

awarded a London M.Sc. degree. He then decided to pursue reaction kinetics in greater depth than was possible at Cardiff. To this end, and with the help of a research grant from the British Non-Ferrous Metals Research Association, he joined the Department of Physical Chemistry in the University of Cambridge, where he worked on a number of topics under the direction of E. K. Rideal. The most important of the subjects he studied were the oxidation of copper, and, as an offshoot, the oxidation of hydrogen with copper as the catalyst. He showed that the oxidation of copper could be considered as the sum of four consecutive processes, while the reduction of cuprous oxide by hydrogen consisted of six consecutive reactions. In all, he published, either as sole or as joint author, some six papers and two short notes while he was at Cambridge, and he received a Ph.D. degree in 1927.

In 1930 he obtained a Department of Scientific and Industrial Research senior research award and he moved to University College, London, where F. G. Donnan was the professor of physical chemistry. There Wilkins worked on gaseous adsorption, and he published one paper on the effect of intensive drying on the accommodation coefficient of liquid and solid surfaces for molecules of their own vapours. However, in spite of the fact that his main work allowed him plenty of time to indulge his tastes for music and the visual arts, Wilkins gradually found himself becoming less interested in an academic life, and in 1933 he joined the nitrates and sulphuric acid group in the Billingham Division of Imperial Chemical Industries, Ltd.

The problems and environment there were much to his liking, and he threw himself with great energy into improving the efficiency of the plants. After three very successful years as a plant manager, he moved first into the research department and then into the technical department, in the latter of which, during the first two years of the war, he was in charge of the start-up and proving trials of a number of ammonium nitrate explosive factories.

In 1941, C. S. Robinson, who had been managing director at Billingham and who had been seconded to the Ministry of Supply as director-general of the Royal Ordnance Filling Factories, was faced with the task of expanding the Royal Ordnance Factory organization in order to meet the constantly changing demands of the Services, and he managed to extract a number of 'bright boys', Wilkins among them, from Billingham. Wilkins was located at Bridgend, which was the headquarters of the western regional filling factories of Bridgend, Glascoed and Hereford, and he created and managed a highly efficient development team. Among their achievements were substantial improvements in the operation of a fully mechanized detonator filling plant and of a continuous 25-pounder shell filling plant. The risks involved in these processes were substantially reduced, and both productivity and quality were much improved.

At the end of the war, Wilkins decided to leave Imperial Chemical Industries and stay in Government service, and he became, first, director of chemical research and development, and, later, principal director of scientific research (defence). However, after some time he found that the task of being a head-office administrator was not an entirely satisfactory one, and in 1949 he accepted an invitation to become a local director of Glaxo Laboratories, Ltd., in charge of their northern factories.

All his work up to that time had been connected with well-known inorganic chemical processes involving the same types of reactions as those which he had first studied in 1924. The complex organic chemistry of the corticosteroids and the production of antibiotics by fermentation were new fields of endeavour to him, and they presented him with a major challenge, a situation which always brought out his best qualities. But he did not confine his interests to purely technical matters, and he became intensely interested in labour relations and in the training and proper utilization of graduate staff. Because of the

new ideas which he introduced and his forceful personality, his influence throughout the Glaxo organization spread well beyond the realms of his own bailiwick, and in 1956 he joined the main board of the company as deputy managing director. In 1961, when the Glaxo organization was remodelled in the form of a holding company, Glaxo Group, Ltd., and of a number of operating subsidiaries, he was made chairman and managing director of Glaxo Laboratories, Ltd., the largest of the subsidiaries in Britain, as well as being made a member of the board of the Group. Under his direction, Glaxo Laboratories, Ltd., continued to expand and flourish, in spite of some slowing down of innovation in the pharmaceutical industry of Britain as a whole.

Fred Wilkins's interests were extremely wide, and he even found time to go in for farming on quite a large scale, employing always, of course, the most up-to-date methods. He travelled widely on the Continent and in North America, and he made many friends whom he and his wife were fond of entertaining at their home in Burnham Beeches.

Although Wilkins made a very considerable contribution to all the organizations in which he worked, his influence on Glaxo Laboratories was much the most profound. His outlook was partly that of a scientist with a highly analytical mind, and partly that of an artist, for he took a great delight in music, in ballet and in the art of the High Renaissance. He was never at a loss for a new idea, and he was always anxious to give the younger members of the staff the best possible chance of proving themselves. He was warm-hearted and volatile, and, as he liked saying, a true Welshman. For him, technological innovation and artistic creativity were the two aspects of human endeavour which were most worth while.

A. H. WILSON

Prof. Mary Barber

THE sudden death of Prof. Mary Barber on September 11, 1965, is an irreparable loss to bacteriology.

Mary Barber was born in 1911. Her father, Dr. Hugh Barber, is a distinguished physician who trained at Guy's Hospital, became a Fellow of the Royal College of Physicians in 1933 and has practised medicine for many years in Derby. She obtained the M.R.C.S., L.R.C.P. qualification from the Royal Free Hospital in 1934, and the M.B., B.S. (London) in 1936. Between 1934 and 1937 she held the posts of house physician, clinical assistant to out-patients, resident pathologist and A. M. Bird Scholar in pathology at the Royal Free Hospital. In 1958 she went to the Archway Group Laboratory in Highgate and in 1940 became assistant in the Department of Pathology at the Postgraduate Medical School of London. She took the London M.D. in pathology in 1940. In 1947 she was appointed lecturer in bacteriology at the Postgraduate Medical School and in 1948 became reader in bacteriology at St. Thomas's Hospital Medical School. While holding this post she spent a few months at the Institut Pasteur in Paris during 1950-51. She stayed at St. Thomas's until 1957, when she returned to the Postgraduate Medical School, this time as reader in clinical bacteriology. In 1964 the title of Professor of Clinical Bacteriology was conferred on her by the University of London.

Mary Barber will always be remembered for her work on hospital infections, particularly those caused by staphylococci: but it should be emphasized that this work in which she established her unique reputation was broadly based on a sound general knowledge of clinical bacteriology and pathology. In her early work she was interested in listerella and erysipelothrix infections, in puerperal sepsis and in the antibacterial activity of 2-aminophenol and some simple derivatives. Later she became increasingly absorbed in the staphylococci and very soon became an authority on almost every aspect of the challenge they present. A clinical bacteriologist by training and ex-

perience, she had a wide knowledge of the clinical and epidemiological effects of staphylococcal infection; when penicillin and other antibiotics became available she was quick to appreciate the great opportunities and the dangers created by their use. She was able to give sound advice to clinicians on the proper use of antibiotics, but without attempting to usurp the responsibility of the physician for the care of patients. She was one of the first to point out the dangers of the development of drug-resistant strains of staphylococci and other bacteria, and saw very clearly that the only rational way to meet this threat was to have a rational policy for the use and, if necessary, the restriction of antibiotics and for the control of cross-infection.

But Mary Barber was more than a clinical bacteriologist. She was intensely interested in bacteriology or microbiology for its own sake, as a branch of biology. She was always experimenting with different laboratory methods for demonstrating the behaviour of staphylococci in laboratory media, and particularly for detecting the penicillinase-producing strains which have become so prevalent in hospitals in almost all parts of the world—though she had great faith in the well-tried and simple

method of the ditch plate, a fact familiar to all who heard her give papers at meetings or read her published works. Besides her technical skill as a bacteriologist, she had also a wide knowledge of microbiology, of microbial chemistry, microbial genetics and of the relation of structure to function in antibiotics and chemotherapeutic drugs. Although in these fields she never claimed expert and detailed knowledge, her mastery of the principles, her ability to see the wood for the trees, and even at times her command of detail were remarkable. The semi-synthetic penicillins with their new range of antibacterial activity presented an exciting challenge which she was quick to take up, since it brought together so many different facets of microbiology.

As a speaker she was always interesting and stimulating, often humorous and provocative, never dull. As a person she was unique. Essentially friendly, sociable and humane, she had no use for pomp or pretentiousness. But she was forceful and outspoken in attacking attitudes of mind with which she did not agree, and in defending causes in which she believed. The world of bacteriology, and indeed the bacteriology of the world, has lost far too soon one of its most active and stimulating workers. R. KNOX

NEWS and VIEWS

Metallurgy in the University of Cambridge :

Prof. R. W. K. Honeycombe

PROF. R. W. K. HONEYCOMBE, whose election to the Goldsmiths' chair of metallurgy in the University of Cambridge was announced recently, was born and educated in Australia. He studied metallurgy in the University of Melbourne under Prof. J. Neill Greenwood. As a research officer in the lubricants and bearings section of the C.S.I.R.O. from 1942 to 1947, he worked on bearing metals and plastic deformation under Dr. F. P. Bowden. His collaboration with Dr. W. Boas during this period led to an appreciation of the role of the anisotropy in the plastic deformation of non-cubic metals when they are thermally cycled. In the Cavendish Laboratory from 1948 until 1951, first as I.C.I. Fellow, and then as a Royal Society Armourers' and Braziers' Fellow, Honeycombe's principal work was concerned with the deformation of single crystals. On his appointment as senior lecturer in physical metallurgy in the University of Sheffield in 1951, he became deeply involved in teaching as well as research and played a prominent part in developing postgraduate courses. In 1955 he was appointed to the chair of physical metallurgy. At Sheffield he has conducted researches into the deformation of alloys and into tempering, intergranular brittleness and precipitation hardening in alloy steels. He holds a substantial Science Research Council research grant in support of his work on alloy steels. Prof. Honeycombe has received the Rosenhain Medal and the Sir George Beilby Medal and Premium; he was awarded a D.Sc. by the University of Melbourne in 1961 and he has held visiting professorships in that University and in Stanford University. He has taken an active part in the life of the University of Sheffield, has served as Dean of the Faculty of Metallurgy and has been a member of the small Senate Committee charged with planning future academic developments in the University. Prof. Honeycombe succeeds Prof. A. H. Cottrell, who has been appointed deputy chief scientific adviser, Ministry of Defence (*Nature*, 208, 19; 1965).

U.S. National Bureau of Standards : Samuel Wesley Stratton Award

DR. HARRY ALLEN, deputy director of the Institute for Materials Research, and Dr. Deane B. Judd, assistant

chief of the Metrology Division, have received the 1965 Samuel Wesley Stratton Award of the National Bureau of Standards, U.S. Department of Commerce. The Award is given each year to recognize outstanding scientific or engineering achievements by a member of the staff of the Bureau. Dr. Allen was cited for "distinguished research contributions to infrared and quadrupole spectra of molecules and for leadership in advancing high resolution analysis of asymmetrical molecular tops". Dr. Allen was chief of the Analytical and Inorganic Chemistry Divisions and of the Inorganic Materials Division of the Bureau before being appointed to his present position in 1965. Dr. Judd's award was for "major basic contributions to the science of color measurement and color vision and the development of color standard for business, science and industry". Dr. Judd has worked in the National Bureau of Standards for 38 years on problems ranging from standards for colour measurement to camouflage and colour blindness.

U.S. National Bureau of Standards : Dr. R. C. Casella

DR. RUSSELL C. CASELLA has joined the U.S. National Bureau of Standards as a theoretical physicist in the Solid State Physics Group of the Institute for Materials Research. An expert in the theory of solids, he will be investigating the problem of penetration depths in the superconducting, heavily doped semiconductor, SrTiO₃. Dr. Casella has conducted investigations into the symmetry of electronic band structures, optical and superconducting properties of solids, and elementary-particle physics at the Watson Research Center of International Business Machines. From 1952 until 1958 he was a graduate student and research associate at the University of Illinois. He has also worked at the Air Force Research Center at Cambridge, Massachusetts. Dr. Casella was born in Framingham, Massachusetts, and received his B.S. from the Massachusetts Institute of Technology in 1951 and his Ph.D. from the University of Illinois in 1956. He is a member of the American Physical Society.

Sir Arthur Keith (1866-1955)

AMONG this year's centenaries of note is that of the birth, on February 5, of Arthur Keith, of Aberdeen.