

fauna the largest known from South America, that from Paraná, for example, consisting of 73 species. This fauna comprises 33 trilobites, 9 cephalopods, 5 conularias, 7 pterapods, 15 gastropods, 26 pelecypods, 33 brachiopods, 3 echinoderms, 3 bryozoa and 4 corals. The few corals, bryozoa and crinoids; the reduced number of brachiopods, and the great abundance of pelecypods emphasize the prevailing muddy environment during Devonian time in Bolivia.

The sub-divisions of the Bolivian Devonian are geographic rather than stratigraphic, although Kozłowski believes the succession given below as probable: At the base are the shales of the Cordillera Real, as at Araca, and these are correlated with the North American Helderberg. Above this lies the Iela formation, consisting of the *Rensselaria knodi* sandstone, the Conularia shales and the Huamampampa sandstone. These are collectively correlated with the Oriskany of North America, the Maecurú sandstone of Pará, the Devonian of Paraná, Matto Grosso, the Argentina, Falkland Islands and the Bokkeveld beds of Africa.

Above the Iela formation is the Sicasica formation of the Altaplanicie, which consists of the lower fossiliferous shales, the *Homalonotus dekayi* shales and the upper barren sandstone. These are correlated with the Ereré sandstone of Pará, and with the middle Devonian of North America, and possibly extending upward into the upper Devonian.

The austral character of the Devonian faunas of South America, emphasized by Clarke, are, in Bolivia, shown chiefly by the Phacopidae. Paraná and Africa show the largest number of identical forms, and Africa has twice as many as Pará. Kozłowski is inclined to think that the barrier that prevented intercommunication between Bolivia and Pará was water too deep to permit the interchange of shallow water faunas rather than a land barrier, and this implies that such a deep water barrier was lacking at that time between South Africa and Bolivia.

Kozłowski identifies a considerable number of North American species in the Bolivian Devonian. These occur for the most part in the supposed younger Devonian Sicasica formation, and include such forms as *Homalonotus dekayi*, *Orthoceras constrictum*, *Nuculites oblongatus*, *Tropidoleptus carinatus*, *Vitulina pustulosa*; and closely related forms of *Lophospira*, *Ambocoelia*, *Liorhynchus* and *Spirifer*. From this he concludes that the means of intercommunication between North America and Bolivia were easier at that time than in the earlier Devonian. We have compared these with material in the Hopkins collections from Bolivia, and with North American specimens, and believe that such an identity is not established in all cases, but this is a question to be decided by more material and by someone better versed in Devonian paleontology than the reviewer.

Kozłowski's memoir is a most complete and scholarly contribution. His adequate and well-executed illustrations amply supply the deficient and poor illustrations of Bolivian material in the works of Ulrich and Knod. The work is a most welcome contribution to the paleontology of South America, and lays a secure basis for future studies of the Andean Devonian.

EDWARD W. BERRY

THE JOHNS HOPKINS UNIVERSITY

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE PREPARATIONS FOR THE FIFTH WASHINGTON MEETING AND ASSOCIATED ORGANIZATIONS

THE local committees in charge of preparations for the approaching Washington meeting of scientists (December 29, 1924, to January 3, 1925) have been organized as follows:

The Local Committee for the Fifth Washington Meeting

William Mather Lewis, president of George Washington University, *chairman*.

C. G. Abbot, assistant secretary, Smithsonian Institution.

Gilbert H. Grosvenor, president of the National Geographic Society.

Vernon Kellogg, permanent secretary of the National Research Council.

John C. Merriam, president of the Carnegie Institution of Washington.

David White, home secretary of the National Academy of Sciences, and senior geologist, U. S. Geological Survey.

The Committee on Special Arrangements for the Fifth Washington Meeting

Walter M. Gilbert, administrative secretary, Carnegie Institution of Washington, *chairman*.

Albert L. Barrows, assistant secretary, National Research Council.

Paul Brockett, assistant secretary, National Academy of Sciences.

Austin H. Clark, curator, Division of Echinoderms, U. S. National Museum.

Hugh Miller, dean of engineering, George Washington University.

W. J. Showalter, associate editor, National Geographic Society.

Chairmen of Subcommittees

Albert L. Barrows, Hotels.

Paul Brockett, Transportation.

Austin H. Clark, Publicity.
 Walter M. Gilbert, Finances.
 Hugh Miller, Meeting Places.
 W. J. Showalter, Exhibition.

Local Representatives for the Sections

Section A (Mathematics). Howard L. Hodgkins, George Washington University.

Section B (Physics). Lyman J. Briggs, 3208 New-ark street.

Section C (Chemistry). R. S. McBride, Colorado Building.

Section D (Astronomy). W. S. Eichelberger, U. S. Naval Observatory.

Section E (Geology and Geography). W. C. Mendenhall, U. S. Geological Survey.

Section F (Zoological Sciences). Paul D. Bartsch, U. S. National Museum.

Section G (Botanical Sciences). R. F. Griggs, George Washington University.

Section H (Anthropology). J. Walter Fewkes, Smithsonian Institution.

Section I (Psychology). William C. Ruediger, George Washington University.

Section K (Social and Economic Sciences). Frederick L. Hoffman, Babson Institute, Wellesley Hills, Mass.

Section L (Historical and Philological Sciences). Frederick E. Brasch, Department of Terrestrial Magnetism, Carnegie Institution of Washington.

Section M (Engineering). William Bowie, U. S. Coast and Geodetic Survey.

Section N (Medical Sciences). Carl Voegtlin, Hygienic Laboratory.

Section O (Agriculture). Karl F. Kellerman, Bureau of Plant Industry.

Section Q (Education). C. R. Mann, 26 Jackson Place.

The following named organizations have thus far intimated their intention to hold meetings at Washington in convocation week, in conjunction with the association. The name and address of the secretary follows the name of the organization. Organizations marked with an asterisk are officially affiliated with the association:

*American Mathematical Society. R. G. D. Richardson, Brown University, Providence, R. I.

*Mathematical Association of America. W. D. Cairns, Oberlin, Ohio.

Pi Mu Epsilon Mathematical Fraternity. E. D. Roe, Jr., 123 W. Ostrander Ave., Syracuse, N. Y.

*American Physical Society. Harold W. Webb, Columbia University, New York, N. Y.

*American Meteorological Society. Charles F. Brooks, Clark University, Worcester, Mass.

*American Astronomical Society. Joel Stebbins, Washburn Observatory, Madison, Wis.

*Association of American Geographers. Charles C. Colby, University of Chicago, Chicago, Ill.

National Council of Geography Teachers. Geo. J. Miller, Mankato, Minn.

*American Society of Zoologists. W. C. Allee, University of Chicago, Chicago, Ill.

*Entomological Society of America. Clell Lee Metcalf, University of Illinois, Urbana, Ill.

*American Association of Economic Entomologists. C. W. Collins, Melrose Highlands, Mass.

*Botanical Society of America. I. F. Lewis, University of Virginia, University, Va.

*American Phytopathological Society. R. J. Haskell, U. S. Department of Agriculture, Washington, D. C.

American Society of Plant Physiologists. R. B. Harvey, University of Minnesota, Minneapolis, Minn.

*American Society of Naturalists. A. F. Shull, University of Michigan, Ann Arbor, Mich.

*Ecological Society of America. A. O. Weese, James Millikin University, Decatur, Ill.

*American Microscopical Society. Paul S. Welch, University of Michigan, Ann Arbor, Mich.

*American Anthropological Association. A. V. Kidder, Phillips Academy, Andover, Mass.

American Folk-Lore Society. Gladys A. Reichard, Barnard College, Columbia University, New York, N. Y.

*American Psychological Association. John E. Anderson, Drawer 13, Yale Station, New Haven, Conn.

Metric Association. Howard Richards, Jr., 156 Fifth Ave., New York, N. Y.

American Physiological Society. Walter K. Meek, University of Wisconsin, Madison, Wis.

*Society of American Bacteriologists. J. M. Sherman, Cornell University, Ithaca, N. Y.

American Society for Pharmacology and Experimental Therapeutics. Edgar D. Brown, University of Minnesota, Minneapolis, Minn.

American Society of Biological Chemists. Wright Wilson, University of Pennsylvania, Philadelphia, Pa.

American Society for Experimental Pathology. E. B. Krumbhaar, Chestnut Hill, Philadelphia, Pa.

*American Society for Horticultural Science. C. P. Close, College Park, Maryland.

Association of Official Seed Analysts. A. L. Stone, University of Wisconsin, Madison, Wis.

Potato Association of America. William Stuart, U. S. Department of Agriculture, Washington, D. C.

Phi Delta Kappa Fraternity. Clayton R. Wise, 13319 E. Sixth St., E. C. Cleveland, Ohio.

*Society of Sigma Xi. Edward Ellery, Union College, Schenectady, N. Y.

*American Association of University Professors. H. W. Tyler, 222 Charles River Road, Cambridge, Mass.

*Gamma Alpha Graduate Scientific Fraternity. L. M. Hutchins, U. S. Bureau of Plant Industry, Washington, D. C.

The local arrangements for sections and for associated organizations are in charge of the local section

representatives named above, who are in close touch with the Committee on Special Arrangements. Secretaries of associated organizations and of sections of the association are asked to correspond with the local representatives of their respective sections when taking up arrangements for hotel headquarters, dinners, meeting places, lanterns, etc. For organizations that are not specially related to any section of the association these arrangements are to be made through correspondence with the assistant secretary, Dr. Francis D. Murnaghan, who is to be addressed at the Washington office.

The general hotel headquarters for the meeting will be the New Willard Hotel, Pennsylvania Avenue and Fourteenth Street N. W. It is probable that some associated societies will have other hotel headquarters. A list of Washington hotels and their prices will be published later in *SCIENCE* and in the Preliminary Announcement of the meeting, which will be sent, as usual, to all members on or before December 1.

Reduced railway rates on the certificate plan have been granted to those attending the Washington meeting from all parts of the United States and from points in Canada, east of and including Armstrong, Fort William and Sault Ste. Marie, Ont. The certificate plan is the same as that followed for recent meetings.

It is hoped that the publicity feature of the Washington meeting will be handled even more efficiently than has been done at recent meetings of the association. The newspapers are prepared to give much space to science, and the association will do its best to furnish facilities by which representatives of the press may readily secure reliable information and may interview the men of science on their work. The subcommittee on publicity will again have the helpful cooperation of Science Service, as in recent years.

All persons who are to read papers or present addresses at the Washington meeting will aid the advance and the popularization of science very much if they will be sure to prepare *two copies* of a summary or abstract of each paper, sending one to Austin H. Clark, publicity chairman, U. S. National Museum, and the other to the editor of Science Service, Building of the National Academy of Sciences, Washington, D. C. These summaries should be sent in as early as possible. We hope for advanced summaries of all the papers given this year.

The member who made possible the thousand-dollar prize awarded at the Cincinnati meeting has very generously provided funds for a similar prize to be awarded at the fifth Washington meeting, and at the four subsequent annual meetings. The Washington prize will be awarded to the author of a noteworthy contribution to the advancement of science, presented

in the programs of the association and associated organizations.

The fifth Washington meeting will be large and well attended, and plans are being made for many program features that will well represent the present status of American scientific work and scientific thought. An exhibition of new scientific apparatus, methods, books and products is being arranged. It is hoped that individuals as well as firms will exhibit. General plans for the exhibition are in charge of Dr. Chas. A. Shull, Botany Building, the University of Chicago. Prospective exhibitors are asked to correspond with him in this regard.

The opening session of the fifth Washington meeting will occur on the evening of Monday, December 29, at which Dr. Charles D. Walcott, secretary of the Smithsonian Institution, will deliver the retiring presidential address. It is hoped that the President of the United States will address the association and associated societies at the opening session. On Tuesday evening, December 30, will occur the usual joint session of the American Association and the Society of Sigma Xi, and the session by Dr. Frederick Fuller Russell, general director of the International Health Board. On Wednesday evening, December 31, a general session will be addressed by the eminent British astronomer, Arthur Stanley Eddington, Plumian professor of astronomy in Cambridge University and director of the Cambridge Observatory. His subject will be "Relativity."

BURTON E. LIVINGSTON,
Permanent Secretary.

SCIENTIFIC EVENTS

THE PAN-PACIFIC RESEARCH INSTITUTE

THE Castle home, in Honolulu, with four acres of surrounding land, is to become the home of a Pan-Pacific scientific research institute. The property is to be used solely as a college of graduates. The assistant students will, it is expected, attend the University of Hawaii, where they will take their degrees.

The gift will be used as the nucleus of the Pan-Pacific University, for which a charter was granted some years ago. This will be a graduate university chiefly for research work. Probably a Pan-Pacific research college or institute will be granted a license by the incorporators of the Pan-Pacific University to begin work at once with a trusteeship of five scientists of Pacific races who will proceed with the organization of the research institute.

The chief work of the Pan-Pacific Research Institute will be along lines of research study of food resources of Pacific lands and of the ocean itself. It will be entirely a Pan-Pacific institute connected with no other body but cooperating with kindred bodies in all Pacific lands. It will be neither American, Ha-