

declaration on fair dealing in regard to copying from scientific periodicals and the guide for the preparation of synopses, issued by the Royal Society in April 1949, and the recommendations and resolutions adopted in June 1949 by the Interim Co-ordinating Committee on Medical and Biological Abstracting, as well as a bibliography. The ten chapters of the report review briefly the preliminary report and its preparation; types of abstract and the scope and nature of abstracting services; the authorship of abstracts; methods of publication, including costs, arrangement and the desirability of common bibliographical rules; methods of distribution, including the use of offprints and microfilms and means of reducing the time-lag; the selection of abstracts, including indexing systems and the classifications on which indexing systems are based, and the mechanical selection of documents; language problems and the value of translations; the distribution of articles and abstracts by subject; the co-ordination of abstracting services; and the future organization of science abstracting. The report is thus a useful commentary on the Final Act, indicating the trend of responsible opinion on the question, not merely of abstracting but also of the dissemination of science information in the scientific and technical world generally. It is a reference work which should facilitate understanding of, and co-operation in, a difficult field.

#### Determination of Earthquake Azimuths from Observations at a Single Station

PROF. W. HILLER, of Stuttgart, in a paper entitled "Über die Bestimmung des Azimuts von Fernbeben aus Oberflächenwellen" (*Gerlands Beiträge zur Geophysik*, 61, Heft 4, 221-231, Leipzig; 1950), has published details of a method of finding the azimuth of an earthquake from observations at one station. Prof. Hiller states that in many earthquakes the *P* waves are only feebly recorded, or indeed may not be recorded at all, so that the determination of azimuth by means of *P* waves is not possible in these cases. In most earthquakes the surface waves are strongly registered. If one has at one's disposal a record of an earthquake on each of three components obtained with instruments having as nearly as possible the same constants, it is possible to find those positions in the surface waves which indicate the arrival at the observatory of pure Love waves or pure Rayleigh waves. The direction of oscillation of the Rayleigh waves is then used to give the azimuth of the epicentre. (In a Rayleigh wave the motion of the earth particle is in the form of an ellipse in the plane containing the vertical and the direction of the earthquake epicentre to the observatory. The motion of the particle in the ellipse is towards the epicentre at the top of the ellipse.) Prof. Hiller has applied this method with success to hundreds of cases in which the seismograms from the Stuttgart Galitzin-Wilip instruments were used; and illustrated examples are given in the paper.

#### Bibliography of Seismology

Nos. 6, 7 and 8 of Vol. 14 of the Bibliography of Seismology, published by the Dominion Observatory, Ottawa (Ottawa: King's Printer), contain 438 items of pure and applied seismology. The intense interest in microseisms appears to have passed its peak in 1948-49, since in Nos. 5 and 6 of the Bibliography no fewer than twenty-eight items referred to microseisms,

whereas in Nos. 7 and 8 nineteen items were so listed. The mathematical aspects of seismic waves still attract attention, and it appears that a renewed interest in seismographs exists; in Nos. 5 and 6 of the Bibliography nine items were concerned with instruments, whereas in Nos. 7 and 8 twenty items referred to seismographs. There is no doubt that a need is now felt for several instruments designed to work in prescribed conditions and to record particular seismic phenomena, as distinct from one instrument designed to record as many seismic waves as possible. Item 7,407 in the Bibliography refers to one of the latest problems in earthquake waves, namely, "The *T* Phase of Shallow Focus Earthquakes", by Ivan Tolstoy and Maurice Ewing (*Bull. Seis. Soc. America*, 40, No. 1; January 1950). This *T* phase appears to be a feature of submarine earthquakes and may be of use in giving a warning of tsunamis. Recent theoretical work mentioned (Item 7,200) is "On the Nature of the Earth's Interior" by W. H. Ramsey (*Mon. Not. Roy. Astro. Soc., Geophys. Supp.*, 5, No. 9; October 1949) and refers to work on the calculated effects of pressure on the atomic constitution of materials within the earth. In this connexion reference may also be made to Dr. Ramsey's article in *Nature* of October 20, p. 676.

#### Apia Observatory, Western Samoa: Report for 1941

THE annual report for 1941 of the Apia Observatory, Western Samoa (pp. 170; Wellington, New Zealand: Government Printer, 1950) has only recently been issued. Observations during that year were made in the following geophysical subjects: terrestrial magnetism, seismology, meteorology, atmospheric electricity and tides; details are given in tabular matter or otherwise. Preliminary remarks at the beginning of the various sections describe the instruments and provide other relevant information. Hourly scalings of heights of the tides, automatic recording being made by means of the portable tide-gauge No. 11664, together with times and heights of high and low water, were sent, as usual, each month to the United States Coast and Geodetic Survey in Washington, D.C. The resident staff included the acting director, Mr. H. B. Sapsford, and four professional assistants, and in addition there was a locally recruited staff of ten.

#### Announcements

PROF. EUGÈNE DARMOIS, professor of physics in the University of Paris, has been elected a member of the General Physics Section of the Paris Academy of Sciences in succession to the late Prof. Aimé Cotton.

IN Memorandum No. 25 of the Medical Research Council, "The Social Consequences of Pneumoconiosis among Coalminers in South Wales", by Dr. P. Hugh-Jones and Dr. C. M. Fletcher (London: H.M. Stationery Office, 1951; 1s. 9d. net), methods of studying the connexion between dust and disease and the physiological assessment of shortness of breath are discussed. The two sections dealing with the improvement of human performance by laboratory studies include a valuable paper by Sir Frederic Bartlett on the laboratory analysis of human activities, and papers dealing with the effects of warmth on comfort and efficiency, physiological studies of the effects of heat, and anatomical factors in machine design.