The general discussion was opened by Dr. W. K. Slater. He emphasized that the additional production of food from sources in Great Britain means increased supplies of materials, for example, for additional factories and plant for extracting sugar-beet and for housing poultry. The training of the human element in more efficient methods of cultivation and of management of stock is likely to be a formidable task. He asked whether a true appreciation of the immediate future position in Great Britain is rather that the number of calories per person and the nutritional value of the average diet generally are much more likely to fall than to rise; and how far this fall could go without acute sequelæ.

Dr. N. C. Wright considered that a matter of immediate importance is the prevention of wastage, from whatever cause, of food already produced. We must find out, for example, exactly what happens to the 10–15 per cent of calories that vanish as between food 'moving into consumption' and food actually consumed in the household. He believed there is no escape from a greatly increased importation of animal feeding-stuffs from overseas if home-produced human food is to increase.

The importance of disease control and the part that the veterinary profession could play in preventing wastage were emphasized by Dr. W. R. Wooldridge. Prof. J. R. Marrack inquired whether, if the amount of milk required per head per day by the nutritionists has to be produced as liquid milk during the *winter* months, it would not thereby entail a considerable excess to liquid requirements at the production peak during spring and summer, which excess could provide a substantial quantity of dairy products.

Prof. A. W. Ashby, in summing up, said that we should face the fact that the standards in Great Britain for human food have been reduced to, and are likely to remain for some time, those of a rather poor peasant population. He considered that more co-ordinated consultation between the experts in nutrition and in food production and the administrative authorities is needed to give a sound basis both for the planning of increased food production at home and the carrying of these plans into effect. He criticized some of the figures given by those who had spoken during the conference on the possibilities of increased agricultural production, and thought that more statistical wisdom and mutual consultation might have made their estimates more helpful. He was very doubtful whether the yields per acre of wheat, etc., that one of the speakers had assumed as attainable in the near future, could, in fact, be reached. Competing requirements for feeding-stuffs to provide milk, meat and eggs have to be regarded from the point of view of efficiency of conversion of feeding-stuffs to human foods. Here the dairy cow is far superior to the bullock. He emphasized that under an effective system of price control the *relative* prices offered to the producer for the different farm products is the main directive factor in influencing relative volumes of farm output.

The chairman, in conclusion, mentioned the surprisingly large total tonnage, relative to the tonnage of human food, that is needed to feed the animal population of Great Britain, and emphasized the importance and economy of producing the maximum quantity of feeding-stuffs at home by the intensive application of existing knowledge.

The proceedings of the conference will be published in an early number of the *British Journal of Nutrition*.

OBITUARIES

Prof. J. Masson Gulland, F.R.S.

It was with a sense of severe personal loss that his many friends learned of the untimely death of Prof. J. M. Gulland, who was a victim of the railway accident at Goswick on October 26. He was a leading figure in the chemical world, a pioneer worker in several important fields of organic chemistry and biochemistry, and a man of outstanding personal charm.

John Masson Gulland was born in Edinburgh in 1898 and was the only son of the late Prof. G. Lovell Gulland, professor of medicine in the University of Edinburgh. Gulland was much devoted to his native land, and above all to his native city, which he frequently visited. He was educated at Edinburgh Academy and the University of Edinburgh, where he graduated in 1921, after serving as a second lieutenant in the First World War. At that period it was natural for a graduate of a Scottish university with an interest in organic chemistry to turn his eyes towards St. Andrews, and, having been awarded a Carnegie Scholarship, Gulland went there to work under Prof. (later Sir) Robert Robinson, whom he rejoined in Manchester and again later in Oxford. Gulland became a University demonstrator in chemistry at Oxford in 1924, and was appointed lecturer in chemistry at Balliol College in 1926. These appointments he relinquished in 1931, when he became senior assistant in biochemistry at the Lister Institute, London, and a reader in biochemistry in the University of London. In 1936 Gulland was appointed to the Sir Jesse Boot Chair of Chemistry at University College, Nottingham, which post he resigned in September of this year in order to take up a new appointment as director of research to the Institute of Brewing. This position had been vacant since the death of Sir Gilbert Morgan in 1940, and in reviving the post the Institute of Brewing planned to expand its research activities and to set up its own central research laboratories. At the time of his death, Gulland had already begun to apply himself with his customary vigour and enthusiasm to the execution of these plans. He was married in 1924, and is survived by his wife and two daughters.

Although he has a large amount of first-rate scientific achievement to his credit, Gulland was not quite so prolific a contributor to the original literature as some of his contemporaries. This is partly due to the formidable nature of the problems which he tackled; he never engaged in trivialities. It is probably due also to the fact that his earlier ardour for work at the bench tended to be subordinated later to his interest in organisation and administration, for which he had a real flair. He served on the councils of the Chemical Society and the Royal Institute of Chemistry, and was an honorary secretary of the Chemical Society during 1933–36. From 1932 until 1934 he was secretary of Section B of the British Association, and during 1935–37 he was recorder to the Section. During the early years of the Second World War he was senior gas adviser to the North Midland Region of the Ministry of Home Security, and during 1943–44 he was assistant director, Chemical Research and Development, Ministry of Supply. In this capacity he was attracted by the potentialities of alginic acid as a chemical raw material, and he took an important part in the establishment of the Scottish Seaweed Research

Association, the new laboratories of which in Musselburgh, Midlothian, were formally opened in September (see *Nature* of November 15, p. 662); Gulland was a member of the Board of Management of this Association, and chairman of its General Purposes and Chemical Advisory Committees. His department at Nottingham was a model of efficient organisation, and was well equipped for the researches which were carried out there under his inspiration and guidance. He had in recent years planned and supervised the erection of excellent extensions to the laboratories, and these are now playing a valuable part in meeting the heavy demands of the post-war period.

Only the barest reference is possible here to Gulland's scientific work, an appreciation of which will doubtless be published elsewhere. During his St. Andrews and Manchester days, he worked on the morphine group of alkaloids, and the constitution which is now generally accepted for morphine was first adumbrated in two classical papers, published in 1923 and 1925, by Gulland and Robinson. With R. D. Haworth, Gulland published a series of papers on the aporphine group of *iso*quinoline alkaloids (1928–29). New methods were devised by which were synthesized, among other compounds, bulbocapnine methyl ether and corytuberine dimethyl ether. Gulland also made other chemical studies of compounds of biological interest, including pellitorine, the pungent principle of *Anacyclus pyrethrum*, and the active constituents of *Taxus baccata* (1930–31). His work then followed a more biochemical trend and he investigated (with R. A. Peters) the reducing substances of pigeon's blood, and carried out a series of investigations on the oxytocic principle of the pituitary gland (1932–35), elucidating something of the chemical nature of this hormone. His major contributions to science are those carried out during the past twelve years on the chemistry of the nucleic acids, and of the nucleotides and nucleosides from which they are built up. Some of this work was summarized by Gulland in his Tilden Lecture given before the Chemical Society in 1943 (*J. Chem. Soc.*, 208; 1944). The pre-eminent part which the nucleoproteins play in the fundamental processes of life has become increasingly apparent in recent years, and gives added significance to Gulland's investigations in this field. It is a great misfortune to biological science that they have been so abruptly terminated.

J. W. Cook

We regret to announce the following deaths:

Prof. W. S. R. S. Lewis, professor of geography at the University College of the South-West, Exeter, on November 14.

Prof. Frank R. Lillie, emeritus professor of embryology in the University of Chicago, president during 1935–39 of the U.S. National Academy of Sciences.

Mr. W. J. U. Woolcock, C.M.G., C.B.E., a past-president of the Society of Chemical Industry, on November 13, aged sixty-nine.

NEWS and VIEWS

Nobel Prizes for 1947

Sir Robert Robinson, F.R.S.

The award of the Nobel Prize for Chemistry for 1947 to Sir Robert Robinson, president of the Royal Society, can have occasioned little surprise in view of his outstanding contributions to organic chemistry. They cover so wide a field that it is only possible to refer to a few of the more important of these. His early work on brazilin and hæmatoxylin, carried out in collaboration with the late Prof. W. H. Perkin, led to new pyrylium salt syntheses, which were later extended and applied to the artificial preparation of the anthocyanins, the chief red and blue pigments of flowers and blossoms, thus providing a final proof of the structures assigned to some of them by Willstätter. The possession of the pure synthetic specimens made it possible to devise simple quick tests for the anthocyanins contained in a few petals, which have proved to be of great value in genetic investigations. Of equal brilliance are his investigations in the alkaloid field. His simple synthesis of tropinone was rather the outcome than the cause of a theory of biogenesis of plant products put forward in 1917. This theory collated for the first time the apparently dissimilar alkaloidal constituents, and it has proved useful both in prediction and in criticism. The structures put forward for morphine and thebaine have found general acceptance. Undoubtedly his greatest contribution in this field has been his extended study of the chemistry of strychnine and brucine.

Sir Robert's mastery of the synthetic method and his penetrating insight is revealed in the long series of memoirs on the synthesis of the steroids. His work in this field has led, in collaboration with Prof. E. C. Dodds, to the synthesis of stilbœstrol, a useful and active œstrogen, which has found application in the treatment of certain forms of cancer. During the recent War he was the leader of the Oxford team engaged on the chemistry of penicillin, and it was in his laboratory that the main facts of its constitution were first elucidated. Finally, mention must be made of his contributions to the electronic theory of organic reactions. This theory was based originally on the discovery of C-alkylation of substituted aminocrotonic esters and was later extended by many other observations. Robinson's theoretical views, developed during the decade 1920–30, were subjected to severe criticism, but they have survived in almost unmodified form and they have now found general acceptance. It is not too much to say that the system first advanced by Robinson and his collaborators is the basis of the modern chemistry of organic chemical reactions. Robinson and his school have exercised a profound influence on the development of organic chemistry, not only in Great Britain but throughout the whole Commonwealth. Many of his former students and collaborators hold university professorships or fill important positions in chemical industry.

Sir Edward Appleton, G.B.E., K.C.B., F.R.S.

The announcement of the award of the Nobel Prize for Physics for 1947 to Sir Edward Appleton is one which will be received with great satisfaction by scientific men everywhere, and particularly by workers in pure and applied physics. Sir Edward