broadening due to close contact between delegates from many regions. An appreciation was obtained by many of problems which are not widely realized though of vital importance to their immediate localities.

The conference was organized in seven sections, the most active of which were devoted to (a) the sugar-cane industry, (b) fisheries, marine biology and oceanography, (c) plant protection through quarantine and researches in entomology and pathology and (d) food-crop production and improvement. As a result of the deliberations of the section on the sugar-cane industry, there was tentatively organized an international association of men interested in the sugar-cane industry, which it is hoped will meet in Havana in 1927. The other sections have also provided continuation committees.

At the final sessions thirty-three resolutions were adopted. Three resolutions relate to the sugar industry, six to fisheries, four to plant protection, one to animal industry, four to food crops, three to marketing problems and the rest are of a more general nature. Classifying the resolutions on a different basis, three refer to the work of the Pan-Pacific Science Congress to be held in Japan in the autumn of 1926, six to protection of food resources by international treaties and agreements and twelve recommend more or less specific programs for future research.

The committtee on publication appointed by the conference plans to publish a report of the proceedings which will include abstracts of the papers transmitted, list of delegates and the like. It is expected that many of the papers will be published in full in journals devoted to special fields of science.

HAROLD S. PALMER,
Secretary of the Conference

COOPERATION IN SEISMOLOGY

AN agreement has been reached to promote seismological research in both scientific and practical lines between the Carnegie Institution of Washington, through its advisory committee in seismology, and the Seismological Society of America. The first-named is a research organization, which pursues the policy of publishing its results in any particular journal that will reach the largest number of readers interested in a given subject. The second is a society dependent on its members for support and engaged in publishing a journal (*Bulletin* of the Seismological Society of America), which is designed to form a means of communication among seismologists and to serve as a medium of education for the general public in matters relating to earthquakes and allied phenomena. It is obvious that these two organizations may advantageously cooperate.

The advisory committee in seismology was appointed by the institution four years ago with the specific purpose of organizing investigation in the field of seismology. After considering the extent and character of the field, the committee recommended "taking up at the outset the pressing problem offered by the West Coast region of the United States, where earth-movements in considerable variety occur and so little is known about them that they constitute a tangible menace to large engineering and other development enterprises and sometimes to human life." (Report of the Chairman for 1921.)

If this selection of a province seems geographically limited the fruitfulness of the region in problems may be indicated by a further quotation from the report cited, bearing on the organizations drawn into the work. The report continues:

> "It was recommended that the Institution invite the participation of a number of agencies, through the cooperation of which an adequately comprehensive attack might be inaugurated and competent conclusions assured." Accordingly the Ukiah and Lick Observatories were invited "to continue and extend their observations of latitude for the purpose of establishing (or disproving) a northward crustal creep or drift, which had been indicated by earlier observations." The U. S. Coast and Geodetic Survey was invited to resurvey and extend "its system of primary triangulation and precise levels until no considerable area within the various zones of movement in California can suffer displacement without the possibility of establishing its direction and magnitude." The U. S. Geological Survey, in collaboration with the California universities and geological societies, was asked to "organize geological studies of the regions in which the more active faults occur. Several organizations "were invited to aid in the development of instruments more suitable than any now in use for recording and analyzing local slips and tremors. And finally, the Navy Department undertook deep-sea soundings off the west coast of California to establish the precise location of the continental shelf and any conspicuous fault scarps adjacent to the land areas in which active faults are found.

Without exception the initiative of the advisory committee was welcomed by the organizations invited to participate and important results have already been reached. Among the more definite accomplishments we may mention the Fault Map of California, published by the Seismological Society, the Bathymetric Chart of the Continental Shelf from San Francisco to Point Descanso, published by the U. S. Hydrographic Office, a new primary triangulation of the entire coast region south of San Francisco by the U. S. Coast and Geodetic Survey and the successful development of a new type of torsion seismometer of low first cost and general application by Messrs. J. A. Anderson and H. O. Wood, working in the laboratories of the Mt. Wilson Observatory at Pasadena.

The influence of the advisory committee in promoting cooperation is now extended to the Seismological Society of America. That society, organized in 1906 and publishing since 1911, has for its objects the advancement of seismological research and the promotion of human security against earthquakes and earthquake fires. It has carried on its work with slender means, with a membership of about four hundred, including interested laymen as well as seismologists, widely distributed in all the continents. Recently its membership has increased by more than fifty per cent., and it seeks to increase it still further in order better to serve its objects. The agreement with the advisory committee in seismology provides that the latter shall assist, temporarily, in the publication of the *Bulletin* of the society by meeting the cost of publishing specific articles which the society could not otherwise undertake.

The guarantee of this financial support is of such a nature that the Seismological Society may and does extend an invitation to workers in the field of seismology and related zones of research to use the *Bulletin* as a means of communication with fellow workers in all lands. In considering the scope of the field of seismology and related zones of research within which it may advantageously serve its scientific circle, the *Bulletin* will lean toward a liberal interpretation, with due regard for the established journals in meteorology, chemistry and physics. Its interest centers in the dynamics of the earth, but extends to allied researches which may throw light upon that comprehensive field of activity.

Another phase of the *Bulletin's* interest comprehends the practical side of earthquake studies. The world-wide occurrence of earthquakes means that there is world-wide experience of their effects, acquired at the cost of enormous values destroyed and great loss of life, but so scattered, ignored or suppressed that it is ineffective to serve humanity at large. The records of that experience await assembling, discussion and interpretation for the benefit of communities in all trembling lands.

Furthermore, there is great need of education of the intelligent public to take earthquakes out of the realm of astrology and rob them of that mystery which is one of their most potent attributes for mischief. Articles dealing with the facts of earthquake activity in relation to human affairs, addressed to men of affairs, in language intelligible to the educated reader will also be welcomed by the *Bulletin*.

Correspondence with the chairman of the Committee on Publication, Professor S. D. Townley, Stanford University, California, is invited from all who may be interested, either in publishing the results of seismologic studies or becoming members of the society. Articles intended for publication may be written in English, French, German or Italian. Publication will be in English, but if the foreign author should wish to supply an abstract in his own tongue, it may be printed in any one of those languages.

ARTHUR L. DAY, *Chairman*
Advisory Committee on Seismology, Carnegie Institution of Washington,
BAILEY WILLIS, *President,*
Seismological Society of America

SCIENTIFIC NOTES AND NEWS

AT the conclusion of the meetings of the French Association for the Advancement of Science, the University of Liége conferred honorary degrees on M. Raymond Poincaré; Dr. Rigaud, director of the Paris Radium Institute; Dr. Lacroix, secretary of the Paris Academy of Sciences; Dr. Paul Sabatier, professor of chemistry at Toulouse; Dr. Marcellin Boule, professor of paleontology at the Natural History Museum, Paris; Dr. Henri L. Le Chatelier, professor of chemistry at Paris; Dr. Charles Barrois, professor of geology and mineralogy at Lille; Dr. Paul Shorey, professor of Greek at the University of Chicago.

AT a special convocation of the University of Toronto, held on August 13, on the occasion of the meeting of the British Association for the Advancement of Science, the degree of doctor of science, *honoris causa,* was conferred on Sir David Bruce, president of the British Association; Sir Ernest Rutherford, retiring president, Cavendish professor of physics at the University of Cambridge; Sir John Russell, director of the Rothamsted Experimental Station, and Sir Charles Parsons, chairman of the Parsons Marine Turbine Co., London.

THE honorory degree of doctor of philosophy has been conferred, by the University of Bonn, on Dr. Frank Springer, of the National Museum.

DR. JOSÉ CASARES Y GIL, dean of the faculty of pharmacy at Madrid, has had an honorary degree conferred on him by the University of Munich.

PROFESSOR SALVATOR PINCHERLE, professor of infinitesimal calculus at the University of Bologna, has been elected president of the International Mathematical Union.

DR. M. JEAN CAMUS, professor of physiology at the Paris Medical School, has been elected a member of the French Academy of Medicine.

DR. G. HABERLANDT, professor of botany at the University of Berlin, has been elected a foreign member of the Royal Swedish Academy of Sciences.

THE director of the U. S. Geological Survey rep-