

monthly journals published by the Institute of Physics and the Physical Society, and it will in future appear in a form similar to that of the *Proceedings of the Physical Society* but with a different-coloured cover. These two journals together are now planned so that they cover the whole range of physics, the division between them being along the following lines: the *Proceedings of the Physical Society* covers such subjects as nuclear physics, statistical mechanics, quantum mechanics, low-temperature physics, and theoretical studies and fundamental experiments related to atomic and electronic structure of matter; the *British Journal of Applied Physics* covers such subjects as properties of materials, for example, magnetic, crystallographic, elastic, plastic, optical, etc.; applications of semiconductors, dielectrics, etc., in physics; acoustics; wave propagation and optics (including electron optics); applications of metal physics. These two journals and the Institute and Society's third journal, the *Journal of Scientific Instruments*, offer an average time of publication of four months from the time of receipt of the complete and satisfactory manuscript. 'Letters to the Editor' are published much more rapidly.

M.6 Motorway

THE opening of the 33-mile stretch of the M.6 motorway linking the Stafford by-pass with the Cheshire-Lancashire section is provisionally fixed for mid-November this year. A most significant, if not chastening, admonition to those impatient with alleged tardiness in starting, let alone completing, Britain's vital fast inter-city highway communications is to be learned from what has actually happened in this particular section of M.6. It is a fact that no fewer than seventy-five new bridges, apart from any other levelling and essential civil-engineering work bound up with planning and design of motorway patterns, were needed to carry this section over and under the natural obstacles in its course. An informative article, entitled "Three Bridges to the Mile on the M.6 Motorway", has recently been published in *Concrete Quarterly* (No. 57, April-June 1963), and is illuminating both factually and pictorially. Rivers and streams had to be crossed. Railways had to be negotiated. Footbridges were constructed for pedestrians. Severed links to once continuous farm property had to be spanned by access bridges. Existing trunk and county roads had to be crossed or underpassed. In one instance, the Sow Valley determined a long viaduct to carry the motorway over a railway, river and peat bog. Some idea of the problems involved is gained from the design data: two 36-ft. three-lane carriage-ways, each with 11-ft. hard shoulders and concrete haunches on outer edges, with central reservation 15 ft. wide. The total overall width inclusive of outer verges is 112 ft. Analysis of the bridges, some of which are pictured in this publication and are of outstanding architectural beauty, reveals that thirty are over trunk and county roads, four concern railways, twenty-one accommodate farm requirements, nine span rivers and streams, ten take care of pedestrians, and one is destined for a service-area restaurant.

New Synthetic Detergents

THE sulphonated alkyl benzenes and sulphuric acid esters of long-chain alcohols are well known as synthetic detergents, but untiring research still proceeds by chemists in this field to discover new compounds with novel surface-active properties. Both petroleum and fat sources are involved in these investigations, but procedure in this active field demands considerable technical qualification and laboratory facilities of the highest order. It is abundantly clear from the new and revised booklet describing the research activities of Procter and Gamble, Ltd., Newcastle upon Tyne (formerly Thomas Hedley and Co., Ltd.), that these conditions are amply satisfied. The research projects, not only on the subject of detergents but

also on colourless dyestuffs, light-scattering for determining size and shape of micellar units, electrochemical methods, interfacial adsorption as a factor in promoting some of the unusual properties of surface-active agents, solid detergents and liquid crystals, and analytical procedure, further projected from laboratory to pilot-plant stages of development, thence to the commercial end-products, attain in this publication a high level of both instructive and worth-while advertisement.

Public Health Responsibilities in Radiation Protection

THE nature of public health responsibilities toward ionizing radiation hazards and recommendations on their application are presented in a fourth report of the World Health Organization's Expert Committee on Radiation (Public Health Papers. No. 254: *Public Health Responsibilities in Radiation Protection*. Pp. 23. Geneva: World Health Organization; London: H.M.S.O., 1963. 1 Sw. franc; 1s. 9d.; 0.30 dollar). The report defines the scope of public health agencies in radiation protection under four main headings: (1) measurement of all sources of radiation exposure; (2) stimulation and conduct of research on the biological hazards of these exposures; (3) establishment of control of the safe use of radiations; (4) promotion of education on the health aspects of radiation. In the latter context, the report emphasizes the need for a balanced programme to maintain a proper respect of the hazards of radiation without promoting undue anxiety which might lead people to refuse necessary medical X-ray examinations. The major part of the report deals with legal and administrative requirements to enable public health authorities to meet their responsibilities for radiation protection. Mention is made of the necessity for legislation to give health agencies the authority to control effectively the use of radiations. The Committee believes that inspection of installations should play a major part in the control of radiation hazards and suggests that registration or licensing would supply the basis for the encouragement or enforcement of safe practice. On the administrative side, the Committee favours the establishment of a central unit to control all public health responsibilities for radiation protection. Examples are given of the organization of appropriate services within such a unit.

Diploma in Soil Science at Oxford

BEGINNING in October 1964, the University of Oxford is offering a course leading to a postgraduate diploma in soil science. The course is designed for those who have read the physical or biological sciences for their first degree as well as for those who have read agricultural science. The study of soil science calls for a selected knowledge of the fundamental sciences, and each candidate will be given the opportunity of acquiring this necessary foundation and in addition will study: (1) Soil formation and classification, including the development of landscapes; soil-forming processes and the effects of climate, topography, parent material, vegetation and other biotic factors in soil formation; the main types of soil in the world and their classification. (2) Composition and properties of soils, including their texture, porosity, aggregation and relation with the environment; their mineral composition and structure, exchange properties and other colloidal reactions; their organisms in relation to organic transformations. (3) Soils in relation to plant growth, including inorganic plant nutrition; soil factors affecting plant growth and reactions in the soil of plant nutrients. (4) Soil survey, evaluation and management, including methods of survey and mapping; the evaluation of soils; the management of soils for agriculture and forestry. The course will extend over four terms, beginning in October one year, and finishing with an examination in December of the next. In their first two terms candidates will receive formal instruction. In their last two