

of the Granitic layer. In shocks with faulting completely inside the Granitic layer only, the amplitudes of  $P_y$  should be about the same as those of  $P_n$ . The fact also that the amplitudes of the various  $S$  waves change with distance in a similar way to those of the corresponding  $P$  waves indicates that the effect of pressure and temperature on the coefficient of rigidity is relatively the same as on the bulk-modulus.

Gutenberg states that the Mohorovičić discontinuity is at a depth of about 35–40 km. in the coast areas of southern California, but deeper under mountain ranges. The velocity of  $P_n$  below it is close to 8.0 km./sec. At first, the velocities of both  $P$  and  $S$  increase with depth, probably at a rate similar to that in the upper layers; but the rate of increase falls off rapidly with increasing depth, resulting in a rapid decrease of the amplitudes of  $P_n$  and  $S_n$  with distance beyond  $\Delta = 200$  km. Amplitudes of  $P_n$  and similarly of  $S_n$  in intermediate shocks without appreciable surface waves, on records of shocks originating at various depths within a radius of about 2,000 km. from Huancayo, Peru, and recorded at the station there, confirm results obtained previously by Gutenberg and Richter concerning the relationship between the epicentral distances at which the amplitudes of  $P_n$  are very small, and the focal depth of the shocks.

These findings, according to Gutenberg, can be explained on the assumption that at a depth of about 80 km. the melting point of the material is reached. Immediately above that critical depth, the effect of temperature on the bulk-modulus and on the coefficient of rigidity may approach, or even surpass, the effect of pressure. At the critical depth itself, there may be a slight sudden decrease of the wave-velocity. At greater depth, the effect of the temperature on the bulk-modulus and the coefficient of rigidity becomes more and more insignificant. Whereas above the critical depth a certain minimum stress, the strength, is required to start plastic flow, below this depth no appreciable strength exists, and the plastic flow is controlled only by the viscosity of the material.

## FORTHCOMING EVENTS

Saturday, August 19

ASSOCIATION OF AUSTRIAN ENGINEERS, CHEMISTS AND SCIENTIFIC WORKERS IN GREAT BRITAIN (at Austria House, 260 Oxford Road, Manchester), at 7.30 p.m.—Dr. E. Broda: "Science in Austria (with special reference to the 100th Birthday of L. Boltzmann)".

Tuesday, August 22

QUEKETT MICROSCOPICAL CLUB (at the Royal Society, Burlington House, Piccadilly, London, W.1), at 7 p.m.—Exhibition of specimens and discussion.

## APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

SPEECH THERAPIST (whole-time)—The School Medical Officer, County Hall, Chichester (August 23).

ASSISTANT MASTER preferably with Graduate or equivalent qualifications in Engineering, mainly for work in the Junior Technical School—The Acting Secretary to the Education Committee, 1 Eastbank Street, Southport (August 23).

ASSISTANT PSYCHOLOGIST in the School Psychological Service—The Director of Education, Education Department, Newark Street, Leicester (August 25).

GRADUATE TEACHER OF ENGINEERING (full-time) for Day and Evening Classes in the Crewe Technical College—The Director of Education, County Education Offices, City Road, Chester (August 25).

LECTURER IN AGRICULTURAL ZOOLOGY, INCLUDING ENTOMOLOGY, and an ASSISTANT ADVISORY OFFICER IN ANIMAL HUSBANDRY—The Secretary, West of Scotland Agricultural College, 6 Blythswood Square, Glasgow (August 25).

PRINCIPAL OF THE BURNLEY MUNICIPAL COLLEGE—The Director of Education, Education Offices, Burnley (August 26).

ASSISTANT IN BOTANY—The Secretary, The University, Aberdeen (August 28).

ADVISER IN AGRICULTURAL ENTOMOLOGY (temporary)—The Registrar, King's College, Newcastle-upon-Tyne (August 31).

ASSISTANT LECTURER IN ENGINEERING—The Registrar, The University, Manchester 13 (August 31).

LECTURER IN GEOGRAPHY—The Secretary, University of Durham, 38 North Bailey, Durham (September 1).

BOROUGH ENGINEER AND SURVEYOR to the County Borough of Southampton—The Town Clerk, Town Clerk's Office, Civic Centre, Southampton (endorsed 'Borough Engineer and Surveyor') (September 4).

BOROUGH ENGINEER AND SURVEYOR—The Town Clerk, Town Hall, West Ham, London, E.15 (endorsed 'Borough Engineer and Surveyor') (September 4).

LECTURER IN PHYSIOLOGY—The Secretary, The University, Birmingham 3 (September 5).

UNIVERSITY READERSHIP IN PHYSICS tenable at King's College—The Academic Registrar, University of London, South Kensington, London, S.W.7 (September 6).

CHAIR OF MINING—The Acting Registrar, The University, Leeds 2 (September 30).

LECTURER IN PHILOSOPHY—The Very Rev. the Dean, Christ Church, Oxford (October 15).

HYDROGRAPHICAL SURVEYOR for the Basrah Port Directorate, Iraq—The Ministry of Labour and National Service, Appointments Department, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. O.4962S).

SCIENTIFIC OFFICER (man or woman, temporary) in the Cod Liver Oil (Poultry) Standardisation Laboratory—The Secretary, National Institute for Research in Dairying, Shinfield, Reading, Berks.

SPEECH THERAPIST (full-time)—The Secretary for Education, Education Offices, York.

LECTURER (man or woman, full-time, temporary) IN BIOLOGY in the Leeds College of Technology—The Director of Education, Education Offices, Leeds 1.

LECTURER (woman) IN MATHEMATICS AND BIOLOGY (Nature Study) OR GEOGRAPHY in the Swansea Training College for Women—The Director of Education, The Guildhall, Swansea.

## REPORTS and other PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

Metallurgical Abstracts (General and Non-Ferrous). Vol. 10, 1943 (New Series). Edited by N. B. Vaughan. Pp. xii+523. (London: Institute of Metals.) [257]

Medical Research Council. War Memorandum No. 3: Economy in the Use of Drugs in War-Time. Revised second edition; with an Appendix on Economy in the Use of Bactericides. Pp. 16. (London: H.M. Stationery Office.) 3d. net. [257]

Some Recent Advances in Chemistry in relation to Medicine. By Dr. D. H. Hey. Pp. 24. (London: Royal Institute of Chemistry.) [257]

National Veterinary Medical Association of Great Britain and Ireland. Publication No. 6: Report on Diseases of Farm Livestock, Section 2: Diseases of Sheep. Pp. 101. 10s. Publication No. 7: Memorandum on Farm Buildings. Pp. 48. 5s. (London: National Veterinary Medical Association.) [257]

Ministry of Food. Insect Pests of Food. 1: The Larvæ of the Lepidoptera associated with Stored Products, by H. E. Hinton; 2: Keys for the Identification of the Lepidoptera infesting Stored Food Products, by A. S. Corbet and W. H. T. Tams. Pp. 144+5 plates. (London: H.M. Stationery Office.) 5s. net. [257]

British Association for the Advancement of Science. Report of Committee on Post-War University Education. Pp. 52. (London: British Association.) 2s. 6d. [257]

Transactions of the Royal Society of Edinburgh. Vol. 61, Part 1, No. 6: Growth Stages in some Jurassic Ammonites. By Dr. Ethel D. Currie. Pp. 171–198+1 plate. (Edinburgh and London: Oliver and Boyd.) 7s. 6d. [277]

### Other Countries

League of Nations: Economic, Financial and Transit Department. Food Rationing and Supply, 1943–44. (Publication: 1944: I.A.3.) Pp. 101. (Geneva: League of Nations; London: George Allen and Unwin, Ltd.) 4s. 6d. [257]

Annals of the New York Academy of Sciences. Vol. 45, Art. 7: The Distribution of the Salamanders of the Genus *Plethodon* in Eastern United States and Canada. By Arnold B. Grobman. Pp. 261–316. (New York: New York Academy of Sciences.) [257]

Proceedings of the American Philosophical Society. Vol. 87, No. 5 (May 5, 1944): Papers on Archaeology, Ecology, Ethnology, History, Paleontology, Physics, and Physiology. Pp. iii+365–460. (Philadelphia: American Philosophical Society.) [257]

Commonwealth of Australia: Council for Scientific and Industrial Research. Bulletin No. 178: Food Composition Tables. Compiled by Hedley R. Marston and Mary C. Dawbarn. Pp. 104. (Melbourne: Government Printer.) [257]

U.S. Office of Education: Federal Security Agency. Leaflet No. 69: Education in China To-day. By C. O. Arndt, Severin K. Turosienki and Tung Yuen Fong. Pp. 12. 5 cents. Vocational Division

Leaflet No. 13: Professional Nurses are Needed. (Revision of Leaflet No. 10.) Pp. vi+30. 10 cents. (Washington, D.C.: Government Printing Office.) [257]

U.S. Department of Agriculture. Technical Bulletin No. 846: The Cabbage Looper as a Pest of Lettuce in the Southwest. By K. B. McKinney. Pp. 30. (Washington, D.C.: Government Printing Office.) [257]