

### Swelling of Wood under Stress

AN interesting experiment has been made at the Svenska Träforskningsinstitutet, Stockholm, in organising a series of lectures by foreign men of science who address the Institute on their own specialized subjects connected with wood and paper. In this connexion a course of lectures was given in the Institute during March 1948 by Dr. W. W. Barkas, of the Physics Section of the Forest Products Research Laboratory, Princes Risborough, and industrial men of science from several Scandinavian countries attended. Briefly, the lectures provide a descriptive account of the fundamental work done during 1940-48 by the Physics Section of the Laboratory on the thermodynamics of the swelling of gels, and refer particularly to wood, wood fibres and paper. The swelling stress methods are important in dealing with porous bodies, where external mechanical behaviour gives no precise indication of the elastic and plastic properties of the constituent gel, and also in the study of stresses set up under different conditions. The lectures are issued in book form, entitled "The Swelling of Wood under Stress", under the auspices of the Department of Scientific and Industrial Research by the Forest Products Research Laboratory at Princes Risborough (pp. 103; London: H.M. Stationery Office, 1949. 6s.) and deal with: (1) structure, sorption and swelling; (2) anisotropic elasticity; (3) swelling stresses in elastic gels; (4) plasticity; and (5) sorption hysteresis. The Director of Forest Products Research gives a brief foreword saying that it is hoped that the book will prove of interest and assistance to workers not only in the physics of timber but also in the wider field.

### Junior Colleges in Scotland

A SCOTTISH committee under the chairmanship of Mr. J. B. Frizell, director of education, Edinburgh, and including representatives of a number of important Scottish firms and educational bodies, has been considering the aims, objectives and organisation of junior colleges to be set up under the Scottish Education Act of 1946. These junior colleges are the Scottish counterpart of the county colleges to be set up in England under the Education Act of 1944. A report of the Scottish committee's findings has now been published by the British Association for Commercial and Industrial Education, and, while it deals particularly with the special characteristics of the Scottish scene, contains a great deal of informative material that will be of value to all engaged in further education. Many of the suggestions in the report could find immediate application in the various schemes for part-time day release of young workers in England and in Scotland. Copies of the report may be obtained from the British Association for Commercial and Industrial Education, Management House, 17 Hill Street, London, W.1.

### Archæology of the Florida Gulf Coast

VOL. 113 of the Smithsonian Miscellaneous Collections, entitled "Archeology of the Florida Gulf Coast", by Dr. Gordon R. Willey (Publication 3988; pp. 599 + 60 plates; Washington, D.C.: Smithsonian Institution, 1949), is an important and comprehensive report covering the whole of the coastal region of western Florida except for the subtropical area in the south. Dr. Willey carried out a survey and excavations which enabled him to establish a detailed succession, and, as a result, he has been able to

incorporate the results of older work, much of it of a less exacting standard than his own, in a connected whole. The succession is expressed in terms of the three major stages with which we are familiar in the south-east, namely, Archaic, followed by Burial Mound and Temple Mound, with the modifications necessary for a rather marginal area. The survey was full enough even to enable provisional estimates of population to be made, and it can be regarded as the last word in regard to the area concerned for the foreseeable future, except in so far as radiocarbon dates for the earlier cultures can be obtained. It would be helpful if the Smithsonian Institution would provide an index to works of this length.

### Seismological Observations of the Heligoland Explosion of April 18, 1947

MUCH of the seismic work connected with the explosion of munitions, which took place on the island of Heligoland on April 18, 1947, has now been published ("Seismic Waves from Heligoland Blast of 18 April, 1947". By J. Pomerantz, Cmdr. B. Perkins, jun., J. V. Atanasoff, K. S. Bonwit. U.S. Naval Ordnance Laboratory Report No. 1080, Pt. 1, November 1948; "Seismic Experiments on the North German Explosions 1946 to 1947". By P. L. Willmore. *Phil. Trans. Roy. Soc., A*, 242, 123, August 1949). The chief advantage to seismology of this large explosion was that the initial time of the shock was pre-arranged and later verified by means other than seismic, and also that additional observations to the existing normal observatory ones were made using seismographs especially constructed for the purpose and employing a very open time-scale for the accurate reading of onsets. The explosion took place at 10h. 59m. 58.5s., G.M.T., from an epicentre in lat. 54° 11' N., long. 7° 53' E., and had a thermal energy of  $1.3 \times 10^{20}$  ergs. The energy of the seismic waves was  $10^{17}$  ergs. The above two reports used largely independent data and at some time will have to be correlated; but approximate average results using these data appear to show that the earth's crust in that part of Europe covered by the observing stations has a total thickness of some 30 km. as measured from the earth's surface to the top of the basaltic layer or mantle. It appears to consist of three layers: at the top, sedimentary of thickness 6 km.; second, granitic of thickness 10 km.; and third, intermediate of thickness 14 km., resting on the basalt. The approximate average velocities of the primary or longitudinal waves in the three layers appear to be sedimentary,  $P_s = 4.6$  km./sec.; granitic,  $P_g = 5.5$  km./sec.; and intermediate,  $P^* = 6.6$  km./sec. The velocity of the  $P_n$  waves in the underlying basalt or mantle was 8.2 km./sec.

### Commission of Inquiry into South African Museums

IN 1948 the South African Government appointed a Commission of Inquiry to investigate the scope, finances, etc., of the Union's principal museums, art galleries, and botanic and zoological gardens. The Commission's report has now been presented to Parliament. Of the several recommendations made, the most far-reaching is probably that which relates to the establishment of a national council to advise the Minister of Education on all matters connected with these institutions. Formerly, the Union's museums, art galleries, etc., were under the Ministry of the Interior; at present they come under the