

in 1898. He was also an honorary member of the National Geographic Society

In November 1898 he married Jean T. Botterell of Montreal. His wife predeceased him by three years. He is survived by a son, Richard, on active service in Africa, and a daughter, Winifred.

He did not seek reward or high position; his ambition was to do the appointed task as well as possible and to further the science of geology. In order to be prepared for any work that he might be called upon to do, he kept himself in excellent physical condition by taking long walks. He took hardships as a matter of course, but nevertheless he could tell interesting stories about them afterwards when surrounded by personal friends, though he invariably declined to tell of his work or experiences on a public platform. After his return from an expedition he would immediately write his account of it in excellent English, and for the rest of the winter or spring would study reports of other geologists to keep up to date in his chosen field. He was fond of the outdoor life, and his keen powers of observation made him an outstanding field geologist. He loved the hills and was reluctant to give up his summer explorations to take on office duties as Deputy Minister. His body was cremated in Montreal and the ashes were scattered over the country he loved so much.

GEORGE HANSON.

Major G. W. Dunkin

MAJOR G. W. DUNKIN, lately director of the Agricultural Research Council Field Station, Compton, Berks, died on March 21 of this year. After post-graduate study, taking the diploma of veterinary hygiene of the University of Liverpool, he settled in general veterinary practice in Kent. Three or four years later, on the outbreak of war in 1914, he joined the Royal Army Veterinary Corps and spent most of his war service in Egypt, latterly commanding the 20th Veterinary Hospital in that country. He returned to practice after the War, but in 1923 was

appointed superintendent of the Farm Laboratories' Medical Research Council, Mill Hill.

From then on he carried out much important research on animal disease problems, and in this sphere his keen and inquiring mind and his early training and experience enabled him to plan and execute intricate large-scale experiments with domesticated animals and bring these to successful conclusions, avoiding much of the incidental, often unforeseen, complication that can delay and spoil such work on occasion.

Undoubtedly Dunkin's name will be remembered in future more particularly in connexion with the successful investigation into the causation of distemper in dogs carried out in collaboration with the late Sir Patrick Laidlaw. This is a classic in epidemic disease research. Among diseases to which Dunkin devoted much time are John's disease of cattle and bovine contagious abortion. He spent years on the study of John's disease, particularly with a view to the elaboration of a reliable diagnostic agent and to the production of a vaccine. He obtained important results, and though the problems have not been solved his contributions will be remembered.

In 1937 Dunkin was appointed to the Compton post and the intervening years were devoted to the organization of the estate to suit the requirements of the Agricultural Research Council, and to the inauguration of a large-scale research scheme on bovine contagious abortion.

Major Dunkin was a very active man in many spheres. He had held high office in the National Veterinary Medical Association of Great Britain and Ireland and on the Council of the Royal College of Veterinary Surgeons. He was chairman of the examination committee of that body. He was chairman for some years of the editorial committee of the National Veterinary Medical Association and chairman of a special committee of the Association to investigate small animal euthanasia, an important report being published under his guidance. He held the office of president, Section of Comparative Medicine, Royal Society of Medicine.

NEWS and VIEWS

Sir Henry Tizard, K.C.B., F.R.S.

By electing Sir Henry Tizard as their president, the Fellows of Magdalen College, Oxford, have made a timely and important break with Oxford tradition, for he is the first man of science to become a head of a college there. When the country can spare him from his present extremely important duties as a member of the Air Council and of the Advisory Council of the Ministry of Aircraft Production, he will return to his old college with a mind enriched by an exceptionally wide and varied experience in the arts of war and peace. He won his spurs in scientific research under the guidance of Prof. Townsend, and his valuable work with Dr. Pye on adiabatic compression of gases made a link with internal combustion engineering which he has maintained ever since. The War of 1914-18 turned his thoughts and efforts to aeronautical research, and he has long exerted a highly important directing influence on British aircraft development, and on the solution of the problems of air warfare, offensive and defensive; these services have stood the nation in good stead during the present great struggle for a

free world. The guidance of State assistance to research in pure science and in industry occupied him for eight years between the two Wars, and from that he turned to the administration of scientific and technical education, as rector of the Imperial College of Science and Technology, which has greatly prospered under his leadership. At Oxford, as in London, it is certain that he will not only be successful as head of his College, but also take a prominent part in science, education and national affairs.

Dr. W. S. Gordon

IN the obituary notices in this issue reference is made to the work of the late Major G. W. Dunkin, who was director for the past five years of the Compton Field Station of the Agricultural Research Council. Dr. W. S. Gordon, senior bacteriologist, Animal Diseases Research Association, Moredun Institute, Gilmerton, Edinburgh, has been appointed to succeed Major Dunkin. A graduate of the Glasgow Veterinary College in 1923, Dr. Gordon was on the staff of the Wellcome Physiological Research Laboratories, Beckenham, for some years

and took up the Scottish appointment in 1930. At Beckenham he was associated with Prof. Dalling, and other workers in those laboratories, in the production of biological products, and particularly in investigations of anaerobic infections in sheep. In Scotland he has led a team of workers in investigating and dealing with certain sheep diseases, notably louping-ill, tick-borne fever, braxy and lamb dysentery.

At the time of Gordon's appointment, the causal agent of louping-ill had just been discovered at the Edinburgh institute. Dr. Gordon followed up this work, making a close study of the disease and of the filtrable virus responsible for it, and developed methods for the immunization of sheep against the infection. An early discovery in this later work was that two entirely different virus infections were associated with louping-ill, that due to the true louping-ill virus and another, hitherto not recognized, that was named the virus of tick-borne fever, the latter infection being in itself a less severe disease. Among other disease problems on which he has worked in Scotland is grass sickness in horses, and although the cause of the disease is still unknown he has made notable contributions to the literature on the subject. Dr. Gordon has been active in a wide range of veterinary activities in Scotland and has a close personal interest in, and a practical experience of, general farming.

Dr. W. E. Gaunt

DR. W. E. GAUNT has been appointed research director of the Ashe group of associated companies. Dr. Gaunt graduated from the Colour Chemistry Department at the University of Leeds and obtained his Ph.D. for work on biochemistry and physiology undertaken at the Leeds School of Medicine. Afterwards Dr. Gaunt joined Sir John Orr's staff at the Rowett Research Institute to work on nutrition problems, and just before the War went to Guy's Hospital Medical School as dental research fellow to do work of a similar nature. Since the War started Dr. Gaunt has gained further experience in organic chemistry at Guy's, working with Prof. C. S. Gibson, and has also increased his all-round knowledge of nutrition during a short spell with Imperial Chemical Industries Ltd. Dr. Gaunt's experience in several research fields will enable him to serve Messrs. Ashe Laboratories Ltd. in maintaining and extending on sound nutrition lines their numerous food products. We understand that Dr. Gaunt will be encouraged to continue work on fundamental problems, particularly on human protein requirements.

Newton as an Astrophysicist

A PAPER by Elizabeth Connor entitled "Sir Isaac Newton, the Pioneer of Astrophysics" appears as Leaflet No. 158 of the Astronomical Society of the Pacific (April 1942), which supplies a brief outline of the life and work of Newton. Up to the time of entering the University of Cambridge, Newton had not exhibited any extraordinary talent, and though his undergraduate days were profitable, those which followed immediately after he graduated were the most productive which any scientific worker ever experienced. The outbreak of the plague forced him to leave Cambridge, and practically all his time between August 1665 and March 1667 was spent at Woolsthorpe, where his exile allowed him to concentrate on some of his greatest achievements. Among

these may be noticed his method of fluxions, the law of the composition of light, and the law of universal gravitation. During this period he gave attention to experiments with the refracting telescope, but because he believed that chromatic and spherical aberration could not be overcome, he turned his attention to the reflecting type.

Towards the end of 1668 Newton completed his first telescope with an aperture of a little more than an inch and a tube 6 in. long. His second telescope was exhibited at the Royal Society in 1672 and is still in the possession of the Society. Its principle was used as the model and forerunner of a succession of giant telescopes which have been constructed since the days of Newton and are still the astrophysicist's best tool. His "Principia" did not appear until 1687 and his real scientific career ended with its completion. Most of his later years were spent in London as Master of the Mint, and he had many honours bestowed on him, but there was no return of the originality of his earlier days. Nevertheless, he gave a considerable amount of time to working over the material in hand. In 1704 his "Optics" appeared and in 1713 and 1726 the second and third editions of the "Principia". Specialists in various branches of science still voice the debt of their sciences to Newton.

Benedict Dybowski

AMONG the Poles whose scientific work was conducted in and for Russia was Benedict Dybowski, a sketch of whose life is given by Dr. J. Borucki in the first issue of *Polish Science and Learning* (June, 1942: Oxford University Press. 2s. 6d.). Dybowski was born at Minsk in 1833. As a schoolboy he kept various animals and was apparently the first to observe the metamorphosis of *Petromyzon*. He studied medicine and biology at Dorpat (1856), Breslau (1857) and Berlin (1860), where he published minor researches, for example, on artificial insemination of bees. At Dorpat again, in 1861, he worked on a monograph of the fishes of the Baltic lands. However, he was arrested for his political beliefs, and though the sentence of deportation was at first revoked, he was sent to Siberia after the 1863 insurrection. Here he began by exploring the forest and steppe around Czuya. Later, at Kultuk, he made long journeys to the Saja Mountains and to Chamar, developing a vast philanthropic medical service among the native population, so that the governor, J. G. Skolkow, invited him to join an expedition to the tributaries of the Amur and Ussuri Rivers, penetrating as far as the Pacific. They had scanty means, having to make their own boats. Nevertheless, Dybowski sent extensive collections to European museums and developed a view that each region showed a special structure of animal life in close correspondence with the environment. He discovered a number of hitherto unrecorded species, including a deer on the Ussuri, and noted the differences between Siberian and Bengal tigers. The birds he collected provided the basis for Taczanowski's critical "Review of Siberian Ornithological Fauna".

With Godlewski, Dybowski spent several years studying the fauna of Lake Baikal, and his researches included biological, chemical, bathymetric and temperature observations. The molluscs and sponges collected at this time were later described in a classical monograph by Benedict's brother, Wladislaw. Dybowski's extensive researches had enabled his