

the clue; and in a set of papers developed a partly geometrical, partly analytical, method of surpassing beauty, which finally classified all solutions of Emden's equation and its generalizations. As G. H. Hardy remarked in a debate on the subject at the Royal Astronomical Society, theories of stellar structure may come and go, but Fowler's contributions to the pure mathematics of the subject have a permanent value.

Fowler had become the mainstay of theoretical physics at the Cavendish, and in 1932 he was appointed to the new Plummer chair at Cambridge. Here he found the fullest opportunity for the exercise of his remarkable versatility and power of assimilating new ideas. Anyone in doubt over an unusual argument, anyone in need of encouraging but salty criticism, always turned to Fowler and came away comforted.

In 1938 Fowler was appointed director of the National Physical Laboratory. But an unexpected illness made it undesirable for him to take up the appointment, and he had the unusual experience of being re-elected to his resigned chair. But he could not be persuaded to reduce his activities. During the present War he undertook important liaison work between British and Canadian science, in Canada, and later he did similar work in the United States. He was created a knight in 1942. Unfortunately, his illness returned, and though he threw himself into further work at the Admiralty, it gradually mastered him. He was attending important conferences up to within a few weeks of his death.

Fowler was elected a fellow of the Royal Society in 1925, and awarded its Royal Medal in 1936. He married Eileen, only daughter of the late Lord Rutherford; she died in 1931. He leaves two sons and two daughters.

Fowler had a forceful, even a masterful personality. As I once put it in a sketch of Fowler for the *Granta*, when Fowler was proctor at Cambridge, he had a short way with any committee he was chairman of, and a short way with the chairman of any committee

he was a member of. He could be outspoken to the point of inducing tears, but his subsequent contrition was so endearing that he never left bitterness. He was a man who, starting his scientific career in a promising but by no means excessively distinguished way, went on maturing throughout his life, and attained a fame which surprised even his earliest admirers, but which was wholly deserved, and wholly earned. Had he lived, Fowler would have become one of the greatest scientific powers in the land. He had a tremendous capacity for personal friendships; to collaborate with him on a scientific paper was to embark on high adventure, and the thrill and 'agony' of working alongside him, when results were being turned out quickly and one was on tip-toes as to what was round the next corner, were things never to be forgotten.

Fowler was big and powerful of frame, and he applied his strength with success to a variety of ball-games. He had claims to distinction as a cricketer, both in batting and bowling; he played an excellent game of both lawn tennis and real tennis; he represented Cambridge at golf and declared (and, we hope, made) many a 'Barnwell no-trumper' on his way home from golf at Mildenhall; he was also a rock-climber.

Fowler was the whole man, of many parts. His life was one of unsparing devotion to high scientific ideals. We cannot over-estimate the loss his untimely death means to Great Britain and to science generally.

E. A. MILNE.

WE regret to announce the following deaths:

Mr. Selskar M. Gunn, vice-president of the Rockefeller Foundation, and formerly director of the Paris office of the International Health Board of the Foundation, aged sixty-one.

Sir Henry Lyons, F.R.S., formerly director of the Science Museum, London, on August 10, aged seventy-nine.

## NEWS and VIEWS

### Prof. T. R. Elliott, C.B.E., F.R.S., and the Beit Trust

MANY generations of Beit Memorial research fellows will hear with regret of the retirement of Prof. Elliott from the honorary secretaryship of the Advisory Board to the Beit Memorial Trustees, an appointment he has held since 1930 when he succeeded the late Sir James Kingston Fowler. The Beit Trust, one of the first great benefactions for medical research in Great Britain, has played a very notable part in the training of a number of skilled investigators who have made important contributions in most branches of scientific medicine. From its inception in 1910, the Trust has been particularly fortunate in its first two honorary secretaries to the Advisory Board, both of whom have been distinguished by their enthusiasm for its work, pride in its achievements and vision in its possibilities. The continuity of the generous policy of the Trust, the ease of its adjustment to changing conditions without any lowering of standards or narrowing of aims, have owed much to their work.

Prof. Elliott, a former Beit fellow (1911-12), became a member of the Advisory Board in 1922, and thus has been able to draw upon his own earlier memories in acting as friend and adviser to many of those he has helped to elect to fellowships. During the last fourteen years his intimate knowledge of the working of the Trust has been of the greatest value to the work of his colleagues on the Advisory Board, and of the Trustees to whom he carried their recommendations. Prof. Elliott will take with him the grateful memories of all who have worked with him on the Advisory Board and of many in all parts of the world who, as Beit Memorial fellows, have had his friendly guidance. He hands on a fine tradition to his successor, Dr. A. N. Drury, director of the Lister Institute.

### Metallurgy at the National Physical Laboratory: Dr. N. P. Allen

DR. NORMAN P. ALLEN, who has been appointed superintendent of the Department of Metallurgy at the National Physical Laboratory in succession to

Dr. C. Sykes, studied metallurgy in the University of Sheffield under Prof. C. H. Desch, graduating B.Met. in 1923 and M.Met. in the following year. He collaborated in research on the die-casting of alloys of low melting point for the Non-Ferrous Metals Research Association, at first in Sheffield and later at University College, Swansea. In 1928 he was appointed to a lectureship in metallurgy in the University of Birmingham, where he obtained the degree of D.Sc. Since 1935 he has been on the staff of the research laboratories of the Mond Nickel Co., Ltd.

Dr. Allen's published investigations, undertaken on behalf of the Non-Ferrous Metals Research Association, have dealt with the effects of gases on non-ferrous metals and alloys, and in a series of papers he has described new methods of examining the solution and release of gases from molten alloys, chiefly of copper, and of the relations between the nature and amount of dissolved gases and the porosity of the resulting ingots and castings. The work involved the design of apparatus for applying both high and low pressures to the alloys when molten, and has been of material help in dealing with problems of porosity in non-ferrous alloys, at the same time providing interesting thermodynamic data.

#### Chair of Aviation, Imperial College: Mr. A. A. Hall

THE Department of Aeronautics at the Imperial College of Science and Technology is the largest activity of its kind in the British Empire. The announcement of the appointment of Mr. A. A. Hall as the new head, to succeed Prof. Leonard Baird as Zaharoff professor of aviation, is therefore of great interest. Mr. A. A. Hall will be one of the youngest professors in the country. If the course of the War makes it possible for him to take up his new appointment in October 1945 he will then be just over thirty years of age. He comes from Liverpool. Educated at the Alsop High School, Liverpool, and at Clare College, Cambridge, he obtained first-class honours in the Mechanical Sciences Tripos of 1934, with distinction in aeronautics, in thermodynamics, in applied mechanics and in the theory of structures. He was awarded the Rex Moir prize in engineering, the John Bernard Seely prize in aeronautics, the Ricardo prize in thermodynamics, and the Robins prize of Clare College. After a short period at the Royal Aircraft Establishment, he returned to Cambridge with an Armourers and Braziers' research fellowship to pursue aerodynamic research under Sir Melvill Jones and Sir Geoffrey Taylor. The work he did then, on the turbulence in a free stream and on the laminar and turbulent boundary layer, was an outstanding contribution to the subject. He joined the staff of the Royal Aircraft Establishment in 1938 and his activities there have covered a wide field—aerodynamics, wind tunnel design, and jet propulsion, followed since the outbreak of war by investigations on night interception of aircraft and on many scientific and engineering problems in the field of aircraft armament. In all he has shown high qualities of original thought and of leadership—the best augury for his future in a most responsible position.

#### Miss Grace Wigglesworth

MISS GRACE WIGGLESWORTH retires in September from the Manchester Museum, where she has served in the Botanical Section as assistant keeper since

1910. An old pupil of the Manchester High School, she entered Owens College in 1900 and graduated B.Sc. with honours in botany in 1903. In the same year "The Victoria University of Manchester" received its title, and Miss Wigglesworth continued her botanical studies in the University as an honorary research fellow until 1907. During this period she published several papers, the first in 1902 in vol. 1 of the *New Phytologist*, entitled "Notes on the Rhizome of *Matonia pectinata*, R.Br.". This was followed by "A Note on the Cotyledons of *Ginkgo biloba* and *Cycas revoluta*" (*Ann. Bot.*; 1903), "The Papillae of the Epidermoidal Layer of the Calamitean Root" (*Ann. Bot.*; 1904) and "The Young Sporophyte of *Lycopodium complanatum* and *L. clavatum*" (*Ann. Bot.*; 1907).

In 1907 Miss Wigglesworth was appointed lecturer in botany at the L.C.C. Clapham Day Training College, but in 1910 she returned to Manchester as assistant keeper in the Museum. She was able to devote some time to research, and further published papers are "The Development of *Cœnobia* from Resting Spores in the African Water Net (*Hydrodictyon*)", 1928; "A New Californian Species of *Sphaerocarpus*", 1929; and "South African species of *Riella*", 1937. But much important work remains unpublished. She spent several years working on the developmental morphology of *Polytrichum commune*, and has more recently been working on Prof. W. H. Lang's collection of Malayan Hepaticæ. She is a member of the Bryological Society and has an expert knowledge of hepatics. During her period of office in the Museum Miss Wigglesworth has been responsible for the reception, housing and care of the valuable herbaria of Leo Grindon and Cosmo Melvill. Her intimate knowledge of the contents of the Museum has been invaluable to members of the staff of the Botanical Department of the University who have been able to make use of its resources for teaching purposes. Her personal charm and kindness have endeared her to all who have known her, and her many friends wish her a happy retirement, after a most fruitful scientific career.

#### Manchester Joint Research Council

THE vice-chancellor of the University of Manchester and the president of the Manchester Chamber of Commerce have announced the personnel of the Manchester Joint Research Council which is being set up jointly by the Chamber and the University. Representing the University are: Prof. P. M. S. Blackett, Dr. C. T. J. Cronshaw, Prof. D. R. Hartree, Prof. J. R. Hicks, Prof. Willis Jackson, Prof. J. Jewkes, Sir William Clare Lees, Dr. J. E. Myers, Prof. W. E. Morton, Prof. M. Polanyi, Sir Ernest Simon, Sir John Stopford (vice-chancellor), Sir Raymond Streat and Prof. F. C. Thompson. The Manchester Chamber of Commerce will be represented by Mr. J. Harold Brown, Mr. E. A. Carpenter, Mr. J. Curwen, Mr. R. H. Dobson, Mr. John S. Dodd, Dr. A. P. M. Fleming, Mr. H. M. Harwood, Mr. A. H. S. Hinchliffe (president), Mr. Frank Longworth, Mr. L. E. Mather, Mr. N. G. McCulloch, Earl Peel, Mr. C. G. Renold, Mr. A. V. Sugden and Mr. John F. West. The first meeting of the Council will be held at the University on October 9.

#### School Certificate Mathematics

A conference of representatives of examining bodies and teachers' associations was held in April 1944 and drew up a new syllabus designed to sweep