PROCEEDINGS OF THE THIRD ANNUAL MEETING OF THE
PALEONTOLOGICAL SOCIETY, HELD AT WASHINGTON,
D. C., DECEMBER 28, 29, AND 30, 1911

R. S. BASSLER, *Secretary*

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SESSION OF THURSDAY, DECEMBER 28, 1911

The opening session of the Society was called to order at 10 o'clock, Thursday morning, December 28, 1911, by Vice-President Arthur Hollick, in the new National Museum. Dr. Charles D. Walcott, Secretary of the Smithsonian Institution, welcomed the Society to Washington and made an informal address on the beginnings and progress of Paleontology in America.

The report of the Council, the first matter of business, was then presented.

REPORT OF THE COUNCIL

To the Paleontological Society in Third Annual Meeting assembled:

The regular annual meeting of the Council was held at Pittsburgh on the adjournment of the Society December 29, 1910. Since this meeting all business of the Society has been arranged by correspondence. The details of administration for the third year of the Society's existence are given in the following reports of officers:

SECRETARY'S REPORT

To the Council of the Paleontological Society:

The proceedings of the second annual meeting of the Society, held at Pittsburgh, Pennsylvania, December 28-29, 1910, have been recorded in Volume XXII, pages 85-102, of the Bulletin of the Geological Society of America. Copies of this as well as of the other publications of the Society have been sent to every member.

At the annual meeting of the Council and by correspondence the list of officers for 1912 was prepared and, according to the By-Laws, forwarded to the members on March 19, 1911. It was then also announced that the third annual meeting of the Society would occur in Washington, D. C., beginning December 28, 1911, at the invitation of the Smithsonian Institution, extended through the Secretary, Dr. Charles D. Walcott.

During the past year the Society has lost one member by death, Prof. Samuel Calvin. Two resignations have become effective. The names of the eleven members elected at the Pittsburgh meeting have been added to the list and all of them have completed their membership according to rule. The present enrollment of the Society is 124. Twelve candidates are before the Society for election and thirteen applications are under consideration by the Council.

Following the authorization of the Council, Prof. J. C. Merriam organized a Pacific Coast section of the Paleontological Society, which held its first meeting last March. Professor Merriam reports a very successful meeting, with fourteen papers presented and about thirty in attendance.

At the last meeting of the Society a committee was appointed to prepare a report on securing a change in the classification of the freight rates on fossils. The chairman of this committee, Dr. W. J. Holland, has submitted the following:

Report of Committee Appointed at the Pittsburgh Meeting to Secure a Change of Classification in Freight Rates on Fossils

I desire to report that, as chairman of the committee appointed to secure a reduction in the rates which have hitherto been charged on fossils, immediately after the adjournment of the meeting I took the matter up with Mr. F. S. Holbrook, of the Official Classification Committee in New York, and with the officers of the Transcontinental Freight Association and the Southern Classification Committee. I was seconded in my efforts by Mr. Joseph Wood, the president of the Pennsylvania lines West, and other officers of the Pennsylvania Railroad, who extended to me every courtesy. As a result, the Official Classification in New York, which covers all of the roads east of the Mississippi River, acceded to my request, and by consulting their rate sheets the members of the Society will see that fossils extracted from rock, boxed,

are rated as first class; fossils in rock, less than carloads, are rated as second class, and in carloads of 30,000 pounds they are rated fourth class. The Western Classification Committee has supplemented its classification by the enactment of the following, to take effect after December 15, 1911:

Fossil specimens:

In the rock:

In crates	1
In barrels or boxes.....	2
In packages or loose, carload, minimum weight 24,000 pounds	4

Not in the rock:

In barrels or boxes.....	1
In packages named, carload, minimum weight 20,000 pounds	3

Fossil casts or reproductions:

Cement or plaster:

In barrels or boxes.....	1
In packages named, straight or mixed, carload, minimum weight 20,000 pounds.....	3

Your committee apparently has not labored in vain. The rates accorded by the Western Classification Committee are slightly more favorable, as will be observed, than are accorded by the Official Classification in New York, representing the roads east of the Mississippi. Your committee would be happy, however, if all the railways could be led to feel, as he is aware some of the Western railroads do, that museums and colleges are properly regarded, and have been judicially held to be regarded as "charitable institutions," and that therefore the forwarding of scientific specimens *free of charge* might be undertaken without violation either of the spirit or letter of the regulations adopted by the Interstate Commerce Commission.

All of which is respectfully submitted.

(Signed)

W. J. HOLLAND,
Committee.

At the last election for Fellows in the Geological Society of America, E. B. Branson and Burnett Smith, members of the Paleontological Society, proposed by the Council, were elected to Fellowship. Walter Granger, Lawrence M. Lambe, E. S. Riggs, R. Anderson, Frank Springer, and C. R. Stauffer, of our Society, were also elected to Fellowship in the Geological Society of America on the nomination of individual Fellows of the two Societies.

The members of the Council representing Vertebrate Paleontology suggested a Symposium for the Washington meeting, entitled "Ten Years' Progress in Vertebrate Paleontology," and proposed a list of the

special subjects to be considered. The Council approved their suggestion and the program printed on a following page was arranged.

Respectfully submitted.

R. S. BASSLER,

WASHINGTON, D. C., December 20, 1911.

Secretary.

TREASURER'S REPORT

To the Council of the Paleontological Society:

The Treasurer reports a prosperous year, dues both current and in arrears having been received from every member of the Society but five.

Such bills as were presented to the Treasurer were duly endorsed by the President and promptly paid. They were in excess of the annual expenditures, as up to the time of the present incumbent practically no bills had been presented against the Society, so that this year's outlay represents the entire expenses of the organization to date.

The Treasurer desires instructions on two points: whether or no he shall execute the bond of one thousand dollars (\$1,000) as required by the Constitution, and as to the advisability of insuring the Society's funds against the possibility of loss other than by malfeasance in office.

The funds at present standing in the Treasury, deposited in the name of the Society in the Second National Bank of New Haven, Connecticut, are as follows:

RECEIPTS

Balance received from retiring Treasurer, Dr. W. D. Matthew	\$141.91
Dues of members (with arrears) for 1911 (\$186.00 less \$3.00 overcharge returned)	183.00
	<hr/> \$324.91

EXPENDITURES

Treasurer's office:	
Postage	\$3.00
Stationery	11.84
	<hr/> \$14.84
Secretary's office:	
Expenses, 1910	16.80
Secretary's allowance, 1910	50.00
	<hr/> 66.80
Geological Society of America, printing, stationery, postage, and clerical work (\$43.95 less rebate of \$2.25)	41.70
Geological Society of America, Proceedings Paleontological Society, excess separates	18.50
	<hr/> \$141.84
Balance on hand December 21, 1911	183.07
	<hr/> \$324.91
Respectfully submitted.	

RICHARD S. LULL,

NEW HAVEN, CONNECTICUT, December, 1911.

Treasurer.

APPOINTMENT OF AUDITING COMMITTEE

The chair then appointed A. W. Grabau and T. W. Stanton as a committee to audit the Treasurer's accounts. In response to the Treasurer's inquiry regarding a bond of \$1,000, a motion by John M. Clarke, duly seconded, was adopted by the Society to the effect that the funds in the Treasury were not sufficient at present to require such a bond of the Treasurer.

ELECTION OF OFFICERS AND MEMBERS

The declaration of the vote for officers for 1912 and for members was announced by the Secretary as follows:

OFFICERS FOR 1912

President:

DAVID WHITE, Washington, D. C.

First Vice-President:

J. C. MERRIAM, Berkeley, Cal.

Second Vice-President:

RUDOLF RUEDEMANN, Albany, N. Y.

Third Vice-President:

E. W. BERRY, Baltimore, Md.

Secretary:

R. S. BASSLER, Washington, D. C.

Treasurer:

RICHARD S. LULL, New Haven, Conn.

Editor:

CHARLES R. EASTMAN, Pittsburgh, Pa.

MEMBERS

HARVEY BASSLER, Johns Hopkins University, Baltimore, Maryland.
CHARLES BUTTS, U. S. Geological Survey, Washington, D. C.
WILL EDWIN CRANE, Swissvale P. O., Pittsburgh, Pennsylvania.
JULIA ANNA GARDNER, Johns Hopkins University, Baltimore, Maryland.
F. C. GREENE, Geological Survey of Missouri, Rolla, Missouri.
E. C. JEFFREY, Harvard University, Cambridge, Massachusetts.
CLARA GOULD MARK, Westerville, Ohio.
MAURICE G. MEHL, University of Chicago, Chicago, Illinois.

RECTOR DUVAL MESLER, U. S. Geological Survey, Washington, D. C.

JAMES E. NARRAWAY, Department of Justice, Ottawa, Canada.

HERRICK EAST WILSON, University of Chicago, Chicago, Illinois.

WILLIAM JAMES WILSON, Geological Survey of Canada, Ottawa, Canada.

TITLES OF PAPERS ON GENERAL PALEONTOLOGY AND STRATIGRAPHY

After various announcements by the chair of arrangements for the meetings of the Society and other matters, the reading of the scientific papers, beginning with "General Paleontology and Stratigraphy," was taken up.

*PHYSICAL CONDITIONS UNDER WHICH ORGANIC AND CHEMICALLY
PRECIPITATED LIMESTONES ARE FORMED*

BY T. WAYLAND VAUGHAN

Read by the author from manuscript; 15 minutes.

*COASTAL PLAIN INVESTIGATIONS CONDUCTED BY THE UNITED STATES AND
STATE GEOLOGICAL SURVEYS*

BY T. WAYLAND VAUGHAN

Presented without manuscript; illustrated with lantern slides and maps; 20 minutes. This paper included a statement by L. W. Stephenson, read from manuscript by the writer.

STATE OF OUR KNOWLEDGE OF THE MIDDLE AMERICAN TERTIARY

BY WM. H. DALL

Presented from manuscript; 20 minutes.

REMARKS ON THE GEOLOGIC SECTION OF THE ISTHMUS OF PANAMA

BY D. F. MAC DONALD¹

Presented without manuscript; illustrated with drawings; 20 minutes. Discussed by T. Wayland Vaughan and Ernst Howe.

At 12.30 p. m. the Society adjourned for luncheon, convening again at 2 p. m., with Vice-President Stuart Weller in the chair, when the papers on "General Paleontology and Stratigraphy" were continued, preceded by a memorial on Prof. Samuel Calvin.

MEMORIAL ADDRESS

Professor Weller spoke of the Society's loss by death during the year of Professor Calvin and reviewed his work in science, and especially his

¹ Introduced by T. Wayland Vaughan.

influence on his students. A memoir of Professor Calvin will be presented in the Bulletin of the Geological Society of America.

TITLES OF PAPERS AND NAMES OF DISPUTANTS

PALEONTOLOGY OF A VORACIOUS APPETITE

BY JOHN M. CLARKE

Presented by the author without manuscript; illustrated with lantern slides; 10 minutes. Discussed by A. W. Grabau and H. S. Williams.

CORRELATION OF THE PALEOZOIC FAUNAS OF THE EASTPORT QUADRANGLE, MAINE

BY HENRY SHALEH WILLIAMS

Read from manuscript; 20 minutes. Discussed by H. M. Ami, J. M. Clarke, David White, and E. S. Bastin.

FOSSILIFEROUS CONGLOMERATES

BY A. W. GRABAU

Presented without manuscript; illustrated by sketches; 10 minutes. Discussed by R. Ruedemann, G. W. Stose, J. M. Clarke, C. A. Reeds, T. W. Stanton, W. T. Lee, Joseph Barrell, and Sidney Paige, with reply by the author.

ORISKANY SANDSTONES OF ONTARIO

BY CLINTON B. STAUFFER

Presented without manuscript; 10 minutes. Discussed by W. A. Parks and J. M. Clarke.

TO WHAT PART OF THE RICHMOND DOES THE MEDINA OF ONTARIO CORRESPOND?

BY A. F. FOERSTE

Presented without manuscript; 15 minutes. Discussed by A. W. Grabau, E. R. Cumings, E. O. Ulrich, and the author.

*NOTES ON THE DICTYONEMAS OF NEW BRUNSWICK*BY F. F. HAHN²

Read from manuscript and illustrated with drawings; 10 minutes. Discussed by R. Ruedemann.

² Introduced by A. W. Grabau.

A NEW TRENTON CRINOID FROM ONTARIO

BY W. A. PARKS

Presented without manuscript; illustrated with lantern slides and specimen; 10 minutes. Discussed by A. W. Grabau.

At 5 o'clock the Society adjourned for the day.

Thursday evening the members of the Society took part in the Annual Dinner with the Fellows of the Geological Society of America.

SESSION OF FRIDAY, DECEMBER 29.

Friday morning the Society was called to order at 10 o'clock by President Scott, who announced that the morning would be devoted to the papers on Invertebrate Paleontology, while the Symposium papers would be read during the afternoon session.

W. D. Matthew moved that the incoming Council be instructed to designate a bank of deposit for the Treasurer's funds; motion seconded and passed.

The Auditing Committee then reported that the accounts of the Treasurer were found to be in good shape.

TITLES OF PAPERS ON INVERTEBRATE PALEONTOLOGY

DEVELOPMENT OF THE MONTICULIPOROIDS

BY EDGAR R. CUMINGS

Presented without manuscript; illustrated with sketches; 20 minutes. Discussed by R. S. Bassler and J. M. Clarke.

MIDDLE CAMBRIAN CRUSTACEANS FROM BRITISH COLUMBIA

BY CHARLES D. WALCOTT

Presented without manuscript; illustrated with lantern slides and specimens; 20 minutes. Discussed by J. M. Clarke.

THE OZARKIAN FAUNA

BY E. O. ULRICH

Presented without manuscript; illustrated with lantern slides; 20 minutes. Discussed by C. D. Walcott, Charles Butts, A. W. Grabau, H. M. Ami, L. D. Burling, and E. O. Ulrich.

At 12.30 the Society adjourned for luncheon, convening at 2 p. m. for the reading of the Symposium papers.

SYMPOSIUM ON TEN YEARS' PROGRESS IN VERTEBRATE PALEONTOLOGY

The following papers, most of which are published as a brochure of volume 23, were then presented:

SOUTH AMERICAN MAMMALS

BY WM. B. SCOTT

Read from manuscript. Discussed by W. D. Matthew.

AFRICAN MAMMALS

BY W. D. MATTHEW

Read from manuscript. Discussed by H. F. Osborn and W. B. Scott.

PERISSODACTYLA

BY J. W. GIDLEY

Read from manuscript. Discussed by H. F. Osborn and W. D. Matthew.

CORRELATION AND PALAEOGEOGRAPHY

BY H. F. OSBORN

Presented without manuscript. Discussed by W. D. Matthew and W. J. Sinclair.

CARNIVORA AND RODENTIA

BY W. D. MATTHEW

Read from manuscript.

MARINE MAMMALS

BY F. W. TRUE³

Read from manuscript. Discussed by W. B. Scott.

CRETACEOUS DINOSAURS

BY R. S. LULL

Read from manuscript by the author.

PRE-CRETACEOUS DINOSAURS

BY W. J. HOLLAND

Read in the absence of the author by R. S. Lull. Discussed by W. B. Scott.

³ Introduced by C. D. Walcott.

CONTRIBUTIONS TO GEOLOGIC THEORY AND METHOD

BY W. J. SINCLAIR

Read from manuscript. Discussed by W. D. Matthew.

ARTIODACTYLA

BY O. A. PETERSON

Read in the absence of the author by W. J. Sinclair. Discussed by W. D. Matthew.

PALEOZOIC FISHES

BY BASHFORD DEAN

Read by C. R. Eastman. Discussed by W. B. Scott and L. D. Burling.

MESOZOIC AND CENOZOIC FISHES

BY C. R. EASTMAN

Read from manuscript by the author. Discussed by W. B. Scott and L. D. Burling.

PRIMATES, MARSUPIALS, AND INSECTIVORES

BY W. K. GREGORY

Read in the absence of the author by W. D. Matthew. Discussed by W. B. Scott.

PALEOZOIC REPTILES AND AMPHIBIA, A COMPARISON OF OLD AND NEW WORLD FORMS

BY E. C. CASE

Read by member-elect M. G. Mehl.

MARINE REPTILES

BY J. C. MERRIAM

Read by W. J. Sinclair in the author's absence.

EVOLUTIONARY EVIDENCE

BY S. W. WILLISTON

Read by Stuart Weller.

At 5.30 the Society adjourned.

Friday evening the members of the Society attended the address of the retiring President of the Geological Society of America and took part in the smoker tendered to the Geological Society by the Geological Society of Washington at the Cosmos Club.

SESSION OF SATURDAY, DECEMBER 30

Saturday morning the Society was called to order at 10 o'clock by Vice-President Matthew.

TITLES OF PAPERS AND NAMES OF DISPUTANTS

NOTES ON DEVONIC CORALS

BY A. W. GRABAU

Presented without manuscript; illustrated with sketches. Discussed by R. S. Bassler, with reply by the author.

A FISH FAUNA FROM THE PENNSYLVANIAN OF WYOMING

BY E. B. BRANSON

Presented without manuscript; illustrated with lantern slides; 15 minutes. Discussed by R. S. Bassler, W. D. Matthew, A. L. Miller, and C. R. Eastman, with remarks by the author.

REMARKABLE SKELETON OF STEGOSAURUS

BY C. W. GILMORE

Read from manuscript; illustrated with lantern slides; 20 minutes. Discussed by R. S. Lull and W. D. Matthew.

*REMARKABLE SPECIMEN BELONGING TO THE GENUS EDESTUS*BY O. P. HAY⁴

Presented without manuscript; illustrated with lantern slides; 15 minutes. Discussed by C. R. Eastman.

CRANIUM OF THE PLEURACANTHIDÆ

BY L. HUSSAKOF

Read by title.

JURASSIC SAURIAN REMAINS INGESTED WITHIN FISH

BY C. R. EASTMAN

Delivered without manuscript; illustrated with photographs; 5 minutes.

ESTABLISHMENT OF FAUNAL DIVISIONS AMONG THE VERTEBRATES OF THE PLEISTOCENE

BY O. P. HAY

Delivered without manuscript; illustrated with lantern slides; 30 minutes. Discussed by W. D. Matthew.

⁴ Introduced by R. S. Bassler.

Vice-President Eastman then took the chair and the following paper was presented:

NOTES AND SLIDES OF THE UINTA BASIN EOCENE

BY E. S. RIGGS

Given without manuscript; illustrated with lantern slides; 20 minutes.

TITLES OF PAPERS ON PALEOBOTANY

The two papers in Paleobotany listed below were then read by title on the request of their respective authors.

SOME INTERESTING NEW PLANTS FROM FLORISSANT, COLORADO

BY F. H. KNOWLTON

CHARACTERS OF CALAMITES INORNATUS DAWSON

BY DAVID WHITE

At 12.45 p. m. the Society adjourned.

REGISTER OF THE WASHINGTON MEETING, 1911

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 Prof. Dr. E. KOKEN, University of Tübingen, Tübingen, Germany.
 S. S. BUCKMAN, Esq., Westfield, Thame, England.
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- EDWIN HINCKLEY BARBOUR, Ph. D., University of Nebraska, Lincoln, Neb.
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- WALTER R. BILLINGS, 1250 Bank St., Ottawa, Canada.
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- W. H. DALL, Sc. D., Smithsonian Institution, Washington, D. C.
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- ORVILLE A. DERBY, M. S., 80 Rua Visconde do Rio Branco, Sao Paulo, Brazil.
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- CHARLES N. GOULD, Ph. D., Norman, Okla.

- AMADEUS W. GRABAU, S. D., Columbia University, New York, N. Y.
WALTER GRANGER, American Museum of Natural History, New York City.
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WILLIAM A. PARKS, Ph. D., University of Toronto, Toronto, Canada.
WILLIAM PATTEN, Ph. D., Dartmouth College, Hanover, N. H.
O. A. PETERSON, Carnegie Museum, Pittsburgh, Pa.
CHARLES S. PROSSER, M. S., Ohio State University, Columbus, Ohio.
PERCY E. RAYMOND, Ph. D., Museum of Comparative Zoology, Cambridge, Mass.
W. H. REED, B. S., University of Wyoming, Laramie, Wyo.
CHESTER A. REEDS, Ph. D., Bryn Mawr College, Bryn Mawr, Pa.
E. S. RIGGS, A. B., Field Museum of Natural History, Chicago, Ill.
PAUL V. ROUNDY, U. S. Geological Survey, Washington, D. C.
ROBERT R. ROWLEY, High School, Louisiana, Mo.
RUDOLF RUEDEMANN, Ph. D., State Hall, Albany, N. Y.
FREDERICK W. SARDESON, Ph. D., University of Minnesota, Minneapolis, Minn.

- THOMAS E. SAVAGE, Ph. D., University of Illinois, Urbana, Ill.
 CHARLES SCHUCHERT, Yale University, New Haven, Conn.
 WILLIAM B. SCOTT, Ph. D., 56 Bayard Ave., Princeton, N. J.
 HENRY M. SEELY, M. D., Middlebury College, Middlebury, Vt.
 ELIAS H. SELLARDS, Ph. D., Tallahassee, Fla.
 HENRY W. SHIMER, Ph. D., Massachusetts Institute of Technology, Boston, Mass.
 WILLIAM J. SINCLAIR, Ph. D., Princeton University, Princeton, N. J.
 BURNETT SMITH, Ph. D., Syracuse University, Syracuse, N. Y.
 J. PERRIN SMITH, Ph. D., Stanford University, Cal.
 FRANK SPRINGER, Ph. B., U. S. National Museum, Washington, D. C.
 TIMOTHY W. STANTON, Ph. D., U. S. National Museum, Washington, D. C.
 TIMOTHY W. STANTON, B. S., U. S. National Museum, Washington, D. C.
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 CHARLES H. STERNBERG, 617 Vermont St., Lawrence, Kans.
 CHARLES K. SWARTZ, Ph. D., Johns Hopkins University, Baltimore, Md.
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 ALBERT THOMPSON, American Museum of Natural History, New York City.
 WILLIAM H. TWENHOFEL, B. S., University of Kansas, Lawrence, Kans.
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 JACOB VAN DELOO, State Hall, Albany, New York.
 GILBERT VAN INGEN, Princeton University, Princeton, N. J.
 T. WAYLAND VAUGHAN, Ph. D., U. S. Geological Survey, Washington, D. C.
 ANTHONY W. VOGDES, 2425 First St., San Diego, Cal.
 CHARLES D. WALCOTT, LL. D., Smithsonian Institution, Washington, D. C.
 STUART WELER, Ph. D., University of Chicago, Chicago, Ill.
 DAVID WHITE, B. S., U. S. National Museum, Washington, D. C.
 G. R. WIELAND, Ph. D., Yale University Museum, New Haven, Conn.
 HENRY S. WILLIAMS, Ph. D., Cornell University, Ithaca, N. Y.
 SAMUEL W. WILLISTON, Ph. D., University of Chicago, Chicago, Ill.
 JOHN D. WILSON, Syracuse University, Syracuse, N. Y.
 ELVIRA WOOD, Ph. D., Museum of Comparative Zoölogy, Harvard University, Cambridge, Mass.

MEMBERS DECEASED

- SAMUEL CALVIN. Died April 17, 1911.
 ROBERT H. GORDON. Died May 10, 1910.

MEMBERS-ELECT, DECEMBER 31, 1911

- HARVEY BASSLER, Johns Hopkins University, Baltimore, Md.
 CHARLES BUTTS, U. S. Geological Survey, Washington, D. C.
 WILL E. CRANE, Swissvale P. O., Pittsburgh, Pa.
 JULIA A. GARDNER, Johns Hopkins University, Baltimore, Md.
 F. C. GREENE, Geological Survey of Missouri, Rolla, Mo.
 E. C. JEFFREY, Harvard University, Cambridge, Mass.
 CLARA G. MARK, Ohio State University, Westerville, Ohio.
 MAURICE G. MEHL, University of Chicago, Chicago, Ill.
 RECTOR D. MOSLER, U. S. Geological Survey, Washington, D. C.
 JAMES E. NARRAWAY, Ottawa, Canada.
 HERRICK E. WILSON, University of Chicago, Chicago, Ill.
 WILLIAM J. WILSON, Geological Survey of Canada, Ottawa, Canada.