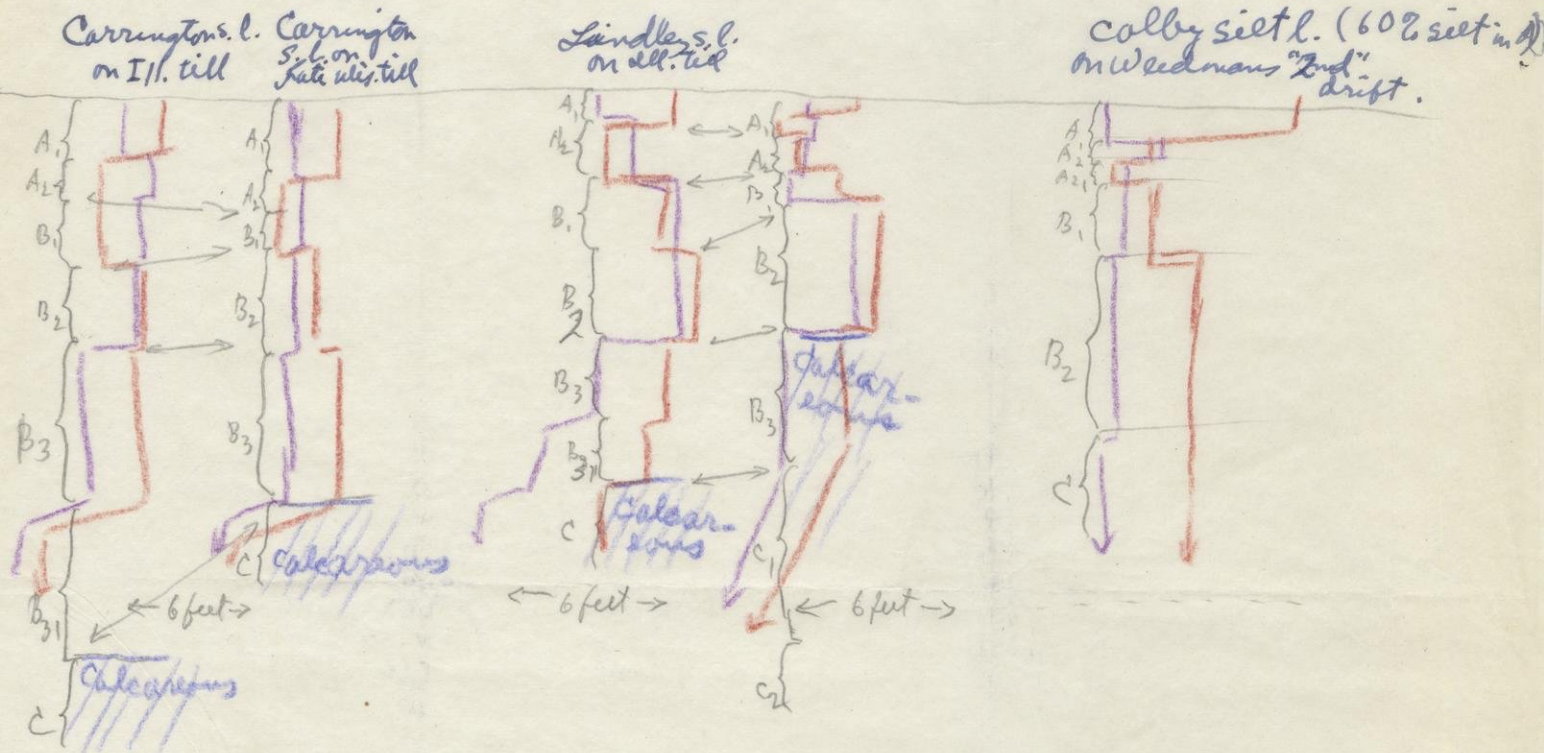
I expect to examine exposures in the longitude of Athens, this week.

I hope your work progresses well, and that the family is flourishing.

Sincerely yours,

Francis D. Hole

Rough diagrams of Data from Kellogg, Bull. #77A, U.S. Geol. Surv. 1930.



When line goes RIGHT, means increase of

■ = Base Exchange Capacity
■ = Clay percentage.

soapstone "mines" north-west of Auburndale several miles.. I cannot understand why the boring near Blenker showed drift at only 25 inches. My only theory is that the soapstone beneath, if such there is, has held up the water table locally. The absence of calcareous drift near Loyal might be said to be due to better drainage on sandstone.

Other than ^{those of} this calcareous drift, observations have been routine and uneventful. The till seems to be red on ridges and on slopes near river valleys. North of the Cary moraine my two pits struck very red till on ~~flat~~ ^{or clay} land, however. Yet red drift appears beneath flat land at rare intervals, while near by no such red material shows up in auger borings of the same depth (about 3-5 ft.). I assume that these places are freaks, due to thin drift over rock, allowing better drainage, or that they are close enough to valleys to be influenced by subsoil drainage.* However many things cannot be easily explained. For example I have found Colby mottling, supposedly caused by poor drainage, once on sand, as well as on loose residual granite fragments at another place, at a depth in both cases of 30 inches. Common sense would not tolerate mottling under those conditions.

I have been making rock counts of 10 pebbles at each road-side exposure where there have been that many pebbles in the till. They all run about the same, there being more quartzite, it seems, on high ridges, such as the "marshfield moraine". I have kept practically no pebbles.

** or one red clay from the sandstone: I have observed red clay in bed-rock sandstone.*

I intend to dig a 6-foot pit near Blenker in the calcareous drift and take samples of soil and all the pebbles I can find. I might dig one pit in Clark County, but then Kellogg did that and we have his analyses. *The Vesper sandy loam area to the south deserves more study.*

It looks now as if I shall not be back at the University next ~~year~~ winter, but will take a job, which will pay up some expenses. If the job comes through I shall inform you and others officially. However, I shall have plenty of time, in any case, to work on my thesis, which is what I stipulated in considering the job. I therefore am anxious to get as much material in the form of data or ^{an} samples to have to work on during the winter. I feel that observations are more important than samples, however.

Though I should prefer to work on into September, I have to return to Indiana about August 20. I had hoped to be able to talk with you and get materials to work on in the winter on my way south. I see that you will be away, however, and so material which you might wish me to mechanically analyze can be sent by mail, in case I am not to return to the University in the Fall. I can perhaps confer with you during Christmas Vacation, in that event.

I shall make the trip to ^{the} Prentice and Hawkins area, as you suggest. Although I have not made extensive and systematic observations of the moraine soil, I have examined it in the area north-west of Medford. The soil seems not to be Colby because: 1) relief causes good drainage, 2) the parent material is nearly always sandy or gravelly. Some cuts show red till, but topography is so rough as to produce good drainage, hence no mottling. Other cuts show gravel and sand, and perhaps gravelly till, not red. These materials seem to be too porous to permit mottling.

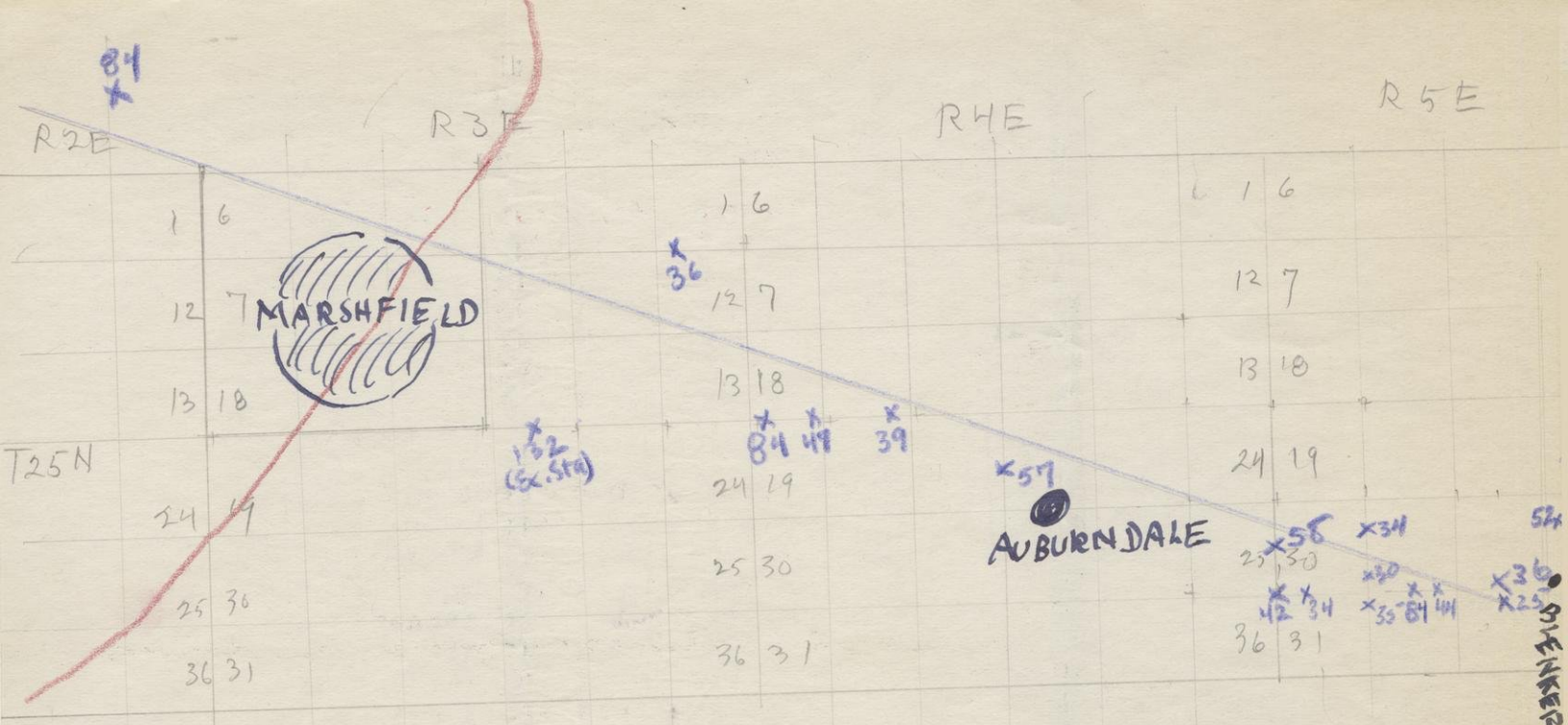
I intend to run a series of observations up through Clark County
(over please)

in Range 1 W. This will take about 4 or 5 days. I shall spend a day on Rib Mt. looking for erratics. I wish to run a series of observations east from Wausau to the Green Bay Lobe in the Marathon and Colby soils. I have nearly finished a series north from Rozelville to just west of Merrill. That is about all there will be time for this summer, it seems.

Best wishes to you and your family for a very happy trip to the West.

Sincerely yours,

Francis D. Hole



P.O. Box #5, Marshfield, Wis.,
August 4, 1940.

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

Dear Professor Thwaites:

I was very glad to get your letter of August Second.

First I wish to show you where my calcareous drift lies. I have put on the sketch at the top of the page all my observations of calcareous drift. I have not been over all the roads in this area, but perhaps over half of them. The strip seems to lie about in the west-north-west position of the blue line. I was surprised to find the calcareous drift at the one place north-west of Marshfield. I came to water about eight inches before I came to calcareous drift. This was in a slightly depressed place, but the whole area was fairly flat around it, and borings to the north and west of it failed to show calcareous drift at the depths of 3 to 6 feet which it is practical to bore when one is making numerous observations. The red line on the sketch is of course the "moraine". I need to say that when I struck "rock", when I had to fish for the auger, I had no idea whether it was sandstone or just a boulder. I think that it was the latter, for the auger had bent around something. I dug only to the upper end of the auger and it was bouldery very red clayey till, that far.

I had the idea that this calcareous drift came from the north-east, and so went into Clark County, following uplands which trend north-west, as if they were a prolongation of the upland in which the calcareous drift has been observed as shown on the sketch. Near Loyal, I decided to bore deep in till which had the same color and texture as that near Auburndale, except that it was stiffer and harder. I went down 15 feet but there was no reaction with acid.

In tracing the calcareous drift near Auburndale, I found that it disappears quickly and is replaced by either a very red clay or a mealy rotten-granite-like talcy silty clay material. Bedrock comes to the surface at several places around the calcareous area. There are several

41 Roby Road,
Madison, Wisconsin
Aug. 5, 1940

Mr. Francis D. Hole,
Box 5, Marshfield, Wisconsin

Dear Mr. Hole:

I feel to always cross one of your letters for this is my second to you this day. Yours of the 4th was here when I got home from mailing one today.

I am sorry you do not expect to be back to school this year. However, we do not expect to go west until the morning of the 25th so will be able to see you when you go through.

Your results are most interesting. The only thing I will suggest is more pebble counts using 50 to 100 pebbles taken at random from below the zone of weathering whenever such can be obtained or if I should say.

Do not you mean that the calcareous drift came from the northwest? The context suggests that and in fact it is more probable than northeast it seems to me. Your comments on relation of color of drift and depth of leaching would seem to indicate a considerable age, possibly Illinoian as thought by Leverett. If you could at any time get over to Ann Arbor I am sure that Leverett would be most happy to talk over the problem with you. I suspect is quite hard of hearing, however. If so is Weidman's Third Drift simply places where erosion has spared constructional features of Illinoian age. Maybe some of the supposed constructional features are gullies in gravel. This would stand checking. Heard the other day that Weidman is in poor health and expects to retire at the end of this coming year.

I am still at work on drawing. Today it was varve curves and tomorrow it will be some cross sections. Then I intend to go into the field for a few days to study the outlet of Lake Oshkosh. Am planning to set up an enlarger so I can do all my photographic work at home.

Everyone is now well for Bobby has just got over the third set of boils this year! With best wishes,

Sincerely,

~~XXXXXXXX~~ 41 Roby Road,

Aug. 5, 1940

Mr. Francis D. Holo,
Box 5,
Marshfield, Wisconsin

Dear Mr. Holo:

Enclosed please find the promised map of north part of north-central Wisconsin. I took time Saturday afternoon to go through the maps in the attic and soon discovered it. Hope it will be a help. In reading what they said of the Colby in the bulletin I thought it must be a thinner soil profile than to the south but am not sure. But you can soon tell in the field, I hope.

Sincerely,

41 Roby Road,
Madison, Wis.,
Aug. 2, 1940

Mr. Francis D. Hole,
Box 5, Marshfield, Wisconsin

Dear Mr. Hole:

Your letter of July 16, which I think crossed one of mine, and card of July 26 are at hand.

I was much interested in your results. What I want to urge is not to take Weidman's different drifts too seriously. They were just one idea which he later repudiated and which Leverett did not check. If fact, your failure to find any difference in soil up to the terminal moraine is quite in line with Leverett's conclusion. South of Marshfield is another matter for the coming in of more sandstone affected the drift and then maybe there never was much drift anyway.

We now have samples from every five feet of three tests down to bed rock at Hawkins in eastern Rusk Co. All show calcareous drift but I do not recall the depth to its top. No line of demarcation is evident, however. As I recall it the samples from Granton and Neilsville show non-calcareous drift although maybe I did not test them as I did not expect any line. But you can see about this when you get back. I was much struck by your finding calcareous drift so near the surface.

Now the map of North Part of North Central shows Colby silt loam along the tract from Prentice west through Hawkins and into Rusk County. I suggest a visit to this district which is inside the moraine to see what difference you can find, also why the moraine soils are not Colby. I will try to get one of these maps for you.

In regard to Langlade County I would let the matter slide until you have definite conclusions farther west. Then we might visit it and see how it compares.

I have finished graphs comparing beach, outwash, and esker gravels but have no mechanical analyses of till except at Madison. However, the type of analysis I need for that is of a 50 pound sample using road material screens. I also graphed mechanical analyses of lake clays, red and gray tills, etc. using mainly Alden's results. These analyses were made by soils methods, including only the fine material. I also compared chemical composition of the same materials. But we are very short of mechanical analyses of tills from below the zone of weathering. I certainly would like to get results on the Colby area of western Langlade Co., the till of the Langlade and Green Bay lobes and the red till north of Green Bay (called Miami on old maps). But I fear that will have to wait for it is part of too big a problem and anyhow, I do not see that I can get north again this year. We are going on a rail tour of the west this year taking both Tommy and Billy. We will not get back until after Labor Day in fact just before schools open.

With best regards and hopes for your work,

Sincerely,

ing the difference between the Colby soils, as that
the boundary between drifts could be detected in the
field. I shall try to find such a means, but am not
optimistic. I have thought of (1) comparative thicknesses
of sand, after the examination of sands, #50 Box #5 Marshfield, Wis.,
Tuesday, July 16, 1940,
and Wis. till in Ohio by noting the greater percentage
of iron-stained sand in the latter. I shall write you
if you have any suggestions as to other
for, if these two fail, I shall write you
Madison, Wisconsin

Dear Professor Thwaites: As I recall, you doubt
whether till refers to a bedrock, which refers to a bedrock
sand. I shall reply to your letter. I shall
reply to your letter, although I have just put another "report"
in the mail this morning. I am sure that you are
puzzled. It is hard to be sure whether it
is a till or a sandstone. Thank you for your good advice about not pulling too
hard. Boring in the till at the Marshfield Station, the
till was very hard, but as I went up on the
moraine, the till became stiffer and boring was in-
creasingly difficult. I therefore made use of a 6-foot
triped of wood, with a windlass, which Mr. Reed offered
me. It was with that equipment that I broke off the
auger, which I finished out by a day's digging. It happens
to be an auger my father used when making a soil survey
for the state of Indiana, so I did not want to abandon it.
Right now I do not have repairs made for deep
drilling, having concluded that as much of the till is far
too stoney to attempt drilling in, and that drilling is too
time-consuming.

I shall be glad for suggestions. This is my idea of
what has been accomplished thus far: 1) enough drilling to
know that there is a very calcareous till at the Station, but
none found on the "moraine" or near it on the south slope;
2) enough detail examination of soils from Cary to Westboro
to see that the Colby soils are not distinguishable at sight,
as the soils in Indiana on Illinoian and Late Wisconsin tills
are; 3) samples taken from drilling done at the Expt. Station,
and also from 6-foot pits dug this week in Colby soil west
of Westboro, in the Ex Cary till (red), and north-west of
Dorchester (south-west of Medford) in Weidman's ^{thin} Drift.
This last locality was as nearly identical ^{as possible} in drainage and
relief situation as the locality in the Cary drift, but in
the ~~first~~ Drift pit, the till was much less stoney and was
limonite-brown rather than hematite-brown. ~~What~~ Also the
profile of the soil was about 8 inches deeper (to bottom of B₁).
Whether this is an accident of local ~~features~~ features
of materials, drainage, thickness of drift, type of virgin forest
which existed, I cannot say. I suppose analyses made next
winter might throw some light on that question.

I expect to dig pits in the 2nd and 1st Drifts in similar
situations as to drainage and relief, for samples for analyses.
I should like to know where you would like samples from Langlade
County; you might have a particular group of sections in mind
where samples for mechanical analysis should be taken.

But what is most needed is some field method for recogniz-

ing the difference between the Colby soils, so that the boundary between drifts could be detected in the field. I shall try to find such a means, but am not optimistic. I have thought of 1) comparative thicknesses of B horizons, and 2) examination of sands, after the manner of White, who determined the boundary between Ill. and Wis. till in Ohio by noting the greater percentage of iron-stained sand in the surface soil of the former till. If you have any suggestions as to other clues to look for, if these two fail, I shall welcome them.

As I recall, you doubt Kellogg's theory about the Vesper silt loam, which refers the clay to a bedrock shale layer. I have come across some intercalated sandy and clay layers near Cary, and some sandy-pebbly material which erodes like rotten sandstone, farther north, both of which are puzzling. It is hard to be sure whether it is rotten sandstone or indurated till which is sandy. The farmers are very busy with haying. There is an unusually good crop of hay this year. The factories are going full steam ahead. It is difficult to triped of wood, with a windlass, which Mr. Reed offered me to help with the new glasses. It would be nice if somebody would be an expert under your direction and I did not want to abandon it. Right now I do not want to spend for deep drilling, having concluded that much of the till is far too hard to drill in, and that drilling is too time-consuming.

I shall be glad for suggestions. This is my idea of what has been accomplished thus far: 1) enough drilling to know that there is a very calcareous till at the Station, but none found on the "moraine" or near it on the south slope; 2) enough detail examination of soils from Cary to Westboro to see that the Colby soils are not distinguishable at all as the soils in Indiana or Illinois and Late Wisconsin tillas are; 3) samples taken from drilling done at the Expt. Station and also from 6-foot pits dug this week in Colby soil west of Westboro, in the Cary till (red), and north-west of Dorchester (south-west of Medford) in Westman's Drift. This last locality was as nearly identical in drainage and relief situation as the locality in the Cary drift, but in the West Drift pit, the till was much less stony and was limonite-brown rather than hematite-brown. Also the profile of the soil was about 8 inches deeper (to bottom of B₁). Whether this is an accident of local features or features of materials, drainage, thickness of drift, type of virgin forest which existed, I cannot say. I suppose analyses made next winter might throw some light on that question.

I expect to dig pits in the 2nd and 1st Drifts in similar situations as to drainage and relief, for samples for analyses. I should like to know where you would like samples from Langlade County; you might have a particular group of sections in mind where samples for mechanical analysis should be taken.

But what is most needed is some field method for recogniz-

P. O. Box #5, Marshfield
July 25, 1940^{Miss.}

Dear Professor Thwaites:

I have been enjoying work, covering about 15 miles of road in detail per day. I have been up as far as just east of Rib Lake and find no real difference in the Colby soils.

Today I found calcareous till in 3 places each a mile from the preceding. Depths to calcareous till, from the surface, were a little over 3 feet in two places and between 4 and 5 feet at the other place. This was near Sherry, S. west of Auburndale. I think this is a very significant set of observations. Sincerely, F. D. Hole



THIS SIDE OF CARD IS FOR ADDRESS

Professor F. J. Thwaites,
41 Roby Road,
Madison,
Wisconsin.



41 Soty Road,

Jul 15, 1949

Mr. Francis B. Hole,
Box 5,
Marshfield, Wisconsin

Dear Mr. Hole:

I was much interested in your cards regarding your progress of which the last was dated the 8th and told of your "fishing job" as well drillers would call it. I trust you did recover the fish but suggest that in such an event you balance the cost of lost time against that of new parts. I found that it often helps to have two sizes of augers so that you can reduce the size of hole when a stone is found. A short length of pipe is often helpful to prevent caving at the collar of the hole.

I also want to caution you against too great effort in pulling tools. I acquired my unhealable hernia from attempting to lift things which should have been beyond my weight and size. It is better to use a chain and bar so arranged that you press down on the end instead of pulling up. You could however, use the car jack to raise the end of a bar. Either method would avoid danger to yourself.

Progress on the illustrations continues good but it is tedious work copying so much. Got new glasses which help some.

Both Tommy and Billy are now in summer school.
Best wishes, Sincerely

P.O. Box #5, Marshfield, Wis.,
Friday, Aug. 16, 1940.

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

Dear Professor Thwaites:

Thank you for your letters and
for the map.

I plan to arrive in Madison on Tuesday, August 20
at about 9:00 A.M. I hope to have the pleasure of a
talk with you before proceeding southward.

I have spent a day working between Prentice and
Hawkins and two days in the "Terminal Moraine" area
between Chelsea, Medford and Gilman. There I found
"red drift" calcareous at 15 feet one place and at 20
feet at another, and grey-brown drift calcareous at
about 15 feet. I also worked east and south-east of Wausau
both in the drift which Weidman mapped just west of the
Green Bay Terminal, and in the so-called driftless
peninsula along the Wisconsin River. Another day was
spent examining drift from Mosinee north-westward about
fifteen miles. I found evidence that the weathering of
the granite of the granite pits has taken place since
the glaciation and not before it. Tomorrow I plan to
work from the vicinity of Stevens Point westward and north-
westward. I spent a day examining till in all three
of Weidman's drifts in the vicinity of Thorpe. At
present I fail to see any real difference between drifts
from Prentice on the north to Vesper on the south. Sandstone
erratics occur nearly everywhere, even east of Wausau, and
between Chelsea and Gilman.

I hope that your work progresses well.

Sincerely yours,

Francis D. Hole

615 National Road West,
Richmond, Indiana,
September 9, 1940.

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

Dear Professor Thwaites:

On August 23 my father died suddenly while visiting my brother in Philadelphia. I telegraphed Dr. Winchell and Dean Fred, saying that because of this I am unable to return to the University this autumn. I knew that you were soon to leave on a trip and were very busy, and so I have put off writing you until now.

I have been asked to take charge of the Geology Department at Earlham College, and to act as Curator of the Joseph Moore Museum, which is on the campus, here. This means that I shall plan to return to Madison next year to complete, if possible, courses required for candidacy for the PhD degree. Next summer, I plan to continue investigations of the nature of those which I carried on under your guidance this summer. I shall do what I can on the progress report during the winter, but cannot promise anything at present.

It has been suggested to me that I attempt to make a report of the work which I did this summer at a meeting, such as that of the Indiana Academy of Science. The advantage in making such a report lies in getting my name before the geologic public. However, I am not eager to be hasty, I should appreciate your opinion in this matter.

I hope to give a course in Glacial Geology during the second semester. I am planning to give one in Physiography of the Western United States this semester. I look forward to offering Topographic Mapping during the second semester. I should appreciate any suggestions as to material or methods which you think of off hand.

I trust that you and your family had a good trip in the west, and I wish for you a very enjoyable academic year.

Very sincerely yours,

Francis D. Hole
Francis Doan Hole.

~~XXXXXX~~ 41 Roby Road,

Sept. 11, 1940

Mr. Francis Dean Holo,
615 National Road West,
Richmond, Indiana

Dear Mr. Holo:

Yours of the 9th is at hand and we were sorry to learn of the death of your father. I suppose, however, that after his illness of last winter it was not entirely unexpected.

I think it would be a very good idea to work up a short paper for the Academy giving the problem and the varying angles of approach to it which have been used by Weidman, Leverett, Mathieson and yourself. This would be a distinct contribution without any commitment on results which you might later regret after securing more data.

I will certainly be glad to help you all I can with material for your courses. Anything I have is at your service.

We had a nice trip out west although a hard one and I think the boys got a lot out of it.

Sincerely,

EARLHAM COLLEGE
RICHMOND, INDIANA

November 5, 1940,

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

Dear Professor Thwaites:

I hope all has been going well with you and your family, and with the Geology Department. I am asking your advice on the enclosed first draft of a summary of my work of this summer. I hope this will not take much of your time, if you find you can devote some attention to it.

I should appreciate any corrections or suggestions. I have been too busy to do any further reading or mechanical analysis. I wonder if the references at the end meet with your approval. Or has Leverett published material on this area in which he expresses himself on Weidman's three drifts? Has Matthiesen's material come out in print, or is it sufficient to refer to his thesis? Is the use of the word "drift" bad, since I am talking about till most of the time? Would you suggest I make a 2" x 2" outline map of Wisconsin to accompany the paper, showing the three drifts of Weidman? I had thought that I should not do that, especially since I may have enough trouble in persuading the Academy to publish so much about an immature investigation.

To whom should I write for information about the GSA meeting this year? I think I shall be able to attend.

I enclose an envelop with return address and stamps.

Sincerely yours,

Francis D. Hole
Francis Doan Hole.

*write.
aldrich*

41 Roby Road,
Madison, Wis.,
Nov. 7, 1940

Mr. Francis D. Hole,
Earlham College,
Richmond, Indiana

Dear Mr. Hole:

Yours of the 5th arrived as we had breakfast this morning. I took it to the office and had Mr. Bean look it over. We agreed that your general treatment is all right but it seems to me that possibly it should be cut short and more of the background of the problem put in. I reviewed all the papers on the subject in the Wisconsin Academy Transactions for 1928 (volume 23). On p. 98 I made the following statement: "Inasmuch as the area was mainly underlain by non-carbonate drifts the leaching test could not be used to discriminate drifts"--- You have shown that such is not the case, at least in parts of the area. I won't copy any more but if your library has not any copy I will lend you one of the few remaining extras that I have. I feel that a brief statement of why and how the three extra-morainic drifts were discriminated is needed for an understanding of what you are trying to do. Another point is that Weidman later (Pleistocene succession in Wisconsin, abstract: Geol. Soc. America, Bull., vol. 23, pp. 697-698, 1913) repudiated all his earlier interpretations:

With regard to Leverett's work in 1923 the map based on that was published by Antevs, Ernst, Maps of the Pleistocene glaciations: Geol. Soc. America, Bull., vol. 40, pp. 646-647, map p. 644, 1929. In this Illinoian drift alone is shown south of the Wisconsin whose border was modified only slightly. The same map is republished in Prof. Paper 154 without any clear discussion or definite designation of the drift outside the moraine. In my map in the 1937 edition of the Outline of Glacial Geology I followed that map of 1929 although some of the text maps still show questionable Nebraskan in the position of Weidman's First Drift. In the 1939 edition of the Outline I changed the map to show Weidman's Third Drift as Iowan following the work of Mathieson. Mathieson's work is now in press but page numbers have not yet been assigned. *vol. 32, Trans. Wis. academy of Sci.*

Now what I wanted you to bring out is the fact that all earlier students of the area except Nelson used topographic form as their criterion whereas you are using chemical alteration. Your line of approach also involves a study of the source of the drift and may also involve its stratigraphy so far as that can be discovered in so thin a deposit. You might explain how you hope to solve origin by mechanical and chemical analyses.

I think you use of the word drift is all right but I advise against a map now. I will have the G. S. A. send you a formal invitation although I am afraid I will not want to miss Christmas to go to it.

If there is anything else I can do please call on me.

With best regards from all of us,

Sincerely,

~~XXXXXXXX~~ 41 Roby Road,

Nov. 13, 1940

Mr. Francis D. Holo,
Earlham College,
Earlham, Indiana

Dear Mr. Holo:

Yours of the 4th came yesterday. This morning I had one of the separates of my 1928 paper mailed you and am returning unused stamps herewith. This copy I recovered from the effects of the late Prof. Whitbeck of the Geography Department. You can keep it as long as you wish or if needed for the College Library you can keep it for that. I think I have only one other copy left so am somewhat shy on giving them away.

With regard to chemical analyses I did not mean to advise any but isn't the problem one of chemical alteration?

I can not now recall just what the question mark in regard to Auburdale was for. It seems as if your conclusion is correct.

One point I forgot. It was suggested by Bean long ago that some of the Colby soil is loess and not derived from till. Probably mechanical analyses will solve this.

The report on northeastern Wisconsin progresses slowly but (I hope) surely. Field trips are ever new but laboratory work keeps me busy. I am sure glad I did so much drafting last summer.

Best regards,

Sincerely,

615 National Road W.,
Richmond, Indiana,
November 9, 1940

Dear Professor Thuwates:

I am very indebted to you for your very prompt and complete appraisal of my general report. I was afraid I had imposed on you too much by sending the first draft to you, with its lack of bibliography, etc. I shall condense the report and speak more fully of the background as you suggest.

The library here is very incomplete in geological periodicals. There are no G.S.A. Bulletins. I should appreciate the loan of Vol 234 the Wisconsin Academy Transactions. I should return it after the 15th (Nov.), when I am to present this short paper.

I am not sure what chemical analysis will do for this problem, unless in regard to mineral matter in solution in ground water, and possibly in regard to a study of the Colby Soil. Did you have any other chemical analysis in mind?

As I recall, the "Palouse Soil Problem" involved glaciation, and a recent

study of it shows that the glaciation was recent (Wisconsin?), rather than old (Kansan?). The drift was reworked residual soil. It looks as if in at least one other locality, therefore, that what was considered to be an old drift has turned out to be a young one.

I notice you put a question mark beside my statement that ^{depth to} leaching in the calcareous drift near Auburndale varies abruptly, and not necessarily in harmony with the topography. I mean that on a flat area, the auger brought up calcareous material at 4 feet one place, at 6 feet another, but not at all at another (about 7 feet sampled), but again at 5 feet at another place, along the same road, and without marked change in topography. I assumed that better subsail drainage existed below the places where leaching was deepest. On certain slopes, however, leaching was only to a depth of about 4 feet. I think ~~this~~ detail can be omitted from the report, however, namely the variability of depth to calcareous drift.

I enclose a few stamps, which may partially pay postage on Vol 23, if you find you can find a copy.

Very sincerely yours,

Francis D. Hole
EARLHAM COLLEGE, EARLHAM, I.N.D.