

June 20, 1929

My dear Mr. Barrows:

I thank you for your letter of June 8 relative to the disposition of the Cincinnati matter. I am sorry that the outcome is in some degree disappointing to you, but I cannot refrain from saying that I regard it as most fortunate for the University of Chicago. And may I take this opportunity to tell you how deeply I appreciate the efficient way in which you conduct the affairs of your department and the very generous spirit in which you have assisted me during the past two years. It is a great satisfaction to feel that the interests of the Department of Geography are so intelligently and carefully looked after.

With warm regards,

Yours cordially,

FREDERICK WOODWARD

Acting President

FW:KF

Mr. H. H. Barrows
Faculty Exchange

GM

June 20, 1929

My dear Mr. Barrows:

I thank you for your letter of June 8 relative to the disposition of the Cincinnati matter. I am sorry that the outcome is in some degree disappointing to you, but I cannot refrain from saying that I regard it as most fortunate for the University of Chicago. And may I take this opportunity to tell you how deeply I appreciate the efficient way in which you conduct the affairs of your department and the very generous spirit in which you have assisted me during the past two years. It is a great satisfaction to feel that the interests of the Department of Geography are so intelligently and carefully looked after.

With warm regards,

Yours cordially,

FREDERICK WOODWARD

Acting President

FW:RP

Mr. H. H. Barrows
Faculty Exchange

The University of Chicago

Department of Geography

June 8, 1929

Vice-President Frederic Woodward,
Faculty Exchange.

My dear Mr. Woodward:

In accordance with my promise to keep you posted concerning developments at Cincinnati, I am sending you a copy of a letter received a day or two ago from President Schneider. I will frankly confess to some disappointment over the outcome. There is, I am sure, a great opportunity at Cincinnati, one which carries with it such a challenge that I had decided to accept the position if asked to take it.

Very cordially yours,

Harlan H. Barrows
Harlan H. Barrows.

The University of Chicago

Department of Geography

June 8, 1929

Vice-President Frederic Woodward,
Faculty Exchange.

My dear Mr. Woodward:

In accordance with my promise to keep
you posted concerning developments at Cincinnati, I am
sending you a copy of a letter received a day or two ago
from President Schneider. I will frankly confess to
some disappointment over the outcome. There is, I am
sure, a great opportunity at Cincinnati, one which carries
with it such a challenge that I had decided to accept the
position if asked to take it.

Very cordially yours,

Harlan M. Barrows
Harlan M. Barrows.

COPY

UNIVERSITY OF CINCINNATI

Cincinnati, Ohio

June 5, 1929

Dear Dr. Barrows:

Our presidential situation here became so complicated that finally I was prevailed upon by the Board to accept the presidency with a Vice President to assist me in many of the burdens and duties attached to the office. The whole thing is too long and too complicated to write, and, anyhow, I am sure you would not be interested in a detailed explanation of our difficulties. This position involves a curiously intricate composite of affairs, and the more the Board went into the situation the more reluctant they were to get anyone from the outside.

Personally, I want to tell you what a deep impression you made upon me, and I shall hope to have the pleasure of knowing you better, because you are one of those rare spirits whom it is a great pleasure to know.

Cordially yours,

Herman Schneider
President

Professor H. H. Barrows,
Department of Geography,
University of Chicago,
Chicago, Illinois.

COPY

UNIVERSITY OF CINCINNATI

Cincinnati, Ohio

June 5, 1929

Dear Dr. Barrows:

Our presidential situation here became so complicated that finally I was prevailed upon by the Board to accept the presidency with a Vice President to assist me in many of the burdens and duties attached to the office. The whole thing is too long and too complicated to write, and, anyhow, I am sure you would not be interested in a detailed explanation of our difficulties. This position involves a curiously intricate composite of affairs, and the more the Board went into the situation the more reluctant they were to get any one from the outside.

Personally, I want to tell you what a deep impression you made upon me, and I shall hope to have the pleasure of knowing you better, because you are one of those rare spirits whom it is a great pleasure to know.

Cordially yours,

Herman Schneider
President

Professor H. H. Barrows,
Department of Geography,
University of Chicago,
Chicago, Illinois.

G-27

August 14, 1928

My dear Dean Gale:

I should like to have your opinion on whether or not I should make a recommendation that we spend funds to have a delegate at the Fourth Pacific Science Congress described in the attached invitation. Possibly the plan of the new man, Taylor in Geography, could be worked out so that he could be our representative.

Very truly yours,

David H. Stevens

Assistant to the President.

Dean Henry G. Gale,
Faculty Exchange.

G-57

August 14, 1928

My dear Dean Gale:

I should like to have
your opinion on whether or not I should
make a recommendation that we spend funds
to have a delegate at the Fourth Pacific
Science Congress described in the attached
invitation. Possibly the plan of the new man,
Taylor in Geography, could be worked out so
that he could be our representative.

Very truly yours,

David H. Stevens

Assistant to the President.

Dean Henry G. Gale,
Faculty Exchange.

927
August 1, 1928.

Dear Harold:

Something may come up in the meeting of the Board next Thursday regarding the news item in the Tribune of July 31 to the effect that Professor Young of the University of Sidney had been appointed to a professorship in our Department of Geography. Barrows called up as soon as he saw the item, to make clear that his letter to Young had been qualified in the usual manner, and to say that he can only assume that some aggressive reporter in Australia went beyond the fact in saying that Young has actually been invited and has accepted. In short, the Department and our own news bureau are in no way responsible for this anticipation of the facts.

Very truly yours,

David H. Stevens

Assistant to the President.

Mr. Harold H. Swift,
Swift & Company,
Union Stock Yards,
Chicago, Illinois.

August 1, 1922.

Dear Harold:

Something may come up in the meeting of the Board next Thursday regarding the news item in the Tribune of July 31 to the effect that Professor Young of the University of Sydney had been appointed to a professorship in our Department of Geography. Barrows called up as soon as he saw the item, to make clear that his letter to Young had been qualified in the usual manner, and to say that he can only assume that some aggressive reporter in Australia went beyond the fact in saying that Young has actually been invited and has accepted. In short, the Department and our own news bureau are in no way responsible for this anticipation of the facts.

Very truly yours,

David H. Stevens

Assistant to the President.

Mr. Harold H. Swift,
Swift & Company,
Union Stock Yards,
Chicago, Illinois.

THE GATHMYS RESEARCH CORPORATION

OFFICES: 1520 No. 134 SOUTH LA SALLE STREET

CHICAGO

March 14, 1928.

OFFICERS:

J. PAUL GOODE
PRESIDENT

JULIUS STIEGLITZ
FIRST VICE-PRESIDENT

CHESTER H. THORDARSON
SECOND VICE-PRESIDENT

EUGENE H. HELLER
SECRETARY

RAYMOND M. ASHCRAFT
TREASURER

WILLIAM HOSKINS
DIRECTOR

SAMUEL L. MADORSKY
DIRECTOR OF RESEARCH

For President Mason.

To the Directors of Gathmys Research Corporation.

Gentlemen:

Let me report progress since our meeting with Mr. Evans in November. It was agreed then that it would be a good plan to present our project to Mr. Jones of the Inland Steel Co.. Dr. Steiglitz arranged for a conference with Mr. Jones for a date early in January, and Mr. Ashcraft reserved a dining room at the Union League Club. Present were Mr. Jones, Dr. Steiglitz, Mr. Ashcraft, and Dr. Madorsky.

The new type of furnace which has been designed by Dr. Madorsky, was discussed. This is a device in which the ore is melted and reduced by blue gas, or other reducing gas, in a continuous performance from ore to special steel. Mr. Jones was greatly pleased with it, and volunteered to arrange a conference between his expert metallurgists and a committee of our directors.

Shortly after this meeting Mr Jones' wife was taken sick, and died on Feb. 4th.. Naturally Mr. Jones was not in a position to take an interest in our project for many days. He wrote Dr. Steiglitz that he had not forgotten and would make the appointment soon, since when nothing has been heard.

This is an embarrassing suspense, since we are near the end of the budget provided by Mr. Swift, and we are at a standstill. We can pay Dr. Madorsky's salary for this month and next only.

The new furnace worked out by Dr. Madorsky promises to produce finished steel, at approximately the cost of blast-furnace pig iron at present costs. Parkinson and Lane are much pleased with it, and a patent application has been drawn up, with over thirty claims, and it seems quite certain that all our essential claims may be allowed.

THE GATHMYS RESEARCH CORPORATION

OFFICES: 1520 No. 134 SOUTH LA SALLE STREET

CHICAGO

PAUL GOODE
PRESIDENT
STIEGLITZ
VICE-PRESIDENT
H. THORDARSON
SECOND VICE-PRESIDENT
EUGENE H. HELLER
SECRETARY
RAYMOND M. ASHCRAFT
TREASURER
WILLIAM HOSKINS
DIRECTOR
SAMUEL L. MADORSKY
DIRECTOR OF RESEARCH

- 2 -

It is worthy of note that the new furnace calls for no electricity, - that its construction is very simple, - that only stock material will be called for in its construction, - that in its semi-commercial tryout the heat for melting and gas for reduction can be had from the city gas mains, and that very little help will be required to make the runs.

It is painful to have to wait weeks and months for action. If we can not get the help we require soon from Mr. Jones, I would raise the question if it may not be advisable to go elsewhere, - to Mr. Rockefeller, or to the United States Steel Co.. In the latter case I feel sure we can get a hearing at once, by the head men.

May I ask each of the Directors to give these matters careful consideration, and to offer suggestions, We are losing most valuable time.

Sincerely,

Paul Goode
J. Paul Goode.

B

927

UNITED STATES DEPARTMENT OF AGRICULTURE
WEATHER BUREAU
CHICAGO, ILL.

February 13, 1928.

Dr. Max Mason, President,
University of Chicago,
Chicago, Illinois.

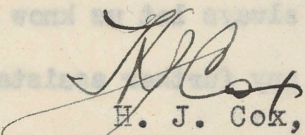
Dear Doctor Mason:

I wish to advise you that the aerological work of the Weather Bureau, including the balloon flights, is to be transferred this day from the University of Chicago Observatory to the Municipal Airport at Cicero. This change has been made necessary in the interests of aviation, as we felt obliged to do all the aerological work at the Airport and afford personal contact between the Weather Bureau and the air transport companies and their pilots.

I wish to take this occasion to express my appreciation of the splendid cooperation of the University, especially that of the Departments of Geography and Geology, with the Weather Bureau in this portion of our work, as well as in the maintenance of the meteorological station as a whole. Of course, the station will be continued in Rosenwald Hall as heretofore, and we are proud to say that, regardless of the aerological work, it is one of the finest meteorological stations in the country.

Very truly yours,

HJC:S.


H. J. Cox,
Senior Meteorologist.

UNITED STATES DEPARTMENT OF AGRICULTURE
WEATHER BUREAU
CHICAGO, ILL.

February 15, 1928
February 15, 1928

Dr. Max Mason, President,
University of Chicago,
Chicago, Illinois.

Dear Doctor Mason:

I wish to advise you that the aerological work of the Weather Bureau, including the balloon flights, is to be transferred this day to the University of Chicago Observatory to the Municipal Airport at Cicero. This is necessary in the interests of aviation, as we felt obliged to do all the aerological work at the Municipal Airport. The transfer of the aerological work of the Weather Bureau and the air transport contact between the Weather Bureau and the air transport companies now see and I can see how

I wish to advise you that the aerological work of the Weather Bureau, including the balloon flights, is to be transferred this day to the University of Chicago Observatory to the Municipal Airport at Cicero. This is necessary in the interests of aviation, as we felt obliged to do all the aerological work at the Municipal Airport. The transfer of the aerological work of the Weather Bureau and the air transport contact between the Weather Bureau and the air transport companies now see and I can see how

with the Weather Bureau and hope that you will
always let us know promptly in case we can be of
any further assistance.

H. J. Cox,
Senior Meteorologist.

Cordially yours,
Max Mason

President

Mr. H. J. Cox
Senior Meteorologist
United States Department of Agriculture
Weather Bureau
Chicago, Illinois

927 Braud
March 8.
February 6, 1928

My dear Mr. Plimpton:

Shortly after the receipt from you of a statement to be sent to Mr. Rawson, covering the cost of the weather map in Rosenwald Hall, we received a letter from Mr. Goode requesting that \$35.00 be added for the cost of a lighting fixture. This was done and the bill has gone forward to Mr. Rawson with a total of \$325.07.

Yours sincerely,

FREDERIC C. WOODWARD

Mr. N. C. Plimpton

Faculty Exchange

FCW:L

March 8
B. 1000
1000

February 6, 1928

My dear Mr. Plimpton:

Shortly after the receipt from you of a statement to be sent to Mr. Rawson, covering the cost of the weather map in Rosenwald Hall, we received a letter from Mr. Goode requesting that \$35.00 be added for the cost of a lighting fixture. This was done and the bill has been forwarded to Mr. Rawson with a total of \$325.07.

Yours sincerely,

FREDERIC C. WOODWARD

Mr. H. C. Plimpton
Security Exchange
FCW-L

February 6, 1928

My dear Mr. Goode:

Your letter of February 1, relating to the cost of a lighting fixture for the weather map, was duly received. I have added \$35.00 to the itemized statement which we are sending to Mr. Rawson today.

It is good news that you are being permitted to sit up for a little while every day, with the prospect that you will be out again in a month or so. I hope your recovery may be rapid and complete.

Yours cordially,

FREDERIC C. WOODWARD

Mr. J. P. Goode
6227 Kimbark Avenue
Chicago, Illinois

FCW:L

February 6, 1928

My dear Mr. Goode:

Your letter of February 1, relating to the
cost of a lighting fixture for the weather map,
was duly received. I have added \$35.00 to the
itemized statement which we are sending to Mr.
Lawson today.

It is good news that you are being permitted
to sit up for a little while every day, with the
prospect that you will be out again in a month or
so. I hope your recovery may be rapid and complete.

Yours cordially,

FREDERIC C. WOODWARD

Mr. J. P. Goode
6327 Kimbark Avenue
Chicago, Illinois

FCW:L

February 6, 1928

My dear Mr. Rawson:

In a letter to the President, dated November 30, 1926, you very generously authorized him to have an illuminated weather map installed in Rosenwald Hall and to send the bill to you. The cost was estimated in advance as between \$300 and \$400. The actual cost is \$325.07, and I inclose herewith an itemized statement.

May I express again our appreciation of this contribution to the work in meteorology, and of your interest in the University?

Yours cordially,

FREDERIC C. WOODWARD

Mr. Frederick H. Rawson
1550 North State Parkway
Chicago, Illinois

FCW:L

February 6, 1928

My dear Mr. Rawson:

In a letter to the President, dated November 30, 1926, you very generously authorized him to have an illuminated weather map installed in Rosenwald Hall and to send the bill to you. The cost was estimated in advance as between \$300 and \$400. The actual cost is \$325.07, and I inclose herewith an itemized statement.

May I express again our appreciation of this contribution to the work in meteorology, and of your interest in the University?

Yours cordially,

FREDERIC C. WOODWARD

Mr. Frederick H. Rawson
1850 North State Parkway
Chicago, Illinois

FCW:L

The University of Chicago
Department of Geography

J. L. GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

January 31, 1928.
CHICAGO, Feb. 1, 1928.

I am enclosing herewith two copies of a statement of the cost of installing a U. S. weather map on the first floor of Rosenwald Hall, for transmission to Mr. R. M. Rawson, in the expectation of receiving from him reimbursement of the amount involved, \$132.07. This statement has been prepared at the suggestion of Mr. J. P. Goode, who states that he had

President Max Mason, in accordance with your letter to
University of Chicago,
Chicago, Ill.

My dear President Mason:

About two months ago I made my report on the weather map which has been installed in Rosenwald and which was the gift of Mr. Rawson. At that time I was in such a critical physical condition I had no means of knowing what the future had in store and made my report before the estimate for the adequate lighting of the map had been sent in from the Department of Buildings and Grounds. Mr. Greenham has now submitted an estimate which has the approval of Mr. Johnson of the Weather Bureau, showing that the adequate fixtures can be installed for \$35.00. If it is not too late with the report to Mr. Rawson may I suggest that this item be added since it will leave the total quite well within the margin that he indicated he was willing to pay for the map?

My doctor is permitting me to sit up a short time each day now with the prospect that within the next month or so I may be out again.

I am

Sincerely,

Paul Goode
J. Paul Goode.

H

The University of Chicago
Department of Geography

PHOTOGRAPHY
ECONOMIC GEOGRAPHY
CODE

Chicago, Feb. 1, 1938.

My dear President Mason:
University of Chicago
Chicago, Ill.
I am very glad to hear that you are interested in the work of the Department of Geography.

About two months ago I made my report on the weather survey which has been included in the volume of the report of the Committee on the Physical Condition of the Nation. I had no means of knowing what the interest had in it and made my report before the estimate for the necessary printing of the map had been sent in from the Department of Agriculture. Mr. Greenham has now submitted an estimate which has the approval of Mr. Johnson of the Weather Bureau. I am sure that the estimate will be satisfactory and that the map will be published. I am sure that the report of the Committee on the Physical Condition of the Nation will be of great value to the public and I am sure that the map will be of great value to the public. I am sure that the report of the Committee on the Physical Condition of the Nation will be of great value to the public and I am sure that the map will be of great value to the public.

My best wishes are permitting me to sit on a report and I am sure that the report will be of great value to the public and I am sure that the map will be of great value to the public.

I am

Sincerely,

Paul H. Hooten
J. Paul Hooten

11

72

The University of Chicago

Office of the Auditor

January 31, 1928.

Dear President Mason:

I am inclosing herewith two copies of a statement of the cost of installing a U. S. weather map on the first floor of Rosenwald Hall, for transmission to Mr. F. H. Rawson, in the expectation of receiving from him reimbursement of the amount involved, \$290.07. This statement has been prepared at the suggestion of Mr. J. P. Goode, who states that he had an understanding with you, in accordance with your letter to him under date of December 11, 1926. (See 1926 file - G.24)

President Max Mason,
Harper Library.

Yours very truly,

W. C. Thompson

The University of Chicago

Office of the Registrar

January 31, 1928.

Dear President Mason:

I am inclosing herewith two copies of a statement of the cost of installing a U. S. weather map on the first floor of Rosenwald Hall, for transmission to Mr. F. H. Rawson, in the expectation of receiving from him reimbursement of the amount involved, \$290.07. This statement has been prepared at the suggestion of Mr. J. P. Goode, who states that he had an understanding with you, in accordance with your letter to him under date of December 11, 1926. (See file - 6.24)

Yours very truly,

W. D. Huntington

President Max Mason,
Harper Library.

The University of Chicago

Office of the Auditor

January 30, 1928.

Mr. F. H. Rawson,
c/o President Mason.

Expenses in connection with preparation and installation
of a U. S. Weather Map on a framed plate glass on the
first floor of Rosenwald Hall, as per arrangements with
Mr. J. Paul Goode:

Preliminary drafting - Karl Mygdal	\$ 27.00
Sanding the glass, Rawson & Evans	20.00

Painting map on plate glass, by Consolidated Sign Letter Company.	200.00
--	--------

Buildings & Grounds for frame and installation	
---	--

lighting fixtures
78.07
~~43.07~~
x 325.07
\$290.07

Copy to Mr. Rawson -

The University of Chicago

Office of the President

January 30, 1928.

Mr. F. H. Rawson,
c/o President Mason.

Expenses in connection with preparation and installation
of a U. S. Weather Map on a framed plate glass on the
first floor of Roosevelt Hall, as per arrangements with
Mr. J. Paul Goode:

\$ 27.00	Preliminary drafting - Karl Myrdal
20.00	Sanding the glass, Rawson & Evans
200.00	Painting map on plate glass, by Consolidated Sign Letter Company
13.07	Buildings & Grounds for frame and installation
<u>260.07</u>	

C24

December 11, 1926

Dear Mr. Plimpton:

I send copy of a letter by Professor Goode and a letter from Mr. Rawson, in answer to one from me quoting Professor Goode's letter and asking him if he cared to furnish the funds to construct this map, and also a letter to Professor Goode from me, for your information.

I have thanked Mr. Rawson for his offer.

Yours truly,

Max Mason

President.

Mr. N. C. Plimpton,
Faculty Exchange.

MM.C

Copy

December 11, 1938

Dear Mr. Plimpton:

I send copy of a letter by Professor Goode and a letter from Mr. Rawson, in answer to one from me quoting Professor Goode's letter and asking him if he cared to furnish the funds to construct this map, and also a letter to Professor Goode from me, for your information.

I have thanked Mr. Rawson for his offer.

Yours truly,

Max W. Rawson

President.

Mr. W. C. Plimpton,
Faculty Exchange.

W.C.

December 11, 1926

Dear Professor Goode:

I am sending you a copy of a letter of Mr. Rawson's. Will you please have the map constructed after obtaining an estimate of the cost so that we may be sure that this will lie in the limits named in your letter of November 17, that is, between \$300 and \$400.

I am assuming that the best way of handling this is to have the University pay for it and then bill Mr. Rawson when it is completed. Perhaps you will be good enough to check with Mr. Plimpton before proceeding. I am sending him a copy of the correspondence.

Sincerely yours,

Max Mason

President.

Professor J. Paul Goode,
Department of Geography,
Faculty Exchange.

MM.C

December 11, 1938

Dear Professor Goode:

I am sending you a copy of a letter of Mr. Rawson's. Will you please have the map constructed after obtaining an estimate of the cost so that we may be sure that this will lie in the limits named in your letter of November 17, that is, between \$300 and \$400.

I am assuming that the best way of handling this is to have the University pay for it and then bill Mr. Rawson when it is completed. Perhaps you will be good enough to check with Mr. Plimpton before proceeding. I am sending him a copy of the correspondence.

Sincerely yours,

Wm. M. Mason

President.

Professor J. Paul Goode,
Department of Geography,
Faculty Exchange.

WM. C.

December 11, 1926

Dear Mr. Rawson:

It is very good of you to respond so quickly and so generously in regard to the provision of the illuminated weather map.

I have transmitted a copy of your letter to Professor Goode and Mr. Plimpton with the request that work be done and that the expense be billed to you afterward.

Thank you very much indeed.

Sincerely yours,

Max Mason

President.

Mr. Frederick H. Rawson,
1550 North State Parkway,
Chicago, Illinois.

MM.C

Copy to City Office
Mr. Moulds
Mr. Haynes

December 11, 1928

Dear Mr. Rawson:

It is very good of you to respond so quickly and so generously in regard to the provision of the illuminated weather map.

I have transmitted a copy of your letter to Professor Goode and Mr. Plimpton with the request that work be done and that the expense be billed to you afterward.

Thank you very much indeed.

Sincerely yours,

W. M. C.

President.

Mr. Frederick H. Rawson,
1850 North State Parkway,
Chicago, Illinois.

W. M. C.

Copy to City Office
Mr. Moulds
Mr. Haynes

FRANK H. RAWSON
North State Parkway
Chicago, Illinois

Brow
March 8, 1928

C
O
P
Y

November 30, 1926

My dear Mr. President:

Upon my return from a short trip to Panama I found your letter relative to the illuminated weather map.

While my budget is working over time, and my pocket-book correspondingly deflated, I realize this map must mean a good deal to the University or you would not have written me concerning it, and hence I will authorize you to have the expenditure made along the lines indicated in your letter and send the bill to me.

Very truly yours,

(Signed) F. H. Rawson

Max Mason, Esquire, President,
The University of Chicago,
The Midway,
Chicago, Illinois.

P.S. Thank you very much for your kind expressions concerning Kennett's book.

F. H. R.

Original to City Office
Copy to Mr. J. F. Moulds
Mr. Rowland Haynes

1111010

November 23, 1926

Dear Mr. Rawson:

I am enclosing a copy of a letter from Mr. Goode, Chairman of the Department of Geography.

We are all familiar with the thought that "to him that hath shall be given", and in sending this to you I apparently am operating on the principle that from him who gives shall be asked. But at any rate you will have to admit the logic of sending an appeal to you since you are

- (a) interested in meteorology,
- (b) interested in the University, and
- (c) for all I know, might be interested in providing for this man.

A very large body of students passes each day through Rosenwald Hall and I do have the feeling that this sort of a thing is of considerable educational value.

I feel somewhat ill at ease in bringing such a matter as this to anyone's attention, and especially to one who is generous, but I know you will understand the spirit in which I am transmitting it.

Sincerely yours,

Max Mason

President

Mr. Frederick H. Rawson,
7 South Dearborn Street,
Chicago, Illinois.

MM R

MM R

Mr. Frederick H. Rawson,
7 South Dearborn Street,
Chicago, Illinois.

President

Max Mason

Sincerely yours,

I feel somewhat ill at ease in bringing such a matter as this to anyone's attention, and especially to one who is generous, but I know you will understand the spirit in which I am transmitting it.

A very large body of students passes each day through Roosevelt Hall and I do have the feeling that this sort of a thing is of considerable educational value.

- (a) interested in meteorology,
- (b) interested in the University, and
- (c) for all I know, might be interested in providing for this man.

You since you are
will have to admit the logic of sending an appeal to
him who gives shall be asked. But at any rate you
I apparently am operating on the principle that from
that hath shall be given", and in sending this to you
We are all familiar with the thought that "to him

Chairman of the Department of Geography.
I am enclosing a copy of a letter from Mr. Goode.

Dear Mr. Rawson:

November 23, 1926

The University of Chicago
Department of Geography

J. L. GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO,
November 17, 1926.

President Max Mason,
The University of Chicago,
Chicago, Illinois.

My dear President Mason:

Professor Henry J. Cox, of the Weather Bureau, has made a suggestion which appeals to me and which has in it, as it would seem, the possibilities of a nice bit of co-operation. He is suggesting that there should be installed, perhaps in Rosenwald Hall, a large map of the United States upon a glass plate, illuminated from behind, and upon which each morning the day's weather map and forecasts will be posted, as they are in the Boards of Trade and Chambers of Commerce and certain other large institutions the country over. The Weather Bureau stands ready to do this daily service if the map can be provided. A rough estimate of the cost of such a map is between \$300 and \$400. I wonder if it might not easily be possible that someone interested in meteorology and in the University might not be glad to contribute the map on the condition of its being taken care of by the Weather Bureau.

I am, sincerely,

JPG:WD.

J. Paul Goode
J. Paul Goode

The University of Chicago
Department of Geography

J. PAUL GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO
November 14, 1933

President Max Mason
The University of Chicago
Chicago, Illinois

My dear President Mason:

Professor Henry J. Cox, of the Weather Bureau, has
made a suggestion which appeals to me and which has in it
as it would seem, the possibility of a nice bit of co-
operation. He is suggesting that there should be installed
a station in Roosevelt Hall, a department of the United States
Department of the Interior, which is now being built, and upon which
work is being done. The station would be a weather station and
would be in the hands of the Weather Bureau and the University of
Chicago and certain other large institutions in the country.
The Weather Bureau stands ready to do this thing
and if the map can be provided. A rough estimate of
the cost of such a map is between \$20 and \$400. I wonder
if it might not easily be possible that someone interested
in meteorology and in the University might not be kind to
contribute the map on the condition of the being taken care
of by the Weather Bureau.

I am, sincerely,
Yours,
J. Paul Goode

J. Paul Goode
The University of Chicago
Department of Geography

927
December 1,

1927.

My dear Mr. Barrows:

On the chance that you have not had direct reports of the plan for graduate work in Geography during the Summer Quarter, at Clark University, I am sending you these two items picked up at the recent meeting of Summer School Directors.

Clark University is to conduct a course next year that will demonstrate the teaching of Geography by the use of 22 - 25 students from the 8th grade. This course will be given as a demonstration course in the forenoon, and the graduate students observing the work will meet the instructor every afternoon for discussion of method and substance. I was struck by the enthusiasm of the man from Clark and what he said of the instructor, a Miss McClellan, from the School of Education at Los Angeles.

He spoke in some detail of their plan for field courses in Geography as part of summer travel plan in Scotland and northern England. Probably you are familiar with the routine that they have worked out there, ^{for} carrying on that type of work.

Very truly yours,

David H. Stevens.

Assistant to the President.

Mr. Frederick M. Barrows,
Faculty Exchange.

Q. 21

December 1,

1927.

My dear Mr. Barrows:

On the chance that you have not had direct reports of the plan for graduate work in Geography during the Summer Quarter, at Clark University, I am sending you these two items picked up at the recent meeting of Summer School Directors.

Clark University is to conduct a course next year that will demonstrate the teaching of Geography by the use of SS - 25 students from the 6th grade. This course will be given as a demonstration course in the forenoon, and the graduate students observing the work will meet the instructor every afternoon for discussion of method and substance. I was struck by the enthusiasm of the men from Clark and what he said of the instructor, a Miss McCallan, from the School of Education at Los Angeles.

He spoke in some detail of their plan for field courses in Geography as part of summer travel plan in Scotland and northern England. Probably you are familiar with the route that they have worked out there carrying on that type of work.

Very truly yours,

David H. Stevens.

Assistant to the President.

Mr. Frederick M. Barrows,
Faculty Exchange.

The University of Chicago
Department of Geography

92-57/au

November 19, 1927

Dear Professor Goode:

Thank you for sending me your dangerous article, which I shall read carefully to see if I can detect any evidence of friendliness on your part to anybody except residents of Cook County.

Cordially yours,

Max Mason

Professor J. Paul Goode
Faculty Exchange

1-6P

November 19, 1937

Dear Professor Goode:

Thank you for sending me your dangerous
article, which I shall read carefully to
see if I can detect any evidence of
friendliness on your part to anybody
except residents of Cook County.

Cordially yours,

Max Mason

Professor J. Paul Goode
Faculty Exchange

227

November 17, 1927

My dear Mr. Goode:

Thank you for the copy of your article
on Geography and World Citizenship which of-
fended the people in the City Hall. I hope
the action of Mr. Coath has afforded you as
much amusement as it has me.

Yours sincerely,
FREDERIC C. WOODWARD

Mr. J. Paul Goode
Department of Geography
Faculty Exchange

W*1

807

November 17, 1927

My dear Mr. Goode:

Thank you for the copy of your article
on Geography and World Citizenship which of-
fended the people in the City Hall. I hope
the action of Mr. Goeth has afforded you as
much amusement as it has me.

Yours sincerely,
FREDERIC C. WOODWARD

Mr. J. Paul Goode
Department of Geography
Faculty Exchange

W-1

The University of Chicago
Department of Geography

J. PAUL GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO, Nov. 14, 1927

SCHOOL
AND SOCIETY

EDITED BY J. MCKEN CATTELL

Volume XXVI

SATURDAY, SEPTEMBER 24, 1927

Number 685

CONTENTS

Geography and World Commerce J. Paul Goode 377

Preservation of the Lake Erie Fisheries R. S. Sargent 382

Vice President Woodward,
Faculty Exchange.

My dear Mr. Woodward:-

Herewith I am sending you
a copy of the offensive document which
has put the University upon Mayor
Thompson's "Index expurgatorius."

I am

Sincerely,

J. Paul Goode

J. Paul Goode.

H

Islands and the State Agricultural College 346

Reserve 397

Education Research and Statistics

Religion, Education and Distillation. WILLIAM S. AXENT 329

\$5.00 A YEAR

PUBLISHED WEEKLY

15 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

GRAND CENTRAL TERMINAL, NEW YORK CITY

Entered as second-class matter August 15, 1925, at the Post-office at Lancaster, Pa., under the Act of March 3, 1879

The University of Chicago
Department of Geography

J. PAUL GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO, Nov. 14, 1927

My dear Mr. Woodward:-
I am sending you
a copy of the offensive document which
has put the University upon Mayor
Thompson's "tax-exempting".

I am

Sincerely,

J. Paul Goode

Mr Woodward

7
700

SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

Volume XXVI

SATURDAY, SEPTEMBER 24, 1927

Number 665

CONTENTS

Geography and World Citizenship: J. PAUL GOODE 377

Pre-registration at the Ohio State University: E. D. COCKINS 382

Educational Events:

Black-listed Schools in Great Britain; The International Federation of University Women; Motion Pictures and Educational Research; The Samuel Gompers School in Chicago; The Opening of New York University; Vacancies in Supervisory Positions in the New York City School System; The Institute of Child Welfare at the University of California 385

Educational Notes and News 389

Special Correspondence:

Educational Advance in Turkey: CASS ARTHUR REED 394

Discussion:

Fundamentalism in Christian Colleges: CHARLES ROGER HICKS 395

Quotations:

Lincoln and the State Agricultural Colleges 396

Reports:

The Chicago Schools 397

Educational Research and Statistics:

Religion, Education and Distinction: WILLIAM S. AMENT 399

\$5.00 A YEAR

PUBLISHED WEEKLY

15 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

GRAND CENTRAL TERMINAL, NEW YORK CITY

Entered as second-class matter August 15, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879

SCHOOL AND SOCIETY

Two winners
in high-school mathematics

Algebra

By William R. Longley & Harvey B. Marsh

"The very best high school algebra."

"An outstanding advance over the multitude of books that flood the market."

"I like especially well the arrangement and the selection of material. Also, the development from the simple to the more difficult is praise-worthy."

Complete, \$1.60

Part One, \$1.28

Part Two, *In press*

Beginners' Geometry

Geometry Understood not Memorized

By Rolland R. Smith

"Well written and well arranged. A very desirable text."

"The developmental exercises form one of the best parts of the book."

"A textbook that makes geometry interesting."

Price \$1.28

*Send for illustrated descriptive booklet
on books in high-school mathematics.*

THE MACMILLAN COMPANY

NEW YORK
BOSTON

CHICAGO
DALLAS

ATLANTA
SAN FRANCISCO

SCHOOL AND SOCIETY

Volume XXVI

SATURDAY, SEPTEMBER 24, 1927

Number 665

GEOGRAPHY AND WORLD CITIZENSHIP¹

A GOODLY fraction of the trouble that comes into this world comes from a lack of understanding between parties concerned. The misunderstanding arises often from a difference in the use of the mother tongue, or it may be from a use of different languages. It will be recalled that when the Lord wished to destroy utterly the builders of the great tower at Babel, he inflicted on them a diversity of tongues, and the absolute failure of the great project was assured. It does not seem necessary at the present time to account for differences in language that way. For we know by observation and record that it is isolation of one group of people from another, the isolation long continued, which accounts for differences in language and a multitude of other human differences as well. There are more languages and dialects spoken in the valleys of the northern flank of the Caucasus range than in all the two million square miles of Russia in Europe to the north of them. The isolation and lack of contact between the valleys have allowed differences to grow, where such differences could not grow in the open plain.

In fact we are perfectly sure that the great *racial* differences among men have come about in just this way. And through yesterday's hundred thousand years the earth has been big, and the human race has been small and scattered, and isolation has been the rule.

¹ Address for the World Citizenship Conference of the League of Women Voters, Congress Hotel, Chicago, March 12, 1927.

And even now when populations have become dense, and in our industrial cities are crowded into slums, or even in better quarters are stacked in dwellings three to sixteen stories deep upon the land, we have brought with us, by inheritance, the habit of isolation and non-intercourse, and suspicion and race hatred, because of our ignorance. And we may quote just here the recognition of this evil by a highly educated American, Professor W. Burghardt Du Bois, who, more incisively than any other, has expressed the pain which the souls of black folk feel at isolation:

Herein lies the tragedy of the age:

Not that men are poor;

All men know something of poverty:

Not that men are evil;

Who is good?

Not that men are ignorant;

What is truth?

Nay, but this:—

That men know so little of each other.

The nations, and the races then, differ from one another for geographic reasons. But in spite of all the differences, people the world around are more alike than they are different. That is, they are more alike in fundamentals—the differences are mostly superficial. Shylock in the "Merchant of Venice" voices poignant protest against a racial spleen from which he and his people were suffering, saying: "If you prick us do we not bleed? If you tickle us do we not laugh? If you poison us do we not die?" Shylock knew well that fundamentally all men are of one flesh, and he was protesting against an age-long racial prejudice, which has brought endless grief into the world.

No one has felt this fact of human unity more clearly than the cosmopolitan, many-sided Kipling, who in two classic lines quotes the current conviction that human life is different in the Orient, only to show in the next two lines the utter falsity of the current ignorance:

Oh East is East and West is West,
And never the twain shall meet,
Till Earth and Sky stand presently,
At God's Great Judgment Seat.
But there is neither East nor West,
Border, nor Breed, nor Birth,
When two strong men stand face to face,
Tho they come from the Ends of the Earth.

And in another place he sees through the superficialities to the fundamental truth, when he assures us that:

The Colonel's lady, and Biddy O'Grady
Are sisters,—under the skin.

Those wise people who in every age have been studying human contacts, and human behavior, have always noticed that race hatred is largely impersonal and generic, and as a rule does not apply to the individuals of the race whom we happen to know well. So a proverb has grown up in every land, that you can't hate a man if you know him.

An amusing illustration of this came into my horizon in war time, when my nephew, a strapping "long-horn" from the great plains of western North Dakota, came to us to enter the S. A. T. C., or Students' Training Corps, at the university. He was aggressively a "hundred per cent. American" with a vigorous intolerance for everything that wasn't "nordic." He spoke with contempt of sheenies and kikes, hunkies, wops, dagos, greasers, Japs and Chinks. And when he was enrolled and found himself quartered with a Jew, he came home raging. If it hadn't been for the iron hand of army discipline, there would have been a rebellion and a resignation on the spot. But a week or so later he was speaking with interest of "Goldie," and presently of

"Felix"—and presently they were inseparable. Now whenever my nephew is in the city he is at the telephone at once to call up Felix and make a date with him.

Now that we are sure of the baneful influence of isolation and ignorance, as a source of group friction and trouble, let us take note that *we* are living in the most remarkable age, even the most remarkable century in all history, and the world all about us is in rapid flux. In the way of breaking down barriers between peoples, and dissipating the ignorance of one group of another, more progress has been made in the last hundred years than in the last preceding hundred centuries. Almost incredible is it, and difficult to estimate, the amount of shuffling of humanity, and goods and cultures, which has come about by the development of the steamship, the railway, the cable and the telegraph. For some years before the great war began the influx of immigrants into our country ran to a million a year. That is more people than came into Britain from the continent in all the wars and tribal migrations of a thousand years. The world has never before known such a swarming of people as we have observed in the last generation.

And now, in the most recent years, to the magnificent services of the steamship and the railway, the airplane is added and the automobile with its attendant concrete roadways—best of all agencies for overcoming isolation and spreading intelligence.

Then, to complete the cycle of telegraph and telephone, comes the radio, most marvelous of human inventions, to put all mankind into most intimate touch with each other. Now people by millions travel into far lands and get first-hand contacts and interests in people hitherto strange, and friendships and understandings grow apace. For some decades we have been aware that the best money crop of Switzerland, and

Perhaps of Italy, is the sight-seeing tourist. But to bring this matter closer home, the highway commission of Wisconsin reports an estimate that travelers, tourists, outsiders, left over a hundred million dollars in Wisconsin last year, 1926.

To whet this human interest, and to nourish it, a marvelous stream of books and magazines is issuing from the presses everywhere, and men's horizons are widened. In spite of the fact that alien people were entering our country at the rate of a million a year, these aliens speedily have adopted our language and our ways and become American. The newspapers, the magazines, the radio, the movie, in addition to all the older agencies of social moulding, are at work upon them, and for the young the schools are doing their wonderful magic of transformation. Think of the unifying influence of our great newspapers and magazines. The *Saturday Evening Post* and the *Ladies' Home Journal* run to over two million copies each, and the *National Geographic Magazine* to over a million copies per issue. And the latter magazine more than any other shows the deep-seated and wide-spread interest among all manner of folk in the peoples of other lands. In fact it is the best illustration of the profoundly significant fact that of all human interests in the world about us the most fundamental and the most persistent is our interest in *folks*.

Perhaps you will pardon a playful illustration: A benevolent Philadelphia gentleman was visiting the slums upon a time and came across an elderly Irish couple, James and Mary. They were living in squalor and want and the old gentleman's sympathy was aroused. "James," he said, "how would you like to have a nice cottage out in the country where you could have pigs and chickens and a garden of your own?" James thought that would be fine, and Mary thought so too. So the good man sent them to a cottage over in New Jersey, where he

felt sure they would be much better off. But some of you will recall what a semi-barren place much of New Jersey is just east of Philadelphia. And you won't be surprised that when the benevolent gentleman a year later went through the slums again he found James and Mary right back where they were. And when the good man asked in surprise, "How's this?" James looked at Mary, and Mary looked at James, and it was his turn to speak—"Well, sor," he said, "It's this wy. Payple is more interesting than stoomps."

One of the greatest agencies in breaking down international and regional barriers and in establishing peace among men is commerce. And commerce has had a mushroom-growth in the past century, as a result of the magical development of means of transport and communication. The foreign commerce of our country has passed the mark of \$12,000,000,000 a year in value, and that of Britain is almost the same. The total world's international commerce has been estimated at over \$75,000,000,000 a year, and is rapidly growing.

Into this worldwide social, commercial, human flux, comes the geographer, with his well-defined purpose to study the relations between man and his physical environment, particularly those relations having to do with the making of a living—that is, to study *people*—to try to understand them. And such a study calls for definite qualifications: The geographer, in the first place, must be *human*, with broad and genuine human sympathies—sympathies with *men* and *women*, in the vicissitudes of everyday life, wherever they may be—the Western farmer, gambling on an uncertain climate and a manipulated market, facing defeat and bankruptcy for no fault of his own, and rising in political protest at his fate—the planters of cotton, of sugar-cane or sugar-beet, of apples or citrus fruits, of bananas, coffee, tea, rice, and of a hundred other products the world around, each in an en-

vironment with a hazard in climate, with problems in soil, and labor, and transport and market—each one playing the game at his best, doing the work of a man, and deserving the understanding and the sympathy of all other intelligent men in other walks of life.

The geographer needs to understand and have sympathy with the laboring men and women in the shops and factories and transport services of the industrial towns—struggling to make the two ends meet, and to bring up a family, and to educate them for self-respecting citizenship.

He must have sympathies with men and women in other climes, with skins of another color, and in other stages of culture. And just in proportion as he can put himself in their places, and understand their problems, he will have sympathy with them, his prejudices will fade away and friendship will grow.

And all these sympathies must be *contagious*. They must be imparted to the boys and girls, and neighbors and friends and to every susceptible nature in the environment, as a benign infection. The great agnostic Robert Ingersoll was once confronted by a good bishop with a contemptuous challenge—"You are so ready to criticize the works of the Almighty, what improvement in the universe would you propose if you had the creation of it?" Quick as a flash the doughty colonel answered, "I'd have good health catching, instead of disease!"

But good health *is* catching, in a very real way. And boys and girls who have the good fortune to begin the study of geography in our best schools, as geography is now being taught, will be inoculated with the interest in the problems of other people, and a respect and sympathy for them, which is the surest foundation for international peace and good health. Two of my colleagues, Professors Barrows and Parker, are just completing a four-volume

text for geography in the grades, which presents this new attitude at its best. And in the grades is the place to begin. We must catch the human animal very young if we are to start it in a new direction. There is small hope for the older generation. As a rule they must die in their sins. And it is a good thing that they can die and pack their spleens and grouches off with them. The hope of progress in civilization is always in the coming generation. That is why I am a school teacher.

The right study of geography establishes understanding of the problems of other people, emphasizes sympathy, recognizes virtues, promotes the "square deal" between nations and groups, breaks down barriers, works for international peace and world citizenship.

We, in America, at the present moment, need to acquire the international mind and to work for right relations between all nations. Our relationships with the rest of the world are critical in the extreme and are due to grow more so. We are, at the present moment, far and away the richest nation on earth. Our wealth, estimated at \$350,000,000,000 is, so near as can be told, nearly one half of the material wealth of the entire earth. Other people are finding out how rich we are and jealousies and hatred of us are our inevitable portion. There are plenty of people ready to hate us just because we *are* rich and powerful. This produces a "state of nerves" which has all sorts of possibilities of international friction and trouble for us.

To other and larger groups of people ours is a magic land, a fairy land of opportunity, a powerful magnet drawing them to us from the ends of the earth. In a series of Sunday evening suppers at the University of Chicago, in the interest of the welfare of foreign students of Chicago and vicinity, between 200 and 300 young people have been gathered together at a time, representing every race and clime, a total of 51 nations

being recorded at a single supper. This is our best opportunity to establish bonds of brotherhood with the people of the outside world. But this, at best, is only planting for the future. But, like the education of our own children, it is planting good seed.

A vastly larger contact with the nations of the world, already in full swing, is our foreign commerce referred to above. Within the next five years we will be the leading nation in the value and sweep of our foreign commerce. And we are just beginning. When we look about to discover the reason for our great wealth and power, we find that our continent is better endowed than any other with the raw materials and forces for great industrial and commercial development. We are producing at the present time nearly one half of the world's iron, nearly half of the coal, and two thirds of the petroleum, half of the zinc and lead, nearly two thirds of the aluminum, and four fifths of the copper. To go no farther with the list, which is a long one, it is plain why we rank so high. But one may look to the future. And if one should raise the question as to how long this prosperity will last, the answer is ready. We have over four trillion tons of coal in our mines untouched, which is over one half of all the world's coal. And since coal is the bank account out of which nations grow rich and powerful, it is plain to see what our manifest destiny is. It is to do the manufacturing for half the entire world for centuries to come. Great as our foreign trade and foreign contacts are now, we have barely begun in our record of foreign trade. For the next thousand years, so far as any one can at present see, we are to be the world's greatest commercial nation, richest, and with the most intimate relations with all peoples.

That is, our major material interest will be commercial. And this is most significant, for commerce and war do not mix.

Trade is absolutely dependent on peace. And trade is not a one-sided affair. If it is done on the square, both parties to it are benefited. And just here is the greatest opportunity that ever came to a nation: to have the largest opportunity in trade the earth has ever offered, and to have the largest material incentive to establish and maintain cordial relations with all the world. That is the biggest hostage for world peace that was ever given.

In other words, ours is the opportunity to go farther and serve better in the establishment of an "international mind" and a "world citizenship" than any nation has ever gone. And not only is it good morals and good ethics; it is good business, which should make it easy to do. So let us develop that great commerce, not in the attitude of "Anglo-Saxon superiority," with a chip on our shoulder, and with army and navy ready, and spoiling for a fight. But in the spirit of the "square deal," which our noble ambassador, John Hay, so splendidly put into international relations with China. Our wealth is so great, our influence is so dominant, that in the great family of nations our vote will make a majority, either way we cast it, on any question.

So let us meet this opportunity more than half way. Let us start with the boys and girls in school, giving them their proper geographic horizon. Let's establish in business and commerce that beautiful spirit which Harry Emerson Fosdick has put into his prayer for the spiritual union of mankind:

Help us to break down all prejudice, stay the greed of those who profit by war, and the ambitions of those who seek an imperialistic conquest. . . . Arouse in the whole body of the people an adventurous willingness. As they sacrificed greatly for war, so also for international good will. To dare bravely, think wisely, decide resolutely, and to achieve triumphantly.

J. PAUL GOODE

UNIVERSITY OF CHICAGO

PRE-REGISTRATION AT THE OHIO STATE UNIVERSITY

THE administration of the academic side of our colleges and universities has received less attention and study than any other phase of university life. In many institutions the machinery that is responsible for the operation of the university has proved itself inadequate to the task and has broken down completely under the load that has been placed upon it. Colleges of education are offering many courses on all phases of public school administration and much has been written on this subject, but there is little literature available on college administration, and practically nothing on the problems of the registrar.

It was not an unusual policy years ago, where an institution possessed a professor who had worn out his usefulness in the classroom, for the governing board, embarrassed in finding a niche for him, to assign him to the duties of registrar. This was a quiet, easy berth where he could spend his declining years without harming anybody or anything. The registration of students was a leisurely process that extended over many days—and *anybody* could keep records.

At one time a college training was looked upon as a privilege for a chosen few. Today the young people in our secondary schools look upon a college education as a *right*. This demand must be met—to furnish an opportunity for all persons who desire to proceed easily and logically from the high school to the university. The result is that colleges and universities, especially the state universities, are obliged to provide for the training of thousands of young people who come demanding admission with the opening of each college year. The handling of great numbers of students with promptness and efficiency, so that the work in the classroom may proceed without delay, is the big problem that confronts the registrar.

Along with the enormous growth of the colleges and universities, along with the demand of the times for speed-up courses and speed-up methods, along with the demand for industrial efficiency and the elimination of time and effort, has come the demand for efficiency in college administration. The business manager or financial officer of an institution of learning must meet these demands with the most modern business methods. To keep pace with the development and demands of the times the registrar, who is the head of the business office of the academic side of the university, must be no less alert than the business manager. His methods also must keep pace with the most modern business methods. This is especially true in the large state universities where necessity has demanded efficient methods of student-accounting, not only in the results of his work in the classroom but in the cost to the university and to the state of each student-hour.

The registration of students is a necessary part of university routine, and registration periods therefore have always been a source of concern to faculty, students and university officials. Of course, the ideal registration system is a system of personal contact, where the official is able to sit down with the student and learn first-hand something of the student's preparation, his background in his home town and why he came to college, as well as what he plans to do after he has finished his college career. Such a system could be employed only in an institution that enrolls annually less than five hundred students. The large universities must of necessity find some other means of registering the thousands of students that must be registered, not once a year—but two, three and even four times a year, if the university is on the quarter plan.

The "mass system" of registration is the system that is most universally in use in our colleges and universities. Most of us are familiar with this system and have

G 24

April 1, 1927

My dear Mr. Bastin:

Thank you for your letter of March 29 expressing the appreciation of the Department for the contribution from Mr. Rosenwald's gift.

The question of writing to Mr. Rosenwald is one upon which I am undecided at the present moment. I suggest that you do not write to him unless I let you know that I think it would be a good thing to do.

Yours sincerely,

F. C. Woodward

Mr. E. S. Bastin
Department of Geography
Faculty Exchange

W*L

G 24

April 1, 1937

My dear Mr. Bastin:

Thank you for your letter of March 29
expressing the appreciation of the De-
partment for the contribution from Mr.
Rosenwald's gift.

The question of writing to Mr. Rosenwald
is one upon which I am undecided at the
present moment. I suggest that you do
not write to him unless I let you know
that I think it would be a good thing to
do.

Yours sincerely,

F. C. Woodward

Mr. E. S. Bastin
Department of Geography
Faculty Exchange

W:L

The University of Chicago

Department of Geology

March 29, 1927.

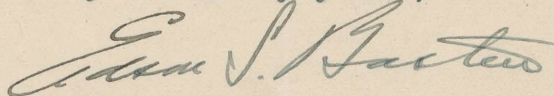
Mr. Frederic C. Woodward, Vice President,
University of Chicago,
Faculty Exchange.

My dear Mr. Woodward:

I want to express my appreciation on behalf of this Department for the generous contribution which Mr. Rosenwald has made toward our needs in the matter of equipment. This added equipment will make it possible to do more and better work. Many of the things we shall purchase have been much needed for a long time.

If you think it appropriate we shall be glad to express our appreciation to Mr. Rosenwald through this letter or another sent to him direct.

Very sincerely yours,



EDSON S. BASTIN,
Chairman, Department of Geology.

ESB:MS

The University of Chicago

Department of Geology

March 29, 1934

Mr. Frederick C. Woodward, Vice President,
University of Chicago, Faculty Exchange

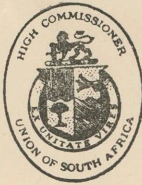
My dear Mr. Woodward:
I want to express my appreciation on behalf
of this Department for the generous contribution which Mr. Rosenwald
has made toward our needs in the matter of equipment. This added
equipment will make it possible to do more and better work. Many
of the things we shall purchase have been much needed for a long
time.

If you think it appropriate we shall be glad
to express our appreciation to Mr. Rosenwald through this letter
or another sent to him direct.

Very sincerely yours,

EDSON S. BASTIN,
Chairman, Department of Geology.

ESB:ms



FS XXIa

Telephone: REGENT 6760.
Telegraphic Address: -
"OPPOSITELY, WESTRAND, LONDON."

ALL COMMUNICATIONS SHOULD BE ADDRESSED:-
THE SECRETARY,
OFFICE OF THE HIGH COMMISSIONER FOR THE
UNION OF SOUTH AFRICA,
and the following Number quoted:

SOUTH AFRICA HOUSE,
TRAFALGAR SQUARE,
LONDON, W.C. 2.

L.P.8/91

15 JUN 1926

REGISTERED POST.

Dear Sir,

I am directed by the High Commissioner to
attach hereto a copy of my letter of May 7th with regard
to 14 photographs loaned to Mr. H.H. Barrows, and to state
that it will be appreciated if you will favour me with a
reply thereto.

Yours faithfully,

Publicity Agent.

The Principal,
The University of Chicago,
Chicago, Illinois,
U. S. A.

*Copy sent to H H Barrows
Photographs returned by Prof Barrows
A.S.L.*

Telephone: REGENT 6720.
Telegrams: AFRICA.
OPPOSITE, WEST END, LONDON.



SOUTH AFRICA HOUSE,
TRAFAALGAR SQUARE,
LONDON, W.C. 2.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO—
THE SECRETARY,
OFFICE OF THE HIGH COMMISSIONER FOR THE
UNION OF SOUTH AFRICA,
and the following names, should

L.P. 8/91

RECEIVED 1901

Dear Sir,

I am directed by the High Commissioner to
attach hereto a copy of my letter of May 7th with regard
to the photographs loaned to Mr. E.H. Barrows, and to state
that it will be appreciated if you will favour me with a
reply thereto.

Yours faithfully,

W. H. Barrows

Publicity Agent.

The Principal,
The University of Chicago,
Chicago, Illinois,
U. S. A.

Enclosed to H. Barrows
are 10 copies of the
report of the
Committee on the
Photographs of the
Union of South Africa.

COPY.

UNION OF SOUTH AFRICA.

South Africa House,
Trafalgar Square, W.C.2.

L.P.8/91.

7th May 1926.

Dear Sir,

In October, 1923, we received a letter from Mr. H.H.Barrows of the Department of Geography of your University and, in response thereto, 14 photographs of South African scenery were forwarded to him, and their receipt was acknowledged. Since that time no less than 5 letters have been sent to him asking for their return and as yet no reply has been received. These photographs are the property of the Union Government and are loaned on the understanding that they are returned after use, and I shall therefore be glad if you will be so good as to arrange for their return at an early date.

Yours faithfully,

(Sgd) G.E.CHITTENDEN.

Publicity Agent.

The Principal,
The University of Chicago,
Chicago, Illinois,
U. S. A.

DG.

OFFICE OF SOUTH AFRICA
South Africa House,
Treasury Square, S.O.A.
7th May 1936.

Copy.
J.P. 8/31.

Dear Sir,

In October, 1935, we received a letter from
Mr. H.B. Barrow of the Department of Geography of Texas University
and, in response thereto, 14 photographs of South African
scenery were forwarded to him, and their receipt was acknowledged.
Since that time no less than 3 letters have been sent to him
asking for their return and as yet no reply has been received.
These photographs are the property of the Union Government and are
loaned on the understanding that they are returned after use,
and I shall therefore be glad if you will be so good as to
arrange for their return at an early date.

Yours faithfully,

(Sgd) C.M. CHITTENDEN.

Publicity Agent.

The Principal,
The University of Chicago,
Chicago, Illinois,
U.S.A.

7

FS 8X14

A PROPOSED INSTITUTE FOR PALEOBOTANY AND COAL GEOLOGY

1. Title of the proposed organization:

The Institute for Paleobotany and Coal Geology of the University of Chicago.

2. Home of the Institute:

The Institute is to be located at Walker Museum of the University of Chicago.

3. Purpose of the Institute:

The purpose of the Institute is to collect and organize the numerous facts pertaining to Paleobotany and coal geology which are now scattered in hundreds of publications.

Whenever possible these facts should be made servicable to practical coal geologists and coal operators.

A program should be developed for extensive field work in coal geology and coal paleontology by cooperation with the various agencies already existing for related purposes. These agencies are, as a rule, restricted to limited areas and have no organization for coordinating their activities.

Financial assistance should be procured to promising students in their training for paleobotany and coal geology by employing them for the purposes of the Institute.

4. Administration and Organization of the Institute:

The Institute is to be administered by the Board of Trustees of the University of Chicago and its work should be carried out by a technical staff. The latter should consist of a Director who gives only part of his time to the Institute and who is a member of the Faculty of the University of Chicago, of one or more Research Associates who give practically all of their time to the Institute and who carry out independent research problems, of several Assistants who may give all or part of their time to the Institute, working under the supervision of the Director or of a Research Associate, and of a Secretary to the Director.

5. Necessary Funds:

An attempt will be made to raise a fund of ten thousand dollars a year for five consecutive years to be used for salaries, field and office expenses, and for publications. If the Institute proves its usefulness during this period of five years permanent endowments will be solicited.

A PROPOSED INSTITUTE FOR PALEOBOTANY AND COAL GEOLOGY

1. Title of the proposed organization:

The Institute for Paleobotany and Coal Geology of the University of Chicago.

2. Name of the Institute:

The Institute is to be located at Walker Museum of the University of Chicago.

3. Purpose of the Institute:

The purpose of the Institute is to collect and organize the numerous facts pertaining to Paleobotany and coal geology which are now scattered in hundreds of publications.

Whenever possible these facts should be made accessible to practical coal geologists and coal operators.

A program should be developed for extensive field work in coal geology and coal paleontology by cooperation with the various agencies already existing for related purposes. These agencies are, as a rule, restricted to limited areas and have no organization for coordinating their activities.

Planned assistance should be procured to promote students in their training for paleobotany and coal geology by employing them for the purposes of the Institute.

4. Administration and Organization of the Institute:

The Institute is to be administered by the Board of Trustees of the University of Chicago and its work should be carried out by a Research Staff. The latter should consist of a Director who gives only part of his time to the Institute and who is a member of the Faculty of the University of Chicago, of one or more Research Associates who give practically all of their time to the Institute and who carry out independent research problems, of several Assistants who may give all or part of their time to the Institute, working under the supervision of the Director or of a Research Associate, and of a Secretary to the Director.

5. Necessary Funds:

An attempt will be made to raise a fund of ten thousand dollars a year for five consecutive years to be used for salaries, field and office expenses, and for publications. If the Institute proves its usefulness during this period of five years permanent endowment will be solicited.

December 12, 1923

Memo. to President Burton,

Concerning the proposed Institute for Paleobotany and
Coal Geology.

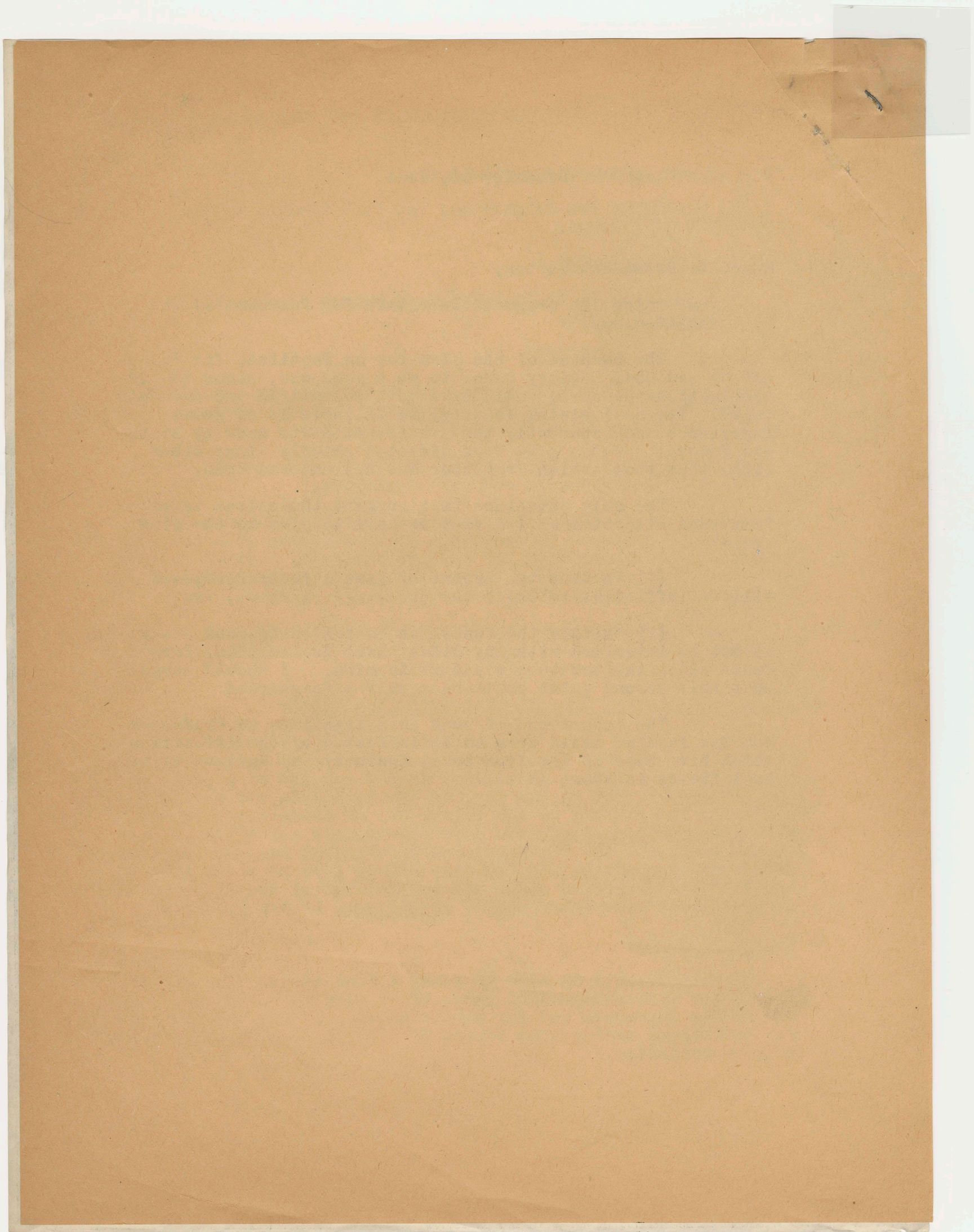
The purpose of the plan for an Institute for Paleobotany and Coal Geology seems to me a good one, since the investigations proposed would have both scientific and economic value. The coal mining industry in Illinois is of great importance and apparently the studies hitherto made by state and federal surveys have been directed chiefly along other lines than those which Professor Noe has entered upon.

The only questions that suggest themselves to me from such attention as I have been able to give to the plan are -

(1) Whether the amount of annual income proposed will be sufficient to cover the necessary expenses, and

(2) Whether the funds can be raised in such a way as not to interfere with any other plans for securing large funds which the trustees may have in mind. I should suppose that this second point could be easily safe-guarded.

The importance of such investigations as Professor Noe has in mind would seem to be indicated by the invitations which have come to him from Iowa, Kentucky and Indiana to study coal fields in those states.



The University of Chicago
Department of Geography

J. PAUL GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO,
April 19, 1926.

Mr. C. J. Davis,
Fourth Vice-President,
American Steel Foundries,
Chicago, Illinois.

Dear Sir:

Mr. Trevor Arnett has passed on to us the report of your committee of March 20 on "The hydrogen method of iron ore reduction", which process has been developed by the Gathmays Research Corporation. In this process the iron ore is melted preferably in an electric furnace, and the oxygen removed from the ore by passing hydrogen gas through it. We believe the process has great commercial possibilities of large significance in our own country, and of much greater significance to the world at large. The advantages of our process will be found in three main lines:

(1) In the development of an industry in iron and steel in such countries as Norway and Brazil where cheap and plentiful waterpower is convenient to large supplies of cheap iron ore. In these countries iron and steel can be produced in large measure, and sold directly into the open world market at a large margin of profit. We are hoping that this development may be made under American control and for American profit.

(2) In the development of our large deposits of titanium-bearing ores, which under present conditions have no value, but which with the hydrogen process may produce not only the special steels, but steel of the ordinary grade under present market conditions: and

(3) A very large significance attaches to the purity of our product—almost chemically pure—which will put it successfully into competition with

- (a) The special steels, which sell at much higher prices than ordinary steels (see Appendix, herewith).
- (b) As pure iron it should take the place at once of Swedish iron in our industries.

The University of Chicago
Department of Geography

J. PAUL GOODE
ECONOMIC GEOGRAPHY
CARTOGRAPHY

CHICAGO
MAY 11 1930

Mr. J. I. Davis
American Steel Foundries
Chicago, Illinois

Dear Sir:

Mr. J. I. Davis has referred me to the report of your committee of March 30 on "The hydrogen method of iron ore reduction," which process has been developed by the Gerdau-Wabasco Corporation. In this process the iron ore is reduced directly in an electric furnace, and the hydrogen gas evolved from the ore is recycled hydrogen gas through it. We believe the process has great commercial possibilities of large significance in our own country, and of much greater significance to the world at large. The advantages of our process will be found in three main lines:

(1) In the recovery of an industrial gas, iron and steel in such quantities as to be a heavy and costly waste product. The waste gas is converted to large quantities of steam iron ore. In these quantities iron and steel can be produced in large amounts, and sold directly into the open world market at a large saving of cost. It is a saving which this process may be made under American control and for American use.

(2) In the development of our large deposits of lignite-bearing areas, which under present conditions have no value, but which with the hydrogen process may produce not only the special steels, but also of the ordinary grade under present market conditions.

(3) A very large significance attached to the purity of our present steel-making process, which will not be successful with large quantities of hydrogen.

(4) The special steels, which sell at much higher prices than ordinary steels (see especially, for example, the

(5) As you know, it should be noted that the price of iron ore is not in our interest.

2. C. J. D.

In the report of your committee above mentioned, we observe that some errors and misapprehensions have crept in, which have given rise to an adverse recommendation. May we call attention to these errors, and solicit a review of judgment on the merits of the process?

1. The statement is made that "Iron ore is first melted in an arc furnace and the temperature is raised to 1800° C.....At this high temperature there is apt to be a reaction between the basic lining of the furnace", etc.

Please note—It is not intended to heat the ore much above its melting point, which is 1400° C.(not 1800). There should be little deterioration of the lining at this temperature. There may easily be left a layer of solidified ore over the bottom of the furnace, protecting the lining from any action by the liquid ore.

2. Your committee says that "in the laboratory work this stream of hydrogen(in the reduction chamber) has been passed through a carbon tube, but carbon has bad effects on the product."

Answer: The carbon which was dissolved in the iron in these experiments was almost negligible, 0.005%. The only point here is that in the commercial scale of production the reducer would have the hydrogen blown through tuyeres in the refractory lining of the reduction chamber, hence be absolutely free from carbon.

3. Your committee is in error in reporting our analyses of impurities, making them, in two cases, ten times too large, which puts in a false light the whole character of the product.

<u>As reported by your</u> <u>committee</u>		<u>These are the</u> <u>true values</u>
Carbon	0.05%	0.005%
Silicon	0.05%	0.005%
Phosphorus		0.017
Sulphur		0.036

These very slight impurities put our product, not in the class of ordinary steel, but in the class of special steels, which sell at a price higher than ordinary steel by \$20 to \$30 a ton, or even more.

The results of our experiments show definitely that even these slight impurities were due to the presence of carbon, and not to the hydrogen, and hence would be expected to be absent in the commercial scale production.

In the report of your committee above mentioned, we observe that some errors and misapprehensions have crept in which have given rise to an adverse recommendation. It is all attributed to these errors, and holds a review of judgment on the merits of the process.

1. The statement is made that "Iron ore is heated in an open furnace and the temperature is raised to 1800° C. At this high temperature there is said to be a reaction between the basification of the furnace, etc."

It seems to me that it is not intended to heat the ore above the melting point, which is 1800° C. (not 1800° F.). There should be little deterioration of the lining at this temperature. There may easily be left a layer of solidified ore over the surface of the furnace, protecting the lining from oxidation by the light ore.

2. Your committee says that "in the reaction of iron with oxygen (the reduction chamber) has been obtained through a carbon tube, but carbon has not entered the product."

Answer: The carbon which was placed in the iron in these experiments was almost negligible, 0.002%. The only point here is that in the commercial scale of production the reaction would have the hydrogen blown through layers in the refractory lining of the reduction chamber, hence be absolutely free from carbon.

3. Your committee is in error in regarding our analysis of impurities, seeing them in two cases, for times 100 times, which give in a false light the whole character of the product.

As reported by your committee		These are the true values	
Carbon	0.002	0.002	0.002
Silicon	0.002	0.002	0.002
Phosphorus	0.01	0.01	0.01
Sulphur	0.002	0.002	0.002

These very slight impurities are our product, not in the class of ordinary steel, but in the class of special steels which sell at a price higher than ordinary steel by 50 to 100 times or even more.

The results of our experiments show definitely that even these slight impurities are due to the presence of carbon, and not to the hydrogen, and hence will be expected to be absent in the commercial scale production.

3. C. J. D.

4. Your committee remarks: "With a temperature of 1800° C. on top, and a temperature of 1650° C. at the bottom, there will be a decided effect on the lining of the furnace."

Answer: The temperature at top needs to be only high enough to keep the ore molten, say 1500° C., while in the induction furnace at bottom the temperature need be only high enough to melt the iron, say 1550° C. It may well be possible to have a uniform temperature from top to bottom.

5. Your committee says: "Another suggestion is that this process could use iron ores high in titanium oxide which are difficult to handle in the blast furnace. The use of impure ores, however, would at least reduce the yield and therefore increase the cost of product".

Answer: The point is that titanium bearing iron ores can be reduced by this process more easily than ordinary ore. They cannot now be reduced by any commercial processes at all. Thus the hydrogen process gives a market value to the titanium-iron ores at once, the value being based upon the iron content, regardless of the titanium. The great deposits of titanium-iron ores in the Adirondacks contain 55 to 58% Fe, and hence are rich ores of iron. They can be reduced by the hydrogen process without concentration, just as they come from the mine.

6. Your committee says, p.4.: "He has listed no charge for maintenance of equipment, which in our judgment should be \$2.00 per ton".

Answer: On p. 4 of your committee report, item 7 in the table quoted from Dr. Madorsky, is set down "Interest and depreciation, 10% on an investment of \$300,000, \$2.00". Dr. Madorsky figured this item as interest at 6% on an investment of \$300,000 for a plant producing 50 tons of iron a day. The hydrogen plant was not included in this figure, since its depreciation is included in the cost of hydrogen. He also figured 4% for depreciation which includes lining and repairs. These figures were based upon estimates made for the manufacture of electric steel in Canada (see Electric Furnace for Iron and Steel, by Stansfield, 1923, p.96). Our estimates may be too small but they are based upon recent and comparable conditions.

7. Your committee concludes: "In view of the apparently small market for the sale of the product of this process, and the competition that it would meet", etc.

Answer: It appears here that there was a most important misapprehension on the part of the committee of the possibilities of service which we are presenting, because they overlooked the

4. C. J. D.

great possibility of development in foreign countries, with large unused water powers and with plentiful iron ore, such as Norway and Brazil.

Nor did they consider the contribution we are making to the utilization of the large supplies of titanium-bearing iron ores in our own country. These are the two main purposes of our project.

Nor would it seem that the market for the product would be small in any case. As pure iron it should have a degree of purity higher than the Armsco iron now in use. It should take the place of Swedish iron for all purposes. As special steel, it has a chance for a market which in this country runs to over \$200,000,000 a year at the present time.

We would call your attention to the Appendix of "Facts and Principles" attached herewith.

Respectfully submitted,

L. C. J. D.

great possibility of development in foreign countries. With large
natural water power and with plentiful iron ore, such as Norway
and Sweden.

Now did they consider the construction as being to
the utilization of the large supplies of aluminum-bearing iron
ores in our country. These are the two main purposes of our
project.

For would it seem that the market for the product would
be small in any case. As there is a shortage of aluminum-bearing
ores in the United States, it is now in the hands of the
place of Sweden from the purpose of the project. It has a
chance for a market in this country and to cover
\$200,000,000 a year at the present time.

We would call your attention to the appendix of "Data
and Principles" attached herewith.

Respectfully submitted,

APPENDIX: THE GATHMYS PROCESS OF IRON REDUCTION

April 12, 1926
J. Paul Goode

Facts, Principles, and Possibilities.

1. The Hydrogen Process is demonstrated chemically and metallurgically correct in principle. It reduces iron from its ores directly, without the use of any carbon whatever, and at the temperature used without bringing down the silicon, sulphur, phosphorus, or manganese of the ore.
2. It therefore produces almost chemically pure iron. This pure iron has large commercial value itself in electrical machinery and transmission and in other ways. The iron when reduced is ready in the liquid form for the addition of the proper ingredients for the making of any special steel.
3. The process reduces the iron from titanium-bearing ores more easily than from ordinary ore, and absolutely free from titanium or its compounds, therefore giving immediate market value to the titanium-iron ore deposits, the value being based upon the iron content of the ore, regardless of the titanium content.
4. The requisite for the profitable use of the process is hydrogen. For the preparation of the hydrogen the electric current will be used (1) where the current is cheap, and (2) where the purpose is to obtain the iron in the purest form, for the making of special steels selling at a high price.

The consumption of current for the complete process of heating and reduction is about three-fourths of a kilowatt year per ton of iron produced.

Where special purity in the product is not required, other sources of hydrogen may be used, such as "blue gas", a special form of water gas made from coke. This might prove to be cheaper than electric hydrogen in the Adirondack region, and might make the process profitable in certain regions of cheap coal elsewhere.

5. The process is of great promise in regions having plentiful undeveloped waterpower, and convenient to large supplies of iron ore. Its success in these regions will be measured by the difference between (a) the combined cost of ore and current, and (b) the world price of steel. Where current can be had at the present moment at \$20 per kilowatt year

APPENDIX: THE GATHEYS PROCESS OF IRON REDUCTION

April 12, 1908
J. F. G. G.

Principles and Considerations

1. The Gatheys process is a continuous process for the production of iron from hematite. It is a process which is based on the principle of the reduction of iron ore by means of a reducing gas. The reducing gas is produced by the reaction of carbon monoxide and hydrogen gas. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

2. It is therefore a process which is based on the principle of the reduction of iron ore by means of a reducing gas. The reducing gas is produced by the reaction of carbon monoxide and hydrogen gas. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

3. The process is based on the principle of the reduction of iron ore by means of a reducing gas. The reducing gas is produced by the reaction of carbon monoxide and hydrogen gas. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

4. The principle for the production of the reducing gas is the reaction of carbon monoxide and hydrogen gas. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

5. The consumption of energy for the complete process of heating and reduction is about three times that of a blast furnace for the same amount of iron produced.

6. Where special purity in the product is not required, other sources of hydrogen may be used, such as "blue gas" or a mixture of water gas and steam. This is the case in the production of iron for the manufacture of steel. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

7. The process is of great interest in regions having abundant supplies of iron ore, and is particularly so in regions where the cost of iron ore is high. The process is based on the principle of the reduction of iron ore by means of a reducing gas. The reducing gas is produced by the reaction of carbon monoxide and hydrogen gas. The reducing gas is then passed over the hematite ore, which is reduced to iron. The iron is then melted and cast into ingots.

6.

the product can be sold into the world market at a profit, even in the form of commercial pig iron, to say nothing of special steels. A lower price for current widens the margin of profit proportionally, as in Norway, where current can be produced at less than \$8 per kilowatt year.

6. Under existing conditions of high price charged for electric current in U.S.A., there is little chance for development for the production of pig iron in this country, except as would be used for the making of special steels and the reduction of the titanium-bearing ores.

7. Regions which offer phenomenal opportunity for the development of the hydrogen process for the production of iron and steel for sale into the world market at the present time in competition with ordinary pig iron and steel are:

(1) Norway: It is estimated that there is in Norway over 16,000,000 H. P. of waterpower, mostly undeveloped. All this power is close to the sea, on the fjords, or near enough to serve with great advantage on the seacoast or dock side.

In addition to this the great iron deposits of northern Sweden, at Kiruna and vicinity, with reserves estimated at 1,128,000,000 tons of ore, lie only 19 miles from the sea, at the Norwegian port of Narvik. The ore goes out from this port at present to be reduced to iron at the coal fields of Britain, Belgium, and Germany. It passes 800 miles of waiting water power, on the way to the world market. It should stop en route in Norway, and be made into iron and steel, before going on to market; and should provide an endless opportunity for industrial development of iron and steel products in Norway.

(2) Sweden: There is 12,000,000 H. P. of available waterpower in Sweden, at present largely unused, and 1,548,000,000 tons of iron ore waiting to be manufactured. Power is so cheap in Sweden as to offer a wide margin of profit in the steel business, by the use of the hydrogen process.

(3) Canada: Eighteen million horsepower is available in the rivers of Canada, in the minimum flow of the rivers, and very little of it is developed. About three billion tons of iron ore is available at Bell Island, not far from St. John's, N. F. Other large deposits are known in the Lake Superior district. Within easy reach of Winnipeg are nearly 5,000,000 H. P. of idle energy. In the vicinity of Winnipeg, and in the lower St. Lawrence, there is the possibility of large development of an iron and steel industry.

The product can be sold into the world market at a profit even in the form of commercial pig iron. It may be sold as special steels. A lower price for export than the margin of profit proportionally, as in Norway, where current cost is produced at less than 50 per cent profit.

Under existing conditions of high prices charged for electric current in U.S.A., there is little chance for development for the production of iron in this country. It would be used for the making of special steels and the reduction of the nitrogen-bearing ones.

It is possible that other development opportunity for the development of the hydrogen process for the production of iron and steel may arise into the world market at the present time in competition with ordinary pig iron and steel.

(1) Norway: It is estimated that there is in Norway over 10,000,000 H.P. of waterpower, mostly undeveloped. All this power is close to the sea, on the fjords, or near enough to serve with great advantage on the transport of steel.

In addition to this the great iron deposits of northern Sweden, at Kiruna and Gällivare, which reserves estimated at 1,100,000,000 tons of iron, are only 12 miles from the sea. At the Norwegian part of Kiruna, the present output of this iron is 1,000,000 tons. It is proposed to build a steel plant at Kiruna, Sweden, and Germany. It is estimated that 100,000 tons of water power, on the way to the steel works, is available on the coast in Norway, and on the coast of Sweden. Before going to the steel works, the water is used for the production of electricity. The industrial development of iron and steel works in Norway.

(2) Sweden: There is 10,000,000 H.P. of available waterpower in Sweden, but present largely unused. It is estimated that 1,000,000 tons of iron are waiting to be manufactured. Power is so cheap in Sweden as to offer a wide margin of profit in the steel business, by the use of the hydrogen process.

(3) Canada: Eighteen million horsepower is available in the rivers of Canada, in the Niagara flow of the river, and very little of it is developed. About three billion tons of iron ore is available at Baili Island, not far from St. John's, N. F. Other large deposits are known in the Lake Superior district. Within easy reach of Winnipeg are nearly 5,000,000 H.P. of this energy. In the vicinity of Winnipeg, and in the lower St. Lawrence, there is the possibility of large development of iron and steel industry.

(4) Brazil: The richest deposit of iron in the world, being worked at the present time, is a few miles north of Rio de Janeiro. It is estimated to contain over three and a half billion tons of iron. The great plateau and the coastal mountains south of the Amazon, an area over a third as large as the entire United States, has a higher rainfall than the eastern United States. Many great rivers, gathering their water in this plateau, drop by falls and rapids, over the margin of this plateau, furnishing enormous power for which there are no adequate estimates. One of these rivers, the Parana, is estimated to have over 20,000,000 H. P. It is safe to say there is ore enough and power enough in Brazil to supply the entire present world's demands in iron indefinitely.

(5) Japan: has over 5,000,000 H. P. of unused water power, and large deposits of titanium iron ore. The hydrogen process might well give Japan an independent supply of iron and steel for present needs.

(6) Russia: Up to the present time Russia has been helpless as to her iron supplies. But within the last two years an iron deposit has been located by the compass, in the Kursk district, 200 miles south of Moscow. Drilling has gone far enough to make certain a great body of magnetic iron ore of nearly or quite 20,000,000,000 tons; more iron than all Europe and North America were credited with a short time ago.

Russia has but little coal, no more, in fact, than the State of Illinois, but there is in the Caucasus mountains 13,500,000 H. P. of energy available, and all unused. This power can be delivered easily on the shore of the Black Sea, and the ore from the Kursk region can travel practically the whole distance by water. By developing the Caucasus water power Russia could manufacture about one-sixth of all the iron at present produced in the world.

-----00000-----

(1) Japan: The richest deposits of iron in the world being worked at the present time, is a few miles north of the seaboard. It is estimated to contain over 100 million tons of iron. The great plains and the coastal mountains south of the Honshu, are covered with a thin layer of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore.

(2) Japan: The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore.

(3) Japan: The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore.

(4) Japan: The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore. The Honshu, has a higher rainfall than the rest of Japan. The great river, the Tone River, flows through this district, and is a rich source of iron ore.

(Copy)

THE UNIVERSITY OF CHICAGO
Department of Geography

F XX1a

Copy to Pres. Max Mason.

Chicago,
February 6, 1926.

Mr. Trevor Arnett,
Vice-President and Business Manager,
The University of Chicago,
Chicago, Illinois.

My dear Mr. Arnett:

As per your request of last evening, I will attempt here a statement

- (I) Of the present status of the work of the Gathmys Research Corporation;
- (II) A program for the next stage in the development of the hydrogen process of iron reduction; and
- (III) Estimates of what this next stage of development will cost.

I. Accomplishments of the Gathmys Research Corporation.

During the past year, thanks to Mr. Harold Swift for the funds advanced, we have carried thru to an entirely successful conclusion our demonstration of the scientific feasibility of the reduction of iron from its ores by the hydrogen process. If it were merely a contribution from the research laboratory we are interested in, we could publish now a complete study.

What we have proven is, that it is easily possible to win iron from its ore by the use of hydrogen, and that without the use of coal, or coke, or carbon in any form. Moreover, the iron produced is almost chemically pure.

We equipped our laboratory with a Booth electric furnace, capable of melting six or eight pounds of ore at a time. To bubble the hydrogen thru the ore, in an experiment with so small a quantity of material, we have had to use a graphite tube, and since carbon is soluble in iron, when there was not flux enough above the liquid iron, and the carbon touched the iron, some trace of carbon is found in the resulting iron. In the commercial scale of production, a modified Bessemer converter will be used, as a reducer, so giving us iron absolutely free from carbon. It seems also that the presence of carbon in the iron is responsible for a trace of phosphorus as well. Here is a sample run, showing the character of ore, and of the resulting iron:

(Copy)

THE UNIVERSITY OF CHICAGO
Department of Geography

Copy to Pres. Max Mason.
Chicago, February 6, 1926.

Mr. Trevor Arnett,
Vice-President and Business Manager,
The University of Chicago,
Chicago, Illinois.

My dear Mr. Arnett:

As per your request of last evening, I will attempt
here a statement

(I) Of the present status of the work of the
Gathmy Research Corporation;

(II) A program for the next stage in the develop-
ment of the hydrogen process of iron re-
duction; and

(III) Estimates of what this next stage of develop-
ment will cost.

I. Accomplishments of the Gathmy Research Corporation.

During the past year, thanks to Mr. Harold Swift
for the funds advanced, we have carried thru to an entirely
successful conclusion our demonstration of the scientific
feasibility of the reduction of iron from its ores by the
hydrogen process. If it were merely a contribution from
the research laboratory we are interested in, we could pub-
lish now a complete study.

What we have proven is, that it is easily possible
to win from iron its ore by the use of hydrogen, and that
without the use of coal, or coke, or carbon in any form.
Moreover, the iron produced is almost chemically pure.

We equipped our laboratory with a Booth electric
furnace, capable of melting six or eight pounds of ore at a
time. To bubble the hydrogen thru the ore, in an experiment
with so small a quantity of material, we have had to use a
graphite tube, and since carbon is soluble in iron, when
there was not flux enough above the liquid iron, and the car-
bon touched the iron, some trace of carbon is found in the
resulting iron. In the commercial scale of production, a
modified Bessemer converter will be used, as a reducer, so
giving us iron absolutely free from carbon. It seems also
that the presence of carbon in the iron is responsible for a
trace of phosphorus as well. Here is a sample run, showing
the character of ore, and of the resulting iron:

Sample No. 3. Hematite.

	<u>Silica</u>	<u>Phosphorus</u>	<u>Sulphur</u>	<u>Iron</u>
Ore, per cent.	9.27	.175	.30	
Iron, per cwt.	.005	.017	.036	99.938

It is evident that here we have iron so pure, that it may go to market for commercial use as pure iron, and it may serve as the starting point for the making of special steels, a very important contribution.

We tried regular run of mine ores from Minnesota, and demonstrated that in an ore with high titanium content, 15.92 per cent. TiO_2 , the iron came down easier than from the ordinary ore, without a trace of titanium in it. This is revolutionary, for up to date it has been difficult or impossible to extract the iron from the titanium-bearing ores, and there are tremendous quantities of such ores available.

II. A Program for Semi-Commercial Development.

It seems advisable at this stage, to try out the process on a larger, or semi-commercial scale, so that we may blow the hydrogen thru the melted ore in a reducer made as a modified form of Bessemer converter. In such case the hydrogen will enter the melt from apertures in the refractory lining of the reducer, and be absolutely free from carbon. The reducer will not be mounted on trunnions, but will be rigid, like an ordinary furnace. The inside space will be egg-shaped, the small end down. When fully charged this space will be only half filled. The heat necessary to provide for radiation loss will be gained by burning a stream of oxygen in an atmosphere of hydrogen above the melt, working as a reverberatory furnace.

The temperature of the melt will be kept at $1400^{\circ}C$. or less, and the iron, in a finely divided solid form, will settle like snow to the bottom of the furnace.

Since the iron comes down in the solid form, it has to be heated to the melting point, $1550^{\circ}C$., so as to be tapped off from time to time. This melting is accomplished by the installation of a low frequency induction furnace, at the base of the reducer. This induction furnace is a well-known commercial device used very satisfactorily in the making of crucible steel at the present time.

The equipment required, then, for the next stage of development consists of:

- (1) A Heroult electric furnace large enough to melt 600 pounds of ore;
- (2) A specially designed reducer, like a Bessemer converter, which is completely closed at the top, into which, thru a trap, the charge of molten ore can be poured;

Sample No. 3. Hematite.

Ore, per cent.	Silica	Phosphorus	Sulphur	Iron
9.27	.005	.175	.30	99.938
Iron, per cwt.		.017	.036	

It is evident that here we have iron so pure, that it may go to market for commercial use as pure iron, and it may serve as the starting point for the making of special steels, a very important contribution.

We tried regular run of mine ores from Minnesota, and demonstrated that in an ore with high titanium content, 15.92 per cent. TiO_2 , the iron came down easier than from the ordinary ore, without a trace of titanium in it. This is revolutionary, for up to date it has been difficult or impossible to extract the iron from the titanium-bearing ores, and there are tremendous quantities of such ores available.

II. A Program for Semi-Commercial Development.

It seems advisable at this stage, to try out the process on a larger, or semi-commercial scale, so that we may blow the hydrogen thru the melted ore in a reducer made as a modified form of Bessemer converter. In such case the hydrogen will enter the melt from apertures in the refractory lining of the reducer, and be absolutely free from carbon. The reducer will not be mounted on trunnions, but will be rigid, like an ordinary furnace. The inside space will be egg-shaped, the small end down. When fully charged this space will be only half filled. The heat necessary to provide for radiation loss will be gained by burning a stream of oxygen in an atmosphere of hydrogen above the melt, working as a reverberatory furnace.

The temperature of the melt will be kept at $1400^{\circ}C$. or less, and the iron, in a finely divided solid form, will settle like snow to the bottom of the furnace.

Since the iron comes down in the solid form, it has to be heated to the melting point, $1550^{\circ}C$, so as to be tapped off from time to time. This melting is accomplished by the installation of a low frequency induction furnace, at the base of the reducer. This induction furnace is a well-known commercial device used very satisfactorily in the making of crucible steel at the present time.

The equipment required, then, for the next stage of development consists of:

- (1) A Heroult electric furnace large enough to melt 600 pounds of ore;
- (2) A specially designed reducer, like a Bessemer converter, which is completely closed at the top, into which, thru a trap, the charge of molten ore can be poured;

(3) The reducer to be served with a blast of hydrogen thru tuyeres in the lower part of the reducer lining;

(4) The reducer to be provided at the bottom with a low-frequency induction furnace to melt the reduced iron.

This equipment is designed for continuous operation, the molten iron being tapped off at bottom from time to time, as from a blast furnace. The design we have in plan will produce 250 pounds of iron every hour or so, in a continuous run. It will be necessary to run along enough to demonstrate that it will run continuously.

We are hoping that the plant as designed will be large enough to serve as a basis for a somewhat accurate determination of:

(1) The energy required to melt the ore;

(2) The energy required to compensate for heat loss by radiation from the reducer;

(3) The energy necessary to melt the iron after it has been reduced.

This should make it possible for the engineers to determine with some degree of certainty the requirements for a larger scale, commercial development. The larger the scale of operation the less will be the ratio of heat loss, and the more efficient the process. There would seem to be no reason why the production units may not be as large as the largest in use by the Bessemer process at present, and since the reducer need not be mounted on trunnions, the size might run even larger.

III. Estimates of Cost of Semi-Commercial Development.

A Heroult furnace of the size required to melt 600 pounds of ore costs installed, new, \$25,000. But we have found that the Trojan Electric Steel Company, at Thirty-fourth Street and Hoyne Avenue, has just such a furnace in its plant, and they are going out of business. The furnace complete, already installed and in good working order, can be had for about \$10,000, and the plant can be rented for \$200 a month, beginning May 1. The hydrogen and oxygen are easily available in this market. The ore is convenient.

It is desirable that we rent this plant for a year, and carry out our demonstration there. Tentative estimates for such a development to run thru the year are as follows:

Heroult furnace and laboratory,	\$10,800
Reducer, for hydrogen reduction,	4,000
Ore, hydrogen, oxygen,	1,000
Rent,	2,400
Salaries and wages,	5,000
Electric current,	2,000
	<u>\$ 25,200</u>

(3) The reducer to be served with a blast of hydrogen
 thru tuyeres in the lower part of the reducer lining;

(4) The reducer to be provided at the bottom with a
 low-frequency induction furnace to melt the reduced iron.

This equipment is designed for continuous operation,
 the molten iron being tapped off at bottom from time to time, as
 from a blast furnace. The design we have in plan will produce
 250 pounds of iron every hour or so, in a continuous run. It
 will be necessary to run along enough to demonstrate that it will
 run continuously.

We are hoping that the plant as designed will be large
 enough to serve as a basis for a somewhat accurate determina-
 tion of:

- (1) The energy required to melt the ore;
- (2) The energy required to compensate for heat loss
 by radiation from the reducer;
- (3) The energy necessary to melt the iron after it has
 been reduced.

This should make it possible for the engineers to de-
 termine with some degree of certainty the requirements for a larger
 scale, commercial development. The larger the scale of operation
 the less will be the ratio of heat loss, and the more efficient
 the process. There would seem to be no reason why the produc-
 tion units may not be as large as the largest in use by the
 Bessemer process at present, and since the reducer need not be
 mounted on trunnions, the size might run even larger.

III. Estimates of Cost of Semi-Commercial Development.

A Heroult furnace of the size required to melt 600 pounds
 of ore costs installed, new, \$25,000. But we have found that
 the Trojan Electric Steel Company, at Thirty-fourth Street and
 Hoyne Avenue, has just such a furnace in its plant, and they
 are going out of business. The furnace complete, already in-
 stalled and in good working order, can be had for about \$10,000,
 and the plant can be rented for \$200 a month, beginning May 1.
 The hydrogen and oxygen are easily available in this market.
 The ore is convenient.

It is desirable that we rent this plant for a year, and
 carry out our demonstration there. Tentative estimates for
 such a development to run thru the year are as follows:

Heroult furnace and laboratory,	\$10,800
Reducer, for hydrogen reduction,	4,000
Ore, hydrogen, oxygen,	1,000
Rent,	2,400
Salaries and wages,	5,000
Electric current,	2,000
	<u>\$25,200</u>

,-4-

It may not be necessary to run the whole year. In such case the cost will be less by so much. The equipment may well have a value of \$10,000 to \$12,000 when we are thru with it.

Before the completion of this demonstration we should have our patents in hand, and be ready to turn the process over on a royalty basis for regular commercial development.

Respectfully submitted,

J. Paul Goode.

It may not be necessary to run the whole year. In such case the cost will be less by so much. The equipment may well have a value of \$10,000 to \$12,000 when we are thru with it.

Before the completion of this demonstration we should have our patents in hand, and be ready to turn the process over on a royalty basis for regular commercial development.

Respectfully submitted,

J. Paul Goode.

M. G.

October 13, 1925

Memorandum to President Mason regarding Professor Goode and the Department of Geography:

The Department of Geography of the University of Chicago was the first department of geography to be established in any American university or college. It is an outgrowth of the Department of Geology, established to emphasize as a social science the relation of man to his physical environment. It lies somewhere between the Physical Sciences, Geology, Botany, Zoology, Climatology, and the Humanistic Sciences, Economics, and Sociology. The Department was established in 1903, and is the strongest department of geography in the country. (Only two of those voting in the Hughes questionnaire voted for departments other than Chicago's for first place.)

Dr. Goode was the first man called to the staff in the Department. Born and brought up in Minnesota, he received his undergraduate training at the University of Minnesota, and his graduate work at the University of Chicago, Harvard University, and the University of Pennsylvania, from the last of which he received his Ph.D. degree. He taught at Pennsylvania for two years, and then came to the University of Chicago as an instructor within the Department of Geology, and later upon the staff of the Department of Geography when it was established.

Dr. Goode's special work has been in Economic Geography, and in Cartography. His work in Economic Geography has led him into the field of public speaking. He has addressed a score or more of organizations of men who, whether consciously or not, appreciate the point of view of the economic geographer.

Dr. Goode has also established a reputation for himself as a map-maker. Some years ago he undertook to ~~buy~~ provide a better quality of American maps than had ever before been made. His wall maps for schools and other organizations published by Rand, McNally & Company are the best thing of the kind that have been done. He is now working upon a series of globes, the first of which is on the market. He has published a school atlas of 300 maps which is the first and only school atlas ever made in America. This atlas is now in the third edition. Dr. Goode has also originated a series of base maps which are used by schools, the government, and various other institutions. In 1916 he invented the projection world map which for geographical use is superior to the well known Mercator's projections. For all his work in the field of Geography, Dr. Goode was in 1923 presented with the Helen Culver gold medal of the

October 13, 1933

Memorandum to President Mason regarding Professor Goode and the Department of Geography:

The Department of Geography of the University of Chicago was the first department of geography to be established in any American university or college. It is an outgrowth of the Department of Geology established to emphasize as a social science the relation of man to his physical environment. It lies somewhere between the Physical Sciences, Geology, Botany, Zoology, Climatology, and the Humane Sciences, Economics, and Sociology. The Department was established in 1903, and is the strongest department of geography in the country. (Only two of those voting in the higher questionnaire voted for departments other than Chicago's for first place.)

Dr. Goode was the first man called to the staff in the Department. Born and brought up in Minnesota, he received his undergraduate training at the University of Minnesota, and his graduate work at the University of Chicago, Harvard University, and the University of Pennsylvania, from the last of which he received his Ph.D. degree. He taught at Pennsylvania for two years, and then came to the University of Chicago as an instructor within the Department of Geology, and later upon the staff of the Department of Geography when it was established.

Dr. Goode's special work has been in Economic Geography, and in Cartography. His work in Economic Geography has led him into the field of public speaking. He has addressed a score or more of organizations of men who, whether consciously or not, appreciate the point of view of the economic geographer.

Dr. Goode has also established a reputation for himself as a map-maker. Some years ago he undertook to buy a better quality of American maps than had ever before been made. His wall maps for schools and other organizations published by Rand, McNally & Company are the best thing of the kind that have been done. He is now working upon a series of globes, the first of which is on the market. He has published a school atlas of 300 maps which is the first and only school atlas ever made in America. This atlas is now in the third edition. Dr. Goode has also originated a series of base maps which are used by schools, the government, and various other institutions. In 1916 he invented the projection world map which for geographical use is superior to the well known Mercator's projections. For all his work in the field of Geography, Dr. Goode was in 1933 presented with the Helen Oliver Gold medal of the

Geographic Society of Chicago, presented previously to twelve persons including such men as Munson, Perry, Shackleton, Rollin Salisbury, and Stefansson.

Geographic Society of Chicago, presented previously to twelve persons
including such men as Hanson, Perry, Shackleton, Rollin Salisbury, and
Stefansson.