

field of nutrition) and Prof. A. C. Frazer (the control of the use of chemical aids in food processing), and the evidence provided by the other papers about different lines of work being followed by different countries in 1954.

Bird Collection at Birmingham Museum and Art Gallery

THE collection of British nesting birds in the Natural History Department of Birmingham Museum and Art Gallery commemorates in part the eminent public services of the late Alderman C. G. Beale, first vice-chancellor of the University and four times Lord Mayor of Birmingham. Funds provided by public subscription enabled work to be started in April 1913, and in May 1920 the memorial, encompassing forty-two nesting groups of common British species, was complete. Wherever possible, each nesting site was removed bodily from its surroundings, carefully preserved and reassembled for display. Every effort was made to secure the original parent birds, their eggs and their young. In the few instances where modelling became necessary, the original surroundings were photographed, measured, described and accurately reproduced. The greatest possible care was constantly taken by the taxidermists to give a faithful presentation of the various nesting groups, so that the collection is now rightly regarded as one of the best of its kind. A booklet describing the collection has been issued by the Museum (price 2s.), and photographic postcards of most of the groups in the collection are also available (price 4d. each).

Tracer Techniques in the Study of Host-Parasite Relationships

THE accumulation of radioactive substances at loci of infection of some facultative and obligate fungal parasites and of tobacco mosaic virus has been investigated by M. Shaw and D. J. Samborski (*Canad. J. Bot.*, **34**, 3, 389; 1956). Excised, parasitized leaves were placed with their bases in radioactive solutions or exposed to radioactive carbon dioxide, and the uptake and distribution of the tracers followed by autoradiography. Carbon dioxide and twenty other carbon compounds, including sugars, amino- and organic acids, phenols, and indoleacetic acid, and/or their metabolic products, as well as phosphate and calcium, accumulated strongly at uredial and conidial loci of the obligate parasites *Puccinia* and *Erysiphe* respectively. An accumulation of glucose, which occurred in the host tissue at the sites of mildew colonies on leaves from which the ectoparasitic fungal mycelium had been removed, ran parallel with the respiration-rate and increased progressively with the development of the parasites. It was inhibited by sulphur dust (with mildew), sodium azide, 2,4-dinitrophenol and, reversibly, by anaerobiosis, and was therefore dependent on aerobic respiration. On the other hand, the tracers did not accumulate within senescent rust and mildew colonies or within the necrotic lesions produced by bacterial and fungal parasites which kill the tissues of their hosts. Radioactive glucose did not, but calcium and phosphate did, accumulate within young local lesions of tobacco mosaic virus on *Nicotiana*. The tracers did not enter dead areas on mechanically wounded leaves, and only accumulated at fresh wounds under conditions conducive to a high rate of water-loss from the damaged surface.

The Soul in a Primitive Society

IN his Fraser Lecture for 1955, given under the title "The Fate of the Soul" (Cambridge: At the University Press, 1955; 2s. 6d.), Prof. Raymond Firth returns to a subject examined by Sir James Fraser in his "Belief in Immortality and the Worship of the Dead". Firth's approach is, however, functional and not ethnological, as was Fraser's. His interest lies in these beliefs in terms of their social functions and, in support of his argument, he examines the eschatological beliefs of a particular society, Tikopia, relating them to its social structure and organization, with particular reference to the changing religious system. His conclusion is that the framework of ideas about the fate of the soul is in many respects a framework of ideas about the state of society, and that they are concerned primarily with emphasizing the continuity of society rather than the continuity of the individual personality.

Standard X-ray Diffraction Powder Patterns

THE fifth in the series of "Standard X-ray Diffraction Powder Patterns", prepared by the National Bureau of Standards, Washington, D.C., has recently been published as Circular No. 539 of the Bureau (pp. 75. Washington, D.C.: Government Printing Office, 1955. 45 cents). In it, forty-five standard X-ray diffraction patterns are presented relating to two elements and forty-three inorganic compounds. The patterns are recommended to replace seventy-four cards in the card file of the American Society for Testing Materials, and, in addition, five compounds (caesium chloroplatinate, caesium chlorostannate, germanium iodide, rubidium chloroplatinate and thallium chloroplatinate), which are not represented in the file, are included. The experimental procedure used for obtaining the patterns and the general plan of the reports are the same as those in the volumes previous to Circular 539. The patterns are of use in many applications, but primarily for the identification of unknown crystalline materials. The samples used were of exceptionally high purity, and the patterns were made with a Geiger-counter X-ray diffractometer. The new publication concludes with a cumulative index to Vols. 1-5; but it is emphasized that further work on the programme is in progress, and it is anticipated that additional volumes in the series will be issued.

Professional Engineers Appointments Bureau: Report for 1955

THE report for 1955 of the Professional Engineers Appointments Bureau (9 Victoria Street, London, S.W.1) shows that there was no significant change in the numbers of civil, mechanical and electrical engineers registering with the Bureau, but the number of vacancies notified increased by 20 per cent. The total placings rose by 15 per cent above the figure for last year, but the more rigid specification of requirements laid down both by those registered and by prospective employers tended to reduce the field of selection. More of the placings were for senior appointments and fewer for junior posts. More employers and engineers approach the Bureau informally to discuss their problems and to review the general employment market. In general, firms which are rapidly expanding are having great difficulty in securing staff who have the particular specialized experience that is now required in many posts in industry.