

### National Soil Survey of Ireland

A SYSTEMATIC soil survey of Ireland has been undertaken by the Agricultural Institute, and Bulletin No. 1 is an account of the *Soils of Co. Wexford*, by M. J. Gardiner and Pierce Ryan (Pp. 171+xiii. 31 Plates. 3 Maps. Foras Taluntais: 33 Merrion Road, Dublin 4, 1964. 30s.). Apart from the Leinster Mountains, which rise to 2,610 ft. in the north-west, most of the county consists of gently undulating country below 750 ft. with a relatively favourable maritime climate, the average rainfall varying from 34 in. on the coast to 48 in. near the mountains, the average monthly temperature from 40° to 60° F and the relative humidity from 70 to 80 per cent. The solid geology consists mainly of granite and mica-schist in the higher ground, Ordovician shale associated with volcanic rocks in the central region, and Cambrian shale with a belt of Carboniferous limestone in the low-lying area. But most of the County is covered by glacial deposits of different ages and most of the soils have been derived from the Saale glaciation and form a complex pattern. A chapter of 50 pages is given to a full description of the soil associations and series, including regosols, brown earths, podzols, gleys, lithosols and organic soils, and their classification into the Great Soil Groups. There are discussions of analytical data in relation to the main soil associations and of the suitability of the various soils for the usual range of crops, including pasture and forest, concluding with a suitability classification. A chapter on the agricultural pattern is contributed by M. T. Connolly. The three maps, on the scale 2 miles to 1 in., describe the soils, the soil drainage and the soil suitability.

### Measuring Techniques in Coastal Waters

A PAPER in the *South African Journal of Science* (60, No. 9; September 1964), by C. C. Stacropoulos, describes the classical methods of measuring temperature, salinity and ocean currents, and discusses their limitations in coastal waters. Preference is given to techniques which give rapid coverage in space and time, rather than to those which give a precision which may not be justified in near-shore water. Electrical salinometry and electrical thermometry in various forms have proved the most useful. A method of measuring near-surface currents up to distances of 3 miles offshore is recorded, as well as a rapid method of measuring currents at numerous depths in profile and to greater distances offshore. Time series current measurements have been obtained from observations on a system of buoys offshore.

### Cardiac Pacemakers

VOLUME 3, Article 3 of *Annals of the New York Academy of Sciences* presents the papers and records the discussion that took place from them at a conference held under the chairmanship of Dr. W. W. L. Glenn, and sponsored jointly by the New York Academy of Sciences and the Council of Cardiovascular Surgery of the American Heart Association (*Cardiac Pacemakers*. Pp. 813-1122. New York: New York Academy of Sciences, 1964. 7 dollars). Twenty-five papers are presented. They range from reviews of the normal anatomy and clinical aspects of the conduction system of the heart in man to its abnormal behaviour in disease leading to the need for artificial cardiac pacemaking. Papers cover the full range of present knowledge on the means available for artificial pacemaking. Conventional non-synchronous electrical pacemakers now support an increasing population of patients in active life, who were previously condemned to sudden loss of consciousness and the risk of death from cardiac standstill. The techniques used for this treatment are reviewed in detail and the disadvantages of these methods are clearly stated. Numerous papers on the experimental approach to more effective methods are also presented in this volume. They give an exciting glimpse

of technical, pharmacological and physiological advances in this field which will yield both an increase in benefits to patients and new knowledge of the biochemical and physiological behaviour of the heart itself. This volume should be looked on as essential reading for the clinician and clinical research worker in this field. There is one surprising omission to be found in this very complete symposium. The cardiologist required to provide a medical and technical service for artificial electrical pacemaking of the heart would have valued an article giving special guidance on the medical and technical hazards and requirements needed to provide an efficient testing and maintenance service for these devices once they have been installed in the patient's body. The patient's life depends on the efficiency and the reliability of these devices. These in turn depend on the efficiency of the medical and technical organization for installation, maintenance, servicing and replacement of procedures within the patient's body when the need arises.

### The Paul Instrument Fund Awards

THE Paul Instrument Fund Committee has made grants as follows: £3,500 to Dr. J. E. Baldwin, assistant director of research in the Cavendish Laboratory, Cambridge, for the construction of a receiver for measuring power spectrum of a radio-frequency noise source using auto-correlation techniques in a large number of parallel channels. £7,800 to Dr. R. D. Davies, senior lecturer in radio astronomy, University of Manchester, for the construction of a spectrometer for radio astronomy using digital auto-correlation techniques with a sampling switch rate of 4 Mc/s, which it is hoped can be increased to 10 Mc/s and even to 100 Mc/s. £2,700 per annum for three years to Prof. J. D. McGee, professor of applied physics, Imperial College of Science and Technology, London, for the development of a photoelectronic image device for time resolution of rapidly changing optical images. £3,000 to Dr. D. W. Turner, lecturer in organic chemistry, Imperial College of Science and Technology, London, for the development of high-resolution electron spectrometry techniques, which are to be joined with the new molecular photoelectron spectroscopy approach to higher ionization potential determination: two spectrometers are envisaged, for the study of molecular *L* shells and *K* shell electrons, respectively. The Paul Instrument Fund Committee, composed of representatives of the Royal Society, the Institute of Physics and the Physical Society, and the Institution of Electrical Engineers, was set up in 1945 "to receive applications from British subjects who are research workers in Great Britain for grants for the design, construction and maintenance of novel, unusual or much-improved types of physical instruments and apparatus for investigations in pure or applied physical science".

### Nuffield Foundation Scholarships and Bursaries

THE Nuffield Foundation is offering a number of biological awards, scholarships and bursaries to scientists who wish to receive training in other fields of science. Until 1963, graduates in biology were not eligible for these awards, the purpose of which was to encourage graduates in the physical sciences to make a complete change by receiving training in biology. It was then decided that the conditions should be extended to assist graduates in biological subjects to study appropriate aspects of mathematics, physics or chemistry. The purpose of the enlarged scheme remains the same: to encourage progress in the many branches of botany and zoology, which is at present blocked for lack of workers who have an adequate grasp of the physical sciences, and to break away from the traditional descriptive form of teaching. In the case of candidates making the change to biology, awards are made for nothing less than a training in a fairly wide, selected field of biological subjects, and it must always be the candidate's intention to make his future career in biology. It is in the desire to