the establishment of four accounting centers (France, Norway, United States of America and England) through which collections of dues of adhering countries are to be made.

In view of the paramount importance in all human endeavor in life of the physics of the earth from both scientific and economic viewpoints and of the spirit of the present officers, it seems that we may look forward to the continuation of the International Union of Geodesy and Geophysics as a functioning body although the Eighth Triennial Assembly set for Bergen, Norway, in 1942 may have to be postponed.

AMERICAN GEOPHYSICAL UNION

The executive committee of the American Geophysical Union has continued to act as the advisory body on geodesy and geophysics to the National Research Council in the relations with the International Union of Geodesy and Geophysics. The total membership of the Union April 26, 1940, was 1,264—a net gain of 140 during the past year. The transactions of the Union for 1939 contained in four volumes totaling 741 pages, including 153 papers and reports, have been published and distributed except for some 300 volumes held for future distribution in Europe pending the resumption of the International Exchange Service with European countries now at war. The edition was 2,000 copies.

In 1940 a regional meeting of the Section of Hydrology and the Western Interstate Snow-Survey Conference was held at Stanford University, California, January 12 and 13. Arrangements have been made for another regional meeting of the section and of the Western Interstate Snow-Survey Conference at Seattle, Washington, June 20 to 23, 1940. The twenty-first annual meetings of the Union and of its sections were held April 24 to 27, 1940. The Union also took part in two symposia bearing on "Application of mathematics and Earth's physics" and "Hydrologic problems in the Ohio and Michigan basins" during the Columbus meeting of the American Association for the Advancement of Science in December, 1939. These and the papers and reports presented at the twenty-first annual meeting will be published in the Union's volumes of transactions for 1940.

Following a mail ballot sent to all members of the Union, an eighth section has been formed, namely, the Section of Tectonophysics, the object of which is to promote and encourage research of fundamental importance to our knowledge of earth structure not covered in any one of the seven sections of the Union. The affiliations with this section already total 275.

The William Bowie Medal endowed by friends and coworkers of Dr. William Bowie and established by vote of the executive committee of the Union on March 1, 1939, to be awarded for distinguished attainment and outstanding contribution to the advancement of cooperative research in fundamental geophysics, was designed, and dies were prepared during 1939. The first and particularly fitting award of the medal was to William Bowie. The second award was made at the General Assembly of the Union on April 26 to Dr. Arthur Louis Day.

The Union was represented by five delegates at the Sixth Pacific Science Congress, July 24 to August 12, 1939, and has also designated 16 delegates to the coming Eighth American Scientific Congress, May 10 to 18, 1940.

In conclusion, it is felt that the American Geophysical Union has continued to take effective part in the advance of scientific and economic aspects of geophysical research and in the coordination of international and national activities.

SCIENTIFIC EVENTS

REPORT OF THE BROOKLYN BOTANIC GARDEN

ACCORDING to the twenty-ninth annual report of the Brooklyn Botanic Garden, for 1939, more than 1,789,000 visitors were registered, an increase of nearly 72,000 over 1938. The attendance at classes and lectures for adults and children exceeded 104,000. Teaching material was supplied to more than 4,700 teachers in all five boroughs of Greater New York for the instruction of over 281,700 pupils.

Research has been continued on the problem of disease resistance in plants; the culture, diseases and nomenclature of Japanese Iris; the fungus disease (*Endothia parasitica*) of the American chestnut, and on the native and foreign flora.

The library, with more than 37,600 bound volumes and pamphlets, is open free to the public daily, and had nearly 5,000 readers during 1939. The opening paragraphs of the report congratulate American educational and scientific institutions on being located in a country where scientific investigators and teachers are free to pursue the truth as it is, and to proclaim it without necessity of having to try to bring it into conformity with any political or sociological or racial ideology.

More than half the operating budget for the year (51.82 per cent.) was provided from private funds, the remainder (48.18 per cent.) being appropriated in the tax budget of New York City. Private citizens contributed to the support of the garden more than $54,000, which equals nearly 57 per cent. of the tax budget appropriation ($96,450). "Private benefac-

tions," the report points out, "are derived from surplus of income or capital, but in these days it seems to be the deliberate intention of government to abolish surplus by excessive taxation. It is like planning to get water for irrigation, or power to generate electricity, by draining the great federal dams." The need of a substantial increase in the permanent endowment funds is emphasized.

EXPEDITIONS OF THE SMITHSONIAN INSTITUTION

REPORTS of nineteen expeditions, extending from Mexico to Siberia and from Peru to north Greenland, of the Smithsonian Institution during the past year are published in the recently issued annual Explorations Report. The expeditions were for the purpose of both gathering specimens of plants, animals, minerals and fossils for the national collections and for field study of scientific problems.

Dr. W. F. Foshag collected minerals in the mining districts of Mexico, particularly at the Ojuela mines in Durango, where a single mine is reported to contain more than 200 miles of tunnels. A hunt for dinosaurs and extinct mammals was conducted by Dr. C. Lewis Gazin in central Utah. Dr. William M. Mann, director of the National Zoological Park, describes his adventures in bringing a cargo of living animals from the Argentine. Among his specimens were some not previously seen in this country. Dr. Alexander Wetmore (assistant secretary of the institution, collected birds in southern Mexico. Dr. Leonard P. Schultz, curator of fishes, accompanied a U. S. Navy expedition to the Phoenix and Samoan Islands. He collected approximately 90 varieties of fish from a lagoon in the center of the coral-built Canton Island. Among these was a type of trumpet fish extremely rare in collections. Eleven days on Rose Atoll, another coral-built island of the Phoenix group, resulted in the capture of a hundred varieties of fishes, besides corals, mollusks, invertebrates and many birds. In a single day on another atoll, Tau Island, he obtained 800 fishes belonging to 90 different species.

Dr. Waldo L. Schmitt, curator of marine invertebrates, describes his collecting activities along the northern coast of South America as a member of the G. Allen Hancock 1939 expedition. Many specimens were collected on the island of Tobago, the locale of Robinson Crusoe.

Specimens of marine life were collected in Arctic waters by Captain Robert A. Bartlett. The collection included five specimens of the very rare 10-armed starfish. Only five specimens hitherto had been known, all in European museums.

A large collection of the flora of Colombia was made by Ellsworth P. Killip, associate curator of plants. His expedition covered especially the little-explored Pacific littoral, including the western slope of the Cordilleras. Mr. Killip also spent three weeks in the interior of the Choco, the forested region extending to the Panama border of Colombia. Altogether more than 11,000 specimens were collected.

Dr. Aleš Hrdlička, curator of physical anthropology, spent the summer examining specimens in anthropological museums in Russia and Siberia and in examining archeological sites.

In addition to these voyages outside the limits of the United States, there were several archeological and collecting expeditions in this country. Notable among those was that of Dr. Frank H. H. Roberts, Jr., who sought for remains of the earliest known inhabitants of North America in Colorado. Another project carried out by Dr. T. D. Stewart was the excavation of a Potomac River town closely associated with the life of Pocahontas.

RESEARCH GRANTS OF THE AMERICAN COLLEGE OF DENTISTS

THE Research Fellowship Board of the American College of Dentists has made the following grants for the year 1940–41.

$100 to H. R. Hunt and C. A. Hoppert, Michigan State College, to continue a study on "Inheritance in Rat Caries."

$500 to Albert H. Kniesner, Dental School, Western Reserve University, to conduct an investigation of "The Factors in Saliva which Influence the Growth of *L. acidophilus* and are Indicative of the Presence or Absence of Dental Caries."

$1,200 to Sidney B. Finn, School of Medicine and Dentistry, University of Rochester, for an investigation of "The Effect of Applications of Sodium Fluoride in Preventing and Controlling Dental Caries in Children."

$500 to Samuel Seltzer, Dental School, University of Pennsylvania, for "An Investigation of the Anti-Bacterial Action of Drugs which have been Recommended for Cavity Sterilization."

$400 to M. L. Tainter, of the School of Dentistry, College of Physicians and Surgeons, San Francisco, for an "Investigation of the General Problems Involved in the Evaluation of the Abrasiveness of Dentifrices and their Individual Constituents."

$500 to James Nuckolls, School of Dentistry, University of California, for an "Investigation of the Primary Centers of Lobular Development, Growth and Calcification in the Tooth."

$500 to Balint Orban, School of Dentistry, Northwestern University, to continue an investigation of "Wound Healing after Different Methods of Gingivectomy and Postoperative Treatment."

$100 to William J. Furuta, School of Dentistry, University of California, for a "Histologic Study of the Effect of Various Mineral Deficiencies on Dental and Oral Structures in Animals."