firm foundations for his future career. His first paper was an unpublished one on the mother-of-pearl moth (*Sylepta ruralis* Scop.) and its parasites which he read, while still an undergraduate, to the Ashmolean Natural History Society of Oxfordshire, one of the many societies of which he later became president, and which he always regarded with much affection. From Oxford he passed with a University Entrance Scholarship to St. George's Hospital, London, qualifying M.R.C.S., L.R.C.P., taking the degrees of B.M. and B.Ch. in 1908, and eventually holding the appointments of house-surgeon and house-physician.

Hale Carpenter's interest in entomology led him to specialize in insect-borne diseases, and in 1910 he entered the Colonial Medical Service. The following year found him in the Sesse Islands in the north-west part of Victoria Nyanza, where he had been sent to study the bionomics of the tsetse fly, *Glossina palpalis*, which had recently appeared in Uganda and within a few years had caused more than two hundred thousand deaths from sleeping sickness. The results of his researches were published in the Reports of the Sleeping Sickness Commission of the Royal Society (1912, 1913 and 1919) and were presented as a dissertation for his D.M. degree at Oxford.

In the First World War, Hale Carpenter served as a captain in the Uganda Medical Service, his duties taking him into many interesting parts of Africa that he would otherwise never have visited and providing him with rich material for his book "A Naturalist in East Africa" (1925) and for many scientific papers on insect bionomics, polymorphism and mimicry. For his war services he received the M.B.E. On demobilization he resumed his work on tsetse fly, becoming specialist officer for the control of sleeping sickness in Uganda. He retired from the Colonial Medical Service in 1930; but at the request of the Secretary of State for the Colonies undertook a special investigation into tsetse fly in Ngamiland during 1930-31.

While in Africa, Hale Carpenter kept up a voluminous correspondence about his observations on insects with Sir Edward Poulton, Hope professor at Oxford, and on returning to England he built a house on Cumnor Hill, just outside that city. For a year or two he visited the Hope Department of Entomology, Oxford University Museum, daily, studying the vast stores of African insects, many of which he had collected himself, and helping Sir Edward Poulton. When Sir Edward retired in 1933, Hale Carpenter succeeded him, occupying the chair for the next fifteen years, and so qualifying for the title of emeritus professor on his retirement in 1948. During this period he continued his studies on mimicry and geographical distribution, and paid special attention to the vexed question of the attacks of birds on butterflies and its significance for evolutionary theory. At the same time he was deeply concerned about the future of his Department, and not only did all he could to enhance its value, but also appealed to the University for a new building and an increased staff.

During the Second World War, Hale Carpenter lectured on camouflage and tropical medicine to troops in training near Oxford, prepared special booklets for the African campaigns and served as head warden of the air-raid precaution service for Cumnor.

He frequently attended and spoke at scientific meetings in London, was president of the Royal

Entomological Society during 1945-46, vice-president of the Linnean Society during 1935-36 and was an ardent supporter of the British Association.

His writings included "A Naturalist on Lake Victoria" (1920) and "Mimicry" (1933). His study of the genus *Euplaea*, a genus of butterflies found on many Pacific Islands, was completed shortly before his death and is to appear in the *Transactions of the Zoological Society of London*.

Hale Carpenter was a tall, distinguished-looking man with white hair, easy of address and with a keen sense of humour. His chief recreation was gardening, the varied soils at his home at Cumnor Hill enabling him to grow a wide variety of plants. He was an ardent churchman, secretary of the Parochial Church Council, and chairman of the Cumnor branch of the Oxford Preservation Trust. His holidays were often spent in Cornwall, where he would walk, watch birds and collect insects.

He married in 1919 Amy Frances Thomas-Peter, of Treviles, Cornwall, who survives him.

B. M. HOBBS

Prof. N. A. V. Piercy

In the passing of Prof. N. A. V. Piercy, on February 1, the profession of aeronautical engineering has lost one of its ablest teachers and a pioneer in the teaching of aeronautics.

Norman Augustus Victor Piercy was born in London on August 10, 1891, and after being educated at Hampton Grammar School he was apprenticed to Yarrow and Company, Scotstoun (1908-13). He obtained an honours degree (London) in engineering at East London College (now Queen Mary College) in 1913 and immediately became engaged at Shoreham on the Cedric Lee aeroplane, known as the 'Doughnut', which had a circular ring for its wing plan-form. The period until 1919 found him engaged at East London College in researches on this novel wing, as well as special investigations for the Admiralty. During this time he designed his own 4-ft. wind tunnel, which was built of steel plating obtained from a destroyer. This tunnel is still in use.

In 1919 he was appointed head of the Department of Aeronautics at East London College and started the first university course with aeronautics as a recognized subject. In 1920 he obtained his D.Sc., for his work in connexion with the flow behind aerofoils. His subsequent researches in aerodynamics included flow in pipes, heat flow from moving bodies and aerofoil theory from which the 'Piercy aerofoil' was developed.

As a teacher Piercy inspired his students, and in consequence he soon gathered a small team of research workers around him. In 1934 he was appointed reader in aeronautics in the University of London, and in 1949 his work was officially recognized when the title of University professor of aeronautical engineering at Queen Mary College was conferred upon him.

During the Second World War Piercy was in charge of the Aeronautical Department in the University of Cambridge, in addition to his work at Queen Mary College.

Piercy was the author of "Aerodynamics", which was published in 1937 and revised in 1947, "Elementary Aerodynamics", published in 1944, as well as various papers read before learned societies. At the time of his death he was engaged in a third edition of "Aerodynamics", incorporating more recent advances in supersonic flow. He was a man of amazing energy

and served on many committees dealing with the teaching of aeronautics, as well as being a member of the Council of the Royal Aeronautical Society during 1935-39. His other interests included music—he was an able pianist—golf and the collecting of antiques.

H. F. WINNY

Dr. Y. A. Bilibin

YURY ALEXANDROVICH BILIBIN was born on May 19, 1901, in Rostov in Yaroslav province, and he died on May 4, 1952, in Moscow. After active participation in the civil war of 1917-21, he graduated in 1926 at the Leningrad Mining Institute. His scientific work is intimately associated with the geological survey of Eastern Siberia, and he became an authority on the mode of occurrence and mode of origin of ores of gold, tin, copper and other metals. He constructed metallogenetic maps and lectured on metallogenetic provinces, and made considerable progress in the application of geochemistry to the

problem of ore genesis. He also published important papers on the igneous rocks of the Aldan region in Eastern Siberia and was particularly interested in the origin of alkaline rocks. In 1943 he received his doctorate and was later elected a corresponding member of the Academy of Sciences. In 1948 he came to London to take part in the meeting of the International Geological Congress, and those who met him there will remember him as a shy but very friendly person who was an outstanding geochemist and geologist.

S. I. TOMKEIEFF

WE regret to announce the following deaths:

Mr. Andrew Gray, technical general manager during 1928-32 of Marconi's Wireless Telegraph Co., Ltd., and an early assistant of Marconi, aged eighty.

Prof. J. W. McBain, F.R.S., emeritus professor of chemistry in Stanford University, California, and lately director of the National Chemical Laboratory, India, on March 12, aged seventy.

NEWS and VIEWS

Agriculture in the University of Sydney:

Prof. W. L. Waterhouse

PROF. W. L. WATERHOUSE, research professor in the Faculty of Agriculture, University of Sydney, retired at the end of 1952. During his thirty-two years of service, he had occupied the positions of lecturer, reader and professor. Prof. Waterhouse lectured on plant pathology, genetics and plant breeding, and agricultural botany. The scientific discipline derived from these courses was ideal, and has stood many graduates in good stead no matter in what field of scientific endeavour they work; his teaching was inspired. His main researches were in the field of cereal diseases, in which he accepted the challenge of solving the wheat rust problem of Australia. He had many successes, the culmination of his work from a practical point of view resulting in the production of an outstanding variety known as Gabo, which was resistant to all the forms of stem rust existent in Australia up to 1948. But perhaps his greatest contribution was to give a complete understanding of the problem, a thorough knowledge of the rusts, techniques for breeding resistant varieties, and above all hope for the future. Prof. Waterhouse has been a good colleague and has played a considerable part in developing the Faculty of Agriculture in the University of Sydney. Although handicapped by wounds sustained in the First World War when he was awarded the Military Cross, he never spared himself in his teaching and research. Prof. Waterhouse's work has been recognized by many awards: he was given the Farrer Memorial Medal in 1937 and again in 1950; in 1943 he received the Clarke Memorial Medal of the Royal Society of New South Wales, and in 1948 the Australian Medal of Agricultural Science. Now his University has conferred on him the title of emeritus professor. Truly can it be said that here is a man who has devoted himself to science and to agriculture, so that the lot of the farmer and the community might be improved and the world made a better place in which to live.

Geophysics at the Carnegie Institution of Washington:

Dr. P. H. Abelson

DR. PHILIP H. ABELSON, chairman of the Biophysics Section of the Department of Terrestrial Magnetism in the Carnegie Institution of Washington, has been appointed director of the Geophysical Laboratory of the Institution with effect from September 1 next. Dr. Abelson's research career began under Prof. Ernest O. Lawrence at the University of California, Berkeley, where he made the initial identification of radioactive antimony, tellurium and iodine as products of uranium fission, gaining his Ph.D. in 1939. He then joined the Carnegie Institution as a staff member and took a prominent part in the design and construction of the cyclotron at its Department of Terrestrial Magnetism at Washington, D.C. During the Second World War he was a physicist at the Naval Research Laboratory, where he developed the liquid thermal diffusion method for enrichment of uranium-235, and under his general supervision a plant employing the method was designed and constructed at Oak Ridge for work in connexion with the atomic bomb. Dr. Abelson returned in 1946 to his old Department in the Carnegie Institution and organized a programme of biophysical work for using isotopes and radioactive nuclei in the study of the processes by which living cells select chemicals from their environment and organize them into new cells; as a result, a number of processes in the chemistry of amino-acids have been elucidated. At the same time he has continued his interest in geophysics and geochemistry, and in his new post he is going to a laboratory where during recent years much of the work has been focused on novel experimental techniques for studying the physics and chemistry of the solid state, such as the melting and solubility relations of silicates, especially in the presence of water, and the transport of minerals by solution in a gas phase.

Dannie Heineman Prize of the Heineman Foundation

THE first award of the Dannie Heineman Prize of the Heineman Foundation for Research, Educational,