is believed to represent readvance, or at least a long pause in the ice front. For these somewhat regular oscillations no secular cause appears adequate except the precision of the equinoxes, and Taylor figures the time, using the minimum of the precession periods, as 75,000 to 150,000 years. In New York we have many clear proofs of the great length of Glacial and Postglacial time. One of them refers to continental land uplift. Since the glacier passed off from New York the land at the north boundary has risen 740 feet, and that rise is all subsequent to the deposition of the Hudson-Champlain clays, though not to that of the clays of the St. Lawrence.

Any measurement of time by counting seasonal lamination of the Pleistocene clays will require conscientious study of many sections, with the same scrupulous care that Huntington gave to the counting of the growth rings in the California Big Trees.

The clay record, it should be repeated, is only the time while the latest ice sheet was passing off, and that time is only a fraction of glacial time, to say nothing of true Postglacial time.

It is apparent that the proposed study can not be done hurriedly, by reconnaissance and cursory methods. It is the work of a lifetime, and when done is little more than a guess. Possibly such study might develop criteria and methods that would give precision.

To attribute the long-period variation in world climate which produced the Pleistocene Glacial Period, and other vastly more ancient glaciation, to variability in solar radiation is the easiest way of explaining a difficulty. It has no scientific basis. We would better seek causes for climatic changes in the known geologic and atmospheric changes. For this Professor Chamberlin has blazed the path.

H. L. Fairchild
University of Rochester

GENERAL RESOLUTIONS OF THE PAN-PACIFIC SCIENTIFIC CONFERENCE[1]

1. FUTURE CONFERENCES

Since the present conference has been found highly inspiring and illuminating and an invaluable aid in defining the essential problems of the Pacific region, be it

Resolved that future similar conferences should be held at intervals of not over three years.

2. PERMANENT ORGANIZATION

The results of the First Pan-Pacific Conference have demonstrated the high value of meetings for the discussion of problems common to all countries whose interests lie wholly or in part within the Pacific area; and have shown that the problems relating to the welfare of Pacific peoples are too large and too complex to be solved satisfactorily except by sympathetic cooperation of individual institutions and governmental agencies. To develop a unity of interest and to make harmonious coordination practicable, it seems desirable that some permanent organization be established which may serve as the point of contact for representatives of various interests in the countries of the Pacific. Be it therefore

Resolved that the attention of the governor of Hawaii be called to the great opportunity afforded by an organization designed for the advancement of the common interests of the Pacific, including scientific research, and to the desirability of taking action which may lead to the development of such an organization vouched for and supported by the various Pacific countries.

3. INTERNATIONAL RESEARCH COUNCIL

Since this conference commends the organization of the International Research Council as a means toward coordinating research in science; be it

Resolved that it is the desire of this conference that any agency created for the guidance of scientific research and exploration in the Pacific region may be affiliated with the council and with the various national research councils of the nations of the Pacific.

4. SHIPS FOR EXPLORATION

The cost of scientific researches in the Pacific which involve the continuous use of a ship is prohibitive for most scientific institutions and individuals. The results of the *Challenger* and the *Wilkes* expeditions have

[1] Held at Honolulu, August 2 to 20, 1920.

demonstrated the great advantage gained by the use of government-owned ships for scientific exploration. Be it therefore,

Resolved that this conference unites in inviting the attention of governments to the desirability of providing vessels for suitably planned expeditions.

5. PROMOTION OF EDUCATION

The results of scientific research have led to extensions of human knowledge and to increased control of the forces and resources of nature the values of which can not be measured. All scientific work which is well done is of value, and no man can predict to what useful purposes the results of any investigation, no matter how recondite, may be put. It is of fundamental importance that sufficient numbers of young men and women of first class ability shall be adequately trained, and that teachers and investigators shall be properly compensated. This conference therefore, *Recommends:*

1. That in order that young men may enter upon scientific careers without sacrificing all hope of reasonable financial returns, the compensation for instruction and for research in science be increased so that all can at least be assured of a comfortable living for themselves and their families, and that men of exceptional attainments may receive financial rewards which shall approximate those which their powers could command if directed to commercial ends.

2 That persistent efforts be made to inform the public of the progress of science and of its bearings upon the practical affairs of life.

3. That to enlarge the experience and vision of the instructors in the various colleges and universities of the Pacific countries, making them thereby more competent and inspiring teachers, the exchange of teachers between institutions in different countries to be encouraged and made possible.

4. That a clearing house of information relative to opportunities for scientific study and research in the Pacific area be established.

5. That arrangements be perfected between the universities and other research institutions whereby properly qualified students may move from institution to institution carrying on their work at the place or places where the best facilities are available for the special kind of work upon which each may be engaged.

6. That a considerable number of fellowships be provided, with adequate stipends which shall be looked upon as compensation for the faithful performance of scientific work, and that especially able work by young investigators be rewarded by substantial prizes.

7. That to stimulate interest in the Pacific and inculcate a knowledge of its importance and unity, text-books should be prepared in which proper emphasis will be placed upon the Pacific area, its physical features, peoples, fauna, flora, resources and trade, and that the schools in Pacific countries be encouraged to give instruction which will stimulate the interest and enthusiasm of young students in the objects of their environment.

SCIENTIFIC EVENTS

DIMENSIONS AND AREA OF THE UNITED STATES

THE gross area of the United States is 3,026,789 square miles. The land area amounts to 2,973,774 square miles, and the water area—exclusive of the area in the Great Lakes, the Atlantic, the Pacific, and the Gulf of Mexico within the three mile limit—amounts to 53,015 square miles. These and other data determined or compiled by the United States Geological Survey, Department of the Interior, to show the limits of the continental United States contain some interesting facts.

The southern most point of the mainland is Cape Sable, Fla., which is in latitude 25° 07′ and longitude 81° 05′. The extreme southern point of Texas is in latitude 25° 50′, and longitude 97° 24′. Cape Sable is therefore 49 miles farther south than the most southern point in Texas.

A small detached land area of northern Minnesota at longitude 95° 09′ extends northward to a latitude 49° 23′.

The easternmost point of the United States is West Quoddy Head, near Eastport, Maine,