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Correspondence re: Kansas Geological Society's 9th annual field conference - General - 1. 1931-1935

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

[s.l.]: [s.n.], 1931-1935

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317 SOUTH BOSTON AVENUE
TULSA, OKLAHOMA

April 28. 1936

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

Dear Sir:

We are enclosing our invoice for the pictures of the Geological meeting you ordered from Mr. Levorsen, and which we are mailing to-day.

We are sending this to you on open account to save you the extra costs, your return check will be appreciated.

Sincerely yours,

Tulsa Camera Record Co.

H.N. Masoner

by

L. E. Goodson

$40 @ 3¢ = 1.20$
 $\text{postage } \frac{6}{1.26}$

Buy 33 @ 3¢ + 03 postage = 1.02

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April 11, 1936

Dells Boat Co.,
Wisconsin Dells, Wisconsin

Gentlemen:

After a very long delay I received the cut of the view of the Dells which you kindly loaned me last summer to use in the guidebook of the Kansas Geological Society. I inspected the cut here and it being in good condition had it mailed at once to you from the office of the Geological Survey. If it does not arrive safely please advise me. I felt very badly about the long delay but it was not my fault. I do not know how many letters I wrote about it but I would have soon expended its cost on postage if they had not returned it!

Very truly yours,

F. T. Thwaites

April 11, 1936

Mr. Anthony Folger,
Gulf Oil Corporation,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your letters of March 31 and April 4, a package of photographs, a roll of maps, and the Dells cut are all at hand. I forwarded the last to its owners and returned Andy's maps. It was the last two items which most troubled me because of the delay. However, all's well that ends well and this can now be forgotten.

I rather take it that there will be no K. G. S. trip this year.

Raasch is off for Tulsa next week trying to get a job stalk ing those "elephant pools" which Leversen talked about. We will be sorry if he leaves but do not blame him. What with salary cuts and general hostility to the University I often feel tempted to follow his example!

With best regards to both you and others of the K. G. S.,

Sincerely,

F. T. Thwaites

Ogark Dome

Tikrity, Sammie Sherif, 1968, Wash. Univ.,
Ph.D. dissertation.

3 major tect. elements of Ogark Uplift.

- 1) late E. Ord.
- 2) late M. Dev.
- 3) E. Penn.

GULF OIL CORPORATION OF PENNSYLVANIA
GYPSY DIVISION

TULSA, OKLA.

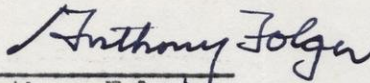
Wichita, Kansas,
April 4, 1936.

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

Dear Fred:

We have today found the half-tone of the Wisconsin Dells,
which you so kindly borrowed for us from the Wisconsin
Dells Boat Company. It will be forwarded to you Monday
morning by express by the Kansas Well Log Bureau, and
I trust it will be received in good condition.

Very truly yours,


Anthony Folger

AF:AS

CC: Dr. A. C. Trowbridge

GULF OIL CORPORATION OF PENNSYLVANIA

GYPSY DIVISION

TULSA, OKLA.

Wichita, Kansas,
March 31, 1936.

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

Dear Fred:

I shall not go back into the file and ascertain just how many letters I have received from you during the past six months which have gone unanswered, because of my embarrassment, but they have all been received even though I knew the nature of their contents before I opened the envelopes. Also to be acknowledged are similar letters to Kesler, Philbrick, Wyman, Mueller, and Trowbridge, all of which have either been forwarded me or I have been advised of their contents.

It appeals to me that the contributors to the Guide Book in Madison, as well as all of the other contributors, have just and real cause for complaint. I realize that many of you had real need for the originals of some of the drawings and that no matter how insistently and how courteously you have requested their return, they have remained unforwarded.

Let me emphasize one point which I would like to make clear to all of you. Namely, that the entire fault and all the blame rests solely on my shoulders. No one else is responsible. In one of your letters you suggest that possibly our creditors were holding these originals until our bills had been paid and that we may be embarrassed to so advise you of that fact. This certainly is not the case, since every bill but one has long ago been paid and the one remaining bill only has a few hundred dollars still owing. The other members of the Committee have repeatedly asked me to return these maps and have even been gracious enough to offer their help. I felt, however, that it was my place to return these maps. Being of the somewhat stubborn nature, I refused their help with equal graciousness. All the maps and illustrations have been reposing in my office since about the first of October, and procrastination plus an excessive amount of Company work has been the cause of the delay of their transmittal to the Upper Mississippi Valley states. I realize, however, that neither excuse is justified and that I should be severely reprimanded for not having the courtesy to return these maps when I knew they were much needed.

F. T. Thwaites, Page No. 2.

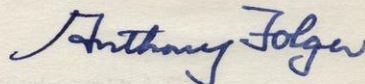
I therefore offer no apologies, since I have no justifiable apology to offer. I do, however, feel very badly about the situation and I certainly wish to emphasize that the fault is not due to the Kansas Geological Society as an organization or to any of its individual membership or to any member of the field conference committee, excepting myself. I only trust after the maps have been received that those of you who have been the most inconvenienced will find it possible to forget and overlook my discourtesies. If any grudge is to be held against those of us here in Wichita, I trust you will not hold it against the Society but solely upon me.

In the roll of maps returned to you the other day by express, you will find the original tracing cloth map of a contour map of the Ableman Gorge prepared by Williams of Ponca City, which I promised would be sent to you after the Conference in case the boys who prepared this map should wish to have prints made for sale. I am particularly distressed that thus far we have been unable to find the half-tone cut of the Wisconsin Dells, which appears as Figure 127 on page 137 of the Guide Book. It is possible that this is still in the hands of the McCormick-Armstrong Press, but Mr. Mueller has been out of town for several days and will not be back until tomorrow. I shall, however, keep on trying to locate this half-tone until it is found and will forward it to you at once.

Please give my kindest personal regards to Raasch, Andrew Leith, and Mrs. Thwaites. After you have checked the maps sent you, if there is any missing please so advise and we will search the files. I tried, however, to return everything which I thought should be returned.

Again let me offer my regrets for the trouble I have caused all of you, and please feel assured that I feel very badly about the entire situation.

Very cordially yours,



Anthony Folger

AF:AS

CC: Dr. A. C. Trowbridge

May, base

Bromberger, S.H., 1968, Basal Magnolata Phylogeny
Bels: Iowa Univ., Ph.D. dissertation

Basal is Unconf.

Brooklyn College

66 COURT STREET
BROOKLYN, N. Y.

DEPARTMENT OF GEOLOGY

Apr. 3, 1936.

Dr. F.T. Thwaites,
U. of Wisconsin, Madison, Wisc.
My dear Dr. Thwaites,

During the excursion of the K.G.S. this past summer you took a great many photographs, some of which would be a great help to me in my work. I was wondering if it would be possible for me to obtain these. I need them in the form of slides rather than photographs.

Somewhere I received the impression that you were going to arrange for distribution of these, and I was more or less counting on this, since my own abilities as a photographer are notably poor.

Would you be willing to send me a list of what you have and the cost, or approximate cost of these? I should be very grateful.

Yours very truly,

(Mrs) Helen Antine-Sherman

Helen Antine-Sherman.

April 11, 1936

Mrs. Helen Antine-Sherman,
Brooklyn College,
66 Court St.,
Brooklyn, New York

Dear Mrs. Antine-Sherman:

In reply to yours of the 3rd I am enclosing a list of the photographs which I took on the recent K. G. S. Conference. They are nearly all good although some were taken under unfavorable conditions. I can have slides made at the rate of 35 cents each. I sent a copy of the list to Wichita but nothing was done about it. In fact, we have just received the last of the material borrowed this week.

If you wish to order either slides or prints please indicate what ones you want and return the list as it is the last one I have. I also have negatives of all the pictures in the guidebook which were credited to me. If you want slides of any of these you can send me a list of the figure numbers.

Sincerely,

F. T. Thwaites

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

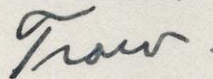
January 23, 1936

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

Dear Fred:

I am sorry to learn from yours of January 18 that nothing further has been heard from Anthony Folger in regard to the maps, etc. which should have been returned long ago. I am writing Anthony today to see what I can do to get these items straightened out.

Cordially yours,



A. C. Trowbridge.

ACT:F

Jan. 18, 1936

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

I have delayed a long time to thank you about
sending the list of Tri-State people.

Nothing has been heard from Anthony and no maps
have ever been returned. Could you kindly stir him up?
This includes Andy's map of the Baraboo district.

We are snowed in today and I do not know just when
I will be able to get to town!

With best regards,

Sincerely,

ARTHUR C. TROWBRIDGE
DIRECTOR AND STATE GEOLOGIST
ALLEN C. TESTER
ASSISTANT STATE GEOLOGIST

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
103 GEOLOGY BUILDING
IOWA CITY

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ROBERT E. BUCHANAN
PRESIDENT IOWA ACADEMY OF SCIENCE
CHARLES W. STORMS
AUDITOR OF STATE

November 26, 1935

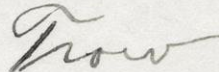
Dr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Fred:

On the next day after the Tri-State Field Conference I wrote to Kesler as promised, and now have a reply from him. It appears that Anthony Folger was called to California because of the illness of his mother and has only recently returned, to find his desk covered with work which accumulated during his absence. Kesler thinks that all post-K.G.S. Conference business will now be taken care of without further delay. Will you please pass this word along to Twenhofel and to any one else at Madison who might have reason to be interested?

If you do not receive the originals of your map and the Dells picture and if Twenhofel does not get his copy of the guidebook within a very short time, please write me again. I am anxious to get all these matters straightened out.

Cordially yours,



A. C. Trowbridge

ACT:A

Nov. 19, 1935

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

Dear Mr. Thwaites:

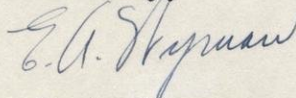
Thanks very much for the photo you sent me of the group taken at Mendota. I did not take a group picture, so was glad to receive yours.

Please forgive my delay in not answering your letter sooner. I have only one excuse, such as it is, that of procrastinating.

After coming back from the trip there were plenty of things to do, keeping me fairly well occupied until the middle of October, at which time Mrs. Wyman and myself took an "official" vacation to Mexico. We attended the mid-year meeting of the A. A. P. G. and the San Antonio society held at Mexico City. Naturally we enjoyed ourselves thoroughly, driving the entire distance. Not logging the route, however.

Let me again thank you, personally, for your hearty cooperation in contributing to the success of the trip. Although it may have been slightly strenuous at times, I feel I have gained much from the pleasant contacts and experiences.

Cordially,

A handwritten signature in dark ink, appearing to read "E. A. Wyman", written in a cursive style.

E. A. Wyman

THE MUNICIPAL
UNIVERSITY OF WICHITA

WICHITA, KANSAS

Sept. 16, 1935

Dear friend Thwaites:

Looking back on the 9th Annual Field Conference the members of the Kansas Geological Society who took part feel that it was the most successful Conference ever taken. The weather was perfect and the outcrops diversified and interesting. I feel personally that a large share of the credit for the success of the Conference was due to your interest and preparation. The talks you gave at various "stops" revealed a broad and extensive understanding of the stratigraphy and structure of the rocks in the Upper Mississippi Valley. You may be sure that the time and effort you gave so generously is deeply appreciated by the undersigned and the other members of the Society.

The articles you contributed are an outstanding contribution to our knowledge of the area and will long be referred to by other geologists who may do research work in the Upper Mississippi Valley. On account of these articles and several others in the Guidebook we believe that the book will be purchased by all large universities in the country. For years to come it will be an indispensable reference book on the north central part of the United States.

In closing I will say that I was particularly glad to have had an opportunity of getting better acquainted with you personally. I hope that we shall be able to renew our friendship soon again.

Very cordially yours,

Walter H. Hille

Oct. 19, 1935

Prof. W. A. VerWiebe,
University of Wichita,
Wichita, Kansas

Dear Prof. VerWiebe:

I have been trying to get in touch with Anthony since September 12 having written again on the 7th of this month. Andy Leith has also been writing. We are wondering what is the matter.

What I want is to have the cut of the Dells and the original of the map of the bottom of Lake Superior returned as promised last summer. Andy also wants an original map returned. Failure to get this material has been troublesome to both of us and is so unlike what we have experienced in the past that we both wonder what has happened.

I also have a set of the photos which I took on the Conference which I thought some might like to look over before it is broken up to fill the orders which I have here.

My class this semester is just five times as large as two years ago so I am kept pretty busy.

With best regards,

Sincerely,

Oct. 7, 1935

Mr. Anthony "elger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

On Sept 12 I wrote you as follows and have never had a reply.

In Winding up the affairs connected with my part in the recent Field Conference there are still some loose ends.

(1) I would prefer that you return the cut of the Dells direct to the Dells Boat Co. at Wisconsin Dells, Wis., and simply notify me when it is sent.

(2) I would like to have you return to me the original map of the bottom of Lake Superior whenever convenient. This map will be needed for instruction this fall.

(3) It has been suggested by some that a key to the numbers in the group photo at St. Paul would be greatly appreciated and I wonder if such is practicable. I was too busy myself to get to know very many by sight.

Would you like to have a set of my photos taken on the trip for inspection and possible placing of orders for reprints of some? I have ordered a duplicate set of prints ~~in~~ in case you would like to see them.

The post-post-conference trip to Limestone Mt. was a success.

I occurred to me that as this letter was written on small paper it may have been lost,

sincerely,

Sept. 12, 1935

Mr. Anthony Holger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

In winding up the affairs connected with my part in the recent Field Conference there are still some loose ends.

(1) I would prefer that you return the cut of the Dolls direct to the Dolls Boat Co. at Wisconsin Dolls W. and simply notify me when it is sent.

(2) I would like to have you return to me the original map of the bottom of Lake Superior whenever convenient. This map will be needed for instruction this fall.

It has been suggested by some that a key to the numbers in the group photo at St. Paul would be greatly appreciated and I wonder if such is practicable. I was too busy myself to get to know very many by sight.

Would you like to have a set of my photos taken on the trip for inspection and possible placing of orders for reprints of some? I have ordered a duplicate set of prints in case you would like to see them.

The post-post-conference trip to Limestone Mt.
was a success,

Sincerely

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS

DEPARTMENT OF GEOLOGY AND MINERALOGY

September 20, 1935

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

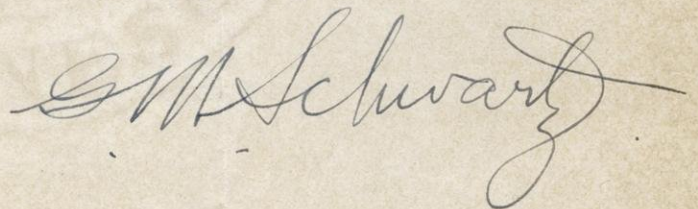
Dear Professor Thwaites:

I have your letter of the 14th, regarding the possible fault on the North Shore of Lake Superior. We obviously have much the same ideas except that we lean in opposite directions in opinion.

I may gather some of my data together if I can find time. If I do so I will submit the entire matter to you for criticism before doing anything final.

Mr. Thiel was very glad to have the note regarding the St. Peter map. It explains a great deal. Incidentally someone did you a disservice in making the changes since your original map was no doubt correct south of Minneapolis where you used Winchell's map.

Sincerely yours,

A handwritten signature in cursive script, reading "G. M. Schwartz". The signature is written in dark ink and is positioned below the typed name "G. M. Schwartz".

Sept. 16, 1935

Mr. Jess Vernon,
Amerada Petroleum Corporation,
Petroleum Bldg.,
Tulsa, Oklahoma

Dear Mr. Vernon:

At the time yours of Aug. 5 arrived I was so busy with the K. G. S. trip that all I could do was to mail you a copy of the "Outline of Glacial Geology". Hope this arrived O.K.

Now that I was having the prints made for the photos taken on the trip I was able to take care of your request for the photo at Mendota. Enclosed please find a copy for you and one for Mr. Damison whose address I do not have.

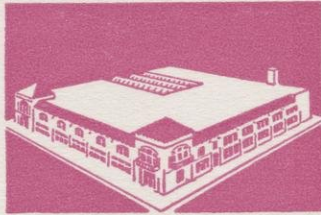
So far as scientific features went the trip was O. K. but the inadequate and in many cases untrained police escorts rendered a large part of it a nightmare to a driver who tries to be careful. I was greatly relieved when the trip ended with only two collisions and nobody hurt!

I've been hoping for some years to be able to go to Oklahoma and look over some of our farms there but am afraid that before I get there all will have gone for taxes. Sincerely,

Satterthwaite, W. G.
Evanston Township High School
Evanston, Illinois 60204

THE McCORMICK-ARMSTRONG COMPANY

The House of Impressions



1501-1511 East Douglas
WICHITA, KANSAS

September 14, 1935.

Dr. Fredrik T. Thwaites
University of Wisconsin
Madison, Wisconsin.

Dear Sir:

Because you are one of the contributing authors to the Ninth Annual Field Conference of the Kansas Geological Society, you are probably quite familiar with the big blue book used as a guide for the field conference. This book comprising some 480 pages, printed and bound in its entirety in our plant, is an example of a new process called planographing, which is inexpensive, quicker, and particularly adapted to geological reports.

Please notice the type in which the book is printed. This is a large size typewriter type reduced down to the size you see on the page. The entire book is printed from lithographing plates, the familiar printer's type being absent in this case for reasons of economy.

If you have a report that you wish to publish and want to do it as reasonably as possible, by all means investigate the economical features of planographing. By means of this process we can reproduce your manuscript providing it is good, clean typing, or if you have difficulty running a machine yourself, we can type it off on one of our special typewriters and give you the kind of a job so clearly demonstrated in the Ninth Annual Field Conference Book.

We'll be glad to furnish prices on any number of pages in any quantity on request and without obligation. Simply drop us a short note telling us what you have in mind and you will have our reply by return mail.

Sincerely yours,

McCORMICK-ARMSTRONG COMPANY

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B. TAMMANY, SECRETARY

COMMERCIAL, PERIODICAL AND ADVERTISING PRINTING AND LITHOGRAPHING

Sept. 14, 1935

Prof. G. M. Schwartz,
Dept. of Geology,
University of Minnesota,
Minneapolis, Minnesota

Dear Prof. Schwartz:

Yours of the 10th is at hand.

In justification of my maps I want to say that Figure 191 was drawn complete by me and that I consulted with Dr. Leith about it before sending it in. He felt that some of the faults shown are too largely a matter of hypothesis rather than actual observation. I agreed and the matter is discussed fully in the text accompanying Figure 192. This latter figure was requested by Folger after I had sent in all my data. I had decided to omit it on account of expense. However, they wanted it and I yielded against my better judgment and rushed the map on. In drafting it they followed my manuscript chart very well for depths but failed to check the tentative fault lines shown on that in colored pencil (in part erased imperfectly) with my final opinion as shown on the tracing. (fig. 191). As a result the red lines of Figure 192 are decidedly off and do not agree.

With specific reference to the north coast fault I long classed it with Martin's "capture of Mississippi River by St. Louis River" and other hypotheses which rested upon little or no observed fact. However, after a study of the sublacustrine topography especially north of Isle Royal where the shoreline cuts right across the flows and Huronian changed my opinion. A similar beveling of the flows also occurs near Duluth. I have always felt that the end of the gabbro at New Duluth could only be accounted for by faulting. Of course, the north coast is irregular in detail but its general outline is markedly straight and out of harmony with geology. However, I have great difficulty in putting a normal fault in the same cross section with a thrust although Leith felt that so many periods of faulting have occurred that one should not hesitate on this account. I am still open to conviction on the matter and would particularly like to restudy the sediments on St. Louis River.

I have not replied to a letter from Prof. Thiel in regard to the structure map of the St. Peter. This map was drawn by me from all available data including the old atlas sheets on a 500 foot interval. It was changed for publication to a 200 foot interval without my knowledge and without using all of my data.

It was too bad that we had no time to look over the sections before you left the party but it could not be helped.

Sincerely,

F. T. Thwaites

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS

DEPARTMENT OF GEOLOGY AND MINERALOGY

September 10, 1935

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

Dear Mr. Thwaites:

I have now had time to study the guidebook with some care. I was much interested in your two maps and comments on the structure of Lake Superior, more particularly in the supposed fault along the North Shore.

I have worked along the North Shore in Minnesota for several years and have mapped all of it in a general way and fully forty miles in great detail. I have always been interested in this supposed fault and sought evidence for it. It must be said that we have yet to see any real evidence of it and have concluded that it is a case of a hypothesis based on very doubtful evidence which has come to be accepted more or less as fact, although I am glad to note that you state that Martin only suggested the fault.

It is stated that the North Shore is straight and disregards the rock structure. This is exactly what it does not do. In the first place the shore is straight only on a small scale map. Secondly, the relation of structure to the shore is so obvious that anyone working along the shore can judge what rock to expect from the topography. Wherever the shore is straight for a considerable distance it is due to the dip slope of a rather resistant rock such as a diabase sill. Practically every abrupt cliff is due to an intrusive diabase, or more rarely a felsite porphyry which is jointed on a large scale. Most of the bays are flows, usually extremely jointed felsites. Furthermore, the shore is approximately straight only from Duluth to Grand Portage. From there eastward it is very irregular. The difference is due not to change in structure, but to change in lithology. Martin lays great stress on the escarpment. It seems to me that the only escarpment worthy of the name is a few miles at Duluth where it is almost entirely due to the gabbro. The rest of the shore is no steeper than the average dip of the flows.

From your map one would judge that near Pigeon Point the Keweenawan rocks are faulted down past the Huronian slates, giving a fault contact. This is positively not the case. On the islands south of Pigeon Point we have a normal succession of Huronian slate, Keweenawan basal sandstone, flows, with a patch of conglomerate remaining on the dip slope of slate where it passes under a narrow straight between the islands. This suc-

cession can be traced the entire length of the Pigeon river, as shown in Minnesota Geological Survey Bulletin 24.

I had planned to present some of these views at the G. S. A. meeting in New York if I am able to go, but would like to thresh the matter out with you first. Particularly I should like to know what sort of evidence of a fault you would expect to find. The point is of considerable importance in the work which we have about two thirds complete on the North Shore.

You may remember that I have worked on Keweenaw Point and am familiar with the great fault there, so my skepticism applies only to the North Shore fault, **not** to the others in the Superior region.

Sincerely yours

G. M. Schwarz

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS

DEPARTMENT OF GEOLOGY AND MINERALOGY

Sept. 10, 1935

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

Dear Dr. Thwaites:

Since returning from the field, I have glanced at a few of the papers and maps in the new guide-book of the Kansas Geological Society. Your structural contour map drawn on the top of the St. Peter sandstone attracted my attention.

For the contours in southeastern Minnesota, I feel you followed too closely the contour map by Trowbridge published in the G. S. A. bulletin last summer, and reproduced in the Kansas guide-book. Unfortunately the map by Trowbridge does not give an accurate representation of the structure of the southeastern part of this state. Both you and Trowbridge have ignored the classic work done by Winchell over forty years ago in which he mapped quite accurately the elevation of the contacts of the outcrops in the counties south of the Twin Cities. Winchell does not show all the stratigraphic units we map at present. However, the St. Peter is still St. Peter and his maps of Dakota, Rice, Goodhue, Steele, Olmstead and other counties in the southeastern part of the state, show the St. Peter several hundred feet higher than you have designated on the structural contour map in the guide-book. The syncline shown by your 800 ft. contour does not exist. Through most of that region the top of the St. Peter is over 1000 ft. above sea level. I have spent the major part of this field season in that region and find no evidence to support Trowbridge's structural map as published in the G. S. A. bulletin June, 1934.

If you question my criticism of the structural maps in the guide-book simply take a trip from Hastings through Hampton, Randolph, Stanton, Dennison, Nerstrand, Kenyon, and eastward toward Rochester and take elevations

on the numerous exposures of the top of the St. Peter. You will find nearly all of the readings over 1000 ft. above sea level along the axis of your syncline outlined by the 800 ft. contour.

I call your attention to these inaccuracies so that the errors on Trowbridge's map in the G. S. A. will not be republished indefinitely. Mr. Schwartz's bulletin on the structure of the Twin City area will correct some of them, but my work on the southern counties will not be published for some time.

Our Post Conference day to the Mesabi Range was a very pleasant one and I am sure your trip to Ironwood was enjoyed by all members of your party.

Cordially yours,

Geo. A. Phil

Map of topography of bottom of Lake Superior.

Introduction. The map on the opposite page is based upon a recent chart published by the U. S. Lake Survey, Detroit, Michigan. The contours in feet are the work of the writer for the original map shows only soundings in fathoms. Comparison should be made with the map of the structure of the Lake Superior Basin (p.). The sublacustrine topography of Lake Superior is interesting because of the bearing which it has upon the geologic structure of the adjacent region. The lake occupies a structural basin which, save on its southeastern side, is deeply indented in the surrounding highlands.

Southeastern shore. The only long extent of lowland shore of Lake Superior is from the "Soo" west to Marquette. This shore is a cuesta of Plaeozoic rocks. Locally there is a faint suggestion of drowned dendritic valleys in horizontal sediments but these evidently do not extend far under the lake.

Eastern shore. The eastern shore of Lake Superior shows ^{a number} ~~several~~ isolated areas of Keweenawan rocks which dip steeply under the water. Several submerged ridges strongly suggest hog^{backs} ~~backs~~ formed by similar formations dipping in the same direction. If these were all parts of the same sequence the thickness of beds would be tremendous and on this account normal faults along the strike are postulated. In one place a ridge appears to indicate a southeast dip and a fault on its northwest side is suggested.

Northeastern shore. The northeastern shore of Lake Superior is composed on ancient crystalline rocks which descend beneath the waves in an abrupt escarpment. This may be due either to a dip slope stripped of the overlying Keweenawan or to a curved fault as shown on the map.

Eastern basin. A submerged hogback which locally rises to within a few feet of the surface of the water separates Lake Superior into two major basins. It seems fair to suggest that this ridge is due to the Keweenawan traps and that its northwest side is ~~marked by~~ another thrust fault similar to those which are well known farther west. It is clear that this basin is a structural as well as a topographic feature and that it is the northward extension of the great structural basin of Lower Michigan, here stripped of the overlying Paleozoics. In this part of the lake the bottom is extremely irregular with several enclosed basins some of which have very abrupt sides. One of these is the deepest place thus far discovered in the lake. These holes are wholly unlike either ^{stream} erosion valleys or basins due to recent folding. The writer suggests that they are the product of glacial plucking along lines of faulting in rocks of unknown character. Another peculiar feature is the abrupt ending of Michipicoten Island in both directions along the strike of the traps. It is likely that this is due to fault shattering of these elsewhere resistant rocks. In this connection it must be realized that glacial erosion is by far most effective by plucking of broken rock, not by abrasion of firm rock.

Northwest coast. The escarpment along the northwest coast of the lake rises from more than 600 feet of water to hills over 1000 feet above the lake. This escarpment bevels across formations of different character paying no attention to the strike. Isle Royal has no connection under water with the mainland but is separated by the trough of deep water which borders almost all of the northwest shore. That this escarpment is along a fault which has been largely stripped by glacial excavation appears well established.

Sandstone platform. The plateau of almost horizontal sandstone

which forms the Bayfield Peninsula and the Apostle Islands extends under the lake for many miles sloping gradually into deep water to the northwest and northeast. In the vicinity of the islands it is cut with several deep depressions which may be either stream valleys blocked by drift or due to glacial erosion. As they are not very deep and the islands contain no faults the first hypothesis seems preferable.

Lowlands west of the lake. Both at Superior and Ashland the shores of the lake are low and drilling has disclosed drift several hundred feet thick.

Vicinity of Keweenaw Point. The long straight shore line from Oronto Bay near the Wisconsin-Michigan line northeast to Keweenaw Point is ^a dip slope whose angle varies with the dip of the strata. Part of the southeast side of the Point is along the well-known Keweenaw Point thrust fault. The bay east of the point shows some submerged and probably drift-blocked valleys.

Summary. Although the major features of the structure of the Lake Superior Basin stand out clearly in the topography the interpretation of many of the features submerged by the lake is as yet entirely hypothetical. Could the area be examined in detail doubtless the true structure would be found to be much more complex than the explanation here hazarded.

F. T. Thwaites, Aug. 3, 1935

Map of topography of bottom of Lake Superior.

Introduction

The map ~~showing~~ on the opposite page is based upon a recent ~~map~~ chart published by the U. S. Lake Survey, Detroit, Michigan. The contours are the work of the writer as the original map shows only the soundings. Comparison should also be made with the map of the structure of the Lake Superior.

The sublacustrine topography of Lake Superior is interesting because of the great depth of the lake and the abruptness of its ^{most of} ~~banks~~. ~~Sixty miles to the southeast shore~~ The basin is ^{lined} bordered closely by highlands ^a save on the southeast from the "Soo" to Marquette.

Southeastern shore. This southeastern shore is ~~evidently~~ ^{which} a cuesta capped by Paleozoic dolomites overlying both Cambrian and Upper Keweenaw sandstones. Beneath the water there is locally ^{some} suggestion of drowned dendritic ~~drainage~~ valleys in horizontal strata, ~~but such do not occur over any large area.~~

Eastern shore. The eastern shore of Lake Superior shows several isolated areas of Keweenaw sediments which dip steeply under the Lake. Several ~~almost wholly~~ submerged ridges strongly suggests hogbacks with a westward dip. The writer suggests that these are separated by normal faults parallel to the north-south strike. ^{for otherwise to get a thickness of Keweenaw would be required}

Northeastern shore. The northeastern shore of the Lake is composed largely of granite and other ancient ^{crystalline} rocks. The writer is undecided ~~as to~~ as to the origin of the abrupt escarpment; It may be a curved fault as shown on the structure map or ^{be} (simply) due to the inferior resistance of the Keweenaw sediments, ^{that is a dip slope.}

Eastern basin. The great basin which is bounded on the north-west by the submerged hogback which extends north ^{east} from the tip of Keweenaw Point is evidently ^{the northward} an extension of the Michigan syncline which is unconformably overlapped to the south by the gently inclined

Paleozoics. Within the ^{lake} basin the bottom is extremely irregular and is marked by a number of enclosed basins some of which have very abrupt sides. One of these is the deepest known spot in the Lake. The writer suggests that these peculiar deeps which are totally unlike stream valleys were caused by glacial plucking along lines of faulting. A peculiar feature is that Michipicoten Island is so abruptly cut off on both ends. This may be due to ^{either} faulting down of the ~~existent~~ ^{increase} traps or to lateral ~~variation~~ in amount of shattering of the ^{se} elsewhere resistant rocks. The postulated thrust fault bordering this eastern syncline is purely hypothetical. If it extends as far to the south as shown then the youngest Keweenaw sediments do not seem to be affected.

North coast fault. The existence of a fault along the north coast of Lake Superior has been suspected for many years. The evidence is not only the abrupt ^{and regular} escarpment which rises from ~~more~~ ^{over} than 600 feet of water to ~~slavation~~ more than 1000 feet above, but also the way in which the shoreline bevels across the strike of the formations. There is no submerged connection ~~to~~ to Isle Royal and it is probably that the ^{in part of the traps} connection has been destroyed by glacial excavation of a shattered area ~~in the traps~~. This zone of shattering must account for the deep water along along this shore.

Apostle Island platform. The platform of almost horizontal Upper Keweenaw sandstone of the Bayfield Peninsula and Apostle Islands may be traced under the lake to the northeast where it slopes gradually into deep water. On its southeast side there is at ~~least~~ one enclosed basin ~~(either~~ due to glacial excavation or to drift blocking of a preglacial valley. The drift is several hundred feet thick ^{at} both ~~near~~ Ashland and Superior but ~~how~~ far inland these buried valleys extend is not known.

Keweenaw Point shores. The long straight shoreline west and south-west from Keweenaw Point is a dip slope ^{and t} ~~although~~ The angle of slope beneath the water seems to vary ~~slightly~~ in response to change in the dip of the beds. The south side of the end of the Point is a fault line scarp which in a few miles passes inland, ~~therefore~~ The ~~in~~ thrust plane is exposed in a number of places. The bottom of the bay south of the Point is irregular and the borders show submerged valleys.. The irregular shore from the bay east to

Marquette is a reflection of the nearly horizontal sandstone ^{bordering the} ~~crystalline mass of the Huron mountains~~

Summary. The foregoing interpretation of the form of the bottom of Lake Superior is ~~in~~ in large part entirely hypothetical. ^{but the major structures appear to be well founded in detail} The actual structure is probably much more complex ^{stripped by glacial excavation} than is yet suspected. Discrimination of fault line scarps from dip slopes is needed in several places. Studies of the relation of the Upper Keweenawan sandstones to not only the overlying Paleozoics but ^{also} to the structure of the older Keweenawan are badly needed.

STATE OF WISCONSIN

IN REPLY PLEASE
REFER TO

CONSERVATION DEPARTMENT

Trimpalean Aug 23/31

Mr. F. T. Thwaites

Dear Sir

Yours of Aug 19th at hand will be glad to have
you & family visit our Park and will be ready to
give you all the assistance I possibly can I will
be at Point Port a 8. a.m.

Yours Truly

R. D. Howell Supt.

PICKANDS, MATHER & COMPANY
MINING DEPARTMENT

W. A. KNOLL.
GENERAL SUPERINTENDENT

ODANAH IRON CO.
PALMER MINING CO.
PLYMOUTH MINING CO.
SUNDAY LAKE IRON CO.
THE YOUNGSTOWN MINES
CORPORATION

IRONWOOD, MICHIGAN.

Aug. 20th, 1935.

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

Dear Mr. Thwaites:-

We have your letter of Aug. 19th relative to the visit of members of the Kansas Geological Society to this district on Labor Day, Sept. 2nd, and desire to advise that it will be perfectly satisfactory for your party to visit the Plymouth open-pit near Wakefield, Mich. This pit is idle and has been for several years.

Mr. Kenneth Duncan is Superintendent of this property and lives in Wakefield and Mr. L. M. Scofield is our geologist and lives in Ironwood. Labor Day being a holiday, I cannot say whether Mr. Duncan, Mr. Scofield or myself will be available, but if it is possible for any of us to be around at the time of your arrival, we will be more than pleased to take you to the Plymouth open-pit.

With kind regards, I remain,

Yours very truly,

W. A. Knoll
General Superintendent

WISCONSIN GRANITE CO.

QUARRY CORRESPONDENCE

Ableman, Wis.,

DATE Aug. 20, 1935.

FROM

TO

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

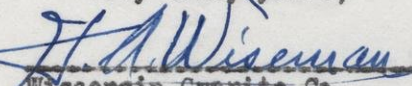
Dear Sir:

Yours of the 16th received. I know of no objections to your party crossing over this Companies property as outlined in your letter. Our quarry may or may not be working on the day you visit here and it may be best to caution your party about rolling loose stones down the cliff since men working at the foot of the ledge cannot be seen from the top of quarry.

In event you visit our quarry floor and enter from the South end and under through the Railroad bridge be careful of loaded quarry cars which come out under the R.R. bridge quite fast and cannot be seen at this point due to the curve. I am mentioning this only to prevent any accident to our workmen as well as your party.

The White Rock Quarry is owned by the C&NW Railway Company. Mr. Wm. Stoeckmann, has charge of the General Refractories Co. quarry on the West side of the Highway, while Mr. G.H. Volz, has charge of the property joining our quarry on the North end. The two latter parties reside here. Mr. J. W. Vilas of your city I assume would be the man to see relative to the White Rock Quarry property.

Very truly yours,


H. A. Wiseman Sup't
Wisconsin Granite Co.

Mendota State Hospital

Dr. M. K. Green, Superintendent

Mendota, Wisconsin

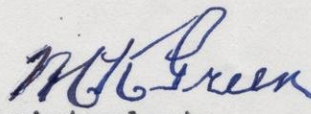
August 19, 1935

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

Dear Sir:

Replying to your letter of the 16th, beg to advise that we will be very glad indeed to have the group attending the Ninth Annual Field Conference visit Farwell Point on the 29th. You will be at liberty to inspect the grounds of the Wisconsin Memorial Hospital and probably they would be interested in going over to the State Hospital grounds as well, as there are many Indian mounds on the grounds, which they would probably like to see.

Very truly yours,


Superintendent

MKG/S

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EAU CLAIRE, WISCONSIN

August 19, 1935

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DR. GEORGE W. BEEBE, VISITING PHYSICIAN

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

Dear Sir:

In reply to your letter of August 16, you surely have our permission to ascend Mt. Washington on this side. We have a large parking lot here at the institution and there should be plenty of space on the street just south and which the institution faces to take care of the cars in your party.

Assuring you of our wish to be of service, we are

Yours truly,

CMC:A

MT. WASHINGTON SANATORIUM

By *Clara M. Christenson*
Superintendent

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COMMERCIAL STATE BANK

MADISON, WISCONSIN

August 19th, 1935.

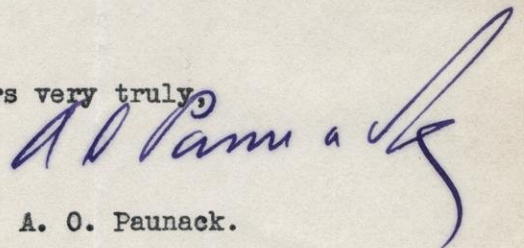
Mr. F. T. Thwaites,
Science Hall,
University of Wisconsin,
Madison, Wisconsin.

Dear Mr. Thwaites:

Mr. Zwicky, one of the heirs of the
Paunack Estate, informs me that it will be perfectly agree-
able for you and your friends to visit the Paunack quarry
at Sunset Point and you can use this letter for such
authorization.

If we can be of further service to
you please feel free to call on us.

Yours very truly,



A. O. Paunack.

Aug. 19, 1935

Pickands, Mather and Co.,
Ironwood, Michigan

Gentlemen:

The Kansas Geological Society of Wichita, Kansas, is holding its Ninth Annual Field Conference in Illinois, Iowa, Minnesota, Wisconsin, and northern Michigan this year. A post-conference trip from Duluth to Ironwood, Michigan has been arranged for Labor Day, Sept. 2. The last scheduled stop for this trip is the Plymouth open-pit mine and I would like to secure permission to visit this. The party will not arrive until late in the afternoon and will probably be small. Plans call for a stop on the highway at the west end of the mine but some will probably want to walk down a short distance into the pit to see the formation. I do not know just who will be leader but hope to get someone who knows the geology better than I do. Anything you can do to help us will be greatly appreciated.

Very truly yours,

F. T. Starnites

August 19, 1935

Mr. Robert Hovel,
Superintendent of Perrot Park,
Trempealeau, Wisconsin.

Dear Sir:

The Kansas Geological Society is planning to visit Perrot State Park on the morning of Tuesday, August 27. The program plans for entering the park and making a U-turn at Perrot's Post then parking along the road and climbing the first bluff out of Trempealeau. Any assistance you can give us in carrying through this program will be greatly appreciated.

Yours very truly,

FTT-T
Copy to G. L. Harrington

F. T. Thwaites

Aug. 19, 1935

Pickands, Mather and Co.,
Ironwood, Michigan

Gentlemen:

The Kansas Geological Society of Wichita, Kansas, is holding its Ninth Annual Field Conference in Illinois, Iowa, Minnesota, Wisconsin, and northern Michigan this year. A post-conference trip from Duluth to Ironwood, Michigan has been arranged for Labor Day, Sept. 2. The last scheduled stop for this trip is the Plymouth open-pit mine and I would like to secure permission to visit this. The party will not arrive until late in the afternoon and will probably be small. Plans call for a stop on the highway at the west end of the mine but some will probably want to walk down a short distance into the pit to see the formation. I do not know just who will be leader but hope to get someone who knows the geology better than I do. Anything you can do to help us will be greatly appreciated.

Very truly yours,

F. T. Thwaites

August 16, 1935

Mr. A. O. Pannack,
102 State St.,
Madison, Wisconsin

Dear Sir:

The Kansas Geological Society of Wichita, Kansas, is holding its Ninth Annual Field Conference in Wisconsin this year. Among other places which they wish to visit is one of the quarries west of Madison. It happens to be more convenient to visit the quarry at Sunset Point which, as I understand it, belongs to the Pannack estate.

I would like to obtain permission to make this visit. I plan to have the party enter at the gate which leads in from the drive up to Sunset Point.

Very truly yours,

F. T. Thwaites

August 16, 1935

Superintendent, Eau Claire County Sanitorium,
Eau Claire, Wisconsin

Dear Sir:

The Kansas Geological Society of Wichita Kansas is holding its Ninth Annual Field Conference in Wisconsin this year. Among the places they wish to visit is the old quarry on Mount Washinton behind the Sanitorium. There may be as many as 200 people in the party.

What I had planned was to park the cars along the street north of the Sanitorium and have the party ascend the hill through the old gate back of the building. If I recall right the hill belongs to someone who lives on the north side whose name I do not have.

I would like to obtain permission to either do this or ascend the hill from the north. The visit will be made early in the morning of August 30.

Anything you can do to help us will be greatly appreciated.

Very truly yours,

F. T. Thwaites

August 16, 1935

Wisconsin Granite Co.,
Ableson, Wisconsin

Gentlemen:

On August 28 the Kansas Geological Society of Wichita, Kansas with a party which may number over 200 expects to spend two hours visiting the Ableson region. I plan on parking cars along the road with the head at the railroad siding bridge, then walking back to the conglomerate quarry, from that down to the tract, up the bluff at the north end of the quartzite and thence along the top through your property and down into the old White rock quarry by means of a trail which I saw when there. We will then return to the cars by the railroad bridge.

I would like to obtain your permission to do this. I do not know the owners of either the conglomerate or White Rock quarries so could you kindly inform me how to reach them?

Very truly yours,

F. T. Thwaites

Aug. 16, 1935

Dr. M. K. Green, Superintendent,
Mendota State Hospital,
Mendota, Wisconsin

Dear Dr. Green:

The Kansas Geological Society of Wichita, Kansas, is planning to hold its Ninth Annual Field Conference in Wisconsin this year. It is expected that over 200 people may attend. One of the places of interest they wish to visit is the rock cliff on "arwell Bluff. I would like to obtain your permission for us to drive down to the U. turn in the former soldiers hospital on the morning of the 29th of August to do this. The party will be accompanied by a police patrol to guard the cars and regulate traffice. The stop will be for about 20 minutes.

Very truly yours,

F. T. Thwaites

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,
August 13, 1935.

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ST. PAUL INSTITUTE

GEORGE A. THIEL

UNIVERSITY OF MINNESOTA

Dr. Fred T. Thwaites,
Route #4,
Madison, Wisconsin.

Dear Dr. Thwaites:

Mr. Folger is away for a few days and during that time I am handling correspondence received relative to the Conference.

We are glad to have the information relative to Shrock, Twenhofel, and Bean. We note with considerable apprehension, to use a hackneyed expression, the information relative to flood waters along a part of our route, and also the fact that we had lost a most important bridge. Of course there is absolutely nothing we can do now, insofar as the Guide Book is concerned. If the bridge is not open, and you doubt that it will be, the trip will have to be more or less extemporaneous until we get across the river and back to our regular route.

Of course instructions, information, etc. can be given to the conference during the progress of the second day, so that all may be informed as to the change in plans.

Relative to your being asked to secure permission to enter certain places on the route, I note that Trowbridge has written you a letter dated August 10 which handles that matter.

Relative to the matter of police escorts, that is now being taken up with Bean.

If that bridge was knocked down by an automobile hitting one of the girders, It may have been a fortunate occurrence that it happened prior to the conference, of course not expecting that any of our men will hit any of the girders on any of the bridges. One just has to take these kinds of things with a smile. As to the floods, we shall inquire around and find out how many of the conference members can swim.

Very truly yours,

L. W. Kesler
L. W. Kesler

LWK:AS

cc: A. C. Trowbridge

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

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ASSISTANT STATE GEOLOGIST, IOWA

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ILLINOIS GEOLOGICAL SURVEY

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MINNESOTA LEADERSHIP

Associate Director

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STATE GEOLOGIST, MINNESOTA

State Leader

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Assistant State Leaders

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UNIVERSITY OF MINNESOTA

LEWIS H. POWELL

ST. PAUL INSTITUTE

GEORGE A. THIEL

UNIVERSITY OF MINNESOTA

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

COMMITTEE ON ARRANGEMENTS

ANTHONY FOLGER, *Chairman*
GYPSY OIL COMPANY
1107 UNION NATIONAL BANK BLDG.,
WICHITA, KANSAS.

L. W. KESLER
SINCLAIR PRAIRIE OIL COMPANY
527 FIRST NATIONAL BANK BLDG.,
WICHITA, KANSAS.

E. P. PHILBRICK
MAGNOLIA PETROLEUM COMPANY
917 FIRST NATIONAL BANK BLDG.,
WICHITA, KANSAS.

E. A. WYMAN
AMERADA PETROLEUM CORPORATION
614 ORPHEUM BUILDING,
WICHITA, KANSAS.

August 10, 1935

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

Dear Fred:

I have just returned from a week of lecturing and field work out in the state to find your letter of August 8. Up until the very hour of my leaving for this trip I was so swamped with field conference matters that I did not make time to let you know just what routes and stops had been finally decided upon for Wisconsin as the final draft of the log was made up.

The logs for the second and third days have not been changed. In other words, we will drive from the Lansing bridgehead to LaCrosse late in the second day and make a short stop at the Victory section. On the third day we will go over to Dresbach and back to LaCrosse and then drive from LaCrosse to the Winona bridge, making stops at Galesville and Trempealeau.

The schedule for the fourth day as finally arranged is as follows: We will drive directly from LaCrosse to Ableman on Highway 33, according to your log. After having made a long stop at Ablemen, we will go to Baraboo for lunch and then go south on the East Sauk road, making the stop on the west of Devil's Lake as originally planned. From there we will go to Mazomanie and stop on the School Hill section. At about this place in the log we have inserted the description and discussion of the Black Earth section but do not plan to stop there. From Mazomanie we will go west and south to East Blue Mounds and have inserted a stop at the Brigham quarry.

For sure

The plan is to drive slowly across the Mound for the views and for the physiographic and other discussion which are included in the log but not to stop except at the quarry. From the Brigham place we will then drive to Madison, make a stop at the Madison quarries and drive through the University campus to the ~~LeClaire~~ Hotel. If it is too late in the day as we leave Blue Mounds, we will not stop at the Brigham quarry. If at the time of the conference the highway between Blue Mounds and Madison is torn up, we will probably go to Madison directly from Mazomanie, perhaps making the stop at Black Earth. In this event the discussion at Blue Mounds will be in the log anyway.

On the fifth day we will drive around Lake Mendota, making the Farwells Point and Mendota stops. Having done this, we will drive through the Baraboo district to Wisconsin Dells and there take the boat trip, have lunch, and service cars. In the afternoon we will then proceed about as originally planned to Eau Claire, making stops at Point Bluff and Goodenough Hill. The description and discussion of the section at tunnel number two are included in the log, but we will not make this stop.

The Mt. Washington and Mt. Simon stops will be made in that order at the beginning of the sixth day, after which we will go to Chippewa Falls and make the stop there and then drive to Menomonie and on west and south from there to Ellsworth. Description and discussion of the faults south of Waverly will be inserted in the log as of a point just east of Ellsworth. The stop at Ellsworth, as you know, is on the public highway. Although some members of the party may wish to climb a fence and go into a pasture, the main party, however, will remain on the road. From Ellsworth we will go to River Falls, where we will have lunch in the River Falls tourist park and make a stop after lunch in the rock gorge which is also in this park. Then we go from River Falls to Hudson and make the stop there on the highway and adjacent bluffs, after which we cross the St. Croix on the Hudson bridge and leave Wisconsin.

On the eighth day there is but one stop in Wisconsin, namely at Osceola. The log finally adopted calls for us to drive from Minneapolis to Stillwater, from Stillwater north on the Minnesota side of the St. Croix to the Osceola bridge, to cross into Wisconsin right at Osceola, make the Osceola stop and then drive by Highway 35 to the Interstate bridge at St. Croix Falls, where we again leave Wisconsin.

F.T.T.

3

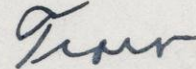
8/10/35

I hope that this information is what you need to get started with the new task which has been assigned to you by Bean.

I understand that the matter of police escort in the several states is to be taken care of very soon now through the Directorship rather than the Leadership of the conference. At least I hope that we leaders will have no responsibility for this item.

You and I have both given up the bulk of our summer to the K.G.S. work. If our efforts and those of the other people who have contributed to the guidebook result in a good conference and in the clarification of some of our problems, I shall consider that the work has been worth doing and shall be entirely satisfied to have participated in it. If, on the other hand, the guidebook should not be well received and if the conference should not prove successful, I should, of course, feel very differently.

Cordially yours,



A. C. Trowbridge

ACT:A

CC: Anthony Folger

Aug. 10, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Thank you for yours of the 5th and for the arrangement in respect to Mrs. Thwaites. I hope that she will be able to go.

Shrock is not yet sure that he can attend as he has been delayed about going into the field after his return from Newfoundland. Trenchhofel thinks that he will attend from Iowa City to Madison. Bean is not yet sure (a few days ago) how much of the trip he will be on.

I am enclosing some clippings in regard to the route. If we have another flood motor boats would be needed! The item in regard to the LaCrosse bridge is by far more serious. I have not called the Highway Commission but think it extremely doubtful that they could get the bridge open by the time we get there even if only temporary repairs are made. The nearest bridge is Wiconna. This will necessitate extensive changes in the route of the third day.

Bean has wished off on me the asking permission to enter certain places. As I have not yet been advised just how the routing has been changed I have not done anything about this as yet. I have not heard how the matter of police escorts has been arranged but doubt that anything else has been done about it than when you were here.

Sincerely,

F. T. Thwaites

Aug. 8, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Bean has wished off on me the job of asking permission for the Conference to visit certain spots. As I do not yet know just how you arranged the schedule where changed particularly around here I am as yet unable to do anything about it. Could you kindly let me know so I can start. Wonder if he has arranged for police escorts!

The lateness of completion of the K. G. S. has put my summer all of out joint. I may hardly get into the field at all.

Sincerely,

F. T. Trowbridge

AMERADA PETROLEUM CORPORATION

PETROLEUM BUILDING

TULSA, OKLA.

August 5, 1935

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

Dear Proffessor Thwaites:

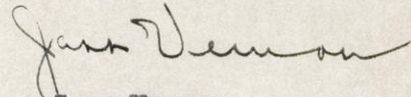
I want a copy of your book on glacial geology, and will enclose \$2.50 for same.

You took a picture of the party north of Madison near a railroad cut where I believe there was some discussion in regards to the Mendota and Madison sand stone. I would like one, as I did not get a group picture.

Wyman's pictures were very good. He had two enlarged, of scenes in Wisconsin, and sent them to me. I intend to have them framed.

I enjoyed the trip very much, especially the day spent riding with you. They will not send me again this fall as so many others wish to go, and some one must stay behind. Should you have occasion to visit Oklahoma, I hope you will pay us a visit and maybe we can return some of your hospitality.

Sincerely,


Jess Vernon

JV/bb
encl.

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,

August 5, 1935.

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ST. PAUL INSTITUTE

GEORGE A. THIEL

UNIVERSITY OF MINNESOTA

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

Dear Fred:

I have just gotten around to opening my mail which has come during the past four or five days and I find your reply blank stating that you will attend all of the Conference and expect to bring Mrs. Thwaites with you. Your question concerning whether or not she will be charged full \$15.00 or whether she is to be charged the guest rate of \$5.00 can be answered quite quickly. Please be advised that because of all of the work that you have done in behalf of this Conference during the past two and one-half years, we shall be glad to have Mrs. Thwaites attend (as long as you are bringing your own car) without the payment of any fee. I see no reason why since you have both done so much work that a fee should be charged Mrs. Thwaites. Please convey my compliments to Mrs. Thwaites and ask her to come along as our guest and have a good time.

Your special delivery airmail letter containing a page on the discussion for your Sublacustrine topographic map of the bottom of Lake Superior was received yesterday and was in time to be included in the Guide Book on the page opposite to the one containing your map. Thank you very much indeed for being so prompt.

At the present time we have four and one-half days' log finally made up on the master sheets. If we have luck we expect to have the second post-conference day's log on the master sheet Tuesday night. After that, everything will go rapidly and the Guide Book should be ready to start running through the press sometime toward the end of this week.

With kindest personal regards to both you and Mrs. Thwaites, I am

Very cordially yours,

Anthony

Anthony Folger.

AF:AS

Fred T. Thwaites, #2.

P. S. Having now opened up a few more envelopes, I find an order with a check for \$10.00 enclosed from Robert R. Shrock. He has, however, returned no yellow personal reply blank and I would like to know whether or not he expects to attend the Conference. Will either he or you be kind enough to forward this information at your earliest convenience.

RF

August 3, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

The first I heard of any telegram regarding the map of the topography of the bottom of Lake Superior was when you telephoned this morning. I called Western Union and they have no such telegram in their files.

Enclosed in the manuscript requested. Of course, not having the map it is not what it should be. I had to write largely from memory and that is not so good.

Mrs. Thwaites is thinking of going on the part of the Conference from Iowa City back to Madison. As she will not want a guidebook would it be possible to bring her at the guest rate of \$5.00? You already know how much work she has done in the preparation of material for the Conference.

Bays, Raasch and I plan to leave the Conference at Ironwood, Michigan and then make a private exploration of Limestone Mountain and the surrounding region where the relations of the Lake Superior sandstone to the fossiliferous Cambrian are well shown. We hope that with the background of previous experience we may be able to get important results in a comparatively short time. We will ship our camping outfit to Ironwood when in Madison during the Conference. It is for this reason that I changed my plans to bring a car.

Just last night Mrs. Thwaites remarked that it was funny we had heard nothing from Wichita or Iowa City!

With best wishes for completion of your big task, I am,

Sincerely,

F. T. Thwaites

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

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Wichita, Kansas,
July 25, 1935.

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TO ALL PERSONS INTERESTED IN GEOLOGY:

Transmitted herewith is a copy of the final announcement of the Ninth Annual Field Conference of the Kansas Geological Society to be held in the upper Mississippi Valley area August 25 to September 1 inclusive.

Provisional registration for this conference is large and includes geologists from thirty states. Everything indicates that this will be the largest and one of the most important conferences held by this Society. Every effort is being made by the Committee to make your participation pleasant.

The purpose of this Conference is to give persons unfamiliar with the upper Mississippi Valley a better understanding of its geology, to promote acquaintanceship and interchange of ideas between academic and commercial geologists, and to study on the outcrop those rocks which produce oil in other parts of the United States.

We entertain the hope that it will be possible for you to arrange your plans so as to attend. In the event this can be accomplished, the Committee will appreciate your early return of the enclosed personal reply blank. If you cannot attend, and have not ordered a Guide Book, may we suggest that it will constitute a valuable addition to your geological library and we trust it will be possible for you to order a copy before the supply is exhausted.

THE KANSAS GEOLOGICAL SOCIETY

July 24, 1935

Mr. Jess Vernon,
Amerada Petroleum Corp.,
Box 2040,
Tulsa, Oklahoma

Dear Mr. Vernon:

Now that the K. G. S. work is done (there have been no telgrams today) I can find time to check up on some odds and ends.

My recollection is that you wanted a copy of my book on glacial geology but as I am not sure. Will mail you a copy if you still desire it. The cost is \$2.50 postpaid. Wyman ordered one while here and I have sent it to him.

Hoping to see you again on the regular trip of the K. G. S., I am,

Sincerely,

F. T. Thwaites

Gypsy Oil Company

Tulsa, Okla.

Wichita, Kansas,
July 23, 1935.

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

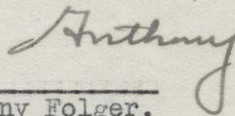
Dear Fred:

I have just received your letter of July 22 enclosing typewritten statements of location of wells on your cross section. Thank you very much indeed for this information. I also note that you have forwarded to Ponca City the map showing the route of your section.

Enclosed herewith is the Society's check for \$3.80 covering the expenses to which you have been put in our behalf.

Even though we are all swamped, I want to take this opportunity to thank you for your immediate attention to all of the little details requested of you by wire during the past two weeks. I believe the last request was made of you by wire this morning and I trust I will not have to bother you further. For the present time let me just express the grateful thanks of the Committee on your splendid cooperation.

Very truly yours,



Anthony Folger.

AF:AS
cc: A. C. Trowbridge

NOTICE OF ADVANCE PAYMENT

for GUIDE BOOK

Members of the Kansas Geological Society, like many organizations, are considerably reduced. A certain amount of ready cash is required in advance of the Conference. Because of this fact, this Society will appreciate advance payment with orders for Guide Books. We wish to emphasize that this advance payment is requested only if it is absolutely convenient. A receipt for this advance payment will be furnished by the Kansas Geological Society upon request. In no case do we desire that you delay ordering a Guide Book should it be inconvenient to arrange for advance payment at this time.

The finances of the Kansas Geological Society, like many organizations, are considerably reduced. A certain amount of ready cash is required in advance of the Conference. Because of this fact, this Society will appreciate advance payment with orders for Guide Books. We wish to emphasize that this advance payment is requested only if it is absolutely convenient. A receipt for this advance payment will be furnished by the Kansas Geological Society upon request. In no case do we desire that you delay ordering a Guide Book should it be inconvenient to arrange for advance payment at this time.

GUIDE BOOK

ISOPACH MAPS

HIGHLIGHTS

METHOD OF TRAVEL

LEADERSHIP

GENERAL

Announcing

The NINTH
ANNUAL
FIELD CONFERENCE

of the KANSAS
GEOLOGICAL
SOCIETY

In Co-operation
with the
STATE GEOLOGICAL SURVEYS
of IOWA
ILLINOIS
WISCONSIN
MINNESOTA

EIGHT DAYS

Sunday, August 25 to Sunday, September 1, 1935
Beginning Iowa City—Ending Duluth



Arranged for a comprehensive examination of the pre-Mississippian sediments of Eastern Iowa, Northwestern Illinois, Central and Western Wisconsin, and Eastern Minnesota with special emphasis on the Ordovician and Cambrian Systems.

HISTORY

In the fall of 1927, the Kansas Geological Society held its First Annual Field Conference in northeastern Missouri and eastern Iowa, studying the Paleozoic sediments of this area. The Conference was attended by 41 geologists. Despite hurried arrangements, and our imperfect knowledge of where special emphasis should have been placed, it is conceded generally that unusual economic results have accrued to those oil companies participating.

During the intervening years, the opinion has been expressed very generally by geologists in widely separated localities that, since the attendance of this First Conference was so small, and the importance of the area involved so great, it would be beneficial to students of Paleozoic stratigraphy to revisit eastern Iowa, and extend this itinerary into parts of adjacent states, affording opportunity for more careful investigation of the pre-Mississippian rocks of the Upper Mississippi Valley. Moreover, after an elapse of eight years, this Society is better qualified to suggest geologic points of concentration for field study.

To comply with this popular demand, active plans were begun in November of 1932. The four State Geological Surveys of Iowa, Illinois, Wisconsin, and Minnesota have given their continued and whole-hearted co-operation toward the completion of field investigations and the solution of problems in interstate correlation. During the field seasons of 1933 and 1934, a large amount of field work was completed relating to Conference problems and to preparation of the Conference road log; supplementary laboratory work was carried on by the State Surveys and by the Departments of Geology of these State Universities during the academic years of 1933, 1934, and 1935. Three years of preparation by the Leadership will make this Conference thorough, instructive, and important.

The itinerary has been prepared considering the four states involved as a single Geologic Province. Only those stops of the greatest geological significance have been selected and all duplication of stops has been avoided wherever possible.

GEORGE F. KAY *Director*
STATE UNIVERSITY OF IOWA

ARTHUR C. TROWBRIDGE *Leader*
STATE GEOLOGIST, IOWA

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Iowa

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University of Rochester
JAMES H. LEES
Iowa Geological Survey

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Cornell College
MERRILL A. STAINBROOK
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Coe College

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St. Paul Institute
GEORGE A. THIEL
University of Minnesota

ISOPACH MAPS

HIGHLIGHTS

HIGHLIGHTS

HIGHLIGHTS OF ITINERARY

*First Day—Sunday, August 25**Iowa City, Iowa, to Dubuque, Iowa*

Devonian Cedar Valley limestone of Iowa, including the type section of the Linwood member of the Cedar Valley.

Unconformity by overlap of Pennsylvanian sandstones and shales on Devonian Cedar Valley limestone.

Glacial and interglacial Pleistocene history and Glacial Lake Calvin.

Niagaran and Alexandrian Series of eastern Illinois and eastern Iowa.

Type section of the Port Byron (Le Claire) Silurian.

Discussion of the "Alexandrian problem."

Relation of the Alexandrian to the underlying Ordovician Maquoketa shale and the overlying Silurian Niagaran dolomite.

Type section of the Ordovician Galena dolomite.

Presentation of a new classification and correlation of the Galena beds.

*Second Day—Monday, August 26**Dubuque, Iowa, to La Crosse, Wisconsin*

Inspection of the complete section of the Ordovician of the Upper Mississippi Valley.

Type section of the Dubuque dolomite and the relation of the Dubuque to the Stewartville and Prosser.

Study of the members of the Decorah formation, with metabentonite near its base.

Relation of the St. Peter sandstone to its older and younger beds.

Problems connected with the definition and classification of the Prairie du Chien strata.

Presentation of the relations of the lowest Ordovician to the highest Cambrian.

Discussion of Nebraskan glaciation and its effects on the course of Mississippi River.

*Third Day—Tuesday, August 27**La Crosse, Wisconsin,**Returning to La Crosse, Wisconsin*

Study of the basal Ordovician Prairie du Chien beds and the Upper Cambrian sequence.

Inspection of localities showing the Dresbach, Trempealeau, and Galesville divisions of the Cambrian.

At several localities, especially at Trempealeau, Wisconsin, and at Dresbach, Minnesota, a general section will be worked out from Eau Claire at the base to New Richmond at the top.

*Fourth Day—Wednesday, August 28**La Crosse, Wisconsin, to Madison, Wisconsin*

Cambrian and Ordovician exposures in Wisconsin will be related to outcrops already seen in Illinois and Iowa.

Franconia formation and a review of the Mazomanie-Franconia problem.

Type localities of the Mendota and the Madison divisions and a discussion of the Mendota problem.

Erosional history of the Driftless Area, involving the peneplane-cuesta controversy.

*Fifth Day—Thursday, August 29**Madison, Wisc., to Black River Falls, Wisc.*

Study of glacial features of late Wisconsin age and of the eastern border of the Driftless Area.

Inspection of the classic district around Devil's Lake and Baraboo, involving the relationship and structure of the pre-Cambrian formations to the superjacent Paleozoics.

Development of the origin and history of Devil's Lake.

In a two-hour boat trip through the dells of Wisconsin, a remarkable section will be seen of the eastern Wisconsin facies of the Eau Claire sandstone.

*Sixth Day—Friday, August 29**Black River Falls, Wisconsin,
to Minneapolis, Minnesota*

Special attention will be accorded the lower members of the Dresbach formation that rest on a pre-Cambrian basement in western Wisconsin.

Type sections of the Mt. Simon and Eau Claire divisions.

Study and comparison of the Ordovician sections of western Wisconsin and southeastern Minnesota.

The Ozarkian-Canadian question will be reopened.

Evidences of faulting of considerable magnitude within the upper Cambrian and lower Ordovician.

Study of the "River Falls Syncline" and the pitching end of the "Hudson Anticline."

*Seventh Day—Saturday, August 30**Minneapolis, Minnesota,**Returning to Minneapolis, Minnesota*

A trip up the Minnesota River Valley from Minneapolis to Mankato will open up problems of correlation of the upper Cambrian of Minnesota with those of Wisconsin and Iowa.

Type section of the St. Lawrence and Jordan.

Inspection of the famous type section at Shakopee will furnish a basis for a discussion of the difficult Oneota-Ozarkian-Shakopee-Canadian, or Prairie du Chien, problem.

HIGHLIGHTS

Special attention will be paid to the contact between the Cambrian and Ordovician.

At Mankato; a locality where uppermost Cambrian silts and clays have been squeezed up into fissures and solution openings in Oneota dolomite.

At New Ulm; a locality where outcrops of pre-Cambrian exist on the western border of the Lake Superior Syncline.

Physiographic studies of Mississippi and Minnesota Rivers, St. Anthony and Minnehaha Falls, etc.

Eighth Day—Sunday, August 31

Minneapolis, Minnesota, to Duluth, Minnesota

Type locality of the St. Peter sandstone at Ft. Snelling with Ordovician strata above this horizon. Inspection of the famous Stillwater section, differently interpreted by different investigators.

Type locality of the Franconia formation, and study of the shore phase of upper Cambrian sediments.

Outcrops of Keweenaw eruptives and giant potholes of Pleistocene Age at Taylor's Falls.

Type locality of the Hinckley sandstone and a consideration of the problems connected with the relations of the Cambrian to the pre-Cambrian.

Near Duluth an examination of the pre-Cambrian Carlton slates with their characteristic complex structure.

OPTIONAL POST-CONFERENCE TRIPS

Optional Trip No. 1—Monday, Labor Day

Duluth to Masabi Iron Range and Return to Duluth

Study of the Duluth Gabbro and the Keweenaw lava flows near Duluth.

Inspection of the Masabi Iron Range and an instructive visit through the famous Hull-Rust-Mahoning open pit at Hibbing, and other iron mines located in the Huronian iron formation.

Soudan iron mine, in which Archean Soudan Formation is productive, and examination of the overlying Knife Lake slates.

Optional Trip No. 2—Labor Day, Sept. 1

Duluth, Minnesota, to Ironton, Michigan

Keweenaw sandstones, conglomerates and lava beds.

Study of thrust faulting affecting the upper Keweenaw in connection with the problem of the relationship between the pre-Cambrian and the Cambrian.

The route along the south shore of Lake Superior will afford a study of the Pleistocene history of Lake Superior and an inspection of the exposed Upper Keweenaw sandstones.

The Gogebic Iron Range, including the famous Plymouth open pit mine. Discussion of the structure of the pre-Cambrian of the Gogebic Iron Range and its relationship to the physiography of the area.

GUIDE BOOK

The Guide Book of the Ninth Annual Field Conference will present a comprehensive statement of the geology of the Upper Mississippi Valley area. It will embody all the recent geological decisions and opinions of the geologists of the four states involved. A series of authoritative papers will discuss the stratigraphy of each of the pre-Pennsylvanian Systems. Isopach maps will exhibit the variation in thickness of these systems, or portions thereof, and structural contour maps will emphasize the major structural features of the Upper Mississippi Valley and adjacent areas. Here is a formal publication which should be in the library of every geologist concerned with physiographic or Paleozoic problems. About one-half of the Guide Book's 300 to 400 lithoprinted pages will consist of the detailed road log and important associated information. Approximately an equal number of additional pages will include special articles, maps, and sections.

Contents of Road Log

Detailed log of the eight Field Conference days and the two optional post-Conference trips, on Labor Day, prepared by the State Leaders.

Detailed description of stratigraphy and structure at each stop.

Comprehensive discussion by the Leaders at each stop included for permanent preservation.

Graphic columnar section of each stop.

Detailed typewritten section of the lithologic units at each stop, with fossil horizons indicated and a list of the important faunas.

Diagrams and photographs.

Full description of geologic features along route of travel between stops.

Strip route maps showing points of interest and geologic contacts where available.

Description of all historical and cultural points of interest along route.

All for the convenience and understanding not only of participants but also those who wish to make the trip independently at some future date.

GUIDE BOOK

System Papers

Seven papers dealing with the stratigraphy of pre-Pennsylvanian Systems of the Upper Mississippi Valley.

These will contain a comprehensive formational discussion of the stratigraphy of each system and the important characteristics and variations in the lithology.

In some instances these papers will involve revisions of nomenclature.

Each paper will contain a system correlation chart for the Upper Mississippi Valley, and will include correlations of that System with adjacent areas.

The following titles and authors speak for themselves:

"Stratigraphy of the Mississippian System in the Mississippi Valley," by Raymond C. Moore;

"Stratigraphy of the Devonian System of the Upper Mississippi Valley," by Merrill A. Stainbrook;

"Stratigraphy of the Siluran System of the Upper Mississippi Valley," by A. H. Sutton;

"Stratigraphy of the Ordovician System of the Upper Mississippi Valley," by G. Marshall Kay;

"Stratigraphy of the Cambrian System of the Upper Mississippi Valley," by Gilbert A. Raasch;

"Relations of the pre-Cambrian and the Cambrian in the Upper Mississippi Valley," by Gordon I. Atwater;

"The pre-Cambrian of the Lake Superior Region, and of Isolated Areas in Wisconsin, Minnesota and Iowa," by Andrew Leith.

Wisconsin-Missouri Structure Section

Detailed structure section from the Lake Superior Highland in Wisconsin, southward through central Wisconsin, western Illinois, and eastern Missouri to the Ozark Mountains of Missouri.

A co-operative result based on the detailed examination of well cuttings, prepared by:

Fredrik T. Thwaites for Wisconsin,

Lewis E. Workman for Illinois,

Henry S. McQueen for Missouri.

An admirable attempt to clarify details of correlation between Ozark and Upper Mississippi Valley stratigraphic units.

Special Reports

The following very important special reports will be included in the Guide Book:

"Stratigraphy and Structure of the Anticline at Oregon, Northwestern Illinois," by Arthur C. Bevan.

"Stratigraphy and Structure of the Paleozoic of the Baraboo Range, Wisconsin," by J. M. Wanenmacher and Fredrik T. Thwaites.

ISOPACH MAPS

"Physiography of the Baraboo Range, Wisconsin," by Fredrik T. Thwaites.

"Stratigraphy and Structure of the pre-Cambrian of the Baraboo Range, Wisconsin," by Andrew Leith.

"Stratigraphy of the Prairie du Chien Formation," by Elliott Powers.

"Stratigraphy and Structure of the Mississippi River Anticline," by J. V. Howell.

"The Geology and Development of the Wisconsin-Illinois Lead and Zinc District," by Charles H. Behre, Jr.

Maps

Isopach Maps

Ten isopach maps will be prepared covering Iowa, northern Missouri, extreme northeastern Kansas, northern Illinois, Wisconsin, Minnesota, and parts of adjacent areas, involving the following stratigraphic units:

Isopach map of the post-Kinderhook Mississippian, by Allen C. Tester;

Isopach map of the Kinderhook Group, by Allen C. Tester;

Isopach map of the Devonian System, by Allen C. Tester;

Isopach map of the Silurian System, by Lewis E. Workman;

Isopach map of the Maquoketa Formation, by Harry S. Ladd;

Isopach map of the Galena-Decorah-Platteville Formations, by John R. Ball;

Isopach map of the St. Peter Sandstone, by John E. Lamar;

Isopach map of the Prairie du Chien Formation, by Elliott Powers;

Isopach map of the Trempealeau and Franconia Formations, by Ira Edwards;

Isopach map of the Dresbach Formation, by Ira Edwards.

Structural Contour Maps

1. A structural contour map drawn on top of the St. Peter sandstone, covering Minnesota, Iowa, Eastern Nebraska, Eastern Kansas, Missouri, Illinois, Wisconsin, and parts of adjacent areas, prepared by J. V. Howell and F. T. Thwaites.
2. Structural contour map drawn on top of the pre-Cambrian covering the same area as the St. Peter map, prepared by J. V. Howell and F. T. Thwaites.
3. Structural contour map drawn on top of the Jordan sandstone covering Iowa, Northern Illinois, Wisconsin, and Southern Minnesota, by A. C. Trowbridge.
4. Structural contour map drawn on top of the Dresbach sandstone covering the same area as the Jordan sandstone map, prepared by F. T. Thwaites.
5. Structural contour map of the Hudson Anticline and the River Falls Syncline, prepared by George E. Clement.

PRICE OF GUIDE BOOK

Miscellaneous Maps and Charts

1. Exposure map of the Minnesota River Valley, together with an index of the outcrops shown on this map, by C. W. Couser.
2. Structural profile section of the Minnesota River from New Ulm to Ft. Snelling, by C. W. Couser.
3. Outcrop map of the Prairie du Chien Formation, by Elliott Powers.
4. Areal map of the Hinckley problem, by Gordon I. Atwater and George E. Clement.
5. Chart showing the relation of D. D. Owen's classification (1852) of the Upper Mississippi Valley sediments to the current classification, by A. C. Trowbridge.
6. Chart showing comparative Cambrian nomenclature from Owen to the present, by F. T. Thwaites.
7. Cross-section looking north, of the Afton Anticline two miles south of the village of Afton, Washington County, Minnesota, by Minnesota Geological Survey.

PRICE OF GUIDE BOOK

For sale by the Kansas Geological Society at \$10.00 per copy.

The Guide Book must be ordered in advance of the Conference. Relatively few copies will be available for later distribution.

For the Academic Geologist—

A serious and scientific co-operative attempt to settle, or at least to review, the outstanding problems of a large and controversial area.

For the Petroleum Geologist—

An actual study on the surface of sediments which produce great quantities of oil in the mid-continent area.

For All Classes of Geologists—

A publication containing most recent information, opinions, decisions, agreements and disagreements in an area containing the type locality of the Upper Cambrian for the United States and Canada; important problems in pre-Cambrian structure and correlation; an important and almost complete Ordovician section; problems in Silurian and Devonian stratigraphy; important facts pertaining to Paleozoic and pre-Cambrian relationships; general principles of stratigraphic classification, correlation and nomenclature; important and controversial geomorphic problems; the Driftless Area; famous and highly productive iron and lead and zinc ore bearing formations; anticlines, synclines, and faults of considerable magnitude; etc.

Fill out and return the inclosed order blank. The Committee must know in advance what provision to make.

METHOD OF TRAVEL

IMPORTANT NOTICE—

Despite the fact that actual arrangement has been made with all contributors for the publication in the Guide Book of all papers, maps, and structure sections advertised in this notice, it is conceivable that some unavoidable circumstance may prevent the appearance of some advertised paper, map, or structure section. The Kansas Geological Society can not hold itself responsible for the non-appearance of any of the above described subject matter. The contents of the Guide Book has been advertised in good faith, with every expectation that final publication will conform to this preliminary announcement. Cancellation of an order because of unavoidable non-appearance of any items listed above will not be justified.

REGISTRATION FEE

A \$15.00 registration fee will be charged actual participants of this Conference, regardless of whether they attend for the full eight days or only for a portion thereof.

The price of the Guide Book is included in the Registration Fee.

METHOD OF TRAVEL

Travel is by automobile, and those participants who do not bring their personal, company, or Survey cars are assigned places in a different car each day, thus allowing broader acquaintanceship. It has been the custom in the past for those who bring cars to bear the entire car expense, without charge for transportation to other occupants of the car. The Society furnishes a baggage truck during the entire Conference, and it is not necessary to carry baggage in Conference cars during the trip.

While no one should hesitate to attend because of the lack of transportation, we wish to emphasize the very essential need for cars this year, and participants are urged to bring cars.

PROGRAM

PROGRAM

The Conference will assemble in Iowa City Saturday, August 24, 1935, for registration, instructions, and distribution of Guide Books. Saturday evening, George F. Kay, Dean of the College of Liberal Arts at the State University of Iowa, will present as an opening address an illustrated lecture on "*The Glacial and Interglacial History of the Pleistocene of Iowa and Adjacent States.*" Early the next morning, the participants will proceed by automobile on an eight-day trip ending at Duluth on Sunday evening, September 1.

EXPENSE DURING CONFERENCE

Advance hotel reservations are made for each participant by the Committee. Unless otherwise requested, it has been the custom to place two participants in a room. The minimum cost for first class hotel accommodations and meals will range from \$30.00 to \$40.00 for the eight days of the Conference. For those desiring accommodation in tourist camps, this same expense will range from \$20.00 to \$25.00. These estimates are exclusive of the registration fee.

For the convenience of those desiring to estimate their car expense, the distance covered during the eight days of the Conference will be 1630 miles from Iowa City to Duluth.

FURTHER NOTICES

If you are desirous of receiving further announcements of this Conference, please fill out and return the inclosed reply blank. Otherwise, it will be necessary to drop your name from the second mailing list.

Special information will be furnished on request. The Committee will appreciate receiving the names of any geologists whom you think would care to receive an announcement.

KANSAS GEOLOGICAL SOCIETY

Committee On Arrangements

ANTHONY FOLGER, *Chairman*

L. W. KESLER E. P. PHILBRICK

E. A. WYMAN

HOTEL RESERVATIONS

ROUTE OF CONFERENCE

TRANSPORTATION

REGISTRATION FEE

Mayor Hopeton

Final Announcement

The NINTH
ANNUAL
FIELD CONFERENCE

of the KANSAS
GEOLOGICAL
SOCIETY

In Co-operation
with the
STATE GEOLOGICAL SURVEYS
of IOWA
ILLINOIS
WISCONSIN
MINNESOTA

EIGHT DAYS

Sunday, August 25 to Sunday, September 1, 1935
Beginning Iowa City—Ending Duluth



Arranged for a comprehensive examination of the pre-Mississippian sediments of Eastern Iowa, Northwestern Illinois, Central and Western Wisconsin, and Eastern Minnesota with special emphasis on the Ordovician and Cambrian Systems.

IS YOUR RESERVATION IN?

HOTEL RESERVATIONS

ROUTE OF CONFERENCE

TRANSPORTATION

REGISTRATION FEE

GENERAL

The Kansas Geological Society extends a cordial invitation to all persons interested in geology to attend its Ninth Annual Field Conference in the Upper Mississippi Valley area. This Conference is the result of three years of preparation by the Leadership, and the itinerary has been arranged with the thought continually in mind that the four states involved constitute a single geologic province. Only those stops of the greatest geological significance have been selected, and all duplication of stops has been avoided wherever possible.

The Conference will convene at the Jefferson Hotel, Iowa City, Saturday evening, August 24, and will end at the Hotel Duluth, in Duluth, Sunday evening, September 1.

Two optional post-Conference trips will be conducted Monday, (Labor Day) September 2. One into the Mesabi and Vermillion Iron Ranges; the other along the south shore of Lake Superior from Duluth to Ironwood, Michigan, by way of the Gogebic Iron Range.

At the present time geologists from 30 states have indicated their intention to make every effort possible to attend this Conference. These participants are distributed from Maine to California, and from Ontario to Georgia. The preliminary registration thus far has been almost equally divided between commercial and academic geologists.

The Kansas Geological Society desires to take advantage of this opportunity to express grateful appreciation to the Leadership and to all others who have contributed toward the preparation of the Guide Book for this Conference. The road log, special articles, and maps are wholly their contribution. Without such splendid and unselfish cooperation, compilation of the Guide Book would not have been possible.

REGISTRATION

It is important that those planning to start with the Conference Sunday morning, arrive in Iowa City the afternoon of Saturday, August 24, in time to register for the Conference. Headquarters and registration booth will be

established at the Jefferson Hotel Saturday noon, at which time all Guide Books and other Conference material and instructions will be issued.

REGISTRATION FEE

The full registration fee of \$15.00 will be payable at the time of registration provided it has not already been paid in advance or provided the sum of \$10.00 has not already been paid for the Guide Book, in which case, the only remaining assessment will be \$5.00. The full registration fee of \$15.00 is charged every participant (Leadership included) whether he attends the entire Conference or only for one or two days. This rule has been strictly adhered to on all previous conferences. It is hoped that the majority of the participants will enclose a check for this registration fee, or for any unpaid balance, with their reply blanks. If this is not convenient, the registration fee may be paid at the time of the registration on the Conference. Please make all checks payable to the Kansas Geological Society.

Note:—Please do not delay returning your reply blank if it is not convenient to enclose a check for the registration fee.

ROUTE OF CONFERENCE

First Day—Sunday, August 25

Iowa City, Iowa, to Dubuque, Iowa

Devonian Cedar Valley limestone of Iowa, including the type section of the Linwood member of the Cedar Valley.

Unconformity by overlap of Pennsylvanian sandstones and shales on Devonian Cedar Valley limestone.

Glacial and interglacial Pleistocene history and Glacial Lake Calvin.

Silurian Niagaran and Alexandrian Series of Western Illinois and Eastern Iowa.

Type section of the Silurian Port Byron.

Discussion of the "Alexandrian problem."

Relation of the Alexandrian to the underlying Ordovician Maquoketa shale and the overlying Silurian Niagaran dolomite.

Type section of the Ordovician Galena dolomite.

ROUTE OF CONFERENCE

Introduction of a new classification and correlation of the Galena beds.

South end of Driftless Area.

Second Day—Monday, August 26

Dubuque, Iowa, to La Crosse, Wisconsin

Inspection of the complete section of the Ordovician of the Upper Mississippi Valley.

Type section of the Dubuque dolomite and the relation of the Dubuque to the Stewartville and Maquoketa.

Study of the members of the Decorah formation.

Study of the Spechts Ferry member of the Platteville with metabentonite near its base.

Relation of the St. Peter sandstone to older and younger beds.

Problems connected with the definition and classification of the Prairie du Chien strata.

Presentation of the relations of the lowest Ordovician to the highest Cambrian.

Discussion of Nebraskan glaciation and the effects of glaciation on the course of Mississippi River.

Third Day—Tuesday, August 27

La Crosse, Wisconsin,

Returning to La Crosse, Wisconsin

Study of the Middle and Lower Ordovician beds and the Upper Cambrian sequence.

Type sections of the Dresbach, Trempealeau, and Galesville divisions of the Cambrian.

Splendid exposures of all formations and members from the Cambrian Eau Claire member of the Dresbach formation at the base to the Ordovician Pecatonica member of the Platteville formation at the top.

The "Driftless Area" of Southeastern Minnesota and the "unglaciated area" of adjacent portions of Wisconsin.

Fourth Day—Wednesday, August 28

La Crosse, Wisconsin, to Madison, Wisconsin

Cambrian and Ordovician exposures in Wisconsin will be related to outcrops already seen in Minnesota, Illinois and Iowa.

Study of classic district around Ableman, Baraboo and Devils Lake involving the composition and structure of the pre-Cambrian formations and relationship to the superjacent Paleozoics, the Paleozoics themselves and the physiography of the region.

HOTEL RESERVATIONS

ROUTE OF CONFERENCE

Study of glacial features of Middle Wisconsin age and of the eastern border of the Driftless Area.

Franconia formation and a review of the Mazomanie-Franconia problem.

Type locality of the Madison division and a discussion of the Madison-Jordan problem.

Introduction to the St. Lawrence-Black Earth-Mendota problem.

Erosional history of the Driftless Area, involving the peneplane-cuesta controversy.

Fifth Day—Thursday, August 29

Madison, Wisconsin, to Eau Claire, Wisconsin

Type section of the Mendota and continuation of St. Lawrence-Mendota problem.

Further discussion of the Madison-Jordan problem.

In a two-hour boat trip the origin and history of the famous Dells of the Wisconsin will be brought out and a remarkable section will be seen of the central Wisconsin facies of the Eau Claire sandstone.

Several excellent Cambrian sections characteristic of Central Wisconsin, including type section of the Goodenough member of the Franconia formation.

Sixth Day—Friday, August 30

Eau Claire, Wisconsin, to Minneapolis, Minnesota

Special attention will be accorded the lower members of the Dresbach formation that rest on a pre-Cambrian basement in West-Central Wisconsin.

Type sections of the Mt. Simon and Eau Claire members of the Dresbach formation.

Sections to be studied include formations and members from pre-Cambrian to Middle Ordovician Decorah.

Evidences of faulting of considerable magnitude within the Upper Cambrian and Lower Ordovician.

Study of the "River Falls Syncline" and the "Hudson Anticline."

Type section of the Hudson member of the Franconia formation.

Type locality of the St. Peter sandstone at Ft. Snelling with Ordovician strata above this horizon.

Section at West St. Paul where Decorah shale is 90-ft. thick.

Seventh Day—Saturday, August 31**Minneapolis, Minnesota,****Returning to Minneapolis, Minnesota**

A trip up the Minnesota River Valley from Minneapolis to Mankato will open up problems of correlation of the Upper Cambrian of Minnesota with those of Wisconsin and Iowa.

Type sections of the St. Lawrence and Jordan.

Inspection of the famous type section at Shakopee will furnish a basis for a discussion of the difficult Oneota-Ozarkian—Shakopee-Canadian, or Prairie du Chien, problem.

Special attention will be paid to the contact between the Cambrian and Ordovician.

Type section of local Kasota and Blue Earth divisions.

At Mankato; a locality where basal Ordovician silts and clays have been squeezed up into fissures and solution openings in Oneota dolomite in an extraordinary way.

At New Ulm; a locality where there are outcrops of pre-Cambrian on the western border of the Lake Superior Syncline.

Physiographic studies of Mississippi and Minnesota Rivers, St. Anthony and Minnehaha Falls, etc.

Eighth Day—Sunday, September 1**Minneapolis, Minnesota, to Duluth, Minnesota**

Inspection of the famous Stillwater section, differently interpreted by different investigators.

Type locality of the Franconia formation, and study of the shore phase of upper Cambrian sediments.

Outcrops of Keweenawan eruptives and giant potholes of Pleistocene Age at Taylor's Falls.

Type locality of the Hinckley sandstone and consideration of the Hinckley-Mt. Simon problem.

Near Duluth an examination of the pre-Cambrian Carlton slates with their characteristic complex structure.

**OPTIONAL POST-CONFERENCE
TRIPS****Optional Trip No. 1—Monday, September 2,
(Labor Day)****Duluth to Mesabi Iron Range and
Return to Duluth**

Study of the Duluth Gabbro and the Keweenawan lava flows near Duluth.

Inspection of the Mesabi Iron Range and an instructive visit at the famous Hull-Rust-Ma-

HOTEL RESERVATIONS

honing open pit at Hibbing, and other iron mines located in the Huronian iron formation.

Soudan iron mine, in which Archean Soudan Formation is productive, and examination of the overlying Knife Lake slates.

An interesting drive through a national forest and along the "north shore" of Lake Superior.

Optional Trip No. 2—Monday, September 2, (Labor Day)

Duluth, Minnesota, to Ironwood, Michigan

Keweenawan sandstones, conglomerates and lava beds.

Study of thrust faulting affecting the upper Keweenawan in connection with the problem of the relationship between the pre-Cambrian and the Cambrian.

The route along the south shore of Lake Superior will afford a study of the Pleistocene history of Lake Superior and an inspection of the exposed Upper Keweenawan sandstones.

The Gogebic Iron Range, including the famous Plymouth open pit mine. Discussion of the structure of the pre-Cambrian of the Gogebic Iron Range and its relationship to the physiography of the area.

HOTEL RESERVATIONS

All hotel reservations **with the exception** of Saturday, August 24, (Iowa City) will be made for you by the Committee. An advance agent will arrange adequate and comfortable hotel accommodations for every participant. Rates have been obtained at most of the headquarter hotels. In the event two men desire to occupy a hotel room jointly throughout the Conference, these arrangements can be made with the advance agent, but please be sure and answer all questions relative to this point on your personal reply blank.

In order to save expense, some of the participants may desire to occupy a tourist cabin, either singly or jointly. By this plan, hotel expenses can be reduced almost half. In the event any participant desires to avail himself of this type of reservation, these arrangements will be made by the advance agent provided this desire is indicated on your personal reply blank.

ADVANCE AGENT-BAGGAGE TRUCK

All baggage is carried during the Conference in a baggage truck supplied at the expense of the Society. The advance agent

EVENING MEETINGS

makes your hotel reservation for you each night, and places your baggage in your hotel room. Before the town is reached in which the night stop is made, the caravan is met by the advance agent, who hands out cards to each participant showing the name of the hotel and your room number. Upon arrival at the headquarter hotel, each participant finds his registration has been made for him, his baggage placed in his room, and it is only necessary for him to proceed to his room.

HEADQUARTER HOTELS AT NIGHT STOPS

Saturday night, August 24—

The Jefferson Hotel, Iowa City, Iowa.

Sunday night, August 25—

Hotel Julian Dubuque, Dubuque, Iowa.

Monday night, Aug. 26 and Tuesday night, August 27—

Stoddard Hotel, La Crosse, Wisconsin

Wednesday night, August 28—

Hotel Loraine, Madison, Wisconsin.

Thursday night, August 29—

Hotel Eau Claire, Eau Claire, Wisconsin.

Friday night, August 30, and Saturday night, August 31—

Curtis Hotel, Minneapolis, Minnesota.

Sunday night, September 1—

Hotel Duluth, Duluth, Minnesota.

EVENING MEETINGS

While each day's trip will start at 7:00 A.M., due to unpredictable weather conditions affecting each itinerary, it is impossible to accurately determine the time of arrival at night stops. Also, experience has emphasized the desire of participants to avoid consecutive evening programs, in order that some evenings may be devoted to discussion with friends, and to rest.

In order to conform to the above, a select group of speakers will be presented at four or five evening meetings, the dates and number of which will be selected and announced to conform best with our daily field schedule.

TRANSPORTATION

Travel during the Conference is by automobile, and those participants who do not bring their personal, company, or survey cars are assigned places in a different car each day, thus allowing broader acquaintanceship. It has

TRANSPORTATION

been the custom in the past for those who bring cars to bear the entire car expense, without charge for transportation to the other occupants of the car.

While no one should hesitate to attend because of the lack of transportation, we wish to emphasize the very essential need for cars this year, and participants are urged to bring cars.

For the convenience of those desiring to estimate their car expense, the distance during the eight days of the Conference, between Iowa City and Duluth, will be 1630 miles.

Emphasis is placed on the importance of bringing a five-passenger car. In the event you bring a car, it will be greatly appreciated if you will try and arrange with your company for a five-passenger car provided you do not already have one. These arrangements have already been made by a considerable number of commercial geologists, and it is hoped that an increasing number will be able to follow this suggestion.

GUIDE BOOK

A charge of \$10.00 will be made for each copy of the Guide Book of this Conference. This charge is a part of the \$15.00 registration fee for those who attend the Conference.

The Guide Book of the Ninth Annual Field Conference will present a comprehensive statement of the geology of the Upper Mississippi Valley area. It will embody all the recent geological decisions and opinions of the geologists of the four states involved. A series of authoritative papers will discuss the stratigraphy of each of the pre-Pennsylvanian systems. Iso-pach maps will exhibit the variation in thickness of these systems, or portions thereof, and structural contour maps will emphasize the major structural features of the Upper Mississippi Valley and adjacent areas. Here is a formal publication which should be in the library of every geologist concerned with physiographic or Paleozoic problems. About one-half of the Guide Book's 300 to 400 litho-printed pages will consist of the detailed road log and important associated information. Approximately an equal number of additional pages will include special articles, maps, and sections.

The contents of the Guide Book have already been advertised in detail in the first announce-

GUIDE BOOK

ment of this Conference, issued March 5, 1935. Inasmuch as this final notice will not go forward to persons who did not receive this first announcement, this information will not be repeated.

Emphasis is placed on the fact that all of the contents of the Guide Book as advertised in the first announcement have been received, and will be included in the Guide Book.

In addition to this, a few papers have been added, the areas of some of the structural contour maps have been enlarged, and a considerable number of additional maps and illustrations have been added.

This Guide Book, therefore, will be one of the most important publications to appear in print on Upper Mississippi Valley geology during recent years. It will bring up to date most of the geological facts pertaining to this area, and should be regarded as a handbook of the geology of the Upper Mississippi Valley area.

All persons desiring to obtain a copy of this Guide Book should send in their order blank, properly filled out (unless this has been previously done). Orders for the Guide Book will be filled in the order they are received. No more Guide Books will be published after the present supply is exhausted.

REPLY BLANKS

If you plan to attend the Conference, the enclosed personal reply blank should be filled out and returned, regardless of whether you have already returned the blue reply blank included in the first announcement.

Three reply blanks are being enclosed herewith, a personal reply blank, an automobile reply blank, and an order blank for the Guide Book. Please be sure and return the enclosed personal reply blank promptly whether you plan to attend the Conference or not. It is just as important for us to know whether you do not plan to attend as it is to know that you will actually participate. If you plan to come, and if you expect to bring a car, please return both the personal and automobile reply blanks. Provided you have not ordered a copy of the Guide Book, and will participate in the Conference, this order blank **must also** be returned properly filled out. In the event you can not attend, but desire a copy of the Guide Book, do not fail to fill out and return this at once in order to assure yourself of a copy before the supply is exhausted.

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Anthony Folger, Chairman

L. W. Kesler

E. P. Philbrick

E. A. Wyman

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

July 22, 1935

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

Dear Fred:

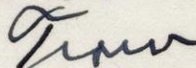
Your letter of July 21 together with the large scale map of Madison and the original topographic map of the Ableman's Gap have just this moment come to hand.

We are glad to get the Madison map.

You may take it from me that I am not going to try to redraw or touch up or otherwise do a darn thing to the Ableman map. It is so much better than I could have done that I wouldn't dare (or care) to touch it. This map is being sent straight on to Wichita.

I, too, hope that your part of the very large work on which we are engaged has now been completed. It probably hasn't, and we may have to refer still other items to you, but surely practically everything is done so far as you are concerned. You have certainly put in a very large amount of time, and these services on your part are greatly appreciated. I, also, am beginning to see some signs of the end. If possible, we will wind it all up by August 1.

Cordially yours,



A. C. Trowbridge

ACT:ML

cc: Mr. Anthony Folger

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3 P. M., July 22, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your day-letter just arrived while eating lunch.
I am sorry I forgot the dope on the Missouri-Wisconsin cross section
but it was finished a long time ago and put aside in the files.
I copy the following from my pencil notes starting at south end.

Beloit, Wisconsin Power and Light Co. No. 2 T. 1 N., R.
12 E., sec. 34
Riverside Farm T. 2 N., R. 12 E., sec. 15
Janesville, State School for Blind combined with one of
city wells T. 2 N., R. 12 E., sec. 1 and T. 3 N., R. 12 E.,
sec. 36
Lerow Farm T. 3 N., R. 12 E., sec. 29
Evansville, city T. 4 N., R. 10 E., sec. 27
Sholts Farm and quarry T. 5 N., R. 10 E., sec. 19
Allison well, Oregon T. 6 N., R. 9 E., sec. 36
State Industrial School for Girls, Oregon, T. 6 N., R.
9 E., sec. 26
Mine Spring Sewage Disposal works, Madison T. 7 N., R.
10 E., sec. 30
Turville Estate Co., T. 7 N., R. 9 E., sec. 25
Madison city well No. 10, T. 7 N., R. 9 E., sec. 13
Madison, Unit well No. 3, T. 7 N., R. 10 E., sec. 6
Oscar Meyer Co., Madison, T. 8 N., R. 10 E., sec. 31
Mendota Golf Club north well, T. 8 N., R. 9 E., sec. 36
Kennedy well, Bernards Park T. 8 N., R. 9 E., sec. 35
Genover well (Hilltop Tavern), Mendota T. 8 N., R. 9 E., sec. 26
Wauwakesee village well T. 8 N., R. 9 E., sec. 8
Sauk City, waterworks T. 9 N., R. 6 E., sec. 12
E. L. Philipp well, T. 10 N., R. 6 E., sec. 27
Baraboo city test well (abandoned) T. 11 N., R. 6 E., sec. 2
Gravel pit test well (abandoned), T. 12 N., R. 6 E., sec. 15
Milbourn (Wisconsin Dells) artesian test (abandoned),
T. 13 N., R. 6 E., sec. 3
Adams waterworks and C. and N. W. R. R. wells, T. 17 N.,
R. 6 E., sec. 8
Oil test near Roche A Gris Bluff T. 18 N., R. 6 E., sec. 30
Other localities are all bluffs. Elephants Back T. 14 N.,
R. 6 E. sec. 21, 22
Rattlesnake Bluff, T. 16 N., R. 6 E., sec. 7
Friendship Mound T. 18 N., R. 6 E., sec. 31, 32
Derro Goucho Bluff, T. 20 N., R. 6 E., sec. 28
Nekoosa, T. 21 N., R. 5 E., sec. 10
Rib Mountain, T. 23 N., R. 7 E., sec. 8

The Ahlman map was mailed last night as an original tracing.

A. F., July 22, p. 2

I am mailing back the blueprint to Williams with route of section shown on it.

Bill for Vandyke positives is included. They are 10 cents a square foot.

If there is anything else just let me know.

Sincerely,

F. T. Ewart

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FULL-RATE DAY LETTER

PLEASE PROCURE TODAY OUR EXPENSE MAILING SPECIAL DELIVERY TO TROWBRIDGE LARGE SCALE MAP OF MADISON ON WHICH THE NAME OF THE STREETS IN THE AREA OF CONFERENCE ROUTE ARE PLAINLY LEGIBLE STOP RIDERS MAP OF CITY OF MADISON WHICH YOU SUBMITTED TROWBRIDGE UNSUITED FOR OUR PURPOSE OF REDRAFTING AND REPRODUCTION=

ANTHONY FOLGER

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

July 19, 1935

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

My dear Dr. Thwaites:

I want to thank you for your letter of July 17 with the additional elevations of the top of the Jordan of Wisconsin and Michigan; also, for your card with the correction for the elevation at Oshkosh. This map has not yet been completed and we are very glad to have this additional information.

With my best thanks, I remain

Cordially yours,

M. L. Thompson

M. L. Thompson

MLT:ML

cc: Mr. Anthony Folger

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

July 19, 1935

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

Dear Fred:

Many thanks for sending me the carbon copy
of your letter to Folger dated July 16.

By this time you know that your Dresbach
map was forwarded to Wichita some days ago.

Edwards' isopach map for the Trempealeau
and Franconia formations has already been received
and his isopach map for the Dresbach formation is
expected within a day or two. You appear to be
right in thinking that he got along somehow with-
out calling on you for subsurface data.

Your additional data for Wisconsin for our
use in making up our structure contour map on
the top of the Jordan was received by Thompson
this morning. This arrives in time for our use
and is greatly appreciated.

Cordially yours,



A. C. Trowbridge

ACT:ML

cc: Mr. Anthony Folger

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

July 18, 1935

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614 ORPHEUM BUILDING,
WICHITA, KANSAS.

Mr. Anthony Folger
1107 Union National Bank Bldg.
Wichita, Kansas

Dear Anthony:

I am sending to you today Thwaites' structure contour map on the top of the Dresbach. This is structure contour map #4 of the Preliminary Announcement.

It is practically impossible for me to take time to check with care either the structure contour maps or the isopach maps. About all I can do is to shoot them on to you as fast as they reach me from the author. This map looks O. K. Anyway, Thwaites has had more experience and would do a better job of this sort than I would.

Cordially yours,

A. C. Trowbridge

ACT:ML

cc: F. T. Thwaites

Photographs for road log

S-844 Upper cliff of Trempealeau section showing Oneota dolomite (light colored) overlying Madison and Jordan members of Trempealeau formation. Photograph by W. O. Hotchkiss, 1914

T-1127 Mineral Point city quarry showing members of Platteville and Decorah formation. Photograph by F. T. Thwaites, 1934

T-1130 Brigham quarry, East Blue Mound. Dubuque member of Galena formation. Photograph by F. T. Thwaites, 1934

T-798 West Blue Mound from top of East Blue Mound. The upland to the left is underlain by the Platteville and Galena formations. The Galena forms the bottoms of the Mounds up to a level about 70 feet below the place where the view was taken. The upland is a remnant of an imperfect peneplain which has since been uplifted and dissected. It is part of the Galena-Platteville cuesta which is known as Military Ridge. The long gentle slope is underlain by the Richmond shale with thin layers of dolomite. The top of the West Mound is Niagaran chert which has a steeper slope and a flat top. Photograph by F. T. Thwaites, 1933

Mazomanie.

T-150 Abandoned quarry of School Section Bluff. Base is the top of the St. Lawrence member of the Trempealeau formation. The darker colored rock above is the Lodi member, whereas the Jordan and Madison members above are white. Oneota dolomite occurs just above the top of this exposure. Photograph by F. T. Thwaites, 1929

T-1131 ~~Black Earth~~ Contact of St. Lawrence member (formerly Black Earth) of Trempealeau formation and Franconia (formerly Mazomanie) sandstone one and a half miles east of Black Earth. It was the discovery of fossils of supposedly Ozarkian types in this dolomite below the admitted Cambrian fauna of the overlying Lodi which eventually upset the hypothesis of a Lower Ozarkian succession in Wisconsin. Photograph by F. T. Thwaites, 1934

T-1207 Sunset Point quarry, Madison. Type locality of Madison sandstone, the bottom of which is concealed. Hammer head at top; Oneota dolomite above. Photograph by F. T. Thwaites, 1935

S-662 Cryptozoa in St. Lawrence (formerly Mendota) dolomite, Farwell Point, Lake Mendota. Photograph by W. O. Hotchkiss, 1914

S-664 St. Lawrence dolomite member of Trempealeau formation, Farwell Point, Lake Mendota. Hammer head points to contact of "Mendota" and underlying "St. Lawrence" as interpreted by Ulrich. Photograph by W. O. Hotchkiss, 1914

S-888 Contact of Madison sandstone and Jordan member of Trempealeau formation, C. and N. W. Ry. cut, Mendota. Hammer head at contact. Photograph by W. O. Hotchkiss, 1915

Photographs, 2

T-803 Blackhawk Bluff and terraces of Wisconsin River from dam of Wisconsin Power and Light Co. above Prairie du Sac. The right hand (southwest) end of the bluff was a nunatak for it is unglaciated and yet surrounded by glacial till. The dam is where the river has eroded a valley through the terminal moraine. Photograph by F. T. Thwaites, 1933

S-3821, S-3822, S-3823 Panorama from West Bluff, Devils Lake. The north dip of the quartzite is shown across the lake. The tops of the bluffs are remnants of the summit peneplain. At the right the contrast between the cliffed valleys of the post-Paleozoic erosion cycle in one of which the lake lies and the gentle mature slopes of the pre-Cambrian valleys is well displayed. The valley beyond the lake may follow a fault line. It was blocked by the terminal moraine. The fields between that and the lake are part of the bottom of the glacial lake which was much higher than the present lake which is only about 40 feet deep. Photographs by F. T. Thwaites, 1927

S-3818 Skillet Falls, west of Devils Lake. The falls are on the top of the Dresbach sandstone and owe their origin to diversion of the stream as a result of delta formation farther east. Photograph by F. T. Thwaites, 1927

T-1172 Van Hise Rock, Ableman. This rock displays features due to differential movement during the folding of the quartzite. The top of the formation is to the right. The bed to the left was originally a shale and yielded by fracture cleavage whereas the quartzite to the right yielded by jointing. This rock was long used by Van Hise and other members of the faculty of the University of Wisconsin as an example of these phenomena. Photograph by F. T. Thwaites, 1935

T-929 Point Bluff, Juneau County. The top of the isolated turret is capped by the Ironston member of the Franconia formation. The upper cliff is the Galesville member of the Dresbach formation and the lower cliff is the central Wisconsin sandstone facies of the Eau Claire member of the above formation. ~~Exam~~ Photograph by F. T. Thwaites, 1934

T-933 Ironston member of Franconia formation, Goodenough Hill. The overlying Goodenough member occurs in the bank above the bench. Photograph by F. T. Thwaites, 1934

T-934 Bad Axe member of Franconia formation at top of Goodenough Hill. Photograph by F. T. Thwaites, 1934

T-969 Contact of ~~hauak~~ Mt. Simon member of Dresbach formation with weathered pre-Cambrian granite, Irvine Park, Chippewa Falls.

T-947 Contact of Oneota dolomite and Jordan sandstone marked by conglomerate. Road cut just south of Osceola. The contact is at the top of the recess just above the notebook. Photograph by F. T. Thwaites, 1934

Photographs, 3

T-948 Falls over St. Lawrence member of Trempealeau formation and upper part of Franconia formation, Osceola. Photograph by F. T. Thwaites, 1934

T-949 Quarry in Keweenaw trap, Dresser Junction, Wis. Photograph by F. T. Thwaites, 1934

M

S-3419 Middle Falls of Anicon River over thrust fault between Middle Keweenaw trap and Orienta sandstone of Bayfield group of Upper Keweenaw. Photograph by H. R. Aldrich, 1925

S-366 Thrust Fault at Falls of Anicon River. The trap above the fault is much brecciated. Below the fault the sandstone contains many pebbles of trap but it is clear that most, if not all, of the movement on the fault occurred after the deposition of the sandstone. Most of the conglomerate was apparently dragged up along the fault from lower horizons. See key sketch. Photograph by F. T. Thwaites, 1910

S-359 Orienta sandstone with vertical beds and horizontal joints. This was mistaken by the early geologist for horizontal bedding. Just north of bridge over Middle River. Photograph by F. T. Thwaites, 1910

T-955 Ripple marks in vertical beds of Anicon formation of Oronto group of Upper Keweenaw. The observer is looking at the under side of the layers. South of this point the beds are overturned as shown in the section. Photograph by F. T. Thwaites, 1934

T-958 Falls of Siskowit Creek, Cornucopia, Wisconsin over Devils Island sandstone of Bayfield group of Upper Keweenaw. The Devils Island sandstone is composed of well-sorted quartz grains and contains many oscillation ripples. It is subaqueous although not necessarily marine in origin. Photograph by F. T. Thwaites, 1934

Photographs for paper on Physiography of Baraboo Range.

T-1170 Initial dip at top of Dresbach sandstone, southside of Range, Ableman. Photograph by F. T. Thwaites, 1935

T-1171 Contact of Dresbach sandstone and Huronian quartzite, Ableman. Note lake of conglomerate. Photograph by F. T. Thwaites, 1935

T-1173 and T-1174 Overlap of Dresbach and Franconia formations upon Huronian quartzite, north side of Range, Ableman. Photographs by F. T. Thwaites, 1935

For introduction to Duluth-Ironwood post-conference trip.

T-959 Beaches of glacial lakes on spur above Pikes quarry. Photograph by F. T. Thwaites, 1934

Additional photographs for paper on Physiography of Baraboo Range.

T.-258 Summit peneplain west of Devils Lake. Picture taken in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 11 N., R. 6 E. At the left of the picture boulder conglomerate occurs just below the edge of the upland at elevation 1400. The notch at the right is believed to be the sea cliff of Prairie du Chien time. Photograph by F. T. Thwaites, 1930

T.-259 Summit peneplain of South Range, Baraboo, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 11 N., R. 5 E. Elevation about 1450. Photograph by F. T. Thwaites, 1930

Data for illustrations other than photographs

1. Comparative stratigraphic section of Cambrian of Wisconsin.
Put with paper by Raasch and give acknowledgement to Geol. Soc. America in same form as with Atwater's map of N. W. Wisconsin.
2. Nomenclature of Cambrian of Upper Mississippi Valley, as above.
3. Key to photo S-366 of Falls of the Annison. Put just below or above.
4. Outcrop map of part of Middle River. Plate XIII, Bull. 25, Wisconsin Geol. and Nat. Hist. Survey. Put in proper place in log of postconference trip to Ironwood, Michigan.
5. Log of drainage hole, Westby, Wis. Put at proper place in road log. Will have to either be redrafted or photographed with panchromatic.
6. Viroqua well log. As above.
7. Two maps, take choice, of Madison. Route and Hotel Loraine indicated.
8. Sketch map of Annison River contact. Place at proper place in road log of postconference trip to Ironwood, Michigan.
9. View of grounds of University of Wisconsin, Madison, Wisconsin (two copies) from University Catalogue. Ink in route shown in blue pencil.
10. Map of Devils Lake, Wisconsin with tracing showing surface geology and physiography. The data on this should be shown on the other map in any desired manner. The only bed rock besides the sandstone is Baraboo quartzite. Mapping by F. T. Thwaites.
11. Route map for postconference trip to Ironwood, Michigan. Geology based on Mon. 52.

Highway data from County Highway Engineer, Gogebic

Co., Mich.

12. Map of La Crosse, Wisconsin. Route shown in blue pencil. Hotel not yet selected.
13. Base of Franconia formation (for the most part top of Ironston member) in Sparta and Tomah quadrangle, Wisconsin by W. H. Twenhofel, F. T. Thwaites, and Lawrence Martin, 1916-1921. It seems probable that the structural highs are above high spots in the pre-Cambrian surface for a well in the north part of Tomah struck granite at a considerably greater elevation than one in the central part of the city.
(Place near to Tunnel No. 2 stop in road log.).
14. Structural map of the Paleozoic strata of the Baraboo Area, Wisconsin by J. M. Wanenmacher, 1931. Ruled areas are outcrops of Baraboo and Lake quartzites. Note the initial dip of the sediments which gives evidence of the depth of the Paleozoic sea. (Place with paper of Paleozoic stratigraphy or paper on Physiography of Baraboo district).

Comparative stratigraphic section of Cambrian of Wisconsin.

Put with

15. Cross section of Ableman gorge, Baraboo district, Wisconsin by J. M. Wanenmacher, 1931. Note the initial dip of the Cambrian and the flat summit of the North range which is interpreted by Thwaites and others as due to wave planation. (Place with either paper on Paleozoic stratigraphy or Physiography of Baraboo district; the upper section of Narrows Creek gorge might be left out if so desired as it will not be visited.)

16. Profiles along roads on north slope of South range of Baraboo district, Wisconsin by J. M. Wanenmacher, 1931. Both sections show a terrace which slopes up from elevation about 1100 to ~~about~~ slightly below 1300 feet. This feature is interpreted by Thwaites and others as due to wave cutting during Franconia, Trempealeau and Prairie du Chien time. This interval was one of slow subsidence whereas it was followed by relatively rapid sinking probably during St. Peter time. The quartzite upland or summit peneplain is regarded by the same investigators as the product of a prolonged stillstand during Platteville deposition. (Place with paper on Physiography of Baraboo district.)

17. Geologic map of Baraboo Area, Wisconsin by J. M. Wanenmacher, 1932 with slight changes by F. T. Thwaites, 1935. This map is to be reproduced in colors. Changes in letters and the geologic column are work of Thwaites. Moraine and line of cross section added. Place with paper on Paleozoic stratigraphy of Baraboo district.

18. Cross section of Baraboo district, Wisconsin, by F. T. Thwaites, 1935. (Place with paper on pre-Cambrian if desired, otherwise with paper on Physiography of Baraboo district.)

~~19-25~~

19. Distribution of flowing fresh water wells in Minnesota, Iowa, Illinois, and Wisconsin by F. T. Thwaites. Flowing artesian wells are fed both by the bed rock aquifers, largely St. Peter and Cambrian sandstones and by waters confined within the glacial drift. In many areas both classes of wells occur. Many of the drift wells are very shallow, some less than 20 feet. Many such "fountains" have flowed for 50 years or more although uncased except for one or two lengths of drive pipe. The rock wells are often cased to considerable depths in order to avoid loss of water into overlying non-artesian strata. Such wells range in depth from less than 100 to over 2000 feet.

See if some maps could be improved by placing on them the conference route or by touching up in any desirable way.

20, 21

Zones of mineralization of underground waters in Minnesota, Iowa, Illinois, and Wisconsin by F. T. Thwaites, 1934.

The map and diagram show some of the phenomena of mineralization of underground waters in relation both to geology and to structure. In the districts of crystalline rocks, ^{without limestone-bearing drift} the amount of soluble material is ^{sufficient} ~~in~~ sufficient to ^{supply} ~~saturate~~ any of the underground waters (analyses 1 and 2). ~~The area of such waters is outlined by the contour of 100~~ ^{with more than} parts per million of total solids. In districts where either the glacial drift or the bed rock contains notable amounts of carbonates the underground waters carry up to somewhat over 1000 p. p. m. of total solids. They are saturated with carbonates of calcium and magnesium (analyses 3, 4, 5, and 7). Where circulation of underground waters is vigorous there is no great variation in total solids and there is little sulphate, chloride, or compounds of sodium and potassium. ^{near shore some waters have been softened by base exchange (analyses 8 and 9)} Passing down the dip of any given aquifer, however, the amount of mineralization increases rather rapidly when the 500 p. p. m. line is attained; the zone below this (structurally) is that of waters which contain slightly less carbonate but much more sulphate and chloride (analyses 6 and 10). This is the zone of potable but relatively stagnant water which is slowly driving out the ^{underlying} connate waters. ~~below of which (no analyses) are given.~~ The boundaries of the Cretaceous and Pennsylvanian formations are important because they are too impervious to ~~let~~ ^{either} have been themselves well flushed of connate ~~slat~~ water or to allow of flushing of the underlying strata. The localities where salty waters are found in the Cambrian are indicated. The width of the zone of transition between the fresh sulphate waters and salt waters is in many places very small. In eastern Wisconsin the Devonian and Mississippian ~~basals~~ (not mapped because largely under lake Michigan) play a similar role to that of the Pennsylvanian and Cretaceous strata.

20, 21

Zones of mineralization of underground waters in Minnesota, Iowa, Illinois, and Wisconsin by F. T. Thwaites, 1934.

The map and diagram show some of the phenomena of mineralization of underground waters in relation both to geology and to structure. without limestone-bearing drift
In the districts of crystalline rocks the amount of soluble material is ^{supply} ~~in~~ sufficient to ~~saturate any of~~ the underground waters (analyses 1 and 2). ^{with more than} ~~The area of such waters is outlined by the contour of 100~~ parts per million of total solids. In districts where either the glacial drift or the bed rock contains notable amounts of carbonates the underground waters carry up to somewhat over 1000 p. p. m. of total solids. They are saturated with carbonates of calcium and magnesium (analyses 3, 4, 5, and 7). Where circulation of underground waters is vigorous there is no great variation in total solids and there is little sulphate, chloride, or compounds of sodium and potassium. ^{Near some shales some waters have been softened by base exchange (analyses 8 and 9)} Passing down the dip of any given aquifer, however, the amount of mineralization increases rather rapidly when the 500 p. p. m. line is attained; the zone below this (structurally) is that of waters which contain slightly less carbonate but much more sulphate and chloride (analyses 6 and 10). This is the zone of potable but relatively stagnant water which is slowly driving out the ^{underlying} connate waters ~~below of which~~ (analyses) ~~are given~~. The boundaries of the Cretaceous and Pennsylvanian formations are important because they are too impervious to ~~either~~ have been themselves well flushed of connate salt water or to allow of flushing of the underlying strata. The localities where salty waters are found in the Cambrian are indicated. The width of the zone of transition between the fresh sulphate waters and salt waters is in many places very small. In eastern Wisconsin the Devonian and Mississippian ~~shales~~ (not mapped because largely under Lake Michigan) play a similar role to that of the Pennsylvanian and Cretaceous strata.

20, 21

Zones of mineralization of underground waters in Minnesota, Iowa, Illinois, and Wisconsin by F. T. Thwaites, 1934.

The map and diagram show some of the phenomena of mineralization of underground waters in relation both to geology and to structure. In the districts of crystalline rocks without limestone-bearing drift the amount of soluble material is insufficient to supply the underground waters (analyses 1 and 2) with more than 100 parts per million of total solids. In districts where either the glacial drift or the bed rock contains notable amounts of carbonates the underground waters carry up to somewhat over 1000 p.p.m. of total solids. They are saturated with carbonates of calcium and magnesium (analyses 3, 4, 5, and 7). Where circulation of underground waters is vigorous, there is no great variation in total solids and there is little sulphate, chloride, or compounds of sodium and potassium. Near some shales some waters have been softened by base exchange (analyses 8 and 9). Passing down the dip of any given aquifer, however, the amount of mineralization increases rather rapidly when the 500 p.p.m. line is attained; the zone structurally below this is that of waters which contain slightly less carbonate but much more sulphate and chloride (analyses 6 and 10). This is the zone of potable but relatively stagnant water which is slowly driving out the underlying connate waters (no analyses). The boundaries of the Cretaceous and Pennsylvanian formations are important because they are too impervious/^{either} to have been themselves well flushed of connate salt water or to allow flushing of the underlying strata. The localities where salty waters are found in the

Illustrations, p. 3-a

Cambrian are indicated. The width of the zone of transition between the fresh sulphate waters and salt waters is in many places very small. In eastern Wisconsin the Devonian and Mississippian shales (Not mapped because largely under Lake Michigan) play a similar role to that of the Pennsylvanian and Cretaceous strata.

Illustrations, p. 4

22. Subsurface geology at Hartford, Wisconsin. Place with paper on physiography of Baraboo District
23. Structure of Lake Superior Basin. Place with introduction to Duluth-Ironwood trip
24. Map of Eau Claire Wisconsin with routes for excursion in pencil. Note Eau Claire near the red circle.
25. Well at Cahoon. Place in road log. Interesting because the perched water table on the basal Franconia shale is well shown.
26. Well At Tomah, Wisconsin. Note change in classification. If desired will change original tracing and make Vandyke positive. Place in road log as revised
27. Philipp well. PLEASE CHECK SPELLING OF NAME IN ROAD LOG. For road log.
28. Structure of La Farge quadrang.e. Check for route and place in road log.
- ~~29. Cross section of Baraboo District. For paper on physiography of Baraboo region.~~

5 P. M., July 21, 1935

Dr. A. G. Trowbridge,
Dept of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find the map of Madison requested in Folger's telegram of Saturday. It was procured during my absence at Ahlenan by Mrs. Thwaites from the Association of Commerce. I will leave it to you to show the final route. I have shown several tentative ones.

The Ahlenan map is not up to my usual standard of drafting but that is mainly due to the humidity which makes the ink do all sorts of bad tricks. The railroad curves are poor due to lack of the survey and of proper instruments with which to draw them. The map ought to come down to a page. I simply could not manage to show geology on it. Please feel free to redraw, touch up, etc as seems best. I sketched the contours from the control points which the boys had located.

I sincerely hope that this closes my part of the preparation. I have just missed the train which would have brought you these maps in the morning but hope they reach you some time tomorrow.

With best hopes for your job which is so much larger than mine has been!

Sincerely,

F. T. Thwaites

July 19, 1935

Mr. L. E. Workman, Associate Geologist,
State Geological Survey,
Urbana, Illinois

Dear Mr. Workman:

In reply to yours of the 17th I was not aware before who was to write the description of the Wisconsin-Missouri section. You are the logical one as you know the problems of both ends.

So far as I can see on short notice the main points in the Wisconsin section are:

(a) the presence of the pre-Cambrian peneplain which passes beneath the Cambrian sediments near to whose border it is almost undisturbed.

(b) the thick filling of glacial lake sediments and outwash deltas near the Cambrian border whose level surface was once mistaken for a peneplain developed in sandstone.

(c) the many outliers capped with Franconia which were once called monadnocks.

(d) the presence of true monadnocks on the pre-Cambrian peneplain one of which, the Baraboo Range has been partly eroded.

(e) the many faults most of which are inferred from subsurface studies and are not shown on most maps.

(f) the several drift-filled valleys

(g) the thickening of the Mt. Simon toward the south.

Most of these matters are taken care of elsewhere in my papers or road log remarks but it might be well to summarize them.

^{any other} ~~Other~~ points, more properly geologic, should include the ^(h) change in the Eau Claire from all sandstone north of the Baraboo district to largely shale to the south. This I suggest elsewhere, my indicate northerly winds in Cambrian time.

I will be glad to get the blueprints of your part.

I turned over the matter of St. Peter structure in Illinois to Howell. With 500 foot contours I hardly think he will feel the lack of recent data but the map is all in his hands now.

Sincerely,

F. T. Thwaites

July 18, 1935

Mr. Anthony Falger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

I thought last night that I was almost through with the K. G. S and was just settling down to the problem of faulting at Wenkosh when the telephone rang and I had to go in to the Post Office for yours of the 16th. This morning I mailed the map of Lake Superior depths just as it stood ^{special delivery} sending. I had decided that you probably would not want to go to the expense of copying the same but if you do, perhaps using the 200 foot interval, it is all right with me. In any case please return the original to me. I have sent this direct to save time.

The only other error which I recall in the preliminary announcement was the substitution of the name Ironton for IRONWOOD, Michigan.

Copy of the letter from McQueen transmitting his part of the Wisconsin-Missouri cross section would seem to indicate that he did not change the vertical scale. All agreed to this scale months ago and all had copies of my blueprints before they started.

Today I went to the vicinity of Ableman where I found Schoepheester and Johnson hard at work on a pea viner. I brought back their three plane table sheets of the Ableman gorge minus elevations and contours. Tomorrow I will reduced the three sheets to one. Saturday I will meet the boys at Ableman and sketch contours. I can then forward the map on Monday the 22nd, possibly part in pencil.

Forgot to make an extra carbon of this for Trow but think it will not matter.

Sincerely,

F. T. Flaxton

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July 17, 1935

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

Dear Dr. Thwaites:

Perhaps you have already learned that I have been asked to write a short description of the geologic section through Wisconsin, Illinois, and Missouri. If you can find time to write me some notes on any special features which ought to be brought to the attention, I should certainly appreciate it. This must be a fast and incomplete paper so that you should not spend any time on the proposition.

Just as soon as the blue-prints come back, I shall send you a copy of my section.

I am reminded that in all the recent special effort, I have neglected to send you additional data on the elevation of the St. Peter sandstone. I am sorry for this but hope that you have gotten along all right without it.

With best wishes,

Yours very truly,

L. E. Workman

L. E. Workman
Associate Geologist
Subsurface Division

NORTHWESTERN UNIVERSITY
COLLEGE OF LIBERAL ARTS
EVANSTON, ILLINOIS

DEPARTMENT OF GEOLOGY
AND GEOGRAPHY

July 17, 1935.

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

Dear Dr. Thwaites:-

Thank you for your prompt reply to my recent inquiry concerning the Glenwood and the Decorah. From all that I have learned it seems that you, Workman and Lamar are in substantial agreement concerning the Glenwood formation. As I recall it, the Glenwood in Iowa seems to attain a considerable thickness in places so I presume it makes a stronger impression on the men working over there.

I value especially what you say about the Decorah. I do not make any claim of knowing anything as yet about that "formation". I am glad to know that Bays' paper has been sent to Trowbridge and I will wait for it with interest.

Hoping that I may possibly see you in connection with the summer's work, or that I at least will see you later in the fall, I remain

Very sincerely yours,

John R. Ball
John R. Ball

JRB:HP

Folger

July 17, 1935

Mr. M. L. Thompson,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Mr. Thompson:

I never had a reply to my letter to you of June 20 but since then received the base for the Jordan and Dresbach structure maps. I found that this covers a much larger area than did Trowbridge's original Jordan map. Therefore, I hasten to add some eastern Wisconsin elevations of the top of the Jordan or other member of the Trempealeau. Also a few in northern Michigan. The contact is missing in localities to east of these.

Soul Choix Point east of Manistique	minus 668
Escanaba, Mich.	130
Powers, Michigan	744
Near Whitfish Point, Lake Superior	about 800
Manominee, Mich	102
Columa, Wis.	646
Peshtigo, Wis.	237
Pulaski	512
Lincoln Hill east of Shawano	about 975
Seymour	570
Binghamton	740
Musquite Hill east of New London	about 940
Highway 2 mi SE New London	about 840
Readfield	845
Green Bay	100
Green Bay Reformatory midway to De Pere	135
Casco Junction	minus 542
Wrightstown	192
Kaukauna	318
Appleton	375
Noonah	440 to 550 west of city
3 n. west of Hilbert	104
Chilton	48
6 mi. west of Chilton	292
Oshkosh	646 476
Green Lake	804
Ripon	683
Rosendale	665
Oakfield	349
Waupun	605
Friesland	868
Randolph	834
Doorfield	735
Edgerton	662
Milton	591
Footville	675
Sharon	350
Walworth	138
Genoa	15
Racine	minus 325 to minus 385

Hope this is not too late. Sorry, Sincerely,

July 16,
1935

Mr. Anthony Folger,
1107 Union National Bank Building,
Wichita, Kansas

Dear Anthony:

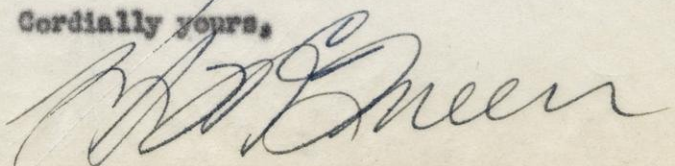
I transmit to you under separate cover the Missouri portion of the Mississippi Valley section. I call your attention to the following details:

1. In view of the fact that I know you urgently need this section in order to properly complete it prior to the conference, I have not shown in detail the symbols for the lithology of the various formations, but have indicated the general type of lithology at various points on the section. These points will serve as guides in the final drafting of the section.
2. The section, as drawn, shows considerable angularity, but in the event you wish to show curves, you may do so.
3. It has been impossible to show the local structural details, and the formations adjacent to the major faults have been somewhat generalized.
4. The scale upon which the section is drawn is such that it is impossible to show much detail for some of our very thin formations and the manner of indicating the formational names will be left to your decision.
5. You will note that unfortunately I had but few deep wells between the southern and northern end of the section and as a result I have been unable to indicate thickening and thinning which no doubt exists and have endeavored to keep away from any exaggerations that could not be explained from a study of the section itself.

I regret very much that I have been unable to send you my portion of the section at an earlier date. No apologies or excuses are offered for the delay. I wish to make it clear, however, that I am solely responsible for the delay, and that no criticism should accrue to Workman, for he has been ready to submit his portion of the section for many months but delayed doing so until my work was completed.

As a matter of convenience to the draftsman, I have also colored one of the sections, using our standard colors to represent the lithology and I am sending it to you with the tracing. When the final section has been drafted will you please send me the tracing of my portion of the section? In the event certain details are not clear to you, please advise me and I will endeavor to make additions, corrections or deletions without delay.

Cordially yours,



MoQ-P

sent 7/16/35

REPLY CARD
THIS SIDE OF CARD IS FOR ADDRESS



Mr. F. T. Thwaites,

Madison, Wisconsin

R. D. 4

Mr Thwaites

July 16

Will be at Ableman Saturday unless extreme cool weather or heavy rains should prevent us from finishing the pea vining job at Baraboo. We can always be found at the office sometime during lunch hour. Should you be unable to come up Saturday you can find us in an abandoned farm yard 3 miles east of Baraboo on STH # 33 on the right side of the road

The control on the map is completed but none of the contouring has been done. There are several places in the area where we are unable to work with the alidates due to heavy foliage and can do nothing until we have the other instruments.

Sincerely,

M. Schoepkoetter

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Assistant State Leaders

GEORGE M. SWARTZ

UNIVERSITY OF MINNESOTA

LEWIS H. POWELL

ST. PAUL INSTITUTE

GEORGE A. THIEL

UNIVERSITY OF MINNESOTA

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

July 16, 1935.

COMMITTEE ON ARRANGEMENTS

ANTHONY FOLGER, *Chairman*
GYPSY OIL COMPANY
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WICHITA, KANSAS.

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WICHITA, KANSAS.

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AMERADA PETROLEUM CORPORATION
614 ORPHEUM BUILDING,
WICHITA, KANSAS.

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

Dear Fred:

This is to acknowledge the zinc plate of the Wisconsin Dells Boat Company of the Picture of Wisconsin Dells. I have turned this over to Armstrong Press, and they are going to prepare the photograph and return to me. Just as soon as it is returned, I shall transmit it to you direct.

This will also serve as acknowledgment of your two structural contour maps, one of the St. Peter sandstone, and the other of the pre-Cambrian. These have both gone forward to J. V. Howell, in Oklahoma for assembly into two final maps. The result of your work is highly satisfactory, and we appreciate very sincerely the co-operation and the labor which you have expended on this project.

If my memory serves me correctly, while I was with you in Madison, you mentioned the existence of an error in the first announcement of this field trip somewhere on pages 4, 5, or 6 other than the duplication of the date August 29, and the spelling incorrectly of the word "Mesabi". At your early convenience, will you kindly see if you can find this error, and advise me of its existence.

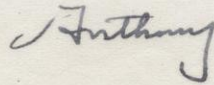
I can not close without telling you how highly satisfactory all of the illustrations are which you forwarded to Trowbridge, and the greater portion of which have been now received here in Wichita. Especially is this true of the block diagrams of the Paraboo Range, and of the structure map of the Lake Superior area. You have done a splendid piece of work on all of these illustrations, and they will render the Guide Book extremely valuable.

One thing remains which I desire to ask you. Namely, when I was at your home in Madison, you showed me a map of Lake Superior on which you had started to contour the bottom of the lake. Everett Wyman tells me also that he remembers seeing this map in your home, and that he was much interested in it. I can not find mention of

Mr. F. T. T. 2 7-16-35.

this map in the list of illustrations which you forwarded Trowbridge, and which in turn was forwarded to me. Did you decide to omit this altogether, or has it not yet been transmitted to Trowbridge. It seems to me that this map had a very special value, and we hope that it has not been your decision to omit including it in the Guide Book.

Cordially yours,

A handwritten signature in cursive script, reading "Anthony".

Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

Dictated 7-15-35.

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

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With the Cooperation of

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July 16, 1935.

COMMITTEE ON ARRANGEMENTS

ANTHONY FOLGER, *Chairman*
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WICHITA, KANSAS.

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

Dear Fred:

Saturday morning I talked with McQueen in Rolla and Workman in Urbana over the long distance telephone in regard to their portions of the Wisconsin-Missouri Structure Section, and they both are going to submit their final result today or tomorrow.

I believe you stated some long time ago that it might be necessary for you to make a small change in the extreme southern portion of your section in order to make it match with the extreme northern part of Workman's section, and I am wondering if this was necessary, and if you have made this change, or if your section can be drafted as submitted.

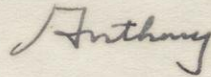
I believe I can foresee that it is going to be necessary for me to either wire or call you on the long distance telephone just as soon as the sections from Workman and McQueen are received. I am not absolutely certain, but it is my opinion that they probably have used the same horizontal and a slightly different vertical scale to your section. This I know you are not going to like at all, and you would probably hold up your hands in horror at the thought of my even suggesting permission to change the vertical scale of your section in order to fit theirs. I have hoped that this matter was all ironed out and would stay ironed out before any of you three gentlemen started to work on this project. It may have been ironed out, but it does not appear to have stayed ironed out, and I most certainly am in a quandry as to what to do about the matter. I believe that Workman and McQueen will insist that after reduction the vertical scale originally planned will be totally unsuited to the thinness of some of the smaller units existing in Illinois and Wisconsin. You, on the other hand, I know, will insist that alteration of your vertical scale will distort the section too much in the vicinity of the Baraboo Range.

Mr. F. T. T. 2 7-16-35.

I am in entire agreement with you, but it may turn out to be two sections against one section, and possibly for the good of the Guide Book and for the lateness of the hour, you will find it in your heart to allow alteration of your vertical scale. This, of course, would be done in Ponca City, and the alteration would be made with extreme care and exactness.

There is a chance still that they have not seen fit to change the original scale. If they have not, then the issue will be closed, but if they have, I thought I would mention this matter to you at this time so that you could be turning the problem over in your mind, and also in order that my wire to you might be short or my telephone conversation not involve so many minutes; then you would be ready with an answer. If you refuse to change, and if they refuse to change, then certainly we will all be in a fine fix. Please believe me when I say that I shall not suggest a change to you unless, after careful inspection of the Workman and McQueen sections, it appears as if this will be necessary.

Cordially yours,



Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

Dictated 7-15-35.

CLASS OF SERVICE

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C240 46 DL=WICHITA KANS 16 504P

FRED T THWAITES=

=ROUTE 4

1935 JUL 16 PM 5 36

MINUTES IN TRANSIT

FULL-RATE DAY LETTER

CAN YOU WRITE ME TONIGHT SPECIAL DELIVERY NAMES OF ALL PERSONS TO WHOM ACKNOWLEDGMENT SHOULD BE MADE IN GUIDE BOOK FOR PREPARATION WISCONSIN LOG BOTH FOR ORIGINAL LOGGING CHECKING OF LOG AND ANY RELOGGING STOP PLEASE PREPARE THIS STATEMENT SEPARATELY FOR EACH DAY INCLUDING POSTCONFERENCE DAY=

ANTHONY FOLGER.

TELEPHONE NO.

TELEPHONE

TIME D

BY

71940 R
J. Thwaites
541 P
Mailed

7 P.M.,

July 16, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

In reply to your recent telegrams and notes.

The following persons helped in preparing the road log in Wisconsin: Second day, Lansing bridgehead to La Crosse, F. T. Thwaites and Amy M. Thwaites. Part of third day in Wisconsin, same. Fourth day F. T. Thwaites and G. A. Bays (day not all finally arranged up to date). Fifth day, F. T. Thwaites, Amy M. Thwaites and G. A. Bays with some new work near Tomah by Dennison and A. G. Trowbridge. Sixth day, F. T. Thwaites and Amy M. Thwaites with some of the alterations near Ellsworth by L. H. Powell (as reported to me). Eighth day part in Wisconsin F. T. Thwaites and Amy M. Thwaites. Postconference trip to Ironwood, Michigan, F. T. Thwaites and Amy M. Thwaites.

Mr. E. F. Bean read most of the log and furnished notes on Tildensound near Black River Falls. Miss Annie A. Huns of the State Historical Society furnished historical data. Mr. G. O. Rasch also supplied information for the log on the region near La Crosse.

The above does not include geological sections which are acknowledged on each one.

I mailed the map of Amnicon Falls back to you this afternoon via special delivery. Sorry for the omission.

The Dresbach map was sent special delivery to Trow this afternoon. On it is a list of errors in place names which I chanced to discover. There must be others. If I had time to make isopach maps for Iowa and Minnesota I could have estimated other contacts but just could not get to it. I could furnish no data for Indiana or Missouri.

It is evident that Edwards did not want any subsurface data.

The Dresbach map is much larger than I had expected. Will try to furnish data to Thompson for his map of the Jordan top.

I explained the matter of the St. Peter in Wisconsin before.

Expect to go to Ableman later this week.

Sincerely,

F. T. Thwaites

Copy to A. G. Trowbridge

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Received at

1935 JUL 15 PM 12 22

C130 87 DL=WICHITA KANS 15 1145A

FRED T THWAITES=

ROUTE FOUR

MINUTES IN TRANSIT

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

COMMITTEE DESIRES EXPRESS GRATEFUL APPRECIATION FOR YOUR
SPLENDID BLOCK DIAGRAMS BARABOO AREA STOP SINCE EDWARDS
FORWARDED TROWBRIDGE TREMPLEAU FRANCONIA ISOPACH MAP
JULY TWELFTH I CANNOT UNDERSTAND REFERENCE TO THIS MAP
YOUR LETTER JULY THIRTEENTH STOP IF YOU HAVE PREPARED
INFORMATION FOR THIS MAP AT EDWARDS REQUEST WHICH SHOULD
HAVE BEEN INCORPORATED PLEASE CALL HIM LONG DISTANCE MY
EXPENSE AND STRAIGHTEN THIS OUT AND ADVISE ME RESULTS OF
THIS CONVERSATION STOP BASE FOR DRESBACK MAP FORWARDED
YOU SOME DAYS AGO IF IT HAS NOT BEEN RECEIVED WIRE
IMMEDIATELY=

ANTHONY FOLGER.

71940 R.

TELEPHONE NO.

TELEPHONED TO Mrs. T.

TIME DELIVERED 12.27 P.

BY R. TO BE M.

THE QUICKEST, SUREST AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

TO DELIVER

7-15-35

DAY LETTER
Wichita, Kansas

Knowlledge

Committee desires to express appreciation for your splendid block diagrams Baraboo area. Since Edwards forwarded Trempealeau, Franconia isopach map July 12, I cannot understand reference to this map your letter July 13. If you have prepared information for this map which Edwards requested which should have been incorporated, please call him long distance my expense and straighten this out and advise me result of this conversation. Base for Dresbach map forwarded you some days ago. If it has not been received, wire immediately.

(SIGNED) Antohny Folger

ARTHUR C. TROWBRIDGE
DIRECTOR AND STATE GEOLOGIST
ALLEN C. TESTER
ASSISTANT STATE GEOLOGIST

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
103 GEOLOGY BUILDING
IOWA CITY

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RAYMOND M. HUGHES
PRESIDENT IOWA STATE COLLEGE
ROBERT E. BUCHANAN
PRESIDENT IOWA ACADEMY OF SCIENCE
CHARLES W. STORMS
AUDITOR OF STATE

July 13, 1935

Dr. F. T. Thwaites
R. F. D. 4
Madison, Wis.

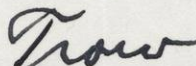
Dear Fred:

Your good letter of July 11 with carbon copies of letters to Gerald A. Smith, Anthony Folger, and John R. Ball attached, and the eight block diagrams of the Baraboo district in a separate package have all just now arrived.

Those block diagrams are honeys. Please accept my congratulations and thanks. After having looked them over I have sent them on to Folger, who will be glad to get them.

With two assistants and a typist I am now hard at work on the logs for the 4th and 5th days. Logs for the 1st and 2nd days have already gone to press, and the log for the 3rd day is finished. Your new material for the 4th and 5th days is very good. Final decisions have not yet been reached regarding the routes and stops by and at Blue Mounds, Black Earth, and the north shore of Lake Mendota, but I feel sure that we can work them all into the 4th and 5th days to the satisfaction of everyone. If I can find time after the logs for these two days have been completed, I will write to tell you what was done about these routes and stops.

Cordially yours,



A. C. Trowbridge.

ACT/MKA
CC: Anthony Folger

7-13-35

Fred:-

Excuse haste, but we are swamped.

On your Fig 8 (enclosed) please place thereon the line of the cross section

and return to me direct at once. The figure is most interesting, but I think we

should know just where the line of section is on the map

Anthony

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R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
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1935 JUL 13 PM 4 03

C233 44=WICHITA KANS 13 336P

FRED T THWAITES=

ROUTE 4

MINUTES IN TRANSIT

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

YOUR FIGURE TWENTY THREE STRUCTURE LAKE SUPERIOR BASIN
FIRST CLASS STOP WOULD YOU OBJECT IF WE PUT A FEW WATER
LINES AROUND EDGES LAKE SUPERIOR TO MAKE WATER AND LAND
STAND OUT BETTER AND ADD A FEW RIVER AND CITY NAMES ANSWER
TODAY COLLECT=

ANTHONY FOLGER.

TELEPHONE NO.

CABLE NO.

TIME DESPATCHED

BY

CLASS OF SERVICE

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PRESIDENT

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CHAIRMAN OF THE BOARD

J. (38)
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1935 JUL 13 PM 1 42

C183 26 DL=WICHITA KANS 13 1132A

FRED T THWAITES=
ROUTE 4

MINUTES IN TRANSIT

FULL-RATE DAY LETTER

YOUR EXPLANATION BARABOO CROSS SECTION SATISFACTORY STOP
YOUR CONTOUR MAP SAINT PETER SANDSTONE LEAVES WISCONSIN
BLANK STOP HOW SOON CAN YOU FORWARD BAYS CONTOURING FOR
WISCONSIN=

:ANTHONY FOLGER.

TELEPHONE NO. 71940R

TELETYPE

TIME 1500

BY

ATTEMPTS

Anthony Folger
Wichita Kansas

arrangement adopted
after long study
will permit

no change
except reparation
of two sections.

SATURDAY
JULY

14

1934	JULY							1934
SU	MO	TU	WE	TH	FR	SA		
1	2	3	4	5	6	7		
8	9	10	11	12	13	14		
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30	31		

SUNDAY, JULY 15
ST. SWITHIN'S DAY

CLASS OF SERVICE

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WESTERN
UNION

NEWCOMB CARLTON, PRESIDENT

J. C. WILLEVER, FIRST VICE-PRESIDENT

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NL = Night Letter

LCO = Deferred Cable

NLT = Cable Night Letter

WLT = Week-End Letter

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Received at 650 State Street, Madison, Wis. Telephone Bad. 2385

TJ39 49/53 DL=WICHITA KANS JUL 12 224P

FRED T THWAITES, DEPT OF GEOLOGY=
UNIVERSITY OF WIS=

YOUR FIGURE FIVE CROSS SECTION BARABOO DISTRICT RECEIVED STOP
COMMITTEE BELIEVE THIS ILLUSTRATION MOST CONFUSION ALTHOUGH
APPRECIATE PROBABLY DRAWN IN TWO PARTS TO AVOID TOO MUCH
DISTORTION OF PRECAMBRIAN STOP HAVE WE YOUR PERMISSION
REDRAFT THIS ILLUSTRATION INTO ONE CROSS SECTION USING YOUR
VERTICAL SCALE FOR PALEOZOIC STRUCTURE THROUGHOUT ANSWER
COLLECT BY WESTERNUNION=

ANTHONY FOLGER.

THE QUICKEST, SUREST 343P. WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

RECEIVED 530p

71940-R

CO. NUMBER 70

LN 211 Science Hall

TELEPHONE NO. 71940-R

TELEPHONED TO add

TIME 535p

BY E del ofr

ATTEMPTS
TO DELIVER

2 P. M July 13, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

In reply to your two recent telegrams, I fully realize the apparent confusion which would result at looking a two cross sections one above the other! But I thought over the matter a long time and talked with others around the Department before I started drafting and all decided that you must not try to show folded rocks with an exaggerated vertical scale. On the other hand you could not show the Paleozoics without one. The only other alternative was a scale of prohibitive size. So that was that. I have a high enough opinion of the oil men who have survived the late (for them not for us) Depression to think that they will all see the dilemma and approve my solution of it.

With regard to the wire which reached me a few minutes ago Bays' data is on the map I sent you and his name is put in Wisconsin in pencil for credit. We thought that you did not notice the relatively few contours on the arch.

The data for the Dresbach is all done and is WAITING FOR THE BASE.

The enclosed copy of letter to Lamar will explain itself.

I have isopach maps of Trempealeau and Franconia on the drawing board but no word from Edwards.

The boys at Ahlman are working in the pea cannery at present but I will see that some kind of a map reaches you by the 22nd if I have to survey it myself. They should soon be back on the job.

The enclosed map is not for publication but for use in preparing other maps if they need revision. You may keep it.

Sincerely,

F. T. Thwaites

July 13, 1935

Dr. J. E. Lanar,
State Geological Survey,
Urbana, Illinois

Dear Dr. Lanar:

Enclosed is an isopach map of the sum of the St. Peter and Prairie du Chien in Wisconsin as compiled from sample-control logs. I have not tried to assemble much outcrop data as most of that is rather uncertain due to incomplete exposures. Very few complete exposures of the St. Peter exist in this state.

As to any attempt to generalize as to regional thicknesses of St. Peter my advice is still against it. But Mr. Folger insisted that I send you the data to do what you can with. You will note that the first figure (except where there is a dash indicating unknown) is the thickness of St. Peter including underlying shales.

In case you have already sent in your isopach map I am also sending a copy of this map to Folger.

I am sorry there was so long a delay but I had to put other things ahead on the list.

Sincerely,

F. E. Truaites

TELEGRAM

Houston Form 2020 - 400M
Tulsa Form T299 - 250M

7-11-35

Fred

Your letter 7-8-35.

Herewith the base for the Dresbach map. I thought

you had received it long ago. Sorry.

Please hurry this all you can. Everything must be

~~ready for printer Aug 1st~~ ready for printer Aug 1st & I don't see how we will

do it.

Anthony.

July 11, 1935

Dr. A. C. Trowbridge,
Dept of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed material was overlooked in my notebook until checking
up this afternoon.

Sincerely,

F. T. Thwaites

July 11, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed letters will speak for themselves.

Please pardon my sending in of maps without letters of transmittal but as I have to do all my own typing it takes too much time to lay off from drafting to write letters.

The block diagrams of Baraboo are going on today to you. Hope they do not shock you too greatly! I fully appreciate that it has been necessary to delay completion of illustrations for the special papers but I feel sure you can number these and work them into the special paper on Baraboo.

I may have to go to Ableson next week to see about finishing the map there. The boys were going to lay off for a week to work in the coming factory to finance their summer's work. The factories are all open now so they probably will not be there for several days yet.

Sincerely,

F. T. Thwaites

July 11, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your two letters of the 9th which arrived together despite sending one by airmail, are at hand.

The two maps, St. Peter and pre-Cambrian on blue-line bases were forwarded to you by registered mail yesterday noon. I did not show the formation outcrops in all places for lack of time but you can get that if desired from the 1933 map of the U. S. which came out for the International Congress. I forgot Limestone Mountain east of Keweenaw Point but it would not affect contouring. I did not try to contour the pre-Cambrian in lower Michigan. If you attempt it it need not be ascribed to me! Bays did the St. Peter for Wisconsin.

Rasch is at present in Madison. The areal map of the Baraboo district which has been sent to Trow should be placed with his paper. Directions for all completed illustrations were sent at the same time and have been received in Iowa City.

The chart was sent in pencil form at the same time. It consists of three columns comparing the Baraboo and other sections. I could not get time to draft it.

The references he left out on page 8 are respectively pages 21, 25, and 27.

The planes pass over our house but no longer stop here so you save nothing by airmail. Your letter was mailed at noon, left the airport at 9 P. M., arrived Chicago at 7 A. M. yesterday and did not reach me until this morning. You can make better time special delivery if you address me at Route 4 for then the Postoffice telephones me whereas I cannot spare time to run over to town for every mail at Science Hall.

The cut for the Dells was sent yesterday via insured parcel post. Please have it returned direct.

Edwards has never consulted me about his isopach maps.

The Dresbach data is complete and waiting the base map.

The block diagrams of Baraboo will be mailed to Trow this noon.

Sincerely,

F. T. Thwaites

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,
July 9, 1935.

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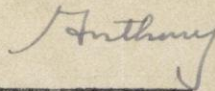
Mr. Fred T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Fred:

If you have not already forwarded the copy of your structural contour maps on the St. Peter and on the pre-Cambrian to Dr. Trowbridge, will you kindly transmit them direct to Wichita, in order to save time since they will have to go down to Mr. Howell in Oklahoma before they can finally be drafted.

This is not in accordance with our plan to have everything pass through the hands of Dr. Trowbridge first, but I am quite sure that in this one instance he will have no objections.

Very truly yours,



Anthony Folger

AT:AS

cc: A. C. Trowbridge.

TELEGRAM

Houston Form 2020 - 400M
Tulsa Form T299 - 250M

7-8-35

Fred

Your letter 6-29-35 - 2nd paragraph

Send plate for picture of Dells direct to Wichita

A.F.

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Wichita, Kansas,
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WICHITA, KANSAS.

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

Dear Fred:

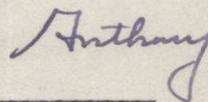
I am today sending Raasch's paper on the "Paleozoic Strata of the Baraboo Range" to Armstrong Press for final typing. Since in his letter of transmittal Raasch stated he is out of the city, I am writing this to you and in the event he has returned you can turn over this correspondence to him.

I have the following questions:

1. Is your areal map on the Baraboo Range to be included as a part of Raasch's paper? If it is, at just what point in the manuscript is this map to be inserted?
2. On page 5, paragraph 3, line 4 of his manuscript he mentions "the accompanying chart, etc." but no chart was submitted with this manuscript to me. Will you please see that this chart is forwarded direct to Wichita at once.
3. On page 8, paragraphs 2, 3, and 4 he gives three references to a paper by Wanenmacher but he has omitted the page reference in each case. I should like to have these page numbers at once.

In answering this letter if it would make faster time coming by airmail, will you please use this means of transmitting.

Very truly yours,



Anthony Folger

AF:AS

cc: A. C. Trowbridge

July 8, 1935

Mr. Anthony Felger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your telegram of this morning reached me after 12 and they did not call my house. You would do best not to address me at the building as I do most of the work at home. My home address is Route 4, telephone Fairchild 1940-R.

Boys will be ready to put on his dope tomorrow afternoon and I expect to mail both St. Peter and pre-Cambrian maps on the bases sent me by Williams and for areas specified by previous letters by the next morning.

The block diagrams, 8 of them, for Berebee district are now almost done after many a headache. I have tried to make them true to nature, not simply ideal.

Next will come the Dreesbach map. THE BASE FOR THIS HAS NEVER ARRIVED. The data is almost all ready on my desk.

I have not been up to see the boys at Ableson recently. They were much delayed by rain and the large scale (100 feet to an inch) on which they are working. However, I will certainly have some kind of a map ready by the 22nd if I have to go up there and work myself to finish it.

Thank you for the check.

I will send the cut for picture of the Dells when I mail the block diagrams.

Newcomb's data is at hand.

Please send me the base for the Dreesbach map.

I may have to go to Milwaukee to see Edwards but hope to avoid that loss of time.

Sincerely,

F. T. Thwaites

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This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable sign above or preceding the address.

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Received at 650 State Street, Madison, Wis. Telephone Bad. 2385

TJ19 44 DL=WICHITA KANS JUL 8 1009A

FRED T THWAITES=

PRES OF GEOLOGY UNIV OF WIS=

JONES FORWARDED STPETER AND PRECAMBRIAN MAPS DIRECT WICHITA

JULY FIFTH STOP SUGGEST YOU FORWARD YOUR TWO MAPS DIRECT

TO WICHITA AND WE HOPE YOU CAN TRANSMIT THESE WITHIN THE

NEXT FORTY EIGHT HOURS STOP PLEASE ADVISE BY LETTER WHEN

THEIR ARRIVAL MAY BE EXPECTED=

ANTHONY FOLGER.

1046A.

TIME RETURNED 11329

MSQR. NUMBER 77

REASON 211 Science Hall

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
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July 7, 1935.

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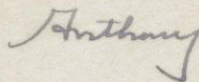
Mr. F. T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Fred:

On page 10 of the first announcement of this Field Conference, under Miscellaneous Maps and Charts, number 6 of this list calls for a chart showing Comparative Cambrian Nomenclature from Owen to the Present, by yourself. I saw this drafted copy while I was in Madison, and I presume that it is almost ready for transmittal to Trowbridge and then to me. One thing has just come to my mind about this chart. I believe it was made last year, and does not quite carry the nomenclature decided upon for this Field Conference. I wish then that you would add to this chart, if you can, one more column, which will give the Conference classification, and so bring this chart right up to the present moment. If there is not room on your piece of tracing cloth to do this, I would suggest that you take a piece of tracing cloth and copy the last column on the chart and then add to it the new column, and then it can be fixed up after it gets to Wichita. This can be done roughly in pencil, provided the lines are accurately drawn so we will know just exactly where they go.

I presume by this time both you and Trowbridge know exactly what names will be used throughout the whole section of the Cambrian, but if you do not, I would suggest you get in touch with him.

Very truly yours,



Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

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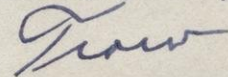
July 6, 1935

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

Dear Fred:

The package containing your manuscript entitled "Physiography of the Baraboo District", your manuscript entitled "Introduction to Duluth-Ironwood Trip", the log for the Duluth-Ironwood trip, your list of illustrations, and the illustrations themselves is received. Many thanks. These materials will be worked into the guidebook as rapidly as possible.

Cordially yours,



A. C. Trowbridge

ACT:A

CC: Anthony Folger

July 6, 1935

Mr. Gerald A. Smith, Agent,
Dells Boat Company,
Wiscamin Dells, Wisconsin

Dear Mr. Smith:

Thank you for your letter of June 22 and the cut. I find that I will have to forward this cut to Wichita, Kansas for printing.

I will have Mr. Folger of the Kansas Geological Society give the proper credit to H. H. Bennett and return the cut direct to you. Printing will probably not be completed until early in August.

Sincerely,

F. E. Hamilton

July 6, 1935

Mr. L. E. Workman,
State Geological Survey,
Urbana, Illinois

Dear Mr. Workman:

Thank you for yours of the 3rd with enclosed map.

I understand that the map of the top of the Dresbach is to have 100 foot contours and your corrections are enough for this. My worry is mainly the outcrop area and Minnesota.

Howell is taking care of southern Illinois as I understand it. With a 500 foot contour interval the Glenwood will be such a small item that I think we can just forget about it. One of our students is taking care of Wisconsin but I will have to do Minnesota. However, I will not do much different than I did last fall on the National Resources Board map.

Work is going slowly and the boys who are surveying the map at Ablemun have been much delayed by rain.

Thanking you again,

Sincerely,

F. T. Thompson

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,

July 3, 1935.

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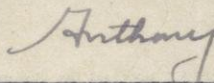
Mr. Fred T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Fred:

Enclosed herewith is a check for \$17.35 covering expenses of relogging the Wisconsin portion of the route as per our request. This amount is figured at the rate of 5 cents a mile, and I wish to thank you for having taken care of this matter at such an early date.

Today I received a letter from Dr. Newcombe containing several elevations of the St. Peter sandstone in southern Michigan, but since your name appeared on the letter as having received a carbon copy, I take it that he forwarded you both the elevations and the carbon of his letter to me direct. If you have not received these datums of the St. Peter sandstone, please telegraph me collect and they will be forwarded at once.

Very truly yours,



Anthony Folger.

1 enc.

AF:AS

cc: A. C. Trowbridge

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HENRY HORNER, GOVERNOR

STATE GEOLOGICAL SURVEY DIVISION

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PRESIDENT ARTHUR CUTTS WILLARD

July 3, 1935

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

Dear Mr. Thwaites:

Enclosed please find a map of the northern part of Illinois with additional figures on the elevation to the top of the Dresbach sandstone and also the thickness of the interval between the tops of the Dresbach and the St. Peter sandstone. I have considered the top of the St. Peter as the top of the sandstone below which there are no important beds of shale or dolomite. This is probably the most consistent method of estimating although we believe that the Glenwood might continue downward from this point in many places.

Before obtaining any figures on the elevation on the top of the St. Peter sandstone, I should like to make sure that the method of estimating as discussed above is satisfactory to you. You will realize that in many well logs, the Glenwood is included with the St. Peter. Perhaps you would rather use the top of the Glenwood for your structure map. Please let me know about this.

Very truly yours,

L. E. Workman

L. E. Workman
Associate Geologist
Subsurface Division

Enc.

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AMERADA PETROLEUM CORPORATION
614 ORPHEUM BUILDING,
WICHITA, KANSAS.

July 2, 1935

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

Dear Fred:

prints The envelope containing your photographic
~~plates~~ and the typed catalog for these pictures
is received. Many thanks. These photographs
will be worked into the log.

Cordially yours,

Trow.
A. C. Trowbridge

ACT:A

CC: Anthony Folger

July 1, 1935

Mr. Anthony Folger
c/o Gypsy Oil Company
1107 Union National Bank Bldg.
Wichita, Kansas

Dear Mr. Folger:

This will acknowledge your letter of June 26th and I regret very much the delay but I was away from Lansing the latter part of last week when the letter was received.

The information which we have on the St. Peter sandstone from wells in the southern peninsula is rather sparse but I am including herewith a list which I hope will be of some aid to the men who are compiling the subsurface maps on the St. Peter formation and on the top of the pre-Cambrian.

There is only one well in southern Michigan which has gone into the pre-Cambrian and that is the St. Clair Oil and Gas Corporation - Fannie Hurst #1, SE NW sec. 25, 5N., 16E., St. Clair County. The datum for the top of the pre-Cambrian on this well is approximate a minus 4080.

I should like to call your attention in regard to this list that some of the points given as St. Peter with a question mark may possibly not be St. Peter at all but some part of the Prairie du Chien or Lower Magnesian instead. The wells which have penetrated beneath the Trenton in areas adjacent to the Cincinnati Arch or well up the flanks of this major tectonic feature do not seem to have typical St. Peter sandstone. Apparently, the deposition took place fairly well down on the Cincinnati Arch and it is evident that the St. Peter either grades into different types of strata or is overlapped up on the Arch.

I very much appreciate your personal invitation to Dr. Smith and myself to participate in the trip but so far we have not been able to see our way clear to attend. However, conditions may alter themselves so that we may find it possible to come. I am very anxious to see the maps of both thickness and structure that have been prepared because of the part that we have played in this work and hope that it will be possible for us to obtain a copy for our efforts in this regard.

Yours very truly

R. B. Newcombe

GEOLOGICAL SURVEY DIVISION
Petroleum Geologist

RBN:M
Encs.
Cc F. T. Thwaites

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

July 1, 1935

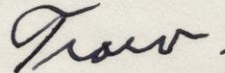
Dr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Fred:

Your letter of June 29, carbon copy of your letter of this same date to Folger, and 20 pages of new material for the road log of the fourth and fifth days are all just now received. Many thanks. Four of us here are working practically all the time there is on the logs for the first three days, copy for which is badly needed in Wichita. Eventually, we will come to the fourth day, however, at which time your material will be at hand for use.

We shall be glad to get the additional material mentioned in your letter when it is ready.

Cordially yours,



ACT:ML

A. C. Trowbridge

cc: Mr. Anthony Folger

June 29, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Enclosed please find first carbon of logs of fourth and fifth days as revised. Enclosed copy of letter to Trow will explain some of the difficulties. These I will have to put up to you. If we are to get to San Claire then it would seem that we must have lunch on that day farther along than the Dells. But where???

The Dells Boat Co. has loaned me a plate for a picture of the Dells and desires it to be returned as soon as possible. Shall I forward it to you direct or via Trow?

Other maps and photos are almost ready except for two items: (a) the seven block diagrams of the Baraboo Range and (b) the several structure maps. These will be started next week.

The logging trip with Bays covered 343.6 miles I used \$3.96 worth of gasoline. Shall I charge you for that or by the mile? At 5 cents per mile this trip would cost \$17.33 There is no charge for the trip around Lake Mendota with the family yesterday. Please do just as you think right about the long trip. Bays helped me.

Now to town to mail the logs at the main post office.

Sincerely,

F. T. Twiss

June 29, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find first draft (my typing not Mrs. Thwaites') of revised logs of fourth and fifth days. I began work the morning after receiving Folger's telegram to Bean on Tuesday. Thursday was out because I was on the examining committee of a local bank.

I hope and trust that there are not many errors but I did so much patch work and reversing of other logs that such may be present. However, I have checked over the work several times as best I could. We logged all day Wednesday in the rain and part of yesterday afternoon.

Neither Bean nor I advise the route via Blue Mound as the highway to Mt. Horeb will be closed most of the season for paving and the detour is long and poor quality of surfacing. But I do feel as though my long dissertation from the top of East Blue Mound really should find a place in the guidebook. Possibly you can place it at some point on the upland or we could work it in to the special paper on Baraboo.

The fifth day is also a problem on which I will pass the buck to you. If we go around Lake Mendota the day before we will get to the Dells too early for lunch. Then I know of no decent place the other side.

I avoided copying the long descriptions at stops after Ableman. I have given the reference to my original log to which some additional pages were inserted. This again I will leave to you.

A bunch of maps and photographs are almost ready to ship also several special papers. I believe that Gilbert has finished his on Baraboo. He is now in the field for a few days collecting fossils.

With best regards,

Sincerely,

Copy to Anthony Folger

F. T. Thwaites

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 26, 1935.

Dr. Robert J. B. Newcombe,
Geological Survey Division,
Department of Conservation,
Lansing, Michigan.

Dear Dr. Newcombe:

Fred T. Thwaites, with the Department of Geology, at the University of Wisconsin, J. V. Howell, Consulting Petroleum Geologist, and Dan J. Jones, with the Geological Division of the Kentucky Department of Mines and Minerals, are preparing for publication in the Guide Book of the forthcoming Ninth Annual Field Conference of the Kansas Geological Society, two structural contour maps (one on the top of the St. Peter sandstone, and the other on the top of the pre-Cambrian) of the area bounded approximately by the parallels of latitude and longitude 80 degrees west to 100 degrees, and 36 degrees north to 49 degrees. This, you will observe, includes all of the State of Michigan.

In the preparation of this map, Thwaites is holding himself responsible for the States of Minnesota, Wisconsin, and Michigan. Under date of June 20, in a discussion of the ways and means of procuring some of this information outside of the State of Wisconsin, he writes in part:

".....I can easily take care of Northern Michigan for both St. Peter (generally absent) and pre-Cambrian, but would prefer that you write Newcombe for data in their southern peninsula.....Besides he has the structure of higher beds better than I have, and so can estimate the lower horizons better than I could."

It is my impression that you have been more than kind during the past few months in supplying considerable isopach information to the contributors of isopach maps which will be published in this Guide Book. I, therefore, hesitate to impose any further on your good nature, for I can well understand from a letter written me on April 8, 1935, by R. A. Smith that all of you are heavily burdened.

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WICHITA, KANSAS.

Dr. R. J. B. N. 2 6-26-35.

On the other hand, I think you will agree that in the publication of this map it would be unfortunate to leave the central and southern portion of Michigan uncountoured and yet have contour lines in northern Michigan and throughout all of Indiana and Ohio.

Therefore, I wonder if you would co-operate with this Society to a further extent by forwarding to Fred Thwaites at the earliest possible date the locations and datum elevations of wells in Central and Southern Michigan which have reached the St. Peter, or any estimated datums to the St. Peter, and also similar information for the top of the pre-Cambrian. It is quite possible that you do not have but a few actual pre-Cambrian datum points in the southern part of your state, but from your knowledge of the subsurface stratigraphy and structure, it is also probable that you can arrive at a fairly close estimate which will fill our needs.

May I ask you to drop me a short note at your early convenience, advising whether it will be possible for you to comply with this additional request, together with a statement of approximately what date you believe you can have this information in Thwaites' hands. If you will send a carbon copy of this letter to Thwaites so that I shall not have to take time to write him, it will be greatly appreciated, inasmuch as the volume of Conference correspondence is very large.

We have asked the three contributors of this map to have it completed on or before the 10th of July, and if Thwaites is to accomplish this, it will be necessary for him to have this information from you without very much delay.

From my knowledge, it will not be necessary for me or for any of the contributors of maps to request any further information of you or your Department, and we most certainly are grateful for the help that you have given us up to this time.

We are also entertaining the hope that it will be possible for you to participate in this Conference. It may interest you to learn that up to the present time, 215 geologists, distributed through 30 states, have signified their intention to attend this trip. We hope, therefore, that both you and Dr. Smith will find it possible to attend.

With kindest personal regards,

Very truly yours,

Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

c. c. to F. T. Thwaites.

Canton well Data on Caloon mi
 Philley well
 Canton well

TIME SCHEDULE--4TH DAY, AS ALTERED.

Start 7:30

La Crosse to Ableman, Highway 33 - 80 miles, 2 hrs., 20 min.

Stop 1. Ableman 2 hrs. 20 min. 80 mi.

arrive 9:50

2 hrs.

leave 11:50

Lunch stop - Baraboo

15 min.

7 mi.

arrive 12:05

1 hr.

leave 1:05

Stop 2. - Devils Lake

10 min.

4 mi.

arrive 1:15

1 hr.

leave 2:15

Stop 3. - Mazomanie

30 min.

15 mi.

arrive 2:45

30 min.

leave 3:15

Stop 4. - Black Earth

10 min.

6 mi.

arrive 3:25

15 min.

leave 3:40

Stop 5. - Madison Quarry

30 min.

18 mi.

arrive 4:10

30 min.

leave 4:40

Night Stop

20 min.

4 mi.

arrive 5:00

60
45

2 hrs to Madison

Thwaites will log if desired.

153.5
 4.8
 158.3

128.7 130 Bl. ml
 2.2 250 Mayo
 130 9 1.20

1-20
 -30 Bl. ml. Verner
 15

30
 20
 2-35 len Bm. sup 25
 25
 230

at Mayo 240
 ev " 320
 main 230
 5-50

3.2 enter log

TIME SCHEDULE--5TH DAY AS ALTERED.

Leave 7:30

Stop 1 - Farells Bluff 20 min. 7.2 mi.

arrive 7:50

20 min.

leave 8:10

Stop 2 - Mendota Cut 5 min. 1.6 mi.

arrive 8:15

20 min.

leave 8:35

Stop 3 - Dells 1 hr. 25 min. 58.0 mi.

arrive 10:00

boat trip 2 hrs }

30 min. to
finish lunch
after return
trip docking 30 min. }

3 hrs.

service cars 30 min. }

leave 1:00

Stop 4 - Point Bluff 40 min. 24.2 mi.

arrive 1:40

30 min.

leave 2:10

Stop 5 - Goodenough Hill 20 min. 10.7 mi.

arrive 2:50

30 min.

leave 3:00

Night Stop - Eau Claire 2 hr. 45 min. 123.7 mi.

arrive 5:45

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With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 26, 1935.

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

Dear Fred:

Thank you very much for your letter of June 20, and I was exceedingly sorry to hear that you are again having trouble with your left side. I have today written to Dr. Newcombe, and inclose a carbon copy of my letter to him.

I do not quite understand the request of Dr. Thompson to you for further datum elevations on top of the Jordan sandstone, since the limits of this map have not been changed as far as I have been advised. This map, however, does include all of the State of Wisconsin.

I wish to thank you for your co-operation in furnishing information for the State of Michigan on top of the St. Peter and on top of the pre-Cambrian. I note in the second paragraph of your letter that you state that the St. Peter is generally absent in the northern portion of Michigan, and in this case, would it not be wise to use the datum elevation of the top of the next subjacent horizon? I believe this is what Howell is going to do throughout.

In answer to your inquiry for the address of Mr. Vernon, please be advised that his address is:

Jess Vernon,
Amerada Petroleum Corporation,
Box 2040,
Tulsa, Oklahoma.

With kindest personal regards,

Very truly yours,

Anthony Folger

Anthony Folger.

AF/B
c. c. to A. C. Trowbridge.

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 25, 1935

Dr. E. H. Bean
State Geologist
Science Building
Madison, Wisconsin

Dear Dr. Bean:

As you have heard from Thwaites or Raasch, Wyman and I recommended to the Wichita Committee certain rather important changes in the routes and stops for the fourth day which would permit improvement in the fifth, sixth, and eighth days. A long telegram has just now arrived from Folger to the effect that all of these changes have been O. K. ed and that I should send to you today without fail complete suggestions for re-logging the fourth day and part of the fifth day. I understand also that you have been asked to wire me if it is satisfactory to you Wisconsin people for us to have Powell do the necessary re-logging for that part of the fifth day which lies west of Chippewa Falls and for the sixth and eighth days, not only for Minnesota but for those parts of Wisconsin which are closer to Minneapolis than to Madison.

Just as this sentence is being dictated, a telegram is received from Thwaites authorizing us to have Powell log the route near Ellsworth, so this is settled.

Copy of the new schedule for the fourth and fifth days is enclosed. However, I am instructed by Folger to start every day at 7 o'clock and to add five minutes to the time of each and every stop. Thwaites will know just what new logging will have to be done and I am willing to leave this entirely up to him.

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Dr. E. H. Bean June 25, 1935 Page 2

All re-logging will be done in the same detailed manner as the remaining portion of the log as completed by Wyman. Folger suggests that by starting at 7 o'clock, the complete swing around Lake Mendota might be included in the fourth day. This would give us still more time for the fifth day.

I believe the necessary re-logging for the fourth day and for the fifth day up to Chippewa Falls can be done without further word from me.

Cordially yours,

ACT:ML
Enc.

cc: Anthony Folger
F. T. Thwaites

A. C. Trowbridge

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June 25, 1935

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Mr. G. O. Raasch
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Gilbert:

I am taking the liberty of sending you copies of pages 189, 190, and 191 of Thwaites' log for the 8th day, especially relating to the sections at and near Hudson, and of making certain comments for your consideration. I shall have special reference to the section at Stop 3 as described and interpreted by Twenhofel and Raasch.

If I am not mistaken, the hill at Stop 3 is capped by St. Lawrence dolomite and #21 of the Twenhofel and Raasch section is directly overlain by the St. Lawrence. If this is so, the Hudson member in this section includes the Bad Axe member of other sections. I note that no fossils were found within about 80' of the top of the described section, and that those in the lower part of #18 and in #17 are diagnostic of the Hudson member. I presume that these fossils constitute the "Hudson Trilobite bed" of Wooster. In my original interpretation of this section, your #17 was taken to be the "yellow sandstone" and your #'s 18, 19, 20, and 21 as the "upper greensand" of Twenhofel and Thwaites in the Tomah and Sparta quadrangles. What relation, if any, does your Goodenough, Hudson, and Bad Axe members bear to the lower greensands, yellow limestone, and upper greensands of Twenhofel and Thwaites? Where you have no fossils, how do you separate Hudson from Bad Axe? Do you not agree that the Bad Axe member is represented in this section?

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Mr. G. O. Raasch June 25, 1935 Page 2

I hardly see how you can classify the 8' of #9 as Eau Claire. On this basis there are only 12.8' of beds between Ironton fossils and the top of the Eau Claire. If the Ironton is as much as 15.2 feet thick, there is no Galesville, and if the Ironton is represented only by the 2.4' of #12, the Galesville can be only 12.8' thick. I have interpreted the lower part of the exposed section so as to make your #'s 10, 11, and 12 Galesville. I have supposed that you would probably put them all into the Ironton. Just what was your basis for calling #9 Eau Claire?

Since the well at the Hudson water-works was drilled in 1917, it has been reamed out by the McCarty Well Company, resulting in a new log which, however, parallels closely the log you give in the lower part of page 191. This new log with interpretations by Clement is copied from Clement's thesis as follows:

Log of Well at Water Works South Hudson, Wisconsin

Elevation-----	Thickness	Depth
-----705		
Pleistocene		
Glacial drift -----50		50
Dresbach formation		
<i>Eau Claire</i> Galesville and Mt. Simon members		
Limestone-----45		145
Sandstone-----247		392
Red Clastic Series		
Red shale and streaks hard		
rock----125		517
Red rock-----40		557
Red shale and rock-----365		922
Rock and shale-----130		1052 T.D.

6 Log supplied by McCarty Well Company to A. C. Trowbridge.

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Mr. G. O. Raasch June 25, 1935 Page 3

The Red Clastics as shown in the logs are 2262 feet thick in the Stillwater well, and at least 660 feet in the south Hudson well. The Railroad well at Hudson records the depth to the Red Clastic series, as the drilling stopped when that rock was reached."

You will note that 45' of #'s 2, 3, and 4 of the Twenhofel-Raasch section is now logged as limestone. Mr. McCarty insists that this is really limestone, but I imagine that the beds are more properly described as your #'s 2, 3, and 4. May I suggest the following classification:

Ironton member	
12. -----	2.4
Ironton or Galesville -----	
11. -----	5.5
10. -----	7.3
9. -----	8.0
8. -----	5.1
7. -----	20.0
Galesville member	
6. -----	50.0
Eau Claire member	
5. -----	50.0
4. -----	15.0
3. -----	15.0
2. -----	15.0
Mt. Simon member	
1. -----	248.0

Where you have a thickness of 15.2' for the combined Ironton and Galesville and a thickness of 178.1' for the Eau Claire, my interpretation would give a thickness of 98.3' for the combination of Ironton and Galesville and a thickness of 95' for the Eau Claire. I believe my suggested interpretation is more nearly in harmony with

*Of course the 50' concealed in
6 might just as well be Eau
Claire or Galesville or any part
might be E.C. & the rest &c.*

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Mr. G. O. Raasch June 25, 1935 Page 4

other sections in this neighborhood than is yours.
I shall be glad to have your comments on this matter
at your convenience.

At mileage about 42.0 on page 192 of the log,
we pass right by the north Hudson section in which
Powers and I found the fauna which you think so far
to be local for the Upper Mississippi Valley, but
found later elsewhere. We probably cannot make another
stop on this section, but do you not think that we
should include a graphic and typed section and a
brief discussion in the log under this mileage?

Cordially yours,

ACT:ML
Enc.

A. C. Trowbridge

cc: Anthony Folger

F. T. Thwaites

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INCORPORATED

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On Highways 13, 16 and 23
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Upper Dells Service
Lower Dells Service

WISCONSIN DELLS, WISCONSIN

June 22, 1935

F. T. Thwaites
Science Hall
Madison, Wisconsin.

Dear Mr. Thwaites:

Under ~~separate~~ cover we are sending the cut of
the picture which was your first choice.

When used please indicate that the photo is by
H.H. Bennett.

We will appreciate a prompt return of the cut.

Yours very truly,

DELLS BOAT COMPANY

By

Gerald A. Smith
Gerald A. Smith, Agent

June 20, 1935

Mr. M. L. Thompson,
University of Iowa,
Iowa City, Iowa

Dear Mr. Thompson:

In reply to yours of the 13th it was my understanding that the map in question is that published by Prof. Trowbridge a short time ago.

I furnished all the data I could to Atwater when this map was drafted and due to the fact that little or no field work has been done in the area since then I am positive I have nothing to add now.

It occurred to me that the limits of the map may have been changed so as to include more of Wisconsin. If so please advise me just what the limits are and I will get out what dope I have.

Very truly yours,

F. T. Thwaites

Copy to Anthony Folger

June 20, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

I have been unable to reply to yours of June 8 and today yours of the 18th came. The fact is that I was taken ill on the 9th with a severe case of neuralgia. Despite this I went on three days of the trial run but on medical examination after my return from that it was discovered that my old trouble with my left side has returned. Beyond doubt that was at the root of my poor health this spring and not the K. G. S. project alone. After two operations have failed I am naturally in rather low spirits. Please do not think I am complaining or that I will not "carry on" to the best of my ability.

Of course I will welcome any help on the maps which I have been unable to start on as yet. Every effort has been devoted to finishing special papers and their illustrations. I have Bays working on the St. Peter, however. I can easily take care of northern Michigan for both St. Peter (generally absent) and pre-Cambrian but would prefer that you write Newcomb for data in their Southern Peninsula. It is true that I have several logs of deep tests there but some of them are marked confidential and I would prefer that he use them. Besides he has the structure of higher beds better than I have and so can estimate the lower horizons better than I could.

A letter from M. L. Thompson at Keweenaw asks for data on the base of the Onondaga or top of Jordan. As I furnished all I could very recently to Trowbridge I was surprised at this and am wondering if the map limits have been changed.. It is my understanding that the Dresbach map is to have the same limits and contour interval as the Jordan map. I have the data almost all assembled for that.

With regard to a proposed change of routing discussed on the trial run I am heartily in favor.

Vernon wanted a copy of my Glacial Geology but we parted in such a hurry that I did not get his initials or address.

Sincerely,

A. T. Thwaites

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 18, 1935.

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

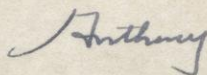
Dear Fred:

Inclosed herewith is a copy of a letter which I have just received from my good friend, Dan J. Jones, which will be self-explanatory.

Last week, when I wrote you and the copy was forwarded you over the week end by my secretary, without my first reading it, I found that she had unintentionally written the word "Minnesota" in place of "Michigan". I think you probably caught this mistake from the general contents of the letter, but I wish to make sure on this point. In any event, I have not as yet heard from you whether or not you really will fill in contours on the St. Peter and on the pre-Cambrian, even though some of the pre-Cambrian datums may have to be estimated for the State of Michigan. Inasmuch as Dan Jones is going to supply all of the rest of this eastern area, I think contouring of the State of Michigan for both the St. Peter and the pre-Cambrian is now almost essential. While I hate to impose any additional work on you, I trust you will be able to get any additional information which you may not have from Dr. Newcomb, so that it will not take up any more of your time.

With kindest personal regards,

Very truly yours,



Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

Dictated 6-17-35.

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 18, 1935.

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WICHITA, KANSAS.

Mr. Dan J. Jones,
Department of Mines and Minerals,
Lexington, Kentucky.

Dear Dan:

Thank you very much for your letter of June 14 which just arrived this morning, and I hasten to express our appreciation that you are able and willing to co-operate with Thwaites and with Howell in the preparation of structural contour maps on top of the St. Peter and on top of the pre-Cambrian.

Answering your question relative to whether it will be satisfactory to use as a datum in Kentucky either the top of the St. Peter or, if it is absent, the first sand in the upper portion of the Cotter, I see no reason why this is not perfectly justifiable, since it is generally considered as good subsurface practice. For instance, in Kansas, when we prepare a subsurface map on the top of the Siliceous lime in those areas wherein the Siliceous lime is entirely absent and Pennsylvanian rests directly on pre-Cambrian, it is the datum elevation of the top of the pre-Cambrian that we use on this map for the point in question. Therefore, my answer is, yes, this will be satisfactory, and the only reservation which I would make is to the effect that if this is not satisfactory with J. V. Howell, I shall ask him to write you directly to this effect. I am inclosing him a carbon copy of this letter, and if he does not write you within the next week, you can take it for granted that he has no objection to your so doing.

I note that you are going to request information from the State Geological Survey of Indiana. If you have not already done so, may I suggest that you address your request to Dr. J. J. Galloway, who is co-operating with us in the preparation of several isopach maps, and we have learned through experience that this information is always forthcoming from Dr. Galloway, whereas the information requested of Dr. Logan is falseless because of his age.

I note that you have no pre-Cambrian datums in the State of Kentucky. Even though you have not, if you can pick out a few points within the state where a fairly reliable estimate can be made of the depth to the pre-Cambrian, I see no reason why it

Mr. D. J. J. 2 6-18-35.

would not be perfectly permissible to use these estimated datum elevations in order to make the map complete. It is my impression that Mr. Howell plans to do this throughout a portion of his area, and I also know that we use this same procedure with considerable success for certain portions of Kansas and Oklahoma.

Thanking you again for the co-operation which you are giving us, and with kindest personal regards,

Very cordially yours,

AF

Anthony Folger.

AF/B

c. c. to A. C. Brownbridge.
c. c. to J. V. Howell.
c. c. to F. F. Thwaites.

Dictated 6-17-35.

COPY

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF
MINES AND MINERALS
Mining Engineering Building
University of Kentucky
LEXINGTON

June 14, 1935

Mr. Anthony Folger, Chairman
Gypsy Oil Company
Wichita, Kansas

Dear Anthony:

I have your letter of June 8th asking me if I would supply certain datum elevations on the top of the St. Peter sandstone and the top of the pre-Cambrian for Indiana, Ohio, Kentucky and Tennessee in co-operation with Howell and Thwaites. In reply, will say that I shall be glad to assist in this matter and will start work on it right away.

There are one or two things I would like to know before submitting the datums. According to work done by the late Reid P. Meacham of the staff of the University of Kentucky, there are certain areas in this state where the St. Peter is missing and the Upper Cotter carries sands closely resembling the St. Peter and in many cases, no doubt, the driller has logged the Cotter as St. Peter and perhaps vice versa.

I note that this map will only permit generalized information and I am wondering if datums presented either on the St. Peter or the first sands in the Upper Cotter would not be permissible.

I know of no way we can determine this because of the lack of samples and the only reliable data I have in Kentucky is that compiled by Meacham in his Insoluble Residue studies.

I will have prints made of the section I am to work and will send them to the State Geological Offices of Ohio, Indiana and Tennessee with the request that they furnish me the data as soon as possible. When the information is in I will compile and send it on to you.

I shall be glad if you will write me at your earliest convenience relative to the uncertainty of differentiating between the St. Peter and some of the underlying Cotter sand horizons.

Generally speaking, the St. Peter carries an abundance of Sulpho-saline water and I suppose the Cotter also carries water of this nature. It has been the custom for drillers to log this blue lick or sulphur water horizon as St. Peter and as I say, this designation may or may not have been correct in all cases.

We have no datums on the pre-Cambrian, but will ask the boys in the other states to send whatever they may have.

With kindest personal regards, I am,

Very sincerely yours,
(Signed) D. J. Jones.
D. J. JONES, Geologist

DJJ/JS

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WICHITA, KANSAS.

June 13, 1935

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


My dear Dr. Thwaites:

Professor Trowbridge has been asked by the Kansas Geological Society to prepare a structure map of Wisconsin, Iowa, northern Illinois, and southern Minnesota, using the top of the Jordan as a datum. Mr. Folger has suggested that we write you for the data for this map for Wisconsin.

Professor Trowbridge is now making a preliminary trip over the route, so I wish you would please send this information to me at Iowa City.

Thanking you in advance for any consideration you may give this request, I remain,

Cordially yours,



M.L. Thompson

MLT/ES

cc: Anthony Folger

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Mr. Dan J. Jones,
Geological Division,
State Department of Mines and Minerals,
Box 680,
Lexington, Kentucky.

Dear Dan:

I wish to thank you for your letter of May 1, in which you inclosed your check for \$10.00 for a copy of the Guide Book and your blue reply blank, indicating that you would make every effort to attend this Field Conference in August. This indeed is very satisfactory information, since you were one of the participants of the First Annual Field Conference, and I know that a considerable number of the friends which you made on this trip will be glad to have you back. I have delivered your message to Kesler concerning the death of Dr. Hopkins, and he expressed regret that he had passed away.

If you will refer to your copy of the first announcement of the forthcoming Field Conference, you will find on page 9, structural contour maps, the advertisement of maps number 1 and 2 by J. V. Howell and F. T. Thwaites on the top of the St. Peter sandstone and on the top of the pre-Cambrian.

Subsequently, it was decided to prepare a base map involving a little larger area than that advertised in the first announcement with the idea in mind that if structural information could be obtained on portions of the adjacent areas, it might be beneficial to include this information. Also the base map, as drafted, makes a much better looking base map from a standpoint of cartography, and has a certain economic importance, since it would show the structural relation of the Cincinnati anticline to the Upper Mississippi Valley and to that portion of the area lying west of the Mississippi River.

I am instructing the Society draftsman, Mr. Joseph A. Williams, of Ponca City, to strike off a print of this map and forward it to you direct the first part of this coming week in order that you may see at once the area involved and the problem with which we are concerned.

Mr. D. J. J. 2 6-8-35.

I am writing this letter to inquire whether or not you would be willing to co-operate with Howell and Thwaites in supplying datum elevations on the top of the St. Peter sandstone and on the top of the pre-Cambrian for Indiana and Ohio, Kentucky and Tennessee, and parts of adjacent states to the east which appear on this base map provided you have or can procure this information.

Inasmuch as you were, for so many years, in the employ of the Gulf, it is quite probable that you have in your files considerable of this information, and any that you may not have, it is probable also that you have contacts within these states from whom this information can be procured at once, with due credit being given them by the Society for thus co-operating with you.

I have not had the opportunity to discuss with either Howell or Thwaites relative to whether or not they would object to a third co-author being brought into the preparation of this map at this late date. Wholly upon my own responsibility, I am assuming that these two gentlemen would not seriously object. Were you to supply this information, each of you would be responsible for approximately an area of equal size, for Howell is contributing Illinois, Missouri, Iowa, Northern Arkansas, Northern Oklahoma, Eastern Kansas, and Eastern Nebraska, whereas Thwaites is supplying the information for Minnesota, Wisconsin, and Michigan.

If, for any reason, you do not care to co-operate with the Society on this project, or you are not allowed to because of the connections which you may now have, I shall be glad to have you keep the copy of the map being forwarded to you by Mr. Williams (for you may find some other use for it) and advise me to that effect. On the other hand, if co-operation is possible, let me know, and I will have Mr. Williams forward you a second print of this map, since in that case, you will have to have one copy for the St. Peter and one copy for the pre-Cambrian.

Two copies of this map have been supplied Thwaites and Howell, and they are each putting the datum elevations on these maps within their area, and contouring these points each within their own area. In case you will join them and contribute this eastern area, I would suggest that you do the same thing. After these three portions of each map are transmitted to Wichita, it is probably that some slight adjustment will have to be made within the area which bounds each map, but I do not anticipate that this will be much of a task. Howell and Thwaites are both receiving co-operation from several others within their own area, and I see no reason why you could not likewise call upon others for help.

Provided you are disposed to join us, it is the desire of the Committee that this map be completed this month if possible. Its completion could be delayed until the 15th of July, but we would very much prefer that this were not done, since a great mass of material is going to be thrown upon Mr. Williams, who will have to complete the drafting at the last minute.

Mr. D. J. J. 3 6-8-35.

I am certainly looking forward with pleasure to seeing you in August. Quite a few of the Gulf boys have signed up to come on this trip, and it should thus be a pleasant reunion for all of us.

Trusting that I may have an affirmative answer from you within the next few days, and with kindest personal regards,

Very truly yours,

Anthony Folger.

AF/B

c. c. to A. C. Frowbridge.
c. c. to F. T. Thwaites.
c. c. to J. V. Howell.

Dictated, and sent without being read, by Mr. Folger.

THE KANSAS GEOLOGICAL SOCIETY

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 8, 1935.

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614 ORPHEUM BUILDING,
WICHITA, KANSAS.

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

Dear Fred:

Inclosed herewith is a carbon copy of a letter to an old personal friend of mine, Mr. Dan J. Jones, who, for a great many years, was a District Geologist, in charge of Kentucky, for the Gulf Oil Corporation. I trust there will be no objection to the request which I have made of Mr. Jones by either you or by J. V. Howell.

In this connection, I some time ago expressed the hope that you could furnish the structural information for the State of ~~Minnesota~~ either from your own personal files or through co-operative help from Bob Newcomb. To date, I have not had a specific answer from you relative to this expression, but I well realize that you have been very busy on other projects in connection with this Field Conference.

We particularly hope that you can arrange to fill in all of the State of ~~Minnesota~~, especially if Mr. Jones comes through with his information on this southeastern area. I shall advise you at once of his decision.

At your convenience, please let me know what you will be able to do on the St. Peter and on the pre-Cambrian for the State of Minnesota.

With kindest personal regards,

Very cordially yours,

Anthony Folger
Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

Dictated, and sent without being read, by Mr. Folger.

KGS

J. V. HOWELL

Geologist

PONCA CITY, OKLAHOMA

McAlester, Okla.

June 6, 1935

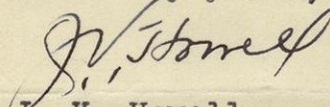
Dr. F. T. Thwaites
Dept of Geology
University of Wisconsin
Madison, Wisconsin

Dear Dr. Thwaites:

You are right about the map scale. Just stopped writing ciphers too soon, and my letter should have specified 1-1 million.

Have received today from Mr. Folger the base maps which we will use, and hope to get my data placed thereon within the next week. This will be sent to Anthony and he will then add your data, after which I suppose we will immediately be involved in discussions. However, we can only do our best and hope it will be enough.

Sincerely yours,


J. V. Howell

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THE GEOLOGICAL SOCIETY OF AMERICA

419 WEST 117TH STREET, NEW YORK

June 5, 1935

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

Dear Fred:

I have your letter of May 28 to Doctor Berkey asking permission to use illustrations from a paper now in our files for use in the Guide Book of the Kansas Geological Society.

We have already had the problem of releasing a map from the Atwater paper for this same guide book, and I am glad to grant permission with the proper credit and release notice. We are making arrangements with Doctor Folger of the Kansas Society, therefore as I see it, you may send the Van Dyke positives with a note that the Geological Society gives permission to print on the same basis as that in the Atwater connection.

Regarding the "condensed version" of the paper, after discussion with Doctor Berkey I have this to say. We are hopeful that the paper will be very little more than an abstract and that its printing will not raise the question of duplication when we come to print the longer manuscript. I have no doubt that you appreciate this possibility and will avoid difficulties. The G. S. A. publishes abstracts and full papers as well, but is opposed, of course, to duplication. I think I am correct that publication in the Kansas guide book constitutes publication.

Yours with best regards,

H. R. Aldrich

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

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WICHITA, KANSAS.

June 7, 1935

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

Dear Fred:

Your letter of June 5 with the remainder of the graphic sections attached is received; also your letter of June 6, especially in regard to our meeting for the preliminary trip.

I understand why there is no graphic or typed section for the Devils Lake stop.

Wyman and I will try to get data on the stops at Ellsworth and near Waverly as we go over the route.

I agree with you that the question of whether the Madison is finally considered a formation in its own right or a member of the Trempealeau formation is not so very important. On the other hand, I have not realized until just lately that the "official" classification involved the separation of the Madison from the Jordan at all. I believe the classification Atwater and I agreed to in 1933 recognized a post-Franconia-Cambrian formation called the Trempealeau and divided into St. Lawrence, Lodi, and Jordan members. If I remember correctly, the paper presented orally by Raasch at the Chicago meetings of the G.S.A. suggested that a Madison member might later be recognized, but I did not realize that even this step had been taken in the paper on the Cambrian of Wisconsin.

The Madison of Irving certainly included the whole of the Jordan as we now conceive it. The Madison of Ulrich was a post-Jordan--post-Devils Lake--post-Mendota--Ozarkian formation. I do not know just what the Madison of Ockermann was. Raasch says the present Madison is younger than the Van Oser, which I think is probably true. It may or may not be the equivalent of the Kasota or of the Blue Earth. Personally I do not consider the Madison to be separable from the remainder of the Jordan even as a member. I note that in your typed and graphic sections the Madison is the uppermost member of Trempealeau. This does not agree with the section taken from Raasch's paper on the Cambrian. Until this point is settled I hesitate to have these graphic sections redrafted. This whole matter and many others can doubtless be talked over in Madison or while we are on the trip next week. Until then final decisions can be held in abeyance.

I note that the photographs are now being printed.

I am glad to say that I am in no way responsible for the base maps for isopachs and structure maps. I assume that you have notified Folger of the fact that your base maps have not yet arrived.

I am glad that Bean now finds it possible to pay for the making of the remainder of the maps. This is fine.

We shall be very glad if you and Bays and perhaps others from Madison can meet us at the Lansing bridgehead. According to present plans we will be on our way from Lansing to LaCrosse in the middle or late afternoon on Tuesday, the eleventh. I shall probably phone you in this regard from Dubuque Monday night if this item has not been cleared up in the meantime.

Your comments concerning the introduction to the post-conference trip are noted. We shall be glad to receive the map and the others mentioned in the last paragraph of your letter of the fifth when they are ready.

F.T.T.

3

6/7/35

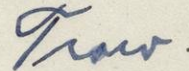
It will be satisfactory for you to meet us on the morning of Thursday, June 13, at the highway junction just north of Liberty Pole Hill, as outlined in the first paragraph of yours of the sixth. This will make it necessary for us to check the Wisconsin route and stops of the third day without your help, but I imagine that we can do this. We still hope that Bean can come along with you.

Many thanks for your description of the best way to locate the section at Victory. I think we will have no trouble in finding it now, even if you do not meet us at the Lansing bridgehead. If we should miss it, we could see it together on Thursday, as you suggest.

I am sorry to know that you are having difficulty with printing the photographs.

Many thanks also for the typed section on Middle River and the faunal lists which accompanied your letter of the fifth.

Cordially yours,



A. C. Trowbridge

ACT:A

CC: Anthony Folger

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Missouri.....	7	Total.....	173
Michigan.....	5		
New York.....	5		
California.....	4		
Colorado.....	4		
District of Columbia.....	4		
Wisconsin.....	4		
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Pennsylvania.....	5	Netherlands.....	<u>1</u>
Missouri.....	4	Total.....	190
Colorado.....	4		
Massachusetts.....	3		
Connecticut.....	2		
Indiana.....	2		
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Louisiana.....	2		
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3. G. E. Alexander, Retired, Medicine Lodge, Kansas;
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9. George W. Baughman, Assistant Geologist, Phillips Petroleum Co., Wichita, Kansas;
10. Chas. H. Behre, Jr., Associate Professor of Geology, Northwestern University, Evanston, Illinois;
11. Edmund T. Benson, Assistant Geologist, State Geological Survey, Urbana, Illinois;
12. S. G. Bergquist, Professor of Geology, Michigan State College, East Lansing, Michigan;
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14. James Boyd, Instructor in Geology, Colorado School of Mines, Denver, Colorado;
15. Walter J. Boyle, District Geologist, Phillips Petroleum Co., San Antonio, Texas;
16. Everett L. Bradley, Petroleum Geologist, Bradley Brothers, Wichita, Kansas;
17. F. M. Brandenburg, Geol. Instructor, El Dorado Junior College, El Dorado, Kansas; after June 1, Pittsburg, Kansas;

REPLIES, Cont.

18. C. C. Branson, Instructor, Brown University, Providence, Rhode Island;
19. Josiah Bridge, Geologist, U. S. Geological Survey, Washington, D. C.
20. Howard S. Bryant, District Geologist, Skelly Oil Co., Wichita, Kansas;
21. Walter H. Bucher, Professor of Historical Geology, University of Cincinnati, Cincinnati, Ohio;
22. Wm. A. Buttram, Route #2, Puente, California;
23. A. C. Carpenter, President, Lesh Oil Co., Ottawa, Kansas;
24. Percy H. Carr, Assoc. Prof. Physics, Iowa State College, Ames, Iowa;
25. Rollin T. Chamberlin, Professor of Geology, University of Chicago, Chicago, Illinois;
26. Hugh D. Chase, Instructor in Geology, University of Maine, Orono, Me.
27. H. G. Cheney, Pres., Anzac Oil Corporation, Coleman, Texas;
28. Frank R. Clark, Chief Geologist, Marathon Oil Co., Tulsa, Oklahoma;
29. Frank T. Clark, Division Geologist, Kansas, Empire Oil & Refining Co., Bartlesville, Oklahoma;
30. Glenn C. Clark, Chief Geologist, Continental Oil Co., Ponca City, Oklahoma.
31. R. W. Clark, Assistant Staff Geologist, Gulf Oil Corp., Pittsburgh, Pennsylvania;
32. Stuart K. Clark, Asst. Chief Geologist, Continental Oil Co., Ponca City, Oklahoma;
33. Willard J. Classen, Consulting Geologist, San Francisco, California;
34. Phil K. Cochran, Division Geologist, The Carter Oil Co., Wichita, Kan.
35. Mary Elizabeth Cooley, Instructor in Geology, Mount Holyoke College, South Hadley, Massachusetts;
36. T. C. Craig, District Geologist, Phillips Petroleum Co., Amarillo, Texas;
37. Ira H. Cram, Division Geologist, Pure Oil Company, Tulsa, Oklahoma;
38. L. A. Cram, Consulting Geologist, Wichita, Kansas;
39. H. Gordon Damon, Adjunct Professor of Geology, The University of Texas, Austin, Texas.

REPLIES, Cont.

40. James I. Daniell, Dist. Geologist, Continental Oil Co., Ponca City, Oklahoma;
41. Geo. M. Davidson, Retired Industrial Engineer, Chicago-Northwestern Railway, Oak Park, Illinois;
42. A. R. Denison, Div. Geol., Amerada Petroleum Corp., Ft. Worth, Texas;
43. R. B. Dunlevy, Geology Department, Southwestern College, Winfield, Kan.
44. Fanny Carter Edson, Research Stratigrapher, Shell Petroleum Corp., Tulsa, Oklahoma;
45. George E. Ekblaw, Geologist and Head Areal and Engineering Geology Division, Illinois State Geological Survey, Urbana, Illinois;
46. Howard Elrod, Asst. in Geol. Dept., S.W.K. College, Southwestern College, Winfield, Kansas;
47. Bernard B. Fallon, Vice-President, Citizens National Bank, Grand Rapids, Michigan;
48. P. E. Fitzgerald, Geologist, Dowell Incorporated, Tulsa, Oklahoma;
49. Anthony Folger, Geologist, Gypsy Oil Co., Wichita, Kansas;
50. L. R. Fortier, District Geologist, Shell Petroleum Corp., Wichita, Kan.
51. Geo. M. Fowler, Consulting Geologist, Joplin, Missouri;
52. Louis Franklin, Consulting Geologist, Houston, Texas;
53. J. L. Garlough, Consulting Geologist, Wichita, Kansas;
54. Marcus I. Goldman, Geologist, U. S. Geological Survey, Washington, D.C.
55. Frank Guin, Consulting Geologist, Duncan, Oklahoma;
56. Judson R. Giffin, Professor, Western Kentucky State Teachers College, Bowling Green, Kentucky;
57. C. S. Gynne, Professor of Geology, Iowa State College, Ames, Iowa;
58. Eugene S. Mahnel, Undergraduate, University of Chicago, St. Louis, Missouri;
59. George M. Hall, Professor of Geology, University of Tennessee, Knoxville, Tennessee;
60. Perry R. Hanson, Land & Geological Dept., Vickers Petroleum Co., Wichita, Kansas;
61. W. Lloyd Haseltine, Research Asst., Sub-Surface Laboratory, Missouri Geological Survey, Rolla, Missouri;

REPLIES, Cont.

62. Oscar Hatcher, Consulting Geologist, Ada, Oklahoma;
63. Margaret Hayward, Undergraduate, Junior, University of Chicago, Department of Geology, Chicago, Illinois;
64. Roy T. Hazzard, Chief Geologist, Gulf Refining Co. of Louisiana, Shreveport, Louisiana;
65. Olive L. Hoffman, Microscopist, Phillips Petroleum Co., Wichita, Kansas;
66. W. Farrin Hoover, Graduate Asst. in Geology, University of Illinois, Urbana, Illinois;
67. C. Don Hughes, Consulting Geologist, Amarillo, Texas;
68. J. M. Jewett, Instructor, Geology, University of Wichita, Wichita, Kansas;
69. J. Harlan Johnson, Associate Professor of Geology, Colorado School of Mines, Golden, Colorado;
70. A. Jeanette Jones, Instructor in Geology, Lawrence College, Appleton, Wisconsin.
71. D. J. Jones, Geologist, Geological Division, State Dept. of Mines & Minerals, Lexington, Kentucky;
72. Hugo Kamb, Jr. Engineer, U. S. Engineer Office, St. Paul, Minnesota;
73. Archie R. Kautz, District Geologist, Empire Gas & Fuel Co., Amarillo, Texas;
74. G. Marshall Kay, Instructor in Geology, Columbia University, New York City;
75. W. W. Keeler, Geologist, Minnehoma Oil and Gas Co., Tulsa, Oklahoma;
76. P. Hastings Keller, Geologist, Lansing, Michigan;
77. W. D. Keller, Asst. Prof. of Geology, University of Missouri; Columbia, Missouri;
78. William A. Kelly, Assistant Prof. of Geology, Michigan State College, East Lansing, Michigan;
79. L. W. Kesler, Resident Geologist, Sinclair Prairie Oil Co., Wichita, Kansas;
80. Cecil H. Kindle, Instructor, City College, Geology Dept., New York City;
81. John F. Kinkel, District Geologist, Phillips Petroleum Co., Wichita, Kansas;

REPLIES, Cont.

82. R. S. Knappen, Executive, Gypsy Oil Co., Tulsa, Oklahoma;
83. J. K. Knox, Chief Geologist, Phillips Petroleum Co., Bartlesville, Okla.
84. W. C. Krumbein, Instructor, Dept. Geology, University of Chicago, Chicago, Illinois;
85. Harry S. Ladd, Research Associate, Dept. Geology, University of Rochester, Rochester, New York;
86. Lynn K. Lee, Asst. to Chief Geologist, The Pure Oil Co., Chicago, Ill.
87. Marvin Lee, Consulting Geologist, Technical Adviser to State Corporation Commission, Wichita, Kansas;
88. Morris M. Leighton, Chief, Illinois State Geological Survey, Urbana, Ill.
89. Boris V. Lerke, Geologist, Wichita, Kansas;
90. A. I. Liversen, Chief Geologist, Tide Water Oil Co., Houston, Tex.
91. Alfred Livingston, Jr., Chairman, Dept. of Geology, Los Angeles Junior College, Los Angeles, Calif.
92. Christina Lochman, Chicago, Ill.
93. H. S. McQueen, Assistant State Geologist, Missouri Geological Survey, Rolla, Mo.
94. Robert B. McNeely, Consulting Geologist, Wichita, Kansas;
95. Geo. C. Matson, Consulting, Tulsa, Oklahoma;
96. A. M. Meyer, Geologist, Atlantic Oil Producing Co., Wichita, Kansas;
97. Paul T. Miller, Research Associate, State University of Iowa, Iowa City, Iowa;
98. E. C. Moncrief, Geologist, Derby Oil Co., Wichita, Kansas;
99. Berlen C. Moneymaker, Associate Geologist, Tennessee Valley Authority, Knoxville, Tennessee;
100. Joseph E. Morero, Chief Geologist, Skelly Oil Co., Tulsa, Oklahoma;
101. D. M. Morgan, Chief Geologist, D. H. Wentz (Oil Div.), Ponca City, Oklahoma;
102. Lindsey C. Morgan, Geologist, Wickers Petroleum Co., Wichita, Kansas;

REPLIES, Cont.

103. H. F. Moses, Division Supt., The Carter Oil Co., Mt. Pleasant, Michigan;
104. C. E. Needham, Asst. Prof. of Geology, New Mexico School of Mines, Socorro, New Mexico;
105. L. Murray Neumann, Consulting Geologist, The Carter Oil Co., Tulsa, Oklahoma;
106. Geo. H. Norton, Kansas District Geologist, Atlantic Oil Producing Co., Wichita, Kansas;
107. D. C. Nufer, Head of Geol. Division, The Carter Oil Co., Tulsa, Okla.
108. Ernest A. Osborne, President, Comanche Oil Co., Colorado Springs, Colo.
109. Harry W. Osborne, Consulting Geologist, Colorado Springs, Colorado;
110. John W. Ockerman, Principal Topographer, Wis. Conservation Dept., Madison, Wisconsin;
111. George C. Oldham, Field Representative, Iowa State Emergency Relief Administration, Des Moines, Iowa;
112. J. H. Page; Geologist, W. S. Fees, Iola, Kansas; Tulsa, Oklahoma;
113. Jessie Parish, (Mrs.), 226½ Main St., Cedar Falls, Iowa;
114. Walter H. Parker, Prof. of Mining, University of Minnesota, Minneapolis, Minnesota;
115. R. L. Pattinson, Chatham, Ontario.
116. E. P. Philbrick, District Geologist, Magnolia Petroleum Co., Wichita, Kansas;
117. John S. Redfield, Assistant Geologist, Stanolind Oil & Gas Co., Tulsa, Oklahoma;
118. H. E. Redmon, Chief Geologist, The National Refining Co., El Dorado, Kansas;
119. B. Coleman Renick, District Geologist, Magnolia Petroleum Co., San Antonio, Texas;
120. John L. Rich, Associate Professor of Geology, University of Cincinnati, Cincinnati, Ohio;
121. Louis Roark, Consulting Geologist, Tulsa, Oklahoma;
122. Walter B. Roe, Geologist, Truax-Traer Coal Co., Chicago, Illinois;
123. Henry Rogatz, Consulting Geologist, Amarillo, Texas;

REPLIES, Cont.

- 124. John T. Rouse, Instructor, Hamilton College, Clinton, New York;
- 125. E. P. Rowe, Petroleum Geologist, Toronto, Canada;
- 126. Charles Rynicker, Geologist, Gypsy Oil Co., Tulsa, Oklahoma;
- 127. Oramel A. Seager, Geologist, The Carter Oil Co., Duncan, Oklahoma;
- 128. E. H. Sellards, State Geologist, Bureau Economic Geology, Austin, Texas;
- 129. W. D. Shipton, Associate Professor of Geology, Washington University, St. Louis, Missouri.
- 130. Raymond Sidwell, Assistant Professor, Texas Technological College, Lubbock, Texas;
- 131. K. A. Simmons, District Geologist, W. C. McBride, Incl., San Antonio, Texas;
- 132. W. B. Sinclair, Assistant District Geologist, Amerada Petroleum Corp., Wichita, Kansas;
- 133. G. C. Siverson, Division Geologist, Oklahoma and Kansas, Tide Water Oil Co., Tulsa, Oklahoma;
- 134. Charles D. Sneller, M. D., First Vice-President, Illinois State Academy of Science, Peoria, Illinois;
- 135. Ernest Rice Smith, Professor of Geology, De. Paw University, Greencastle, Indiana;
- 136. Maria Frances Spencer, Paleontologist, Superior Oil Co., Midland, Tex.
- 137. Taisia Stadvichenko, Associate Geologist, U. S. Geological Survey, Washington, D. C.
- 138. M. A. Stainbrook, Associate Professor of Geology, Texas Technological College, Lubbock, Texas; after June 1, Brandon, Iowa;
- 139. Paris B. Stockdale, Associate Professor of Geology, Ohio State University, Columbus, Ohio;
- 140. V. T. Stringfield, Assistant Geologist, U. S. Geological Survey, Washington, D. C.
- 141. William L. Stryker, Consulting Geologist, Fredonia, Kansas;
- 142. C. W. Studt, Vice-President, Sagamore Oil and Gas Company, Independence, Kansas;
- 143. A. H. Sutton, Asst. Prof. Geology, University of Illinois, Urbana, Illinois;

REPLIES, Cont.

144. Allen C. Tester, Asst. Prof. Geology, State University of Iowa;
Asst. State Geologist, Iowa Geological Survey, Iowa City, Iowa;
145. J. D. Thompson, Jr., Consulting Geologist, Amarillo, Texas;
146. Wallace C. Thompson, Geologist, General Crude Oil Co., Houston, Texas;
147. F. T. Thwaites, Lecturer in Geology, University of Wisconsin, Madison,
Wisconsin;
148. Carl Tolman, Assistant Prof. Geology, Washington University, St.
Louis, Missouri;
149. C. W. Tomlinson, Geologist, Shermershorn Oil Corp., Ardmore, Okla.
150. A. C. Trowbridge, Director, Iowa Geological Survey, Iowa City, Iowa;
151. W. H. Twenhofel, Prof. Geology, University of Wisconsin, Madison,
Wisconsin;
152. Jerry E. Upp, Micro-Paleontologist, Amerada Petroleum Co., Wichita,
Kansas;
153. C. N. Valerius, Geologist, M. M. Valerius Royalty Corporation, Jay,
Oklahoma;
154. Martin Van Couvering, Petroleum Engineer, Los Angeles, California;
155. J. R. Van Pelt, Assistant Director, Museum of Science and Industry,
Chicago, Illinois;
156. H. C. Vanderpool, Geologist, Champlin Refining Co., Enid, Oklahoma;
157. Walter A. Ver Wiebe, Professor of Geology, University of Wichita,
Wichita, Kansas;
158. Jess Vernon, Geologist, Amerada Petroleum Corp., Tulsa, Oklahoma;
159. Ward R. Vickery, Geologist, Vernon Oil & Gas Co., Wichita, Kansas;
160. Lucian Walker, Geologist, Mead Oil Company, Tulsa, Oklahoma;
161. Freeman Ward, Professor of Geology & Head of Dept., Lafayette College,
Easton, Pennsylvania.
162. Mrs. Theron Wasson, Geologist, River Forest, Illinois;
163. W. W. West, Electrified Water Co., Wichita, Kansas;
164. Lawrence Whitcomb, Asst. Professor, Lehigh University, Bethlehem,
Pennsylvania;
165. Luther H. White, Chief Geologist, J. A. Hull Co., Tulsa, Oklahoma;

REELIES, Cont.

166. R. A. Whortan, The Geologist, T. C. Johnson, Wichita, Kansas;
167. G. T. Wickwire, Professor Geology, Hanover College, Hanover, Indiana;
168. L. W. Wood, Geologist, Iowa State Highway Commission, Ames, Iowa;
169. Glen C. Woolley, Geologist, Derby Oil Co., Wichita, Kansas;
170. E. A. Wyman, District Geologist, Amerada Petroleum Corp., Wichita,
Kansas;
171. C. A. Yeakam, Oklahoma City, Oklahoma;
172. F. L. Aurin, Vice-President, Southland Royalty Co., Ponca City,
Oklahoma;
173. Dollie Radler Hall, Geologist, Amerada Petroleum Corporation, Tulsa,
Oklahoma;

ORDERS

1. Wm. Ainsworth, Vice-Pres., Western Petroleum Exploration Co.,
Wichita, Kansas;
2. G. E. Alexander, Medicine Lodge, Kansas;
3. Thos. H. Allan, Division Geologist, Stanolind Oil & Gas Co., Tulsa,
Oklahoma;
4. Dept. of Geology, University of Alabama, University, Alabama.
5. Asiatic Petroleum Corporation, New York City;
6. George W. Baughman, Assistant Geologist, Phillips Petroleum Co.,
Wichita, Kansas;
7. Chas. H. Behre, Jr., Associate Professor of Geology, Northwestern
University, Evanston, Illinois;
8. George F. Berry, Jr., Res. Geologist, Empire Oil and Refining Co.,
El Dorado, Kansas;
9. Arthur Bevan, State Geologist, University, Virginia;
10. R. W. Branchli, Chief Geologist, Anderson Prichard Oil Corp.,
Oklahoma City, Oklahoma;
11. James Boyd, Instructor in Geology, Colorado School of Mines, Denver,
Colorado;
12. E. L. Bradley, Consulting Geologist, Wichita, Kansas;
13. F. M. Brandenburg, Geology Instructor, El Dorado Junior College,
El Dorado, Kan. until June 1; after June 1, Pittsburg, Kan.
14. Josiah Bridge, Geologist, U. S. Geological Survey, Washington, D. C.
15. Howard S. Bryant, District Geologist, Skelly Oil Co., Wichita, Kan.
16. A. C. Carpenter, President, Lesh Oil Company, Ottawa, Kansas;
17. The Carter Oil Company (for D. C. Hufer), Tulsa, Oklahoma;
18. Robt. L. Cassingham, Dist. Geol., Amerada Petroleum Corp., Enid,
Oklahoma;
19. M. G. Chenez, Pres., Anzac Oil Corp., Coleman, Texas;
20. A. E. Cheney, Geologist, Marathon Oil Co., Wichita, Kansas (Charge
Marathon Oil Co.)

ORDERS, Cont.

21. Henri de Cizancourt, Compagnie Francaise des Petroles, Paris, France;
22. Glenn C. Clark, Chief Geologist, Continental Oil Co., Ponca City, Oklahoma;
23. R. W. Clark, Assistant Staff Geologist, Gulf Oil Corp., Pittsburgh, Pennsylvania;
24. Stuart K. Clark, Asst. Chief Geologist, Continental Oil Co., Ponca City, Oklahoma;
- Willard J. Classen, Geologist, San Francisco, California.
26. Phil K. Cochran, Division Geologist, Carter Oil Co., Wichita, Kansas;
27. Mary Elizabeth Cooley, Instructor in Geology, Mount Holyoke College, South Hadley, Massachusetts;
28. T. C. Craig, District Geologist, Phillips Petroleum Co., Amarillo, Texas.
29. L. A. Crum, Consulting Geologist, Wichita, Kansas;
30. H. Gordon Damon, Adjunct Professor of Geology, The University of Texas, Austin, Texas;
31. Jas. I. Daniels, District Geologist, Continental Oil Co., Ponca City, Oklahoma.
32. A. R. Denison, Div. Geol., Amerada Petroleum, Ft. Worth, Texas;
33. C. E. Dobbin, Senior Geologist, U. S. Geological Survey, Denver, Colorado;
34. R. B. Dunlevy, Geology Dept. (Head), Southwestern College, Winfield, Kansas;
35. Nanny Carter Edson, Research Stratigrapher, Shell Petroleum Corp., Tulsa, Oklahoma;
36. Howard Elrod, Assistant in S.W.K.C. Geol. Dept., Southwestern College, Winfield, Kansas;
37. Bernard B. Fallon, Vice-President, Citizens Industrial Bank, Grand Rapids, Michigan;
38. Anthony Folger, Geologist, Gypsy Oil Co., Wichita, Kansas;
39. L. R. Fortier, District Geologist, Shell Petroleum Corp., Wichita, Kan.

ORDERS, Cont.

40. Geo. M. Fowler, Consulting Geologist, Joplin, Missouri;
41. Louis Franklin, Consulting Geologist, Houston, Texas;
42. J. L. Carlough, Consulting Geologist, Wichita, Kansas;
43. Wesley C. Gish, Land Dept., Sinclair Prairie Oil Co., Ft. Worth, Tex.
44. Marcus I. Goldman, Geologist, U. S. Geological Survey, Washington D.C.
45. Judson R. Griffin, Prof., W. Ky. S. T. College, Bowling Green, Ky.
46. Gulf Research & Development Corporation, Pittsburg, Pennsylvania.
47. C. S. Guyane, Professor of Geology, Iowa State College, Ames, Iowa.
48. George M. Hall, Prof. of Geology, University of Tennessee, Knoxville,
Tennessee.
49. Roy H. Hall, Consulting Petroleum Geologist, Wichita, Kansas;
50. W. Dow Hamm, Asst. to Chief Geol. of Royal Dutch, The Hague, Netherlands
51. Perry R. Hanson, Land & Geol. Dept., Vickers Petroleum Co., Wichita,
Kansas;
52. Oscar Hatcher, Consulting Geologist, Ada, Oklahoma.
53. Roy T. Hazzard, Chief Geologist, Gulf Refining Co. of Louisiana,
Shreveport, Louisiana;
54. K. C. Heald, Staff Geologist, The Gulf Companies, Pittsburgh, Pa.
55. T. C. Hiestand, Exploration Dept., W. C. McBride, Inc., Tulsa, Okla.
56. Olive L. Hoffman, Microscopist, Phillips Petroleum Co., Wichita, Kan.
57. F. G. Hall, Consulting Geologist, Wichita, Kan.
58. W. Farrin Hoover, Grad. Asst. in Geology, University of Illinois,
Urbana, Ill.
59. J. V. Howell, Consulting Geologist, Ponca City, Oklahoma;
60. Humble Oil & Refining Company, Geol. Dept., Houston, Texas;
61. Illinois State Geological Survey, Urbana, Illinois;
62. D. J. Jones, Geologist, State Department of Mines & Minerals,
Lexington, Ky.
63. G. Marshall Kay, Instructor in Geology, Columbia University, New York.

ORDERS. Cont.

64. P. Hastings Keller, Geologist, Lansing, Michigan;
65. W. D. Kaller, Asst. Prof. of Geology, University of Missouri, Columbia, Mo.
66. W. W. Keeler, Geologist, Minnehoma Oil and Gas Co., Tulsa, Okla.
67. L. W. Kesler, Resident Geologist, Sinclair Prairie Oil Co., Wichita, Kan.
68. W. S. W. Kew, District Geologist, Standard Oil Co. of California, Los Angeles, Calif.
69. John F. Zinkel, Dist. Geol., Phillips Petroleum Co., Wichita, Kansas;
70. M. B. Kittredge, Shawnee, Oklahoma;
71. R. S. Knappen, Executive, Gypsy Oil Co., Tulsa, Okla.
72. T. K. Knox, Sazet Gas Co., Houston, Texas;
73. Harry S. Ladd, Research Associate, Dept. of Geology, University of Rochester, Rochester, New York.
74. F. H. Lahee, Chief Geologist, Sun Oil Co., Dallas, Texas.
75. Walter W. Larsh, Dist. Geologist, Stanolind, Wichita, Kansas;
76. Marvin Lee, Consulting Geologist, Technical Adviser to State Corporation Commission, Wichita, Kansas;
77. Boris V. Lerke, Geologist, Wichita, Kansas.
78. A. I. Liversen, Chief Geologist, Tide Water Oil Co., Houston, Texas;
79. Bureau of Economic Geology, University of Texas, Austin, Texas;
80. University of California Library, Berkeley, California;
81. University of Arkansas Library, Fayetteville, Arkansas;
82. Clark University Library, Worcester, Massachusetts;
83. Library, The College of the City of New York, New York City;
84. Library, Cornell College, Mount Vernon, Iowa;
85. Cornell University Library, Ithaca, New York;
86. Dartmouth College Library, Hanover, New Hampshire;
87. Department of Mineralogy, Harvard University Library, Cambridge, Mass.

ORDERS, Cont.

88. Geology Library, State University of Iowa, Iowa City, Iowa;
89. Library, The Johns Hopkins University, Baltimore, Maryland;
90. Library, The University of Michigan, Ann Arbor, Mich.
91. Library, Dept. of Geology, Michigan State College of Agriculture and Applied Science, East Lansing, Mich.
92. Library, Geology Dept., The State College of Washington, Pullman, Washington;
93. Library, United Gas System, Houston, Texas;
94. Library, University of Cincinnati, Cincinnati, Ohio;
95. Library of the Department of Geology, Yale University, New Haven, Conn.
96. Library of the Department of Geology, Yale University, New Haven, Conn.
97. John B. Lucke, Asst. Dist. Geologist, The Texas Co., Pampa, Texas;
98. J. F. McKee, Geologist, The Texas Company, Wichita, Kansas;
99. Robert B. McNeely, Consulting Geologist, Wichita, Kansas;
- ¹100. H. S. McQueen, Asst. State Geologist, Missouri Geological Survey, Rolla, Mo.
101. E. A. Markley, Geologist, Barnsdall Oil Co., Tulsa, Okla;
102. Geo. C. Matson, Consulting Geologist, Tulsa, Okla.
103. A. M. Meyer, Geologist, Atlantic Oil Producing Company, Wichita, Kan.
104. Hugh D. Miser, Geologist, U. S. Geological Survey, Washington, D. C.
105. E. G. Moncrief, Geologist, Derby Oil Co., Wichita, Kansas;
106. C. L. Moody, Division Geologist, The Ohio Oil Co., Shreveport, La.
107. Joseph E. Morero, Chief Geologist, Skelly Oil Co., Tulsa, Okla.
108. D. M. Morgan, Chief Geol., L. H. Wentz (Oil Div.), Ponca City, Okla.
109. Lindsey G. Morgan, Geologist, Vickers Petroleum Co., Wichita, Kan.
110. H. F. Moses, Division Supt., The Carter Oil Company, Mt. Pleasant, Mich.

ORDERS, Cont.

111. Nebraska Geological Survey, Lincoln, Nebraska;
112. L. Murray Neumann, Consulting Geologist, The Carter Oil Co., Tulsa, Okla.
113. Earl B. Noble, Asst. Chief Geologist, Union Oil Co. of California, Los Angeles, Calif.
114. Geo. H. Horton, Kansas District Geologist, Atlantic Oil Producing Co., Wichita, Kan.
115. D. C. Mufer, Head of Geol. Division, The Carter Oil Co., Tulsa, Okla.
116. Leonard W. Orynski, The California Co., Dallas, Texas;
117. Katherine V. W. Palmer, Geology Department, Cornell University, Ithaca, New York;
118. The Penwest Oil Company, Wichita, Kan.
119. E. P. Philbrick, District Geologist, Magnolia Petroleum Co., Wichita, Kan.
120. H. E. Redmon, Chief Geologist, The National Refining Co., El Dorado, Kan.
121. B. Coleman Renick, District Geologist, Magnolia Petroleum Co., San Antonio, Texas;
122. John L. Rich, Assoc. Prof. of Geology, University of Cincinnati, Cincinnati, Ohio.
123. B. S. Ridgeway, Geologist, Empire O. & R. Co., Wichita, Kan.
124. Stanolind Oil & Gas Co., Tulsa, Oklahoma;
125. Morgan E. Roberts, Geologist, The Pure Oil Co., Odessa, Texas;
126. Henry Rogatz, Consulting Geologist, Amarillo, Texas;
127. Chas. W. Roop, Geologist, I. T. I. Co., Wichita, Kansas;
128. John T. Rouse, Instructor, Hamilton College, Department of Geology, Clinton, New York.
129. E. P. Rowe, Petroleum Geologist, Toronto, Canada;
130. Charles Rynicker, Chief Micropaleontologist, Gypsy Oil Co., Tulsa, Okla.
131. Oramel A. Seager, Geologist, The Carter Oil Co., Duncan, Okla.
132. Shell Petroleum Corporation, St. Louis, Missouri;

ORDERS, Cont.

133. W. B. Sinclair, Assistant District Geologist, Amerada Petroleum Corp., Wichita, Kan.
134. The Sloan and Zook Company, Bradford, Pennsylvania;
135. Ernest Rice Smith, Professor of Geology, De Pau University, Greencastle, Indiana;
136. John E. Smith, Asst. Professor, Geology, Iowa State College, Ames, Iowa.
137. Charles D. Sneller, M. D., The Peoria Academy of Science, Peoria, Ill.
138. G. W. Speer, Geologist, Western Kansas Oil & Refining Co., Wichita, Kan.
139. Taisia Stadnichenky, Associate Geologist, U. S. Geological Survey, Washington, D. C.
140. P. K. Staehelin, Geologist, Tampico, Tamp., Mexico;
141. M. A. Stainbrook, Associate Professor of Geology, Texas Technological College, Lubbock, Texas;
142. Stanolind Oil and Gas Company, Tulsa, Oklahoma;
143. G. E. Stechert & Co., New York City;
144. Robert J. Steel, Geological Scout, I. T. I. O. Co., Wichita, Kan.
145. Wm. L. Stryker, Consulting Geologist, Fredonia, Kansas;
146. C. W. Stuet, Vice-President, Sagamore Oil and Gas Co., Independence, Kansas;
147. A. H. Sutton, Assistant Professor of Geology, University of Illinois, Urbana, Illinois;
148. Joseph A. Taff, Consulting Geologist, Associated Oil Co., San Francisco, California;
- Carvin L. Taylor, Petrologist, Stanolind Oil & Gas Co., Wichita, Kansas;
150. Allen C. Tester, Asst. Prof. of Geology, State University of Iowa, Asst. State Geologist, Iowa Geological Survey, Iowa City, Ia.
151. J. D. Thompson, Jr., Consulting Geologist, Amarillo, Texas;
152. A. J. Tieje, Professor of Geology, University of Southern California, Los Angeles, California;
153. C. W. Tomlinson, Geologist, Schermerhorn Oil Corp., Ardmore, Okla;

ORDERS, Cont.

154. A. C. Trowbridge, Director, Iowa Geological Survey, Iowa City, Ia.
155. W. N. Twenhofel, Professor of Geology, University of Wisconsin, Madison, Wisconsin.
156. Jerry E. Upp, Micro-Paleontologist, Amerada Petroleum Corp., Wichita, Kansas;
157. C. N. Valerius, Geologist, M. M. Valerius Royalty Corporation, Jay, Oklahoma;
158. Walter A. Ver Wiebe, Professor of Geology, University of Wichita, Wichita, Kansas;
159. Jess Vernon, Geologist, Amerada Petroleum Corp., Tulsa, Oklahoma;
160. Ward R. Vickery, Geologist, Vernon Oil & Gas Co., Wichita, Kansas;
161. Lucian Walker, Geologist, Mead Oil Company, Tulsa, Oklahoma;
162. E. A. Wendlandt, Geologist, Humble Oil and Refining Co., Tyler, Texas
163. W. W. West, Electrified Water Company, Wichita, Kansas;
164. West Virginia Geological Survey, Morgantown, West Virginia;
165. Lawrence Whitcomb, Assistant Professor, Lehigh University, Bethlehem, Pennsylvania;
166. Luther H. White, Chief Geologist, J. A. Hull Oil Co., Tulsa, Okla.
167. R. A. Whorton, The Geologist, T. C. Johnson, Wichita, Kansas;
168. G. T. Wickwire, Professor Geology, Hanover College, Hanover, Indiana;
169. James S. Williams, Associate Geologist, U. S. G. S., Washington, D.C.
170. R. Massey Williams, Geologist, Mining Engineer, Kenty Gold Mines, Ltd., Toronto, Ontario, Canada;
171. John H. Wilson, Pres., Colorado Geophysical Corp., Golden, Colorado;
172. W. B. Wilson, Chief Geologist, Gypsy Oil Co., Tulsa, Oklahoma;
173. Glen C. Woolley, Geologist, Derby Oil Co., Wichita, Kansas;
174. E. A. Wyman, District Geologist, Kansas, Amerada Petroleum Corp., Wichita, Kansas;
175. L. I. Yeager, Dist. Geologist, Empire Oil and Refining Co., Wichita, Kansas;

ORDERS, Cont.

176. Victor Cotner, Chief Geologist, Columbian Carbon Co., Amarillo, Tex.
177. C. E. Erdmann, Associate Geologist, U. S. Geological Survey, Denver, Colorado;
178. F. L. Aurin, Vice-President, Southland Royalty Co., Ponca City, Oklahoma;
179. Ward C. Bean, Geologist, Shell Petroleum Corp., Tulsa, Oklahoma;
180. Frank. T. Clark, Chief Geologist, Marathon Oil Co., Tulsa, Oklahoma;
181. John T. Ferguson, Geologist, Amerada Petroleum Corp., Tulsa, Okla.
182. Dollie Radler Hall, Geologist, Amerada Petroleum Corporation, Tulsa, Oklahoma;
183. B. W. Lincoln, Consulting Geologist, Oklahoma City, Oklahoma;
184. D. A. McGee, Chief Geologist, Phillips Petroleum Co., Bartlesville, Oklahoma;
185. C. C. Siverson, Division Geologist, Tide Water Oil Co., Tulsa, Okla.
186. Ray L. Six, Professor of Geology, Oklahoma A. & M. College, Stillwater, Oklahoma;
187. C. A. Yeakam, Oklahoma City, Oklahoma;

June 6, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

In reply to yours of the 5th I talked over the matter of meeting you with Messers, Bean, Bays, and Raasch. Bean thought that you might like to have him help you about hotels in LaCrosse but hardly believed it necessary. We finally decided to drive out in my car on the morning of Thursday, June 13 and meet you at the highway junction just north of Liberty Pole Hill. This is the junction of U. S. 14 and Wis. 27. There is a filling station on the east side of the road if I remember correctly. After we reach Madison that night the matter of who will go farther and how far can be decided. It is a very busy season for all of us and I must be back in Madison sure on Tuesday the 18th to turn in grades. In fact I see little reason for me to go farther than Chippewa Falls.

You may have some trouble in finding Raasch's Victory section. Here is the dope as he gave it to me: There is a large boulder on the east or hill side of the highway right on the south line of the Stoddard quadrangle about a mile north of Victory. You then stop at the next house which stands well above the road on the hillside. The main part of the section is in a ravine which runs almost north and reaches the road several hundred yards north of the house. A board fence runs along parallel to the ravine. There is another farm house at the head of the ravine. When visited the section was complete but leaves and cave-ins of the bank may render the exposure poor. It should be checked. I could not both for lack of time and an erroneous location in information I had with me. If you should fail to find this spot we could run over on 82 on Thursday as it is not far from Liberty Pole.

We are having trouble with photographs. Some of the places I did not duplicate the old survey photos. Now I find that their films were developed with pyro which makes them very hard to print. This might necessitate retaking photos at several points.

I trust that you will arrange for permission to enter private lands while on this trip. I have permission at only one place and that is not a regular stop.

Sincerely,

F. T. Thwaites

June 5, 1935

Dr. A. G. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find the rest of the graphic sections, also Bays' faunal list for the Platteville and Decorah, and the section for Middle River. The last two were overlooked before.

Please note that I have not given any graphic or other section for the Devils Lake stop. Also that I have no data on the Ellsworth stop.

Copy of a long letter from Folger to Raasch is at hand. He does not realize that the only difference between the Raasch paper on the Cambrian and the "official" section is that R. calls the Madison a "formation" instead of a "member". Now, I have never seen any formal or universally accepted definition for a "formation" and a "member". Personally I regard the whole matter as purely academic. Some suggest that it is a hang-over of Ulrichism, in fact! Anyway, I refuse to get excited about it and think that, as with the Cambrian paper it may be taken care of in a footnote. I spent a lot of time on one there and when at last approved it was very short.

Photographs are now being printed.

No copies of basemaps for the structure maps have come as yet.

Beam now wants to pay for making the rest of the maps.

Bays may run us out to meet you at the Lansing bridgehead provided that is before the 15th. He will accompany the party to Madison and explain his views on the Ordovician.

The introduction to the post-conference trip is almost all typed. Dr. Leith, Sr. thinks that some of my structural interpretations of the eastern Lake Superior syncline are too hypothetical but that can be taken care of in finishing the map. This map should be reduced to page size. I am also including several other maps which will be sent to you soon. But I can't do much until school is over.

Sincerely,

F. A. Thwaites

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

June 5, 1935

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

Dear Fred:

Final word has just arrived from Folger to the effect that Messrs. Wyman and Vernon will arrive in Iowa City on Sunday, June 9. We plan to start early Monday morning, the 10th, and to go over the whole route day by day just as the calvacade will go during the Conference. This means that we will arrive at La Crosse first on the evening of Tuesday, the 11th, that we will cover the route of the third day on Wednesday, the route of the fourth day on Thursday, of the fifth day on Friday, the sixth day on Saturday, and the eighth day on the following Monday. I do not yet know whether we will want to cover the two post conference days or not. It hardly seems necessary to me.

What I want to know now is whether you and if possible Bean can meet us in La Crosse and go over with us the routes that lay in Wisconsin. As most of the route for the third day lies in Minnesota and Iowa, it would probably not be necessary for you to leave La Crosse before Wednesday night or even early Thursday morning. In case there should be a change in this schedule necessitated by our going more slowly or more rapidly than planned, I would, of course, get in touch with you either by telegraph or by telephone.

As the time is rather short for the making of final arrangements for this preliminary trip, I shall hope to hear from you by return mail.

Cordially yours,

Trow.

A. C. Trowbridge

ACT:ML
cc/ Folger
Bean

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June 1, 1935

Dr. A. G. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa.

Dear Trow:

In reply to yours of May 28 I am sending enclosed

- (1) All of the detailed geologic section
- (2) About half or more of the graphic sections.

We realize that the copy is not A-1 but it is the best we had time for and they are to be done over anyway.

The remaining graphic sections should be done in a couple of days.

The biggest jobs left for me are to complete my part of the Baraboo paper and the structure map for the short paper on the Lake Superior district which I have prepared as an introduction for the Duluth-Ironwood trip. I certainly got into something when I started to reproduce Irving's structure map. I finally compromised on a series of cross sections set into an outline map in folio style. I am afraid I may have to send this in without all drafting complete but am not sure.

The photos so far as taken (two at Ableman must be taken over by reason of halation) will be along this coming week. Then I will color up the Baraboo map.

My plans for the summer are more uncertain than ever. One of my students refuses to put forward an exam set for June 17. Then I am figuring on a summer job which if it goes through would probably prevent my going on the trip in August. If it does I will have to go on the trial run anyway.

With best regards,

Sincerely,

F. T. Thwaites

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

May 31, 1935.

Dr. Gilbert O. Raasch,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin.

Dear Dr. Raasch:

I have at hand your letter of May 28 inclosing a copy of your Cambrian article in which several corrections have been made in ink, and also a copy of a paper which you have prepared on the Stratigraphy of the Eastern Kansas Devonian. Both of these manuscripts will be forwarded at once to Trowbridge.

I was particularly pleased to receive your manuscript on the Devonian of Eastern Wisconsin. This subject was not treated very fully by Dr. Stainbrook, I presume because it is somewhat outside of the area with which he is most familiar. It is indeed gratifying to the Committee that you are offering us the privilege of publishing this new material in the Guide Book, and we shall take pleasure in so doing, and shall include it as one of the System papers. I notice as a title you are using "Wisconsin Devonian." Inasmuch as it refers particularly to Eastern Wisconsin, will you have any objection if I were to insert as a title for this paper "Stratigraphy of the Devonian of Eastern Wisconsin"? If this title does not meet with your approval, or if you have one which seems more suitable, I shall be glad to have you instruct me as to your wishes.

I am also glad to learn that you are starting to work on the manuscript for the paper on the Baraboo Range. It appeals to us that this is one of the most interesting places in Wisconsin. While undoubtedly considerable on this area has been written, this material is not easily accessible, and we shall be glad to have you make it just as complete as both you and Thwaites desire. Space should be but a small consideration.

I am inclosing herewith another copy of the blue reply blank for which you have asked, and I shall look for its early return.

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WICHITA, KANSAS.

I have one matter of importance to discuss with you, and I know that you will understand the spirit in which the following remarks are offered. I refer to your stand on the separation of the Madison from the Jordan member of the Trempealeau formation, and the consequent erection of the Madison as a formation. At the outset, I would like you to realize that I recognize I am not qualified to enter into any discussion with you relative to the merits of separating the upper portion of the Jordan member into the Madison formation. Even were I qualified, I would seriously doubt the advisability of my so doing, for I hardly believe it is the province of a Kansas geologist to attempt to tell a Wisconsin geologist what he should or what he should not do.

You know and I know that Trowbridge, Twenhofel, and Thwaites disagree with the criteria on which you separate the Madison out from the Jordan, placing it as a separate formation. On the other hand, I am perfectly ready to recognize that men, even of more mature judgment, are not always correct, and that sometimes it is the younger geologist with a somewhat lesser number of years of experience to his credit may have found a more logical solution to a stratigraphic or to a structural problem. I do not mean by this that I am taking a stand against them. On the other hand, I am not taking a stand against you. I am wholly unqualified to ally myself with either school of thought.

My only thought on the subject is this, namely, that after considerable work, thought, correspondence, and discussion lasting over a two-year period, the Department of Geology of the University of Wisconsin, the Department of Geology of the University of Iowa, and the Iowa Geological Survey, and the Illinois Geological Survey have finally agreed upon a tristate classification, which, to the majority of their combined personnel, appears the most reasonable, the most logical, and the most satisfactory. This tristate classification is to be used throughout the Guide Book. Furthermore, a somewhat elaborate and artistically prepared columnar section will be prepared of this entire tristate classification, and will appear somewhere in the early pages of the Guide Book as the official classification adopted for the Field Conference. All of the System papers have been written around this adopted tristate classification and use its terminology.

In this tristate classification, I believe I am correct in stating that the Cambrian begins with the Jordan member of the Trempealeau, which includes in its upper portion those strata to which you refer as Madison, and that in this classification, the term Madison is not used. Since this is the decision of the majority, you will recognize that it would be unwise on my part to insist that the term Madison be placed in this tristate classification. On the other hand, I feel strongly that I have not the right to insist that you strike out the name Madison in your paper and include the discussion of the stratigraphy of its beds under the heading of the Jordan member.

I am simply calling your attention to this problem, and request you to give consideration to the desirability of a uniform system of nomenclature throughout the Guide Book.

You, of course, realize that the Committee, as well as everyone else, has had considerable trouble with the Minnesota Geological Survey. These troubles

are to be regretted. In the particular case of Minnesota, I felt I had the right, for the benefit of those participants from Maine and from California, from Canada and from Mississippi, to insist that the tristate classification be used throughout the Minnesota portion of the road log text. They, in turn, werewilling to recognize the desirability of so doing, but they would not give an inch of ground in their decision that this tristate classification was wrong. The only thing left to do in this case was the final decision to use the tristate classification in the State of Minnesota, and to put their own classification in parentheses. This, at once, calls the attention of every participant on the trip, as well as every student of stratigraphy who studies the Guide Book subsequent to its publication that something is radically wrong. It will be most embarrassing to Minnesota.

No such drastic action is necessary relative to the use to which you employ the term Madison. If, after turning this problem over in your mind, you still conclude that your evidence justifies the stand which you have taken, I should like to ask your permission to include an unobtrusive footnote on the page on which your discussion of the Madison appears, setting forth the fact that the Madison formation as described by you is included in the upper portion of the Jordan member of the Trempealeau in the official tristate classification of the Guide Book. That statement will be understandable to every geologist and all of us know that it is impossible for everyone to agree.

My own preference would be, however, ~~nam~~ that you necessarily retract all of your statements, but rather that for the sake of unity you rewrite that portion of your paper which refers to the Trempealeau and the Madison formations, and in this written discussion describe those beds which you are inclined to call Madison as Jordan (therefore, conforming with the tristate classification) but at the same time, you take particular pains to set forth in this discussion an adequate and sound statement that you firmly believe the uppermost part of the Jordan should be separated out into an individual formation which you would call Madison, and present all of your reasons for this conclusion.

I particularly wish to emphasize that I am not trying to force you into doing anything which is against your better judgment. I am simply presenting this to you as a problem which confronts the Committee, namely their wish for complete unity in nomenclature throughout the Guide Book. If it is not possible to attain this objective, it will be quite simple to explain the discrepancy in a nicely worded footnote, which I am sure will not hurt anyones feelings. I wish you would give this problem your careful consideration and advise me at your early convenience whatever your decision may be. I shall hold up the final typing of your manuscript until you forward me definite instructions exactly what to do.

I wish to take this opportunity to thank you for giving me a few hours of your time away from your family on Sunday during my stay in Madison, and it was indeed a pleasure to make your acquaintance. I am looking forward with considerable anticipation to spending eight days with you in the field during the Conference, and I am hopeful that we may have several hours to discuss on that trip problems of mutual interest.

Dr. G. O. R. 4 5-31-35.

With kindest personal regards,

Very truly yours,

Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.
c. c. to F. T. Thwaites.

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AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

May 31, 1935.

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

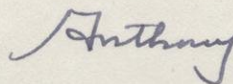
Dear Fred:

I think Mr. Williams forwarded you early this week a white print of the base on which the structure contour maps on the St. Peter sandstone and on the pre-Cambrian are to be prepared by you and Howell. I have your letter of May 28, with a carbon copy of your letter to Howell, for which I thank you very much indeed.

We would prefer that you put all of your structural contours on these two base maps, and then forward them to me. I note in particular that you will be able to take care of the Minnesota information, a fact for which I am exceedingly thankful. If you have any ~~Minnesota~~ ^{Michigan} information, or if you can arrange to procure this direct from Mr. Newcomb, I shall be very glad, for it will save me having to write to him. After these maps have been forwarded to me here in Wichita, it may be possible for me to go down to McAlester, at which time Howell and I can confer as to the best means of completing these two maps.

With kindest personal regards,

Very truly yours,



Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.
c. c. to J. V. Howell.

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STATE UNIVERSITY
PRESIDENT ARTHUR CUTTS WILLARD

May 29, 1935

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

Dear Mr. Thwaites:

I wish to acknowledge receipt of your letter of May 28, asking for additional data for use in preparing the Kansas Geological Society structural maps. I shall be glad to get this data and send it to you.

Very truly yours,

L. E. Workman

Associate Geologist
Subsurface Division

May 29, 1935

County Engineer
Gogebic County
Ironwood, Michigan

Dear Sir:

In preparing for the visit of the Kansas Geological Society to the Iron Range about Labor Day I find that I have no map of U.S. 2 from the state line to the Plymouth mine. If you could furnish me a rough sketch of this for incorporation in their Guidebook I would greatly appreciate it.

This should include sec & top liner
Very truly yours

FTT:N

F. T. Inwaites

May 28, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your recent letters and the check for Griesell are at hand and I wish to thank you for them. I cashed the check for Griesell as he was not known at the bank being a new comer in the city. The signed voucher is returned. Thank you for the promptness!

The letters enclosed explain themselves.

Atwater will take care of the remaining route map near Ironwood, Michigan, also the description of the Plymouth Mine both of which are still lacking.

I handed your letter to Bays, who is just back from the Iron Country, and he says he has a lot of material ready for me. The detailed sections are almost finished. We would have done that at the local quarry this morning but it rained. This morning I started the graphic sections and found that they go very fast so you should have those too very shortly.

With best regards,

Sincerely,

F. T. Thwaites

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

May 28, 1935

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

Dear Fred:

Your letter with its inclosures and the roll containing route maps reached me while we were in the midst of oral and written examinations, and this is the first opportunity I have had to make reply.

The additions to the road log will be worked into the log within a short time. Many thanks for this material.

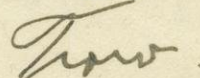
The route maps have been checked off and will be sent on to Wichita along with other materials as soon as possible.

We will be glad to get prints for illustrations and photographs and road maps for the route in Michigan when you have them ready.

I shall be tied up almost completely for the balance of this week and perhaps for the first two or three days of next week, after which I shall plan to put in practically full time on conference matters until the material for the Guide Book has been completed.

As soon as I learn just when Wyman, Vernon, and I will start on the preliminary trip over the route, I will let you know, so that you and Bean may plan to meet us.

Cordially yours,



A. C. Trowbridge

ACT:A
CC: Anthony Folger

May 28, 1935

Mr. L. E. Workman:
State Geological Survey,
Urbana, Illinois
Dear Mr. Workman:

I am now almost ready to start on some of the structure maps I am to prepare for the Kansas Geological Society guidebook.

In order to complete the map of the top of the Dresbach I would appreciate it if you could send me a copy of my old map with such new wells plotted on it as necessitate changes of considerable magnitude. I recall that the well at Seneca did not check very well.

For the St. Peter map any important new data will also help. ^{Days} is doing the Wisconsin portion.

If you have any other wells which strike pre-Cambrian than those noted on my National Resources Board map of last fall will greatly appreciate the logs. It seems to me that Thorne drilled a deep hole just outside of Chicago once.

Please tell Lamar that I will send him some St. Peter figures soon- for what they are worth!

Anything you can send will be much appreciated.

Sincerely,

F. T. Thwaites

May 28, 1935

Dr. Charles P. Berkey, Secretary,
The Geological Society of America,
419 West 117th St.,
New York City

Dear Dr. Berkey:

Some time ago Dr. Twenhofel submitted to you a manuscript on the Cambrian strata of Wisconsin which was written with G. O. Raasch and myself.

In preparing the material for the guidebook of the Ninth Annual Field Conference of the Kansas Geological Society I would like to use both of the illustrations which I had prepared for this paper. Undoubtedly this would mean that publication in the guidebook will precede that by the Society.

We would, therefore, like your permission to use the drawings (of which I have Vandyke positives) in both places.

Mr. Raasch has prepared a condensed version of the paper for the guidebook but I do not think that this will in any way affect the full paper.

We have asked the Kansas Geological Society to release us from all copyright obligations, that is that we be free to republish any of the material given to them.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

May 28, 1935

Mr. J. V. Howell,
Aldrich Hotel,
McAlester, Oklahoma

Dear Mr. Howell:

Thank you for yours of the 26th with information in regard to the St. Peter and pre-Cambrian structure maps.

I think that your plant A is the better but do you not mean the 1 to a million base map? With this fact in mind I will send Folger a print of the Wisconsin pre-Cambrian map revised to date on scale of 1:1,000,000. This morning I wrote Workman at Urbana asking for new data (if any) on Illinois. I have detailed logs of the two deep test^s you mention but not of the one just outside of Chicago.

Enclosed are two small maps with 500 foot contours which I prepared last fall for the National Resources Board water supply investigation. You will note that on them I paid no attention to the Red Glacials. Your view of calling the arkose or granite wash pre-Cambrian is better for scientific purposes but I was dealing with water alone. In a few cases I have found the granite wash under the ordinary light colored Cambrian. What I objected to, however, was my former view that some of the pink quartz sandstones found in deep wells in northern Illinois are pre-Cambrian. Later studies have shown that this was a mistake but the arkose is another matter. I think we will agree on that.

If you want I will take care of Minnesota. I kept notes on my readings last fall and can fix up a map in short order.

One of my students, Mr. C. A. Bays of St. Louis, is working on the St. Peter. I can easily get a tracing of his map at an early date. All of my maps are old and out of date.

On my advice we are letting go of most of the Oklahoma properties I spoke to you about. Most have had no income of any kind for so long that it seems foolish to pay up the back taxes. I did, however, select a few which I felt might have potential value for oil and advised that they be retained. Most of the property belongs to the estate of an uncle of mine who died several years ago.

Sincerely,

F. T. Thwaites



McALESTER, OKLA.



ADA, OKLAHOMA



WEWOKA, OKLA.



SHAWNEE, OKLA.

ALDRIDGE HOTELS

WRITTEN FROM

McAlester, Okla
May 26, 1935

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

My Dear Dr. Thwaites:

My data for the maps to be used in the guide-book may be described as follows:

Kansas----complete for pre-Cambrian and St. Peter
Oklahoma--complete for pre-Cambrian and St. Peter
Missouri--complete for pre-Cambrian and St. Peter
Iowa-----Complete for pre-Cambrian and St. Peter
Illinois--complete for south half of state
Wisconsin-total loss
Minnesota-total loss

The St. Peter map of Illinois can probably be used as prepared by Lamar, though my data are much more recent. But the Iowa map will not do at all, as the contouring is wholly wrong, although the datum points are al/ right.

I already have contour maps of Iowa, Missouri, Illinois, and Kansas. Therefore, in discussing the matter with Mr. Folger, we thought it advisable to follow one of two plans:

A. You to prepare maps of Wisconsin and Minnesota on any available base(I am using the 1-100,000 and 1-62,500) putting thereon all available information

1,000,000

and contouring same. These to be sent to Mr. Folger, who will have the draftsman transfer the data to the base map. My data will be handled the same way.

B. When base map is completed, I will add my data, and forward it to you to add yours. Each of us to contour the areas on which we furnish information and which we are best informed on.

The former method will, I believe, be preferable, as it will save much time, the final base map not yet being ready.

The matter of contouring must also be considered. As you know, this is something on which no two people agree, and there are large areas in Iowa and Illinois where the position of the pre-Cambrian is quite unknown. My maps of Missouri have been prepared in collaboration with McQueen, and of Kansas with Folger, so we feel that they are fairly reliable. We are not at all familiar with your area, nor, presumably are you acquainted with ours. Between us, so far as concerns the pre-Cambrian, is terra incognita, on which all will have to make some guesses. So I feel that it is safest for each of us to work up the individual areas, compile everything on the base map, and then send it around to everyone concerned for criticism and suggestions.

The red clastics may be something of a problem, but I believe the best solution will be to consider them pre-Cambrian unless there is some good reason for doing otherwise. For instance, in Illinois but two wells have reached either granite or arkose, and but few in Iowa. It is my opinion that such a map as we propose, all wells reaching arkose should be considered as having penetrated the pre-Cambrian. If there is doubt, the word "arkose" can be added. The map will have to be on a 500 foot interval anyhow, and the error thus introduced on such a regional map will not be great.

According to my notes a deep well east of Rockford, Illinois reached the Pre-Cambrian, as did also one in 30-20N-10E near Amboy. Also a well in Lee County. I don't have the full information on any of these.

Sincerely yours,

JVH:CT

J. V. Howell

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,
May 25, 1935.

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WICHITA, KANSAS.

Dr. A. C. Trowbridge,
Department of Geology,
University of Iowa,
Iowa City, Iowa.

Dear Trow:

I am in receipt this morning of supplemental information on the Wisconsin stops from Thwaites. May I call your attention to the fact, particularly to his discussion on the stop which appears on page 17 of his manuscript at mile 121.05. I note that in this discussion Thwaites discusses the members of the Platteville using the old terminology. Inasmuch as Marshall Kay has now named all of these members of the Platteville, may I suggest that you insert a note at the bottom of this discussion showing the exact relationship between the old terminology and the new names applied to these members by Marshall.

Very truly yours,

Anthony Folger

AF:AS

cc: F. T. Thwaites

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,
May 25, 1935.

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

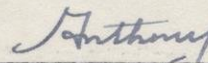
Dear Fred:

I have received your letter of May 23 this morning inclosing a supplemental road log, a copy of which I understand you have sent to Dr. Trowbridge. Thank you very much for forwarding this information so promptly.

I also note that you sent Trowbridge all of the Wisconsin route maps, so I presume they will be coming to Wichita soon. I am enclosing herewith our check for \$20.60 which you will kindly hand to Mr. Jason Griesell. I am also enclosing the statement you sent, which you will kindly have him sign and return to me.

I am enclosing a note to Mr. Bays which I wish you would hand him and which I am hopeful may produce results.

Very truly yours,


Anthony Folger

3 enc.

AF:AS

cc: A. C. Trowbridge

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

May 24, 1935.

Professor A. C. Trowbridge,
Department of Geology,
University of Iowa,
Iowa City, Iowa.

Dear Trow:

While I was in Iowa City, I saw that some of the Leadership had forwarded to you city maps on which the Conference route could be indicated, and these reproduced as plates in the road log.

In order that no hitch may occur at the last minute relative to the inclusion of these city maps in the Guide Book, it seems to the Committee desirable to include city maps of the following cities:

1. Davenport, or possibly a combined map of Davenport, Rock Island, and East Moline, showing the route through the arsenal.
2. Dubuque, or possibly Dubuque and Galena combined.
3. La Crosse.
4. Madison.
5. St. Paul and Minneapolis.
6. Duluth and Superior.

Some of these maps you already have, and I know that Thwaites plans to send you a city map of both Madison and La Crosse. Those which you do not have, I shall be appreciative if you will procure them, and I suggest where these towns are in Minnesota that you can probably just as well procure them from some other source than through the State Survey.

Very truly yours,

AF/B

c. c. to F. T. Thwaites.

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To the Leadership of the Ninth Annual Field Conference:

Gentlemen:

The attention of the Committee on Arrangements has been called to the fact that there are a considerable number of young faculty members on staffs of some of the universities and colleges in the Upper Mississippi Valley area who, because of insufficient funds, will find it impossible to attend this Field Conference if they are required to pay the usual \$15.00 registration fee. Moreover, they are also unable to purchase a copy of the Guide Book for their library at a cost of \$10.00.

This Society has been faced with a somewhat similar situation on almost every conference during the past few years of financial stress. It has been impracticable to do anything relative to this matter during the last few years, since these Conferences, because of the financial stress of the oil industry, were necessarily small and it was mandatory to safeguard the expenses incurred by the Society above all other considerations.

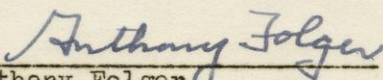
This year a consideration of this matter is a real problem. On the one hand, most of the universities and colleges in the Upper Mississippi Valley are still operating on a reduced budget. On the other hand, it is more essential than at any other time for the Committee to safeguard the financial structure of this Conference, since its total cost to the Society will exceed that of any former conference. From a standpoint of the success of the Conference, however, it is essential that many of these younger faculty members attend, since through their attendance they can contribute much concrete information for the benefit of the participants. For this reason, the Board believes that a special dispensation should be made on this one conference, and therefore, the following recommendation has been made to the Board of Directors of the Kansas Geological Society:

The Committee on Arrangements recommends to the Board of Directors of the Kansas Geological Society that it allow them to adopt the following procedure relative to a certain class of participants who may wish to attend this Conference. Namely, that it be the privilege of any of the leadership to bring as many guests as he desires on this Conference, provided they are faculty members of any university or college in the states of Iowa, Illinois, Wisconsin, and Minnesota, by a payment of \$5.00 per guest. These guests will not receive a copy of the Guide Book and will not be obligated to buy one, although its purchase will be optional with them at the full price of \$10.00. Furthermore, the leadership is cautioned that in asking a guest he shall ask only those faculty members who, in their judgment, would be compelled to absent themselves from this Conference were they required to pay the \$15.00 registration fee.

We are pleased to announce that this recommendation was approved by the Board of Directors on May 17, 1935, and it is our pleasure to transmit this information to you. We are hopeful that through the adoption of this procedure a considerably greater attendance of upper Mississippi Valley men may be possible. You will note that we specifically restricted this recommendation to the four states in which the Conference is to be held, with the thought that these are the four host states and for that reason special consideration should be given to the academic geologists, of which the participants of the Kansas Geologic Field Conference will be guests.

Obviously, it is unimportant to the Committee on Arrangements whether this \$5.00 guest fee is paid by the leader who invited the guest or by the guest himself. Any faculty member, however, availing himself of this privilege will be required to register through the leadership as a guest of a specific leader in order to be entitled to this special rate. It will be necessary, therefore, for you to advise us before the Conference convenes in Iowa City the names of the faculty members who will be your guests.

Very truly yours,


Anthony Folger.

AF/AS

THE KANSAS GEOLOGICAL SOCIETY

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

May 24, 1935.

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

Dear Fred:

I have today received the typewritten copy of the notes which you took down as a result of our conversation together on the 19th of May. Thank you very much indeed for having taken the trouble to type this up for me, since it gives a much clearer idea of just what we talked about. I have had a copy of this made and it has been forwarded to Trowbridge.

I am inclosing herein a plate taken from Dr. Ver Wiebe's text book on historical geology, showing progressive historical structure sections of the area between the Great Basin of Nevada and the Coast Range of California. I had in mind to bring this with me to Madison and discuss with you the possibility that you might prepare something similar to this for the Baraboo Range in addition to the block diagrams which you are going to prepare. It appeals to us that both the block and this progressive diagrammatic structure section fills a need which neither one nor the other can adequately accomplish all alone. While I realize that we have asked you already to do a tremendous amount of work, if you are so inclined to try your hand at something similar to the inclosed for the Baraboo Range, I think it would be highly desirable. Perhaps if the results justified, it could be reproduced in color.

I wish to take this opportunity to thank you very much for the courtesy and co-operation which was shown to me on my recent trip to Madison. I also wish to express my very great appreciation to Mrs. Thwaites for the breakfast and the dinner which she so kindly invited me to share with you both. I shall remember my day in Madison for a long time.

With kindest personal regards,

Very truly yours,

Anthony
Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

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May 23, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Yesterday I send you by registered mail all of the pencil tracings for route maps with the exception of the part of the post-conference trip near Ironwood, Mich. I will attend to this when Andy Leith gets back next week or by writing to one of our graduates up there. Bill for time of a student making these maps is being sent to Folger.

Enclosed please find some additional pages for the road log as requested by Folger when here. Various reasons, such as Bays' long delay in furnishing remarks on the Platteville sections and the desire to avoid controversial points lead to omission of this data in first draft.

Other matters are getting into shape. Took over a lot of tracings for illustrations this morning. Prints from these will follow shortly, also photographs.

Sincerely,

F. T. Thwaites

May 23, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Enclosed please find the extra dope for the road log. Copy also went to Trowbridge in the same mail. I forgot to make an extra carbon of the letter but will give you the same dope. The reasons I left this out in the first draft were: first, Rays has never finished the remarks on the upper Ordovician sections which he promised, second, I wanted to eliminate as much as possible the Ulrich controversy hoping that Reasch would discuss it in his system paper. He did not want to so I had to put the material has passes both Reasch and Bean.

Last night I sent Trowbridge by registered mail at U. W. expense all of the pencil tracings for route maps with the exception of part of the route in Michigan on which I could get no information. Will have to wait for one of the Leiths or else write up there for it. Bill to \$20.60 to Jason Griesell is enclosed.

The list of things to do was sent with order for guidebook. Talked them all over with Reasch this morning.

Blueprints and vandykes for illustrations are now being printed so far as material is ready.

Mrs. Thwaites is making progress at the sections and the graphic sections will be started shortly.

Other matters will be taken care of as soon as possible.

Sorry I could not take you to the train Sunday.

Sincerely,

F. T. Thwaites

May 23, 1935

Mr. J. V. Howell, Consulting Geologist
Aldrich Hotel,
McAlester, Oklahoma

Dear Mr. Howell:

Mr. Folger told me when he was here Sunday that I was to get in touch with you in regard to structure maps on the top of the pre-Cambrian and top of the St. Peter for the guidebook of the forthcoming field conference.

I have the dope on the former for Wisconsin, Iowa, and Minnesota the last rather old. If you can furnish either lists of data for the other states or a sketch map I will be glad to work up the final map and will use my own judgment on contour interval. I prepared a small map last summer for the National Resources Board which included Wisconsin, Minnesota, Iowa, and Illinois. Forgot that I have the dope for Illinois as well unless a deep test near Chicago reached pre-Cambrian. Will say that I have included all red clastics and granite wash in the Paleozoics except in parts of Minnesota where I am confident the red sediments are really Keweenawian.

With regard to the St. Peter Illinois and Iowa are published. Minnesota is terra incognita except for the old water-supply paper. One of my students, C. A. Bays has a manuscript map of Wisconsin almost complete. For the rest of the area I will have to depend on you.

I think they are to furnish a base map.

Hoping to hear from you soon,

Sincerely,

F. T. Thwaites

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Received at 650 State Street, Madison, Wis. Telephone Bad. 2385

TJ16 48 DL=WICHITA KANS MAY 16 1007A

F T THWAITES=

DEPT OF GEOLOGY=

ARRIVING MADISON CHICAGO NORTHWESTERN SEVEN TWENTY FIVE SUNDAY
MORNING STOP IF THIS DOES NOT GET YOU OUT OF BED TOO EARLY IN
THE MORNING I WOULD APPRECIATE YOUR MEETING ME AT THE STATION
SINCE I AM TOTALLY UNFAMILIAR WITH MADISON STOP AM CERTAINLY
LOOKING FORWARD TO SEEING YOU=

ANTHONY FOLGER.

1106A.

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MINUTES IN TRANSIT

FULL-RATE

DAY LETTER

AM ARRANGING FOR CONFERENCE WITH LEADERSHIP THIS WEEK END IN CHICAGO MADISON MINNEAPOLIS AND IOWACITY STOP CAN YOU CONFER WITH ME SATURDAY AFTERNOON AND EVENING EVEN IF NONE OF THE OTHER LEADERS CAN BE PRESENT STOP HOWEVER SINCERELY APPRECIATE CONFERENCE WITH BEAN TWENHOFEL RAASCH ATWATER AND WILL YOU CALL EDWARDS LONG DISTANCE MY EXPENSE AND STRONGLY URGE HIM TO ATTEND CONFERENCE STOP PENDING MINNEAPOLIS ARRANGEMENTS IT MAY BE NECESSARY TO POSTPONE MADISON CONFERENCE UNTIL SUNDAY STOP PLEASE WIRE ME COLLECT TODAY WITHOUT FAIL WHETHER YOU CAN CONFER WITH ME EITHER SATURDAY OR SUNDAY AND I WILL WIRE CONFIRMATION OF PLANS LATER STOP ESSENTIAL FOR SUCCESS OF CONFERENCE THAT THIS CIRCUIT TRIP BE TAKEN THIS WEEK END REGARDS=

ANTHONY FOLGER.

1144A.

Anthony Folger 1107 Union National Bank Bldg Wichita Kas
All except Twenhöfel can meet you either Saturday or Sunday¹⁰
Thwaites¹⁵

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WICHITA, KANSAS

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

May 15, 1935.

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ORDER YOUR NINTH ANNUAL FIELD CONFERENCE GUIDE BOOK NOW!

In order to safeguard the financial structure of this Conference, the Committee must know by June 1 how many Guide Books will be required.

1. If you will attend the Conference:

Send in your advance order for a Guide Book.

2. If you have returned the blue reply blank but have not ordered a Guide Book on the white blank:

Send in your advance order for a Guide Book on the enclosed blank.

3. If you are not certain that you can actually participate but desire a Guide Book for reference and possibly future use in the area involved:

Send in your advance order for a Guide Book.

4. If you know that you cannot attend, but desire a Guide Book for your reference library:

Send in your advance order for a Guide Book.

No advance payment is necessary. Your signature is all the Committee requires.

THE COMMITTEE.

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WICHITA, KANSAS

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

Wichita, Kansas,
May 13, 1935.

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614 ORPHEUM BUILDING,
WICHITA, KANSAS.

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

Dear Fred:

I have not dictated any correspondence in regard to the Field Conference for so long that it is like being away on a trip and coming home to a task which has gotten far behind, even though both Mr. Kesler and Mr. Philbrick were more than kind to take the majority of this correspondence off my hands.

I note in your letter of March 30 that you strenuously object to the preparation of an Isopach map of the St. Peter sandstone in the upper Mississippi Valley. I have also had correspondence from Dr. Lamar on this same subject and also from Trowbridge, so I know you are really raising a strenuous objection. I have correspondence on this matter from Trowbridge, and while we both realize what you are up against in Wisconsin on a St. Peter Isopach map, this does not necessarily hold true for the rest of the area involved in the map. For this reason I am going to ask that you put your personal viewpoints out of a consideration of this matter and that you go ahead and transmit to Lamar such St. Peter Isopach thicknesses as you think would be desirable for the State of Wisconsin. I know you think this is all wrong and I agree with you that you are correct in what you think, but it is the opinion of the committee and of Dr. Trowbridge that since we have started this Isopach business we have nothing left to do but to see it through and to hope that the St. Peter Isopach information for Wisconsin will not look too much like one of our "grandmother's crazy quilts."

Certainly I have no preconceived idea that you will attempt to supply an Isopach thickness for every section in the State of Wisconsin, but possibly it might not be too much labor to choose what would appear to be the average thickness for a township and to supply that data.

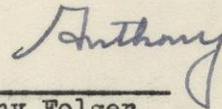
F. T. Thwaites #2.

I presume in your correspondence with Lamar that he told you exactly the upper limit and the lower limit of the beds which he was calling St. Peter. Should there be any question in your mind as to just what he has been using for his St. Peter thicknesses, I wish you would write him a short note at once and have him advise you in this regard.

Your suggestion that we make a St. Peter-Prairie du Chien Isopach map is a very good suggestion but it comes too late, since we have advertised otherwise. I certainly dislike having to go directly against your good judgment in the matter of the Isopach for the St. Peter, but I think if you will regard this from our point of view that you will readily understand that there is nothing left to do. Should the assembling of the St. Peter for Lamar entail considerable labor and if you could turn this over to one of your graduate students, we should be very glad to pay for this information by the hour, should you think that were necessary.

Please give my personal regards to Mrs. Thwaites, and with best regards to yourself, I am

Very truly yours,



Anthony Folger

AF:AS

A. C. Trowbridge

April 30, 1935

Mr. F. M. Parin,
Copper Range Co.,
35 Congress St.,
Boston, Massachusetts

Dear Sir:

Copies of your letter to Prof. Schwartz of the University of Minnesota and of other letters pertaining to the same reached me some time ago but as I had to go out of the city I was obliged to let the matter slide until my return.

The plan for one of the two optional post-conference trips of the Ninth Annual Field Conference of the Kansas Geological Society is to spend a day in going from Duluth to Ironwood, Michigan. With the stops scheduled this will certainly be a long day. It is, therefore, quite out of the question to accept your kind invitation to visit points still farther east unless some of the members wish to make an unofficial trip to other points of interest in the Lake Superior district. This is a matter which cannot be ascertained until we reach Duluth and possibly not until we reach Ironwood. I thoroughly realize that the trip as laid out misses a lot of interesting geology in the north country but it is a long one already and pre-Cambrian hard rock geology is not a subject which many oil companies will pay the expenses of their geologists to study. Any extension of the trip already scheduled would have to be made at the personal expense of the geologists and not on company time.

Possibly some other time some of the points mentioned might be worked into the regular schedule of a trip but at present I am afraid that it cannot be done.

Thanking you again,

Very truly yours,

F. T. Thwaites

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STATE UNIVERSITY
PRESIDENT ARTHUR CUTTS WILLARD

April 16, 1935

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

Dear Mr. Thwaites:

I wish to acknowledge receipt of your letter of April 13 regarding the scale of the cross-section for the Kansas Geological Society. I should be glad to pass this word on to McQueen if the subject of changing the scale of the cross-section comes up. For my own cross-section the scale is perfectly satisfactory.

Sincerely yours,

L. E. Workman

Associate Geologist
Subsurface Division

THE UNIVERSITY OF ROCHESTER
COLLEGE OF ARTS AND SCIENCE
ROCHESTER, NEW YORK

DEPARTMENT OF GEOLOGY

April 15, 1935.

Mr. J. T. Thurston
Wisconsin Geological Survey
Madison, Wis.

Dear Sir -

Thank you for your letter of April 6th re
the data on the thickness of the Maquoketa in
your state. The copy of the map reached me
on Saturday - it gives me exactly the information
I want.

Yours sincerely,
Harry S. Ladd

April 13, 1935

Mr. L. E. Workman, Associate Geologist,
State Geological Survey,
Urbana, Illinois

Dear Mr. Workman:

Yours of the 2nd and enclosed sample came some time ago but to save time I only answer letters on certain days. Thank you for the sample.

Several of the boys looked it over and decided that the pyrite was deposited along with the secondary quartz which has enlarged many of the sand grains. I will search for similar deposits in this state.

With regard to vertical scale for the cross section I am unalterably opposed to any increase. I would consider a decrease. Please express my views to McQueen and remind him that at 400 feet to the inch we can show a stratum only four (4) feet thick by a single line. The name can be inserted by cutting out adjacent strata. It is not necessary to have formations as thick as the size of the letters. So far as my part of the section goes I would personally have preferred 1000 feet to the inch. The 1931 section was condemned by most geologists because of the exaggeration of dips and we still have an exaggeration of 52.8 times at 400 feet to the inch!

Sincerely,

F. T. Thwaites

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

April 11, 1935

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

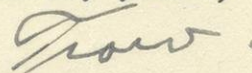
Dear Fred:

Your letter of April 9 and the accompanying log of the route for the post-conference day are received. Many thanks.

We now have the log for all eight days of the regular conference and for the two alternative post-conference trips. The logs from the different states are being patched together as rapidly as possible, and before long we hope to have a complete copy of the complete log of all routes for all four states.

I shall be glad to receive the remaining illustrations, manuscripts, and sections at your convenience.

Cordially yours,



A. C. Trowbridge

ACT:A

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

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THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

April 10, 1935.

COMMITTEE ON ARRANGEMENTS

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GEORGE A. THIEL

UNIVERSITY OF MINNESOTA

Mr. F. M. Parin,
Copper Range Co.,
35 Congress St.,
Boston, Massachusetts.

Dear Sir:

Your letter to Professor George M. Swartz, of the University of Minnesota, offering assistance to facilitate any side trip which some of the men might desire to take in connection with the Ninth Annual Field Conference of the Kansas Geological Society, has been forwarded by Professor Swartz to Professor Trowbridge, of the University of Iowa, and by him to the Conference Committee, at Wichita, Kansas.

May we express to you our appreciation for your offer of assistance. The particular part of the trip which will be effected by a side trip into the fully developed Keweenaw Series is being handled by Mr. F. T. Thwaites, Department of Geology, University of Wisconsin, Madison, Wisconsin, and a copy of your letter is being forwarded to him for his consideration.

Again may we thank you for your interest and offer of assistance, and may we express the desire to meet you personally on the Conference trip next August.

Very truly yours,

L. W. Kesler.

LWK/B

c.c. to A.C.Trowbridge.
c.c. to F.T.Thwaites. ✓
c. c. to Geo. M. Swartz.

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

April 10, 1935.

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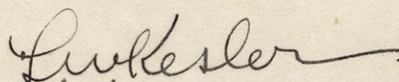
Mr. F. T. Thwaites,
Department of Geology,
University of Wisconsin,
Madison, Wisconsin.

My dear Mr. Thwaites:

We are forwarding to you a copy of a letter written by F. M. Parin to Professor George M. Swartz, of the University of Minnesota, together with other letters having to do with its transmittal from Professor Swartz, through Professor Trowbridge, and to this Committee.

Inasmuch as such a side trip as kindly offered by Mr. Parin comes under your jurisdiction, and in connection with one of the post-Conference trips, it appears that the information should be transmitted to you for your consideration. As to whether or not you care to incorporate this offer of assistance into the post-Conference trip, rests entirely with you. Presumably, the post-Conference trip is already planned completely.

Sincerely yours,



L. W. Kesler.

LWK/B

c. c. to A. C. Trowbridge.

Dictated 4-9-35.

April 9, 1935

Dr. A. C. Trowbridge,
Dept of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find copy of the log of the post-conference trip to Ironwood, Michigan which was misadvertised as "Ironton" in the announcement. The Introduction on the structure and physiography of the Lake Superior Basin is in rough draft and is waiting on illustrations. Other illustrations will follow soon. I do not think that I will attempt any graphic sections of outcrops but will mark on the typewritten sections the units which might be so shown provided these are made. Mrs. Thwaites has started the typing of these sections. Some missing ones will be supplied before I send them.

Glad you found the other log satisfactory. It is the best we could do, anyhow. The introductions to each day may require the cutting out of much of my remarks but that is all right with me.

Sincerely,

F. T. Thwaites

Carbon to Folger

April 9, 1935

Dr. A. G. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find copy of the log of the post-conference
trip from Duluth to Ironwood..

The ~~introduction~~ introduction to this trip on the structure and physiography

April 9, 1935

Dr. John R. Ball,
Dept. of Geology and Geography,
Northwestern University,
Evanston, Illinois

Dear Dr. Ball:

Reply to yours of the second was delayed while I completed an isopach map of the Galena-Platteville of Wisconsin. We do not recognize the Decorah as a formation here, you will note. There are some changes from the 1923 paper. In general, this unit is so clear cut that even the poorer drillers logs give it correctly. There is locally a slight uncertainty about the amount of underlying sandstone to include as part of the Glenwood member and in one old record I had included what is really St. Peter and Trempealeau under the impression that I was dealing with the "stray sand". The same correction as at Carrollville also applies to one well in West Allis. These are shown correctly on the map. In Pyre's thesis he gives 300 feet at Blue Mound west of Madison but I am "from Missouri" about this figure as it is out of line with other localities not far away.

If there is anything else I can do to help you please let me know.

Sincerely,

F. T. Thwaites

Map under separate cover

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

April 9, 1935.

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ST. PAUL INSTITUTE
GEORGE A. THIEL
UNIVERSITY OF MINNESOTA

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

My dear Mr. Thwaites:

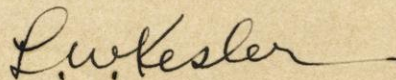
Mr. Folger is loaded for the present with all sorts and kinds of requirements and duties which have forced him to request that I handle some of his Field Conference correspondence, such correspondence as can be handled by others than Folger himself.

We have both briefly gone through the Wisconsin road log prepared by you, and have noted the completeness of it. Later, of course, we shall read it in great detail. Contrary to most road logs, yours will certainly furnish most interesting reading. It has descriptions and numerous things of interest in it which make it of unusual value. Logs of the character of this one which you have prepared make these Field Conference trips much more pleasant and interesting. You have supplied the "color" which will cause participants to follow your log closely.

It will be my pleasure to edit these road logs, together with other material which will be in the Guide Book, and I assure you this undertaking will be comparatively simple if all logs are prepared as carefully as you have prepared this one.

May we express our sincere appreciation for your efforts.

Very truly yours,



L. W. Kesler.

LWK/B

c. c. to A. C. Trowbridge.

Dictated 4-8-35.

April 6, 1935

Dr. Harry S. Ladd,
Dept. of Geology,
University of Rochester,
Rochester, New York

Dear Sir:

Yours of March 21 was turned over to me by Mr. Bean.

Yesterday I mailed you a blue-print of an isopach map of the Maquoketa formation in Wisconsin. If this does not reach you or you have other questions please write me.

In revising this map I paid particular attention to the top of the formation. Where the total is around 300 feet and around 450 feet there is a dolomite member in contact with the overlying Niagara. The Noda ore bed is much more commonly missing than present. The contact may be picked up where the two dolomites adjoin by either the abrupt rise in amount of clay in the residue or by the presence of thin seams of shale or by the presence of blue dolomite in the Maquoketa. Obviously, some of the logs are in need of revision from the samples but I did not have time to do this. Very few drillers logs are included as they commonly record only the shale. On the whole the map must be essentially correct and is a great improvement over the old map I made once.

Very truly yours,

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

April 6, 1935

Dr. Harry S. Ladd,
Dept. of Geology,
University of Rochester,
Rochester, New York

Dear Sir:

Yours of March 21 was turned over to me by Mr. Bean.

Yesterday I mailed you a blue-print of an isopach map of the Maquoketa formation in Wisconsin. If this does not reach you or you have other questions please write me.

In revising this map I paid particular attention to the top of the formation. Where the total is around 200 feet and around 450 feet there is a dolomite member in contact with the overlying Niagaran. The Neda ore bed is much more commonly missing than present. The contact may be picked up where the two dolomites adjoin by either the abrupt rise in amount of clay in the residue or by the presence of thin seams of shale or by the presence of blue dolomite in the Maquoketa. Obviously, some of the logs are in need of revision from the samples but I did not have time to do this. Very few drillers logs are included as they commonly record only the shale. On the whole the map must be essentially correct and is a great improvement over the old map I made once.

Very truly yours,

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

THE STATE UNIVERSITY OF IOWA
IOWA CITY

DEPARTMENT OF GEOLOGY

PLEASE ADDRESS
REPLY TO WRITER

April 5, 1935

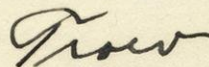
Dr. F. T. Thwaites
Department of Geology
University of Wisconsin
Madison, Wisconsin

Dear Fred:

Your letter of April 1, the copy of the Wisconsin road log, and the carbon copy of your letter to Folger dated March 30 were all duly received; and I am very glad to have them all. Please accept again our congratulations and thanks for the thoroughness with which you are going into these things.

I have started patching together the portions of the log from different states and believe we will have a complete copy of the log for the eight days of the conference within a short time. Questions may arise concerning details, in which case I shall get in touch with you regarding them.

Cordially yours,



A. C. Trowbridge

ACT:A

NORTHWESTERN UNIVERSITY
COLLEGE OF LIBERAL ARTS
EVANSTON, ILLINOIS

DEPARTMENT OF GEOLOGY
AND GEOGRAPHY

April 2, 1935

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

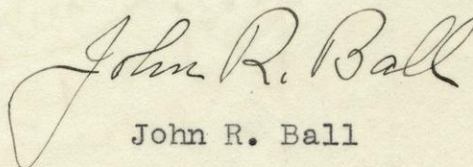
Dear Doctor Thwaites:

As you know from the last letter sent out by Mr. Folger on March 19th, you are named as the individual who will give us help and advice concerning the isopach maps. I am undertaking the map for the Galena-Decorah-Platteville unit and will be very glad for references or data that you care to send me.

Before receiving Folger's letter, I had been browsing about to some extent and I have availed myself of the data that you give in your Journal of Geology paper, volume 31. I notice that what I have is in connection with the cities of northern Illinois chiefly so far. Other localities in Wisconsin or further localities in general that you know are not included in your formerly published articles I will be glad to receive as additional information.

Thanking you sincerely for supplying me with what you know I stand in need of, I remain,

Very cordially yours,


John R. Ball

B/a

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REGISTRATION AND EDUCATION
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SPRINGFIELD

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PRESIDENT ARTHUR CUTTS WILLARD

April 2, 1935

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

Dear Mr. Thwaites:

Thanks for your letter of March 30 giving me figures on the thickness of the Silurian in Wisconsin; also for the inclosure of Mr. Raasch's paper on the Cambrian for the Kansas Geological Society Guide Book. Inclosed are a few grains of the so-called sooty sand at the top of the Mt. Simon formation.

There is some delay in finishing up my cross-section due to the inability of Mr. McQueen to get past his immense amount of current work and examine the insoluble residues I sent him. There is some question in his mind as to the advisability of keeping the vertical scale at 400 feet to the inch. However, I have not heard anything officially about that and shall let you know more about it if the question comes up.

With best wishes,

Yours very truly,

L. E. Workman

Associate Geologist
Subsurface Division

Incl.

April 1, 1935

Dr. A. C. Trowbridge,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Enclosed please find (a) copy of our road log through to Taylors Falls, Minn. prepared by me with aid of Mrs. Thwaites, Miss Annie A. Munns of the State Historical Society, also some checking by Raasch and Bean, (b) copy of answer to long letter from Folger.

I want to add to my statements about the financial conditions here that if the faculty is hard up the students are worse. A \$15.00 registration fee will almost undoubtedly exclude all of them. Bays talked of it as long as it was thought that it would not be more than in previous conferences but when it was raised to \$15.00 he expressed strong doubts. I tried to make it clear that we do not object to the policy of making everyone pay the same but want to state in advance what the result will be of such high charges. As I see it the reason lies in having such an elaborate guidebook. I realize that we who live next door to a good library feel differently about the republication of papers in the guidebook. Most of the oil companies cannot possibly keep as good a geological library as a university must. But I do object to the route maps unless on a small scale like those in the Seventh book, also to graphic sections when duplicated by fuller descriptions. I also think the photographs might be severely curtailed without any harm. However, these things are not our business and if they want them all right,

Sincerely,

March 30, 1935

Mr. Anthony Folger,
1107 Union Nat. Bank Bldg.,
Wichita, Kansas

Dear Anthony:

Your long letter of the 19th is at hand.

First, I want to express my regret at the misunderstanding which appears to have arisen. I did not state my views to you because I felt that the policy of the Kansas Geological Society was none of my business. I did state to Trowbridge, however, the plain fact that ten dollars guide books simply cannot be sold in these parts. You have had hard times in the oil country but they haven't compared with the financial stringency which prevails here among most of the faculty. I myself have other income than my University salary but almost all of the younger people here are having a worse time making both ends meet than ever. It is out of the question for them to pay a \$15.00 registration fee or to purchase a guidebook. We are not objecting to your policy in making everyone pay even if he has put in hundreds of dollars worth of time but are simply stating the bald facts. Knowing this fact you can see how the request for names of prospects had to be ignored by all.

With regard to the Wisconsin Academy I called up the secretary and found that he had no list of members other than his cards and that very few geologists belong to the organization. Most people here simply had to drop all such things when salary cuts came. Following my policy of not writing letters when it could be avoided I let the matter drop with the intention of explaining the situation when I next wrote.

None of us object to the time we have spent or will spend in connection with the project of the Society. It serves to clarify and check up on our data and will certainly have a most wholesome effect. This applies mainly, however, to the papers which are new and to the maps. I did feel free to state that certain of the papers will of necessity be simply rehashes of reports either already in print or soon to be. It has been suggested that these papers will add to the cost of the guidebook without adding materially to its permanent value. It has also been suggested that the amount of detail in the road log is excessive and that the route maps on a large scale are only of temporary value. But, as I stated above these things are not our affair even if they make the book too expensive to allow of its purchase by the great majority here.

One project I do object to and that is an isopach map of the St. Peter. In our state such a map would require a measurement in every 40 at least. Isolated well logs mean nothing. At the old Mt. Horeb well they had 90 feet of St. Peter and in the new one only 19 feet and so on ad infinitum. This geological condition makes any map worthless. It does not hold farther south as I have seen myself. I discouraged Lamar all I could. Had previously protested in my letter of Dec. 17, 1934 to you.

A. F. 2, 3/30/35

With regard to asking me to supply data for other isopach maps that is perfectly all right. That is it is all right so far as my sample-controlled logs and the few surface sections that I have in my files go. I cannot undertake to dig out thicknesses from the notes of others for there simply is no time and I seriously doubt that any of the students could do it. This kind of work requires a knowledge of the later developments in our column and, therefore, constant revision of the older figures. I have already tabulated all the sample-logs with appropriate corrections so far as time permits. Some revisions would require the very tedious work of making insolubles. Raasch will probably find me some figures but so far I have had requests only on the St. Peter, Silurian, and Maquoketa. These will be answered in a few days with blueprints for the last two on scale of 1:1,000,000 (coiled basenaps).

Why not have Lamar make a map of combined Prairie du Chien and St. Peter. That is practicable and interesting.

I am enclosing carbon of the road log up to the last part of the trip proper in Wisconsin. The original is going to Trowbridge in the same mail. Hope you find it satisfactory. Credit is also due to Miss Annie A. Munns of the State Historical Society for the historical notes. Mr. Bean also checked the log. As you know Mrs. Thwaites was the recorder and typist.

Manuscript on the post conference trip is finished except that I have to make the final draft of a 10 page (double spaced) paper on the Physiography of the Lake Superior basin. This is an introduction to the trip and I desire to retain all rights as it will be part of a general paper on the origin of the Great Lakes started over a year ago. It is to be illustrated with a structure contour map of the Lake Superior syncline drawn on the contact of Upper and Middle Keweenaw, several sections, depth map of the Lake, map of glacial lake. If you do not want so much please advise me.

The paper on the Physiography of the Baraboo Range is started.

Raasch has finished the paper on the Cambrian and has mimeographed the same for use of students. He will forward copies soon.

Nothing has been done on road maps. I could use a student on that and will send them in pencil. Mine will unless directed to the contrary show the main highway, towns, township and section lines, stops, prominent escarpments or other geological boundaries but no side roads.

Please understand that we do not object to paying for guidebooks or to the registration fee. The only point is that most of the leaders simply cannot go under these conditions. Mr. Bean says that he will go provided road material or other Survey work does not prevent. I will go. The greatest rub is that the only men who know Cambrian fossils are Raasch and Edwards. Both make no secret of their financial condition. I know the subsurface but without one of them I could not tell a *Coesia amata* from a *Pemphigaspis bullata*. Controversy in which fossils are the deciding factor is certain in Minnesota. So that's that. I hope you can find a way to solve the problem. Dr. Leith is away so cannot appeal to him for any University funds.

Sincerely,

F. T. Thwaites

March 30, 1935

Mr. L. E. Workman, Associate Geologist,
State Geological Survey,
Urbana, Illinois

Dear Workman:

Mr. Bean gave me yours of the 20th.

The story for the Silurian in Wisconsin is short and soon told. It is hard to get both top and bottom throughout the region concerned, viz. the Lake Michigan shore north of Milwaukee, for in this district the top of the Maquoketa is a dolomite and is easily confused with the Silurian. However, I did my best. The basal Devonian is the Thionville which is a dolomite in many places not particularly unlike some of the Niagara. I had Raasch check some of the logs. He knows the Devonian best.

Anyway heres the dope. Maquon 300 feet; Brown Deer 405; Shorewood 360; Sheboygan 750; Oostburg 597. The log at Sheboygan does not record any Devonian but the basal conglomerate occurs just at the level of Lake Michigan. The Maquon log is poor.

The following thicknesses of Niagaran with top eroded may also help. Manitowoc 825 (drillers log, 725 supported by samples); Two Rivers 670; Racine 350.

With regard to the Wisconsin-Missouri cross section I have not had a chance to look for the sooty sand but I did fail to pick it up in a new well at Kenosha. Could you please send me a small amount of one of these sands so I can see just what they look like? Just a few grains which could be enclosed in a letter would be enough. Meantime I looked over the log and thought that 830 would be a satisfactory bottom. I would change Janesville bottom of Eau Claire to 650 from surface. Evansville at 780 cannot very well be changed. If these revisions fit with your correlation in Illinois we need not wait for the finding of the soot but write Folger to go ahead with the drafting. It is a good idea to make the suggested change to go through Rockford and to project the well at Iroquois as that will eliminate an awkward bend.

With best regards,

Sincerely,

F. T. Thwaites

An enclosing advance copy of Raasch's paper on the Cambrian for the K. G. S. guidebook.

THE UNIVERSITY OF ROCHESTER
COLLEGE OF ARTS AND SCIENCE
ROCHESTER, NEW YORK

DEPARTMENT OF GEOLOGY

March 21, 1935.

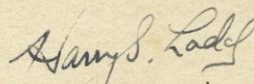
Mr. E. F. Bean, State Geologist,
Wisconsin Geological Survey,
University of Wisconsin,
Madison, Wisconsin.

Dear Mr. Bean:

I am preparing an isopach map of the Maquoketa shale for the forthcoming Ninth Annual Field Conference of the Kansas Geological Survey. In making this map a contour interval of 50 feet is to be used. Can you send me the information which your survey has bearing on the thickness of the Maquoketa in your state?

With kindest regards, I am

Very sincerely yours,



Harry S. Ladd.

HSL:L

STATE OF ILLINOIS
HENRY HORNER, GOVERNOR
STATE GEOLOGICAL SURVEY DIVISION

M. M. LEIGHTON, CHIEF
305 CERAMICS BUILDING
UNIVERSITY OF ILLINOIS CAMPUS

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STATE UNIVERSITY
PRESIDENT ARTHUR CUTTS WILLARD

March 20, 1935

Dr. E. F. Bean, State Geologist
Wisconsin Geological & Natural History Survey
Madison, Wisconsin

Dear Dr. Bean:

I have been asked by the Kansas Geological Society to prepare an isopach map of the Silurian system in an area of the upper Mississippi Valley lying between 39 and 49 degrees north latitude and 87 and 97 degrees west longitude.

As this includes a part of Wisconsin, I should appreciate your cooperation in this work by sending me any pertinent data for the assigned area such as:

- 1) An isopach map of the Silurian; or
- 2) A tabulation of thickness in your State, giving locations; or
- 3) Records of wells through the Silurian.
- 4) Reference to any publications which might be of special assistance by giving logs of, or describing, the Silurian.

I shall be glad to return any or all data furnished for this study and to acknowledge in my report your cooperation.

Very truly yours,

L. E. Wokeman

Associate Geologist
Subsurface Division

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

March 19, 1935.

COMMITTEE ON ARRANGEMENTS

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WICHITA, KANSAS.

E. A. WYMAN
AMERADA PETROLEUM CORPORATION
614 ORPHEUM BUILDING,
WICHITA, KANSAS.

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

Dear Fred:

Events have been moving so swiftly here in Wichita during the past three weeks in getting out the first announcement of the Ninth Field Conference that I have not had time to write and thank you for the Wisconsin portion of the Wisconsin-Missouri Structure Section which you forwarded me some weeks ago. I have examined this in detail, and it is first class, and is one of your characteristically careful and excellent contributions. Dr. Trowbridge writes that you are now in correspondence with Workman relative to one or two of the wells near the Wisconsin-Illinois line, so I have not as yet forwarded your portion of the section to Ponca City for final drafting, and I shall not do so until you advise me just what corrections are to be made.

Trowbridge has also written that you have informed him that the majority of the Wisconsin men, excepting yourself, object to the payment of \$10.00 for their copy of the Guide Book, and furthermore, that if they are forced to pay this, the majority of the Wisconsin Leadership will not participate in this Field Conference at the time it is held. I was more than glad to receive this reaction, even though it came second hand. You and I have known each other for a considerable number of years, and moreover, you are the only Wisconsin man who has ever attended one of our Annual Field Conferences. At any time that things do not appear to you to be going smoothly relative to the Wisconsin end of this Field Conference, I shall more than appreciate a frank letter from you stating exactly where the trouble lies, and if you do not agree with the decisions of the Wichita Committee, a statement of exactly why you do not agree with us. I think you know my disposition well enough to know that we always welcome constructive criticism, and are glad to have it.

This statement of yours to Trowbridge that the Wisconsin Leadership object to payment for the Guide Book, together with the fact that none of the Wisconsin Leadership replied to my circular letter requesting names and addresses of persons they thought might

be willing to order a Guide Book, and together further with the fact that to date I have not received from you a list of the members and their addresses of the Wisconsin Academy of Science, makes me wonder if even you yourself may not be of the opinion that the Wichita Committee have asked and are asking too much of the men in the Upper Mississippi Valley. In the event this is your feeling, I shall certainly welcome your criticism.

At this time, I wish to emphasize that the Wichita Committee recognizes that it has asked for a great deal of information, and that their requests have called for a great number of hours of labor on the part of the men in the Upper Mississippi Valley. On the other hand, with the exception of the System papers and of the isopach maps, I think I am correct in stating that we have asked for no item which was not included in my original circular letter to the four State Geologists under date of February 25, 1933, and of my supplemental mimeographed "Suggestions and Instructions" under date of July 31, 1933. In the case of the System papers and of the isopach maps, these were discussed at length with Dr. Trowbridge and a number of others in the Upper Mississippi Valley before it was decided to include them. It is my opinion that the isopach maps will contribute considerable information of actual value which has not heretofore been in print. In the case of the System papers, while it is recognized that some of this information they will contain is already in print, (and this applies particularly to the pre-Cambrian and the Cambrian paper) they will contain, I believe, a large amount of material which is more or less new, and will assemble the important facts relative to each System in up-to-date form, and all in one place. If you give it some thought, I think you will agree that at the present time those of us outside of the Upper Mississippi Valley have to refer to a great number of articles published in a great number of periodicals to get the important information on any one System in your area. It was our thought that if this could be incorporated into a series of articles included in the Guide Book with the information brought up to date, that it would have a distinct value and place in the geological literature.

*Sorry for repetition
Can't wait to have
letter retyped*

At this time, I wish to emphasize that the Wichita Committee realizes that it is requesting a considerable amount of information for inclusion in the Guide Book which it is taking individuals in the Upper Mississippi Valley area a great amount of time to prepare. On the other hand, I think I am correct in saying that, with the exception of the System papers and of the isopach maps, we have requested nothing more than was originally set forth in my original circular letter of February 25, 1933, and the supplemental "Suggestions and Instructions for the Preparation of the Road Log" under date of July 31, 1933.

Nevertheless, the fact remains that we are relying on the good nature of our friends in the Upper Mississippi Valley to prepare this information. We wish you to know that we realize full well that it is taking a vast amount of your time, and that we appreciate the whole-hearted co-operation which you all have given us.

The Wichita Committee trusts that you are pleased with the first announcement, a copy of which you have received. It is an index, more or less, to the type of a Guide Book which we anticipate getting out, which I believe will be a distinct credit to all who are involved in its preparation. After all, the only tangible evidence of the hours and days the Upper Mississippi Valley men

have given to this Society in the preparation of the Guide Book will be reflected by the type of the Guide Book when printed. To that end, the Wichita Committee is going to take great pains to see that the Guide Book is a distinct credit in appearance to those men who have labored in our behalf.

One thing has been called to my attention by Dr. Trowbridge in connection with the preparation of the isopach maps. Namely, that the Wichita Committee did not advise the contributors of these maps just what individuals to approach in the states involved for the isopach information in that state. I have this evening addressed a supplemental letter to the contributors of isopach maps, a copy of which is inclosed, and which I think will be self-explanatory. In it, you will find that I have suggested that they approach you for this isopach information. Since this information was so long delayed in going forward to the contributors of these maps, I could not take the time to further delay the transmittal of this information by first writing you and asking if it would be satisfactory to refer these men to you. I trust I have not overstepped my bounds by taking this liberty, and I also trust it will cause you no embarrassment. If it does, I authorize you herewith to reply to each of these gentlemen at the time their requests are received that I included your name without authorization, and that you can not accede to their requests. For the success of the Guide Book, I trust it will not be necessary for you to take this action. I assume that you have the information for these various isopach thicknesses easily accessible in your files, and that it will simply be a question of taking this data out of your files and copying it down for each man. Certainly it was not my thought in suggesting that they write to you that you would have to take the time yourself to obtain all of these isopach thicknesses from various sources, inasmuch as I assume that you have the correlations of it on your logs already made. In this connection, may I suggest that you turn over the assembling of this information for the various contributors to one of your graduate students and pay him by the hour for this work, send me the bill, and I will have Mr. White forward you a check by return mail for this work. My thought in making this suggestion is that you already have your hands full with your own work and on top of this you have whole-heartedly assumed a great deal of labor in connection with the Field Conference. To impose any additional burden on you in connection with the isopach maps would be unjust, and we shall be glad to stand whatever expense it is necessary for you to go to to prepare this information for the contributors of these maps.

May I return again to the subject of the payment by the Wisconsin Leadership of the price of the Guide Book. You, of course, know that this Society has always charged the Leadership of its various Conferences for a copy of the Guide Book, and that it has been obligatory upon them to buy a book. This is a question of policy decided by the Board of Directors, and with which the present Committee on Arrangements has nothing to do. We can only rely upon you to explain this fact in our behalf, and we trust you will be able to explain it with such satisfaction that it will not militate against the success of the Conference. It certainly would have a detrimental effect at the time of the Conference if the Wisconsin Leadership did not attend. We can understand and appreciate their reaction, but we also hope they can understand and appreciate equally well the attitude taken by our Board of Directors in attempting to make these Field Conferences self-supporting. In the event you find that the feeling is so strong against this question of policy, I shall appreciate this information from you. I am at a loss to know just what we can do about it, for what would be fair to a small number of the Leadership of the

Mr. F. T. T. 4 3-19-35.

Conference as a whole would be fair to all of them. We certainly will have to treat them all the same. For your own information, the reaction of Iowa and of Illinois has been extremely favorable in that they feel that it is both just and fair for them to pay the \$10.00. On the other hand, in the case of the Minnesota men, they appear to be very much against the payment of this fee. I shall appreciate your frank discussion of this subject relative to the State of Wisconsin.

I presume by this time that you have your manuscript of the Wisconsin road log well under way, and we are looking forward with a great deal of pleasure and anticipation to its receipt when completed. I appreciate that Mrs. Thwaites is giving you a great deal of help in the preparation of this manuscript, and I wish you would convey to her our sincere appreciation. I am indeed sorry that you were not able to get away to come to Wichita for the Annual Convention of the American Association of Petroleum Geologists which will convene here this week, since I know that were you to have come, we could have discussed a great many things relative to this forthcoming Conference to the benefit of us both. Again let me say that if you have any criticism, I shall appreciate receiving it, and I shall take it in the spirit with which you offer it.

I wish to extend my own personal thanks for all that you have done, and with kindest personal regards,

Very truly yours,

Anthony

Anthony Folger.

Not signed until 3-26-35

AF/B

c. c. to A. C. Trowbridge.

Dictated 3-18-35.

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

March 19, 1935.

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WICHITA, KANSAS.

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WICHITA, KANSAS.

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Evanston, Illinois;

galena - Devonian - PV ✓

Mr. Ira Edwards,
Milwaukee, Wisconsin;

Triump + Franc. ✓

Overbank

Mr. Harry A. Ladd,
Rochester, New York;

maguabata ✓

Mr. John E. Lamar,
Urbana, Illinois;

St Peter

no!

Mr. Elliott Powers,
Iowa City, Iowa;

Pr. du Chien no!

Mr. Allen C. Tester,
Iowa City, Iowa;

Mississippi - 2 maps ✓

Devonian

Mr. Lewis E. Workman,
Urbana, Illinois.

Silurian ✓

Gentlemen:

Under date of March 1, a joint letter was forwarded to each of you containing suggestions relative to the preparation of isopach maps to be included in the Guide Book of the Ninth Annual Field Conference.

Dr. Trowbridge has called my attention to the fact that I did not specifically set forth in this letter any statement of exactly what men it would be wise to contact for your information in each of the states involved within the limits of the base map. This oversight was occasioned by the fact that I approached the majority of you with the original request to prepare these maps, whereas Dr. Trowbridge approached others of you for me at a somewhat later date. To those of you approached directly by me, I believe you will find a statement in my original request that it will be necessary for you to make your own contacts in obtaining the necessary information.

However, it is the thought of Dr. Trowbridge, and I think a wise one, that it might be well to specify some actual individual in each of the states involved to whom you should apply for this

information, provided it is possible for the Committee to forward information of that nature at this time.

Therefore, I would suggest that if you have not already approached any state or states for the isopach information, that you address your requests to the following individuals:

Iowa,	Allen C. Tester,
Wisconsin,	Fredrik T. Thwaites,
Illinois,	Morris H. Leighton,
Missouri,	H. S. McQueen,
Nebraska,	George E. Condra.

O.K.
3-26-35
AF.
In the case of Northeastern Kansas, I believe it will be possible for me to make arrangements to obtain this information from Mr. McQueen, who has been doing extensive research work during the past six months in that area. He will be in Wichita during the next two or three days, and I shall take this matter up with him in person.

Relative to Indiana and to Michigan, I shall, this evening, address a letter to each of those two states relative to this matter, and you will hear from me as soon as an answer is received.

In the case of Minnesota, if any of you have not already made a request from that state, I would prefer that you do not do so until I advise you specifically what individual to approach in that state.

I am indeed sorry that Mr. Williams, in Ponca City, has found it necessary to delay the completion of the preliminary base map so long past March 5, but I anticipate that he will have this ready for distribution within a very short time. I am also sorry that there has been some doubt in some of your minds concerning the best way to obtain the necessary information for the compilation of your maps, but events have been moving so swiftly here in Wichita during the past two weeks that it has been impossible for me to give the required time to Conference matters. Because I have, therefore, been the cause of some delay, it may be necessary to postpone the dead line date of April 15, which I gave in my letter of March 1. I trust, however, it will not be necessary to advance this to more than the first of May unless some unforeseen circumstance should arise during the next two weeks.

In the meantime, I trust that all of you are obtaining what information can be procured without waiting on me or the base map.

With kindest personal regards,

Very truly yours,

AF/B

Anthony Folger.

c. c. to A. C. Trowbridge.

c. c. to M. H. Leighton.

cc.c. to F. T. Thwaites.

Dictated 5-18-55.

COPY

March 20, 1935

Prof. G. M. Schwartz,
Department of Geology
University of Minnesota
Minneapolis, Minnesota

Dear Professor Schwartz:

Many thanks for your letter of March 18 and the letter from the Copper Range Company attached to your letter. I am referring this correspondence to Mr. Anthony Folger for his information and attention.

Very sincerely yours,

A. C. Trowbridge.

ACT:A

CC: Mr. Anthony Folger

C O P Y

March 18, 1935

Professor A. C. Trowbridge
University of Iowa
Iowa City, Iowa

Dear Dr. Trowbridge:

Enclosed is a letter I received from the Treasurer of the Copper Range Company, for whom I worked in pre-war days. I thought it might be worth while to pass this invitation on to the members of the trip.

Sincerely yours,

(Signed) G. M. Schwartz.

March 8, 1935

Dr. J. E. Lamar, Geologist,
State Geological Survey,
Urbana, Illinois

Dear Dr. Lamar:

Your letter of March 5 to Mr. Bean was given to me for reply as I have been taking care of almost all the work for the Kansas Geological Society.

I talked over your request with several persons who are familiar with the problem. We all agreed that we would under no circumstances allow our names to be attached to any map showing the thickness of the St. Peter. I had already refused to further any such project in a letter to Trowbridge some months ago.

The reason for this attitude which will at first sight strike you as unreasonable if not "dog-in-the mangerish" is that we feel that the thickness of the St. Peter in Wisconsin varies so greatly in short distances. Tonight I looked over my books of tracings and found 34 records in which no Prairie du Chien is recorded. Of these 20 are in a relatively small area centering around Milwaukee. A sketch of this area is enclosed. The remaining 14 are scattered all over the area of the formation. At many of these localities it is positively known that varying thicknesses of Prairie du Chien are present within small distances. An instance is Wapuna where there is no Prairie du Chien in the city wells whereas at the Prison Farm just east of the city the converse is true and the St. Peter is absent! In field mapping the "holes" or ravines where the St. Peter cuts out the underlying dolomite are common. Hills of dolomite which cut out the St. Peter are less abundant. I have reason to think that such are present within the area outlined although they have not yet been discovered.

This should not be construed as a reflection on maps of St. Peter thicknesses in other areas like the map you made for Illinois. I think that in other states the irregularity of thickness is not so pronounced as it is in Wisconsin.

I feel that you would waste your time trying to make a map of any character for this state. Our well records are at your disposal for I intend to tabulate them for use in other similar maps but without a great deal of data secured from surface observations they would not help you. A lot are published in Bull. 35 but that is now out of date. I will send you a basemap under separate cover if you think you need it but I do want to discourage you from any attempt to rush into a problem we refuse to tackle.

Very truly yours,

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

C O P Y

COPPER RANGE COMPANY
35 Congress Street
Boston

March 8th 1935

Professor George M. Swartz
University of Minnesota
Minneapolis, Minnesota

My dear George:

I notice you are one of the leaders in the Joint Field Conference of the Geological Surveys to be held next summer. I also notice that you are going to cover the Gogebic Range in Michigan.

Just have it in mind as the situation matures that we would be very glad to render any assistance to facilitate any side trip that some of the men might want to take into the fully-developed Keweenaw Series. There are several new things that you yourself may not have seen, including a hydro-electric plant where the Ontonagon River crosses the Keweenaw fault, and we hope and believe we have some new developments south of Champion. We had Paul Billingsley up there last fall and he seemed to agree with us about the situation being very promising, and also did some excellent work for us on structures south of the Champion fault.

I hope this finds you well, and with kindest personal regards, I remain

Yours very sincerely,

(Signed) F. M. Parin (?)

THE KANSAS GEOLOGICAL SOCIETY

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

COMMITTEE ON ARRANGEMENTS

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AMERADA PETROLEUM CORPORATION
614 ORPHEUM BUILDING,
WICHITA, KANSAS.

March 5, 1935

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

Dear Fred:

I have yours of March 2 and wish to thank you for it.

The blue print of the Wisconsin portion of the Wisconsin-Illinois-Missouri cross section reached me promptly. I note that some adjustments will be necessary with Workman and that Folger should not proceed to make any final copy until these adjustments have been reported.

Am glad to know that Raasch has finished his Cambrian paper. Folger and I will be interested in seeing it when it is ready for submission. I have no doubt it will be good.

It is true that all of us are now being pushed pretty hard by the people in Wichita. I agree in general with you and some others that a good deal is being asked of us, and yet I personally do not see how the Wichita Committee could do otherwise. After all, it seems to me that the Upper Mississippi Valley will be the chief beneficiary of the work we are doing and the money and time we will be called upon to put in on it. Ten dollars does seem to be a good deal to charge for the Guidebook, and still such a Guidebook as is being prepared could not be got out any cheaper. I believe three previous Guidebooks have sold for ten dollars a copy, and they were much briefer and much less thorough-going than this one will be. Of course, we shall all be very sorry if the Assistant Leaders do not participate in the conference or buy Guidebooks. I am glad to see that your own interest is not lagging and that you intend to go through to the end of the job. This I also shall do to the best of my ability.

Cordially yours,

Trow

A. C. Trowbridge

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IOWA, ILLINOIS, WISCONSIN, MINNESOTA

March 5, 1935

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WICHITA, KANSAS.

To All Persons Interested in Geology:

In 1933 the Kansas Geological Society mailed questionnaires to the chief geologists of oil companies operating in the mid-continent, soliciting candid opinion whether the field conference announced in the inclosed circular should be held in 1934 as planned, or, postponed until 1935.

While opinion favored holding this conference in 1935, the warm response to the questionnaire was pleasantly surprising to the Society since this response expressed a definite desire for such a trip.

Repeated requests from various Academic and Scientific groups indicated a like desire for an Upper Mississippi Valley Conference.

The purpose of this Conference is to give persons unfamiliar with the Upper Mississippi Valley a better understanding of its geology, to promote acquaintanceship and interchange of ideas between academic and commercial geologists, and to study on the outcrop those rocks which produce great quantities of oil in these United States.

Unlimited praise is due the gentlemen whose names are listed under leadership for the conference and to their many collaborators. Without their co-operation and tireless effort this Field Conference and the resulting Guide Book could not have materialized. Every detail was so carefully studied that they welcomed postponement to 1935 in order that thorough completion of all plans might be attained.

The inclosed announcement should induce every student of geology to attend the conference if at all possible for him to do so. We are certain that the Guide Book will merit a place in all geological libraries.

You are cordially invited to attend.

THE KANSAS GEOLOGICAL SOCIETY.



SERVING THE HEART
OF WISCONSIN

WISCONSIN POWER AND LIGHT COMPANY

122 W. WASHINGTON AVE.
MADISON, WISCONSIN

March 5, 1935

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

Dear Mr. Thwaites:

Your letter dated February 26, in which you asked certain questions about our Prairie du Sac and Kilbourn Plants, has been referred to me.

The Kilbourn Plant was built during the years 1907-1909. It operates under a head of 22 feet and has a capacity of 10,000 kilowatts. There are four units in this plant, two of which generate 60 cycle energy, with a capacity of 5,000 kilowatts; and the other two machines generate 25 cycle current. The annual generation totals approximately forty million kilowatts. The pond has an area of approximately 2,000 acres. 422*

The Prairie du Sac Plant was built during the years of 1911-1914. It operates under a head of 38 feet and has a capacity of 25,000 kilowatts. There are four units generating 25 cycle energy with a total capacity of 10,000 kilowatts, and four units generating 60 cycle energy with a capacity of 15,000 kilowatts. The plant generates approximately 110,000,000 kilowatts per year and the pond covers an area of 9,100 acres.

We shall be very glad to have the members of the Ninth Annual Field Conference of the Kansas Geological Society visit our Prairie du Sac Plant. The party may do as you suggest -- drive through the grounds making a turn near the head of the stairs so as to obtain a general view of the river; or, if it is desired, the party may drive down to a point near the power plant and go through the power house for a closer inspection.

It would be appreciated if you would let us know on the date the party is to visit the plant and in case it is desired to go through the power house, arrangements can be made to have guides available to direct them. In that event we would like to know the number that will be in the party so that we can arrange for sufficient number of guides so that it will be possible for the guide to communicate with those whom he is taking through the plant.

Very truly yours

R. G. Walter
R. G. Walter
Assistant to Vice President

RGW:IW

March 2, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Thank you for yours of Feb. 25 with enclosed locavations. I am going to tabulate all data and check computations before drafting an map. Will do this on the 1:500,000 base map and oil it for blueprints.

During the week I mailed both to you and to Folger blueprints of the Wisconsin portion of the Wisconsin-Missouri cross section. Later information from Workman indicates that changes in the lower limit of the Eau Claire will have to be made close to the Illinois line. Please advise Folger when you write not to make any final copy until this matter has been adjusted with Workman.

Raasch has finished his paper on the Cambrian.

Several of the people here are restive over the increasing demands for time from Wichita. I ignored the last two, namely to furnish lists of people who might buy guidebooks and a list of the members of the Wisconsin Academy. Both seemed to me unreasonable. I feel that in the oil fields where knowledge must be kept up to the minute and is rapidly increasing there is justification for such elaborate guidebooks and for the \$10.00 registration fee to cover them. Here it is different and there will be little in the book but what either is already available elsewhere or soon will be. Considering this the price is so excessive that nobody here will buy one except me. In fact, if the guides are forced to pay \$10.00 to go on the trip I very much fear that you and I will be the only ones. It seems to me that Folger has let enthusiasm run away with him. I particularly object to the needless duplication of printed reports as in the Baraboo paper, to the route maps which are only of temporary interest, and to the photographs many of which show little of importance. The last criticism is in spite of the fact that I have always spent a lot of time on photography on every trip. Let me repeat, the cost of the guidebook will keep away almost all of the people from this region who would be most helped by attending. I do not want to interfere in whatever Folger thinks best for the oil men but am telling you the facts as we see them here. I am going to do my best but will naturally let what I consider least important go to last and if time fails it will be too bad but that is all. Mrs. Thwaites is putting in her hour a day too.

Sincerely,

A. T. Thwaites

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS

DEPARTMENT OF GEOLOGY AND MINERALOGY

March 1, 1935

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

Dear Mr. Thwaites:

I have your letter of February 26th and would like to clear up a few points on our position before we leave the matter. First it should be emphasized that none of the men here have ever consciously modified the classification as used by the earlier workers. Some modifications may have crept in, but these were probably not designed as such.

It seems to me that the whole problem of the Franconia is confused partly because the original use of the term as defined by Berkey is not retained by men working in other states. In spite of what you say we still think that the Franconia as we use it is equivalent to Berkey's Franconia, or at least it has been our intention to keep it so. It also seems clear from Berkey's paper (Amer. Geol., vol. 20, pp. 345-383, and vol. 21, pp. 139-294), that the Franconia was separated from Winchell's Dresbach and not Winchell's St. Lawrence. The Ironston member of your Franconia may very well be the equivalent of the lower part of our Franconia, we do not know. The fossils found in the formations belonging to the St. Croixian series are not always well enough preserved to be easily identified and some kind hearted souls have made too many species out of a single form of trilobite. It is certain, at least, that many species continue from one formation to another.

I note that you do not give Berkey's correlation in your chart. It seems to me you should do so since you use the term Franconia and Berkey's classification was the first using that term and describing the type locality. Trowbridge's Galesville often seems to coincide with our Franconia, at Dresbach, for example.

Winchell in his later work unquestionably included the shales of your chart (listed under Winchell 1888) in the St. Lawrence. See Stauffer, Journal of Geology, vol. 42, pp. 341 and 342, where Winchell is shown to have given a thickness of 200 feet for the St. Lawrence as he used it in later years. These lower sands and sandy shales are frequently dolomitic and it is this usage that we still retain. The average thickness in the Twin City region is 185 feet.

I should say that in the field season of 1934 Stauffer restudied the sections the entire length of the St. Croix and Mississippi in Minnesota. Detailed sections were measured, using a plane table and telescopic alidade with elevations tied to bench marks. This list is as follows, beginning near the Iowa line.

Hell Hollow, near Reno
Mt. Tom section, Hokah
Dresbach
Lanesboro
Winona (two sections)
Minneiska
Lake City
Kellogg
Wabasha
Frontenac
Red Wing (2)
Eggleston
Hastings
Afton
Stillwater (three sections)
Marine
Osceola
Arcola (2)
Franconia
New highway between Franconia and Taylors Falls
Pine Point Trail, Taylors Falls

I think you will admit that most of those reclassifying these rocks have not done anything to compare with this work in care and accuracy, and we are not through yet.

Our position is this. We are using the section as finally worked out by Winchell. Not always his first proposal which he certainly had the privilege of modifying. As he left it to us the classification fits Minnesota very well. We do not say that we may not change this classification because we may when the re-study of stratigraphy, paleontology and sedimentary analyses are completed. We are, however, trying to be very sure when we do change it that we are not going to want to change it again in a few years.

I am not sure that I will be able to join the field trip before they reach Minneapolis, but I doubt if enough can be seen in such a large group to be of any value in working out the problems mentioned above. I will surely see you here in any event

Very truly yours,

A handwritten signature in blue ink, appearing to read "G. M. Schwarz". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

TELEGRAM

Form T290-250M

2-26-35

Thwaites:-

→ or some similar organization

Is there a Wisconsin Academy of Sciences_^? If so will you request

that the names + addresses of the membership list be forwarded me

at once. Should the list have to be copied, omit all G.S.H. members.

Anthony

K65

Feb. 26, 1935

Wisconsin Power and Light Co.,
122 West Washington Ave.,
Madison, Wisconsin

Gentlemen:

Next summer the Ninth Annual Field Conference of the Kansas Geological Society is to visit Wisconsin. I am now getting out material for the guidebook. The route of the party will pass close to two of your hydro-electric plants, those at Prairie du Sac and at Kilbourn (Wisconsin Dells). At the former place would it be all right to have the party drive through the grounds making a turn near the head of the stairs so as to get the view across the river but make no stop?

The men who will attend are almost all engaged in the oil industry and are interested in engineering. I was asked to include in the guide book such data on the dams as the head, amount of impounded water, time and approximate cost of construction, and approximate amount of power developed. Any data on these or other points which might be of interest to our visitors would be greatly appreciated.

Very truly yours,

F. T. Thwaites, Lecturer in Geology

Feb. 26, 1935

Prof. G. M. Schwartz,
Dept. of Geology and Mineralogy,
University of Minnesota,
Minneapolis, Minnesota

Dear Schwartz:

I have been a long time replying to yours of the 5th while the matter of your present nomenclature was discussed with others.

If you study your 1932 geological map you will find that my comparative chart of nomenclature is correct. The only difference is that Stauffer includes the uppermost member of Ulrich's Franconia in his St. Lawrence. Now the downward extension of the term St. Lawrence to the top of the first clean sandstone (Ulrich's Dresbach, not Winchell's) is the usage of the U. S. Survey in the old water-supply papers as per my chart. Glauconite is found sparingly in the Lodi member of our Trempealeau and from then on down to the top of the clean white sandstone misnamed Dresbach by Ulrich and called Galesville by Trowbridge. If the name St. Lawrence is applied to all these strata then the name Franconia must not be used at all.

When Weidman brought Ulrich to Wisconsin in 1913 to explain the Minnesota names he came in company with Sardeson. It is true that they went wrong on the application of Winchell's name Dresbach but there agreed that the Franconia at Franconia lies above the highest clean sandstone. This is abundantly proved by fossils which may be found at the type locality. Unfortunately, the clean sandstone below the Franconia (basal St. Lawrence of older terminology) is not exposed at Franconia. The valley is not deep enough to expose the section that far down. But those who have recently been at Franconia have no difficulty in finding fossils which prove that the lowest strata exposed are the Ironston member of our Franconia. It is clear, therefore, that you must have made an error in thinking that the beds exposed above the village are the clean white sandstone to which Ulrich misapplied the name Dresbach. He certainly did not make this correlation at Franconia. If you will compare the rather fragmentary section of the St. Croix valley with the better exposures near Trempealeau, Wisconsin (as will be done on the forthcoming conference) you will see the point at once. The question is confused at the type locality of the Franconia because it is located near to the old beach against the Keeweenaw. At St. Lawrence the exposures are poor and little can be seen of the true succession.

Your correlation from well to well is correct but it is your conclusion that in the white clean sandstone you have the upper beds at Franconia that we differ on. I suggest that you check with heavy minerals and with the outcrops farther south in Minnesota where the lower succession is better seen. By the way, although the presence of glauconite in the Franconia often enables one to recognize it, it is not diagnostic. It is very sparse in other places than the type.

Hoping to see you on the Conference, Sincerely,

THE KANSAS GEOLOGICAL SOCIETY

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

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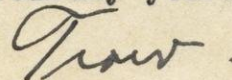
February 25, 1935

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

Dear Fred:

It does seem foolish for me to have asked Atwater to send to me the locations and elevations of the top of the Dresbach formation in western Wisconsin and then for me to return them to you at Madison. One would think that Gordon and I are trying to increase the income of the United States Post Office. My real reason in asking Gordon to send the data to me, after he left here without having gotten them quite completed, rather than to hand them to you directly is that I wanted to have a complete record of these data for my own files. Anyway, the figures are enclosed.

Cordially yours,



A. C. Trowbridge

ACT:A
enc.

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NINTH ANNUAL FIELD CONFERENCE

EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

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WICHITA, KANSAS.

February 20, 1935

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

Dear Fred:

Your very fine letter of February 16 and the attached carbon copy of your letter to Folger of that same date were duly received, but this is the first opportunity I have had to make reply.

Detailed decisions concerning the stops at Victory, Highland, Mineral Point, and Dodgeville can well await the trip to be taken by Raasch to these points.

I am especially glad to learn from the long paragraph in your letter of the 16th of the progress which is being made on the problems of Cambrian and Ordovician nomenclature. It is certainly a relief to know that it will not be necessary for me to make a trip to Madison. Atwater is thoroughly familiar with this whole problem and knows my own opinions and hopes in this regard. As he has doubtless told you, I have been hoping that the Cambrian classification as at least tentatively agreed upon in 1933, as given orally by Raasch from the Twenhofel-Raasch-Thwaites paper at Chicago, and as it will appear in Volume 36 of the Iowa Geological Survey which is now in galley proof can be adopted for conference and Guide Book purposes by Leaders in Wisconsin and Iowa. Unless I am misinformed, the Illinois Leaders will accept this same classification and terminology in case we in Wisconsin and Iowa agree on it. This will still leave the Minnesota people out in some particulars at least, but I have some slight hope that if Wisconsin, Illinois, and

*Sent B/P of ans rec
Feb 25
also to Folger*

2/20/35

Iowa can agree on it, Minnesota may also come in. The section as I have it in mind is in general as follows:

<u>System</u>	<u>Series</u>	<u>Formation</u>	<u>Members</u>
		Trempealeau	{ Jordan Lodi St. Lawrence Dorset ?
Cambrian	St. Croixan	Franconia	{ Perhaps other members to be designated by Raasch Ironton
		Dresbach	{ Galesville Eau Claire Mt. Simon

It still seems to me that this classification comes most nearly to express the facts and at the same time does the least damage to older classifications and to well drillers, etc. If Wisconsin and Iowa can now agree on this general classification, I believe it will be possible to get the official sanction of Illinois for it. This having been accomplished, Folger and I will probably go to Minneapolis in order to see if we cannot get them to agree on this same general classification for field conference purposes.

Cordially yours,

Trow.

A. C. Trowbridge

ACT:A

CC: Anthony Folger

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BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

February 18, 1935.

To The Leadership
of the
Ninth Annual Field Conference.

Gentlemen:

The Committee on Arrangements requests your immediate co-operation in a matter essential to the success of the forthcoming field conference. Many of you have probably realized that to publish the type of Guide Book contemplated, with its estimated 400 pages and multitude of illustrations, will cost this Society several thousand dollars. Our chief source of income is derived from the sale of Guide Books.

Will each of you gentlemen be good enough to forward me, by return mail, the names and addresses of from 10 to 15 (or more if you so desire) of your personal acquaintances whom you deem would be most likely to order a Guide Book at a stated price of \$10.00? It will be desirable, but not essential, that your list be composed of names not likely to be reached by our general mailing list. The greater the geographic distribution of this list throughout the United States, the more valuable will be its power of advertising. Upon receipt in Wichita, these lists will be checked for duplication, and, should there be serious conflict, it may be necessary to impose on you for a few additional names. When the first announcement is mailed out, within the next ten days, all of the notices to the names on your list will be forwarded direct to you each in a stamped, addressed, and unsealed envelope. When these are received, will you write a few lines on a memorandum, or a letter, to each of these men, assuring them of the worth of the Guide Book and emphasizing that a copy should be in their library, inclose your note with the announcement, and forward it without delay?

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It appeals to us that a geologist unacquainted with past publications of this Society, and not conversant with the excellence and real worth of the material in the forthcoming Guide Book, would be far more likely to favor us with an order if its purchase was recommended strongly by you. For your own assurance, you have our absolute guarantee that this Guide Book will be far superior to any previous edition, and will be an essential prerequisite to any reference library of a student of Paleozoic stratigraphy.

Many of you gentlemen have given already hours of labor in behalf of this Conference. Despite that fact, may we count upon each of you for your whole-hearted and immediate support in this sales campaign? The Society must receive advance orders for this Guide Book in order to produce a publication that will do credit and honor to the Leadership. Thus, the advance sale of Guide Books should be as much your interest as the Committee's. All of you are busy men, but may we have your help.

Cordially yours,

Anthony Folger

Anthony Folger.

AF/B

Feb. 16, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Folger:

Reply to yours of the 10th was delayed by reason of the rush (despite small classes) at the start of the new semester.

My paper on Baraboo should really be credited to Wanenmacher as well as to me. It would be a good idea if you would write him at Box 1191, Tulsa, Oklahoma and ask his permission to use his name. He has already given me permission to use such drawings as I see fit. Vandykes of these are in the Survey files here. I suggest as final title:

"Stratigraphy and structure of the Paleozoic of the Baraboo Range, Wisconsin" by J. M. Wanenmacher and F. T. Thwaites

"Physiography of the Baraboo Range, Wisconsin" by F. T. Thwaites
(this will include the discussion of Paleozoic shorelines and beaches and a brief discussion of the glacial features)

"Stratigraphy and structure of the pre-Cambrian of the Baraboo Range, Wisconsin" by Andrew Leith

The first named paper will have to be a rehash of Wanenmacher's original thesis and the publication of it as changed by Twenhofel and Raasch. In fact I would not mind if my name did not appear at all in the title for I will simply do editorial work because I doubt seriously if the original author would have time to work up this material.

The matter of finishing drafting here will apply mainly to the illustrations for Raasch's paper on the Cambrian and for the Baraboo papers in part. I think that almost all other projects extend outside the state and you will have to redraft them anyway. I fully appreciate your desire to get uniformity and road maps and local sections and will probably forward all this in pencil. I take it from a previous letter that you are able to pay the expense of black line prints.

Raasch seems to have a lot of manuscript done on the Cambrian but Andy will not promise any work until April vacation.

Sincerely,

F. T. Thwaites

Copy to A. C. Trowbridge

Feb. 16, 1935

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

Your letter of the 8th has been on my desk for some time but this is the start of the second semester and I could not get to it.

Raasch says he will get out to Victory as soon as possible and inspect his section. He is making good progress on his Cambrian paper.

We will also go to Highland although information now available is to the effect that the Mineral Point section is by all means the better. By the way, the luncheon will have to be moved to Dodgeville, Hotel Higbee, where we ate on the I. G. C. trip in 1933.

With regard to Cambrian nomenclature I have been having some long arguments with Atwater. Two facts stand out. First, I am not allowed by Bean to make any substantial changes from the 1932 Wisconsin section in work for the Survey although he has agreed to go back to Platteville and to drop Mazomanie. Second, the Minnesota geologists have been hopelessly mixed up in their subsurface correlations, although the column given on their recent map is essentially the same as ours. At first Atwater wanted me to change over a lot of my table of names. On consultation with Twenhofel and Raasch I decided not to do this as it represents essentially their correlation of surface geology at or near the type sections. That they have made serious errors in extending this correlation to other areas and does not affect what they intended to do. The only serious difference I see in their surface work is that they locally draw the bottom of their St. Lawrence lower than we do, probably at the bottom of the Upper Greensand. In the subsurface they define St. Lawrence the same as Hall in the water supply paper and then put Franconia below that making it the same as your Galesville. Anyhow, it's a mess and I dislike extremely to use formation names from a state where the geologists do not understand how to extend them and make accurate correlations. However, I do not want you to take the time or to spend the money to come over here now. Now that Atwater is here we will get along all right. Another bad thing is that I must hereafter use one set of names for the Survey and another for scientific writing? Bean tells me he will not attend any conferences on nomenclature. I think it best to let the new nomenclature as it will be given in the Twenhofel-Raasch-Thwaites paper stand but not to hope that it is final or universally acceptable. It is also hopeless to get the U. S. G. S. to accept it.

We have the road log typed up to Madison. Will send you copy of my part of the cross section next week.

Sincerely,

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EASTERN IOWA, NORTHWESTERN ILLINOIS, CENTRAL
AND WESTERN WISCONSIN, EASTERN MINNESOTA

BEGINNING IOWA CITY, AUGUST 25—1935—ENDING DULUTH, SEPTEMBER 1

With the Cooperation of

THE STATE GEOLOGICAL SURVEYS OF
IOWA, ILLINOIS, WISCONSIN, MINNESOTA

February 10, 1935.

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

Dear Thwaites:

Your interesting letter of February 7 has come to hand, but I must request more specific information relative to the third paragraph of your letter. It is now quite clear that you will prepare a paper on the Baraboo district and that Andrew Leith will prepare the pre-Cambrian portion of that paper, and that his manuscript is to be listed separately. However, I must again ask you to forward me the exact title of your Baraboo paper, and of the paper which will be prepared by Andrew Leith.

If the Committee were to list these two papers based on the information received, the titles would have to be included in the following way:

"Stratigraphy and Structure of the Baraboo Range",
by Fredrik T. Thwaites;

"The Pre-Cambrian of the Baraboo Range," by Andrew
Leith.

These titles as they appear above might not be at all satisfactory either to you or to Leith, and I hesitate to incorporate them in the printed announcement without giving you opportunity to forward corrections.

In regard to your forwarding black line prints, drafted by yourself of all illustrations to be incorporated in your papers, let me emphasize that we have no fear of your ability to turn out a nicely drafted illustration or map. Our idea in not requesting contributors to do this was because of our desire to save them time. In your special case, if you would prefer to prepare your own illustrations, that will be perfectly satisfactory.

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Mr. F. T. T. 2 2-10-35.

However, this will apply to everything excepting the graphic columnar sections at a stop and to the strip route maps. These two types of drawings are all to be redrafted by the Society draftsman in Ponca City in order that the drafting on all the graphic sections and on all the strip route maps will be exactly the same.

I have taken particular note of your statements in the next to the last paragraph, and please be advised that the Kansas Geological Society will, in the near future, forward Dr. Bean with an actual release of all material belonging to the Wisconsin Survey and to yourself. Despite the fact that the Guide Book will be copyrighted, it is not the thought of this Society to prevent the republication of this material by any of the State Surveys who have contributed this information.

With kindest personal regards,

Very truly yours,

Anthony Folger

Anthony Folger.

AF/B

c. c. to A. C. Trowbridge.

Dictated 2-9-35.

THE KANSAS GEOLOGICAL SOCIETY

WICHITA, KANSAS

NINTH ANNUAL FIELD CONFERENCE

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WICHITA, KANSAS.

February 8, 1935

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

Dear Fred:

Matters pertaining to the K.G.S. Field Conference have been moving so swiftly lately that it has been almost impossible for me to keep up with them, and I see that I have not replied to your letter of January 29 or acknowledged receipt of carbon copies of your letters to Folger dated January 30 and February 7.

We shall probably have to defer final decisions concerning the relations of the Wisconsin and Iowa portions of Day 2 until the 1935 conditions of the exposures at Victory and of Highway 35 are known more definitely. I hope you will go right ahead with the Wisconsin part of this day's route as you have it. Decisions on details will have to be made later. However, we will plan for a stop at Iron Hill. I had forgotten our oral agreement to this effect. Excuse it please.

I had also forgotten that we agreed at Devil's Lake last summer to cut out the stop at Grandfather's Bluff in Day 3. This too is O.K. Just leave it out. It will be all right also to allow sixty minutes for all bluff stops, at least for the present. If we must reduce them to fifty minutes later, this can be done.

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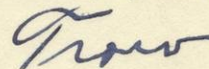
I will leave Day 4 to you, but might remind you of the fine Platteville section at Highland as a possible substitute for the one at Mineral Point, in case the route from Liberty Pole to Military Ridge is anywhere near Highland. I imagine you will climb Military Ridge from Spring Green to Dodgeville, however, and be far east of Highland.

Day 5 also is left in your hands.

Please go ahead with your log for Day 6, reducing the lengths of stops at Hudson and Osceola as much as you think would be reasonable. Details as between Wisconsin and Minnesota will have to be decided upon later.

The several comments contained in your recent letters concerning the general classification have been studied with especial care and have been the subject of considerable conference and correspondence among Dean Kay, Folger, and myself. We are agreed that the problems of general classification and nomenclature are far and away the most difficult of any of those which we face just now. May I say frankly without any intention of giving offense that we are now scarcely less concerned about your own present attitude in this regard than about the position the Minnesota people have occupied ~~in~~consistently from the start. The situation seems to us to be so serious that I have been authorized by Kay and Folger to make a trip to Madison, in order to see just what can be done about it. Would you be willing to see me for a few hours some day within the next two or three weeks? Could you arrange for Bean, Twenhofel, Raasch, Edwards, and Atwater to participate in our conference? Of course, Shrock or Andy Leith or Bays or any other interested person would be welcome also. It is our thought that if we can agree finally on a Cambrian and Ordovician classification that will suit Wisconsin, Illinois, and Iowa, Folger and I will go to Minneapolis a little later for the purpose of trying to get the Minnesota Committee on Stratigraphic Names to concur in this agreement, so that some classification can be adopted for all four states.

Cordially yours,



A. C. Trowbridge

ACT:A

CC: Dean Kay
Mr. Folger

Tulsa, Okla
Feb. 8, 1935.

Mr. J. T. Shwaites
Science Hall
Madison, Wis.

Dear Fred:

Yours of the 4th arrived a few days ago. You have my permission to use all or any of the illustrations I prepared for my thesis. I left all negatives and tracings with the State Survey. In fact I even left my notes there. The Van Dyke negatives will probably answer your purpose. As I recall it the draftsman left out a few lines on the areal map and they had to be added to the prints. One I particularly remember is a Dreibach-Franconia contact a short distance southeast of Paraboo.

I wish I could take in the trip for I am sure it will be interesting. However, it is a rather extended itinerary and will require considerable time and I doubt if the company would allow

a leave of absence. The alternative is to take the trip during my vacation (or vice versa).

My father has been rather seriously ill and I must visit him during my vacation.

We are the proud parents of a son born last October and of course the paternal grandparents are anxious to see him.

My work is going along alright. They keep me very busy. They gave me an increase in salary last August and much to my surprise I received another the first of the year; so I guess they are satisfied with my endeavors.

I believe that the oil business is getting much better. The morale is certainly better than it was a year ago and I anticipate a rise in crude price before long.

I hope that you can locate the drawings and that they save you some work. Best regard to Amy from both Mrs. Wanenmacher and myself.

Sincerely

JM Wanenmacher

Feb. 7, 1935

Mr. Anthony Folger,
1107 Union National Bank Bldg.,
Wichita, Kansas

Dear Folger:

Yours of the third (three separate letters) are at hand.

Mrs. Thwaites has been getting after me for writing such long letters instead of working on the road log so will try to be brief.

I will ~~propagate~~ the paper on the Baraboo district under the following arrangement. Andy Leith will prepare the section on the pre-Cambrian including an areal map and one or two cross sections. I will work over Joe Wernicke's thesis on the Paleozoics and work over such of his illustrations as I deem best. I have already written him to see if vandyke positives can be obtained on which I can draft such new information as I deem proper. The Ableson map will be prepared as early in the season as possible but I do not expect much until after school closes on June 18. I want to supervise the contouring myself and had also intended to finish up field work on my Ponrose project at the same time. By the way, this work has necessitated the complete postponement of the Ponrose project and I have applied for an extension of time on that. The photographs will be taken at some time in the spring before June, I hope. The block diagrams I will work up soon. Andy's paper should be listed separately.

With regard to black line prints my idea was to use quite a few of these in order to save you the expense and time of redrafting but if you want to spend the money and the time to have all drafting uniform then I will send you only blue-line or blueprints or pencil copies. I will refer you to my Outline of Glacial Geology of which Vorhies has copies to show you that I can draft and know about the problems of reduction in size. Please advise me of your wishes on this point. All lettering is with write guides. My preference is for drafting myself for then I retain the tracing for future revision. Also we avoid any danger of mistakes in copying. I might mention now the fact that on the cross section of the central U. S. your draftsman misspelled several words and made all water wells appear to be oil tests in the list. These things just will happen when the author cannot be there to inspect the work.

By the way in furnishing material either belonging to the Wisconsin Survey or to myself we desire to retain all rights of publication at a later date elsewhere. We may later publish the Ableson topographic map as a commercial venture for many students go there every year.

In closing I will emulate Cate and remark that " All Minnesota formations names must be destroyed" if we are to have peace in the pre-Cambrian stratigraphy.

Sincerely,

F. T. Thwaites

Copy to Trow

March 16, 1936

Dr. A. C. Trowbridge,
Dept. of Geology,
University of Iowa,
Iowa City, Iowa

Dear Trow:

First I want to thank you for the copy of the papers by Powers, Couser, and Clement which just arrived.

Second I wish to inform you that no answer of any kind has ever come from Wichita and that both Andy and I are without the material which we "loaned" to Anthony. Now we are both willing if need be to write off the maps to the credit of experience but when it comes to the half tone which I borrowed from the Dells Boat Co. it is another matter. My failure to obtain that leaves me in a very bad position here.

I wrote Wyman a short time ago in regard to this matter but then learned that he has been transferred to Tulsa. Doubtless that is why no answer came that time.

Could you kindly try to arouse Anthony once more or Kesler or shall I once more try my hand at this apparently useless task. If the material is lost or has been retained by their creditors I should think that they could at least tell us about it.

With best regards,
Sincerely,

ARTHUR C. TROWBRIDGE
DIRECTOR AND STATE GEOLOGIST
ALLEN C. TESTER
ASSISTANT STATE GEOLOGIST

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
103 GEOLOGY BUILDING
IOWA CITY

GEOLOGICAL BOARD
CLYDE L. HERRING
GOVERNOR OF IOWA
EUGENE A. GILMORE
PRESIDENT STATE UNIVERSITY OF IOWA
RAYMOND M. HUGHES
PRESIDENT IOWA STATE COLLEGE
ROBERT E. BUCHANAN
PRESIDENT IOWA ACADEMY OF SCIENCE
CHARLES W. STORMS
AUDITOR OF STATE

March 17, 1936

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

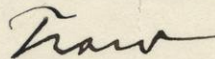
Dear Fred:

Your letter of March 16 is just now received, and I hasten to make reply.

About a week ago all of Tester's material and mine that had been loaned to Folger was returned. It was my hope that one or more packages had been sent to Madison at that time. I am writing Folger again today and am asking Allen Tester to see Folger about the Wisconsin material at the Tulsa meetings of the A.A.P.G. later this week.

Folger's delays in getting these materials back to their owners have been a cause of much embarrassment and inconvenience to all of us. I simply do not understand him.

Cordially yours,



A. C. Trowbridge

ACT:A

Feb. 17, 1936

Mr. E. A. Wyman,
Amerada Petroleum Corporation,
Box 995,
Wichita, Kansas

Dear Mr. Wyman:

When we were on the trial run of the Kansas Geological Society field conference last June I arranged to borrow a cut of a view at the Dells. This was obtained from the Dells Boat Company and forwarded in due course to Anthony Folger in your city. He promised to return the same either to me or (as I requested) direct to the boat company at Wisconsin Dells.

Now the point is I have never heard anything more of this cut. Anthony has never answered any letters either from me or from Andrew Loith nor have any of the other things we loaned ever been returned. Efforts to get action through Trowbridge have also failed. Now I am going to try you as you were present at the time this loan was arranged for. I do not care so much for the personal maps which Andy and I loaned but I do care about keeping my word to return something to an outsider.

Could you please do what you can to straighten out this matter for as it stands it leaves me in a very bad light here.

Sincerely,