

Scottish Geology

TWENTY-ONE years ago the Geological Survey of Great Britain inaugurated a new publication, the *Bulletin*, to accommodate short scientific reports by members of its staff, and since then more than seventy noteworthy papers on British geology have appeared within its covers. The latest number (*Geol. Surv. G. Britain Bull.*, No. 16. Pp. 178+11 pl. London: H.M. Stationery Office, 1960. 20s. net) is a compilation of seven contributions to the geology of Scotland. Two of them describe the strata encountered in deep borings sunk by the National Coal Board in the Firth of Forth, off the coast of Fife, to prove the geological structure beyond the present limits of undersea mining. A third presents a full discussion of the remarkable and little-understood post-diagenetic replacements of coal seams by limestone, found locally in the Coal Measures of Ayrshire and in some other British coalfields. Other papers are concerned with Carboniferous lamellibranchs, with the classification of Scottish Carboniferous strata, and with the igneous rocks of the Pentland Hills; and the volume concludes with a petrological account of the sea-stack of Rockall, based on specimens collected when it was 'annexed' by H.M.S. *Vidal* in 1955. This almost inaccessible islet of aegerine-granite, 200 miles west-north-west of the Outer Hebrides, is renowned as a geochemical curiosity, and it has given its name to the rare rock-type rockallite, present in the granite as veins and segregations which are outstandingly rich in cerium and zirconium.

Parametric Amplification

A RECENT issue of *Philips Technical Review* contains an article entitled "Experiments in the Field of Parametric Amplification", by B. Bollée and G. de Vries (21, No. 2 (1959-60), obtainable from N. V. Philips' Gloeilampenfabrieken, Eindhoven, Holland). The principle of parametric amplification is described on the basis of the century-old Melde's experiment (*Ann. Physik u. Chemie.*, 109, 193; 1860), in which a taut slightly elastic string is pulled lengthwise at the appropriate frequency—nowadays termed the 'pumping' frequency—causing the string to vibrate transversely at half this frequency. The electrical analogue is a resonant circuit in which the capacitance is varied periodically. One example of a voltage-dependent capacitance is the germanium diode, which has already been used by some workers as the basis of a parametric amplifier. The authors of the article, however, describe a system which uses a magnetostrictive resonator of 'Ferroxcube' as the basis of the variable capacitor. Longitudinal vibrations are produced in the core, which is centrally clamped; the ends of the core are ground to be parallel to each other, and opposite each of them is mounted a parallel, fixed electrode at a spacing of 80μ , giving a total capacitance of $532 pF$. With a pumping frequency of 22 kc./s., satisfactory 'noise-free' oscillations were obtained at half this frequency, and various theoretical predictions were verified. Another system, briefly described in the article, uses a piezoelectric resonator with a pumping frequency of 3 Mc./s. This gave results similar to those obtained with the magnetostrictive pump.

Index of Crystallographic Supplies

PREPARED under the editorship of Dr. A. J. Rose (Université de Paris, Laboratoire de Minéralogie et Cristallographie), the "Index of Crystallographic Supplies" is the second in the series of indexes under-

taken by the Commission on Crystallographic Apparatus of the International Union of Crystallography (Union Internationale de Cristallographie: Commission des Appareils Cristallographiques. Répertoire de Matériel Cristallographique. 2^e Édition. Pp. xxvi+126. Paris: Société Française de Minéralogie et de Cristallographie, 1959. 1,250 francs; 2.50 dollars). The first, entitled "Index of Manufacturers of Apparatus and Materials used in Crystallography", was compiled by Prof. A. Guinier and published in September 1956. The information contained in the present Index has been taken from manufacturers' catalogues, and no attempt is made to assess the relative merits of the equipment listed. The volume consists of four parts. Part 1 lists equipment and suppliers, classifying the material in eleven groups according to their fields of application and giving brief specifications to help crystallographers in their selection; Part 2, consisting of three chapters, quotes references to publications concerned with the reading and interpreting of patterns, books and text-books, and the names of periodicals with either the word crystallography or mineralogy in their titles or sub-titles; Part 3 consists of classified advertisements; and Part 4 gives the addresses of manufacturers and suppliers. The table of contents is in English, French, German and Russian, and the rest of the text in a mixture of mainly English and French. The Index is being distributed gratis to all crystallographers, but additional copies can be purchased from the International Union.

Organization for European Economic Co-operation : American Awards

THE Organization for European Economic Co-operation and the National Science Foundation recently announced award of the first twenty-seven senior visiting fellowships in science. These awards are designed to improve scientific work at the Fellow's home institution by training the Fellows in specialties that the institution desires to strengthen. The National Science Foundation is administering the fellowship programme for United States citizens. The recipients will study primarily in member countries of the Organization for European Economic Co-operation, and several will visit more than one country. They will work in Australia, Austria, Denmark, France, the Federal Republic of Germany, Italy, The Netherlands, Portugal, Sweden, Switzerland and the United Kingdom. Scientists from the member countries will also study in the United States under this programme, which is supported by the Organization and the United States.

The Biological Engineering Society

A NEW Society, called the Biological Engineering Society, was inaugurated at a meeting held at the Royal College of Surgeons on June 10. The meeting was attended by doctors, physiologists, electronic engineers, mechanical engineers and physicists from many parts of the country. The purpose of the Society is to bring together members of these different disciplines, from hospitals, research institutes and industry, to further the applications of engineering to biological and medical problems. Prof. R. Woolmer, professor of anaesthesia at the Royal College of Surgeons, was elected first president. The Council consists of: Dr. P. Bauwens, Prof. A. V. Hill, Dr. A. Nightingale, Dr. G. Pampiglione, Mr. W. J. Perkins, Mr. B. Shackel, Dr. N. Smyth, Dr. A. M. Uttley, Mr. H. S. Wolff, Dr. B. M. Wright. The