Dr. K. Landsteiner, For. Mem. R.S.

WORKERS in the field of medical research in Great Britain will wish to join in congratulating Dr. Karl Landsteiner, of the Rockefeller Institute in New York, on his recent election, and will regard the honour as being a well-merited tribute to the high level of the scientific work he has pursued with unremitting vigour during the past forty years. Three outstanding achievements will forever be associated with his name: the discovery of individual differences in human blood which account for the four well-defined groups; the demonstration, together with E. Popper, that the causal agent of acute poliomyelitis is transmissible to monkeys; and the series of notable contributions he has made towards elucidating the nature of the specificity of immunological reactions.

Dr. Landsteiner was an assistant in the Institute of Pathology of the University of Vienna when, in 1901, he first published his work on iso-agglutination and the blood groups. Even at this early date he was aware of the probable significance of his results for medico-legal purposes, and in the practice of blood transfusion; and the value of his pioneer researches on the subject was attested when, in 1930, he was awarded the Nobel Prize in Medicine. The two first papers on the experimental transmission of poliomyelitis to monkeys appeared in 1908 and 1909, and they pointed the way to the subsequent intensive study by himself and by many other workers of the mode of transmission of the causal virus and of its neutralization by a specific immune-serum. In later years Landsteiner and his collaborators have been occupied chiefly with the chemical aspects of immunity. Their investigations and, in particular, the ingenious experiments with artificially conjugated antigens and the corresponding immune-sera have shed much light on the nature of the serological specificity of proteins and cell antigens.

Plankton as a Source of Food

THE interesting article which we publish in another column (p. 695) is of special importance inasmuch as it is from the pen of a distinguished leader in the investigation of marine plankton and its distribution. As the first occupant of the chair of zoology in University College, Hull, Prof. Hardy has wisely borne in mind its proximity to the great fishing-port of Grimsby, and has directed the policy of his department along lines which, as he believes, will lead towards increased prosperity of the fishing industry. The ingenious apparatus which he has devised for towing behind a moving vessel and registering a continuous record—quantitative and qualitative—of the plankton present along the route traversed is well known to all interested in plankton research, and it may well be that the not distant future will see this apparatus installed as part of the regular equipment of vessels engaged in the fishery of those important food-fish—such as herring, pilchard or mackerel—which, subsisting on particular types of plankton, tend naturally to concentrate where their favourite food happens for the time being to be most abundant.

Prof. Hardy, on the whole, supports Sir John Graham Kerr's plea for the appointment of an expert committee to examine into the practicability or otherwise of drawing upon the plankton directly for the reinforcement of the food supply of Great Britain. He emphasizes the nutritive value of plankton. He quotes chemical analyses, which we find perhaps less impressive since an encounter many years ago with a destructive beetle larva which was able to subsist upon a diet of dry cork, and out of it—in apparently complete defiance of all dietetic principles—to build up living protoplasm indistinguishable chemically from that of a human being. But Prof. Hardy tells us too how not long before the outbreak of war, German researchers reported upon two different types of plankton as being respectively equivalent in nutritive value to 'the best meat' and to rye flour. Finally, he quotes the case of the whalebone whales, and, unmindful of the reminder conveyed in a charming leading article in *The Times* regarding their ungainly portliness, the more seriously directs attention to the extraordinarily rapid growth of the young whale as incontrovertible evidence of the nourishing qualities of its food. The practical suggestions made by Prof. Hardy in regard to the large-scale collection of plankton, are, in view of his special knowledge, worthy of attention, and no less so his hint that the preliminary stages in the working out of the plankton-food problems might well be undertaken during the present summer.

Coastal Plankton of New South Wales

PROF. W. J. DAKIN has been working for nine years at the study of plankton off Sydney Harbour. The difficulties were many, but a great deal has been accomplished which acquires a deeper significance when one realizes that it is the preliminary to further fisheries researches in the future. A small yacht only was available, but with this, fortnightly samples of plankton with accompanying hydrographic data (the last only for the first three years) were taken almost continuously. The results, which include much original work not published elsewhere, are now available ("The Plankton of the Australian Coastal Waters off New South Wales. Part 1." Publications of the University of Sydney. Department of Zoology. Monograph No. 1. By William J. Dakin and Alan N. Colefax. 1940). There is, however, much more in it, for it is a general guide to Australian plankton indispensable to all who study the subject in these waters, the introductions give a good survey of each group, and almost every organism is described and, in most cases, figured. Lists of relevant literature are given at the end of each section and certain specialists have helped in identifications. Mr. Takeri Tokioka's contribution on the Chætognatha with its beautiful figures is noteworthy. Mr. Alan Colefax is responsible for the large and detailed section on the Copepoda and also for the chemical analyses.

Prof. Dakin is the author of the main part of the work. Among the Crustacea his notes on life-histories are valuable, especially among the Decapods. The larval stages of the Australian Decapods are little

known, and this is obviously an extensive field for research. Larval Thalassinids form a large part of the plankton, especially inshore. "In one quarter-hour haul at Broken Bay in April 1935, there were hundreds of thousands of larvæ in different stages." Gurney, in the "Discovery" Reports (1938), has shown that there are many more Thalassinid larvæ than known adults (especially belonging to the Axiid-Callianassid group). Here again in Sydney Harbour the adults are not known, except in a very few instances. The larvæ occur at certain stated times. It will be interesting to hear of more researches on these forms—a difficult subject, as these Thalassinids live in very inaccessible places, and there must be an enormous number of undescribed species. The present work deals mainly with invertebrates, but there is a small section on fish eggs. Further work on these and on other groups here not fully dealt with are subjects for the future.

War-Time Medicinal Formulæ

THE direction of the policy which is being adopted in the compilation of war-time formulæ for medicinal preparations is indicated by the nature of the recommendations recently made by the British Pharmaceutical Codex Revision Committee. It may well be that there is little need to replace all those drugs now unobtainable by alternative substances. On the other hand, it is very desirable that authoritative guidance should be given to prescribers as to substitutes for at least some of the scarce or unobtainable drugs, and also as to the best combinations in which to present them. This duty falls upon several bodies recognized as being properly constituted for the purpose, and one such is the Codex Revision Committee.

The recommendations made by this body are not restricted to the replacement of scarce substances by those which are more freely available. They cover a wider field. Thus it is proposed to authorize the use of tap water in place of distilled water except in injections and in preparations for which the pharmacist may consider distilled water more suitable. To the patient who invariably uses tap water to dilute his medicines, where dilution is directed, there appears to be nothing remarkable in this recommendation and there would seem to be little reason why it should not continue to be applied in peace-time. With regard to alcohol the Committee, following the advice of the Medical Research Council, that, in order to observe economy in the use of alcohol, many tinctures should be replaced by concentrated preparations, agrees that concentrated liquid extracts should be employed instead of tinctures and has decided to draw up a list of liquid extracts which might be used for this purpose. Other recommendations have their origin in the scarcity of tragacanth, squill, liquid paraffin, olive oil and almond oil.

Food Growing and Utilization

IT is fully recognized that the amateur gardeners and allotment holders of Great Britain are making a vital contribution to the war effort. Maximum crops need to be raised and any wastage through faulty storage or cooking must be avoided. The "Penguin Book of Food Growing, Storing and Cooking", by Mr. F. W. P. Carter, provides much practical information in a simple manner on these subjects (Penguin Special, *S*.90. Harmondsworth: Penguin Books, Ltd. 6*d*.). Crops are dealt with alphabetically which makes reference simple. The method of cultivation, recommended varieties, quantity of seed required, likely pests and their control, storage and where possible also cooking methods are described for all the more commonly grown vegetables. Good general information is also given regarding the preparation of the soil. The booklet concludes with simple suggestions for garden work each month and a detailed cropping plan for a period of three years on a typical allotment.

The correct utilization of food is dealt with by Mr. Frank Wokes in another Penguin Special, "Food: the Deciding Factor" (S. 87. 6*d*. Much information on food values and diet is compressed into a small space. The energy and body-building values of different types of food are explained, and diets suggested which make for properly balanced meals, rationing being taken into account. A considerable part of the booklet is devoted to the question of vitamins, the quantities required and the foods which supply them. Interesting tables are given in the appendix showing the body-building and energy values, mineral and vitamin contents of a large number of generally consumed articles of food, including cereals, dairy produce, fish, fruit, meat and nuts.

Institute of Physics: Industrial Radiology Group

FOR some considerable time, physicists engaged in the various branches of industrial radiology have expressed a wish for some means whereby they could come together for the mutual discussion of their particular problems. Accordingly, the London and Home Counties' Branch of the Institute of Physics arranged a Conference on Industrial Radiography in January 1941 (see NATURE, February 8, p. 183). As a result of this Conference it was decided to ask the Board of the Institute of Physics to approve the formation of a Radiography Group. The Board's approval having been obtained, the inaugural meeting of the Group was held on May 20, at the Social Centre of Messrs. Kodak, Ltd., Harrow, about seventy people attending—some coming from as far afield as Leven, Motherwell, Sheffield and Derby. The title "Industrial Radiology Group" being approved by those present, Dr. L. Mullins, of the Research Laboratory of Messrs. Kodak, Ltd., was appointed honorary secretary, and the following committee was elected: Drs. W. Betteridge, D. W. Davison, and H. Lowery, Messrs. A. N. Gilchrist, W. L. Harper, H. P. Rooksby, H. S. Tasker, D. E. Thomas, and E. J. Tunnicliffe.

So constituted, the present committee is representative of those concerned with the industrial applications of radiography and X-ray crystallography and of those engaged in the manufacture of industrial X-ray apparatus and X-ray films. In addition, the British Institute of Radiology and the