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

Appleton has achieved renown in two spheres, either of which might be considered as forming a sufficiently full life for a lesser man of science. He has for more than a quarter of a century been the most active worker in the field of radio physics, and during this period he has conducted research work of the most far-reaching importance. Since 1939, also, he has been secretary of the Department of Scientific and Industrial Research, a position which gives him the responsibilities and duties of the leading man of science in the Government service of Britain. Appleton displayed his great scientific ingenuity and experimental skill in December 1924, when he demonstrated the existence of the Heaviside layer as an ionized region of the atmosphere capable of reflecting electromagnetic waves. Shortly afterwards, he discovered another and higher region—the Appleton layer—from which the shorter radio waves are reflected after they have penetrated the lower region. From that time onwards Appleton has conducted a continuous series of researches on the characteristics of the ionosphere, and the part they play in determining the mode of propagation of radio waves round the earth. The techniques developed in the course of these investigations provided the foundations for the development of radar in Great Britain, while the results of the research on the ionosphere have proved invaluable in forecasting and allocating the most suitable frequencies for practical radio communication, broadcasting and other applications. More recently, Sir Edward Appleton, in co-operation with other workers, has devoted attention to the reflexion of radio waves from meteors, and has demonstrated that sunspots are powerful sources of very short radio waves.

His work during the war years as secretary of the Department of Scientific and Industrial Research was particularly onerous for, in addition to conducting the normal activities of the Department, he was called upon in 1941 to advise the Government on the magnitude of the effort to be devoted to the exploitation of nuclear energy, and later to set up a special section of the Department to carry out the necessary research work forming the British contribution to the development of the atom bomb. Sir Edward, who was elected a fellow of the Royal Society in 1927, has received many honours and awards in Great Britain and overseas, and he has been president of the International Scientific Radio Union since 1934.

Royal Society: Medal Awards

HIS MAJESTY THE KING has approved the recommendations made by the Council of the Royal Society for the award of the two Royal Medals for the current year as follows:

Prof. C. N. Hinshelwood, Dr. Lee's professor of chemistry, University of Oxford, for his distinguished work on the mechanism of chemical reactions, from the simplest gas phase processes to the complexities of cell division;

Dr. F. M. Burnet, director of the Walter and Eliza Hall Institute for Medical Research, Melbourne, for his distinguished work on bacteriophages, viruses and immunity; and for his contributions to the study of infectious disease as an ecological phenomenon.

The following awards of medals have been made by the President and Council of the Royal Society:

Copley Medal to Prof. G. H. Hardy, emeritus professor of pure mathematics, University of Cambridge, for his outstanding part in the development of mathematical analysis in Britain during the last thirty years;

Davy Medal to Prof. L. C. Pauling, director of the Gates and Crellin Laboratories, California Institute of Technology, for his distinguished contributions to the theory of valency and for their application to systems of biological importance;

Buchanan Medal to Sir Edward Mellanby, secretary to the Medical Research Council, for his distinguished researches on the physiology of nutrition, especially in relation to the causation of deficiency diseases;

Hughes Medal to Prof. J. F. Joliot, director of the National Centre of Scientific Research, Paris, for his distinguished contributions to nuclear physics, particularly the discovery of artificial radioactivity and of neutron emission in the fission process.

Physiology at St. Thomas's Hospital Medical School: Prof. H. Barcroft

PROF. HENRY BARCROFT, Dunville professor of physiology, Queen's University, Belfast, has recently been appointed to the University chair of physiology in St. Thomas's Hospital Medical School, London. Prof. Barcroft is a son of the late Sir Joseph Barcroft of Cambridge, and was educated at Marlborough College and King's College, Cambridge. He held the Harold Fry and George Henry Lewis studentships at Cambridge during 1927–29 and was awarded the Gedge Prize in 1930. He qualified in medicine at St. Mary's Hospital, London, after which he was appointed lecturer in physiology at University College, London, a post which he occupied from 1932 until 1935. He has held the chair of physiology at Queen's University, Belfast, from 1935 until the present time, and has carried out distinguished work on the control of the vasomotor system, and of the blood flow to the limbs and other parts of the body. His experiments were mainly carried out on the human subject and involved important observations on the physiology of syncope.

Jubilee of the Discovery of the Electron

THE fiftieth anniversary of the discovery of the electron was recently marked in Cambridge by an open meeting of the Philosophical Society at which a lecture on the history of the Cavendish Laboratory was given by Dr. Alex. Wood in that Laboratory. Dr. Wood was himself a research student under Sir J. J. Thomson and has been closely associated with the teaching work of the Cavendish Laboratory since 1905. His lecture was illustrated by exhibits of historical apparatus used by Clerk Maxwell, Rayleigh, Thomson and Rutherford. Among guests present were Dr. G. F. C. Searle, who as a boy was shown round the Laboratory by Clerk Maxwell shortly after it was built; Mr. J. E. Rolph, who was appointed as laboratory assistant by Lord Rayleigh in 1881; Mr. F. J. Lincoln, who was a laboratory assistant for fifty-three years, including forty-two years as steward; Sir William Dampier, who as W. C. D. Whetham joined the Laboratory in the very early days of Sir J. J. Thomson's professorship; and Lady Thomson, who as Miss Paget was a research student in 1889 and was married to J. J. Thomson in 1890.

British Books for Germany

AT the Information Centres of the Control Commission in the British Zone of Germany reference books are available for those who live near enough;