During this period, Wilson collaborated with Sir Charles Martin and, more particularly, with Prof. J. P. Hill in research work, as a result of which many papers of fundamental importance were published on the structure and development of monotremes and marsupials. The late Sir Grafton Elliot Smith was one of his earliest pupils, and there is no doubt that Wilson's guidance and stimulating influence must have counted for much in laying the foundations for his later brilliant work.

In 1920, Wilson accepted the chair of anatomy at Cambridge. Although a comparative stranger, his outstanding abilities were quickly recognized, and he gained the respect and affection of all who worked with him in the University, and of the society of St. John's College, where he was elected to a fellowship in the same year. His work for the Cambridge Anatomy School is well known. During his fourteen years tenure of office, he enlarged and reorganized the course in anatomy for Part I of the Natural Sciences Tripos, created an excellent departmental library to which he gave a great part of his private collection of books and papers, and attracted each year a small number of students to take anatomy in Part II of the Tripos.

Wilson's scientific work was always characterized by meticulous care and thoroughness, and his papers were models in their exactness of expression and lucidity. The value of his contributions to natural science was recognized by his election into the fellowship of the Royal Society in 1909. In his later years, while at Cambridge, he spent a considerable part of his time in perfecting a technique by means of which a series of sections of large embryos could be exploited to the greatest advantage; the enthusiasm which he showed in the development of the method, and in the demonstration of his specimens to those immediately around him, was wholly characteristic; it is a great loss to embryology that but few of the many critical and original observations which he made as a result were published.

After his resignation from the chair at Cambridge in 1934, he continued to lead a full and active life; that his judgment was held in the highest esteem to the end is evidenced by the fact that this year, at the age of eighty-four, he was asked to continue his Carnegie Reports for a further year. He was the first overseas member of the Anatomical Society of Great Britain and Ireland, and he acted as its president during the years 1922-24.

This record of scientific and administrative achievement alone would place Wilson high in the ranks of great medical teachers, but his greatness and influence were more profound and far-reaching than can be indicated by a mere statement of facts. His personal example and his friendship had a marked and lasting effect on generations of students; medical men who were trained at Sydney during Wilson's time still say, when his name is mentioned, "Oh, you mean Jummy", and go on to speak of him with a spontaneous fervour delightful to hear. He had great charm of manner and a natural power of inspiring those around him; he was actuated by the highest ideals, the sincerity of which was recognized and appreciated by the members of his staff and by his students. As with his scientific work, thoroughness and enthusiasm permeated every aspect of his teaching; he gave without stint of his time, knowledge and experience, and no one could fail to be the better man for having met and worked with him.

H. L. H. GREEN.

Prof. W. H. Fraenkel

THE death occurred on July 14, 1945, of Prof. Walter Fraenkel, who was living at Perth Amboy in the United States. He had been expelled from Germany early in 1939 by the Hitler Government and, after spending nearly a year at the University of Cambridge, as guest of the Metallurgical Laboratories, emigrated with his family to the United States.

Fraenkel's work covered problems of the age hardening of aluminium alloys, diffusion, segregation and crystallization and chemical reaction between metal and slag; the latter in close co-operation with R. Lorentz. Fraenkel held a professorship in Frankfurt-am-Main and there most of his research work was done, with the help of a small band of enthusiastic and devoted pupils.

Two short periods in industrial research during the First World War and in the thirties gave him an opportunity of learning about industrial problems and the industrial way of technical development.

Prof. Fraenkel was a physical chemist (trained under Bredig and Lorentz) and his approach to problems of metallurgy was always from this angle, as was the method of his teacher in this field, Tammann. He even introduced the kinetics of reaction into metallurgy in his work on the age hardening of duralumin, a problem which fascinated him during almost the whole of his research work. His studies on this subject were among the earliest scientific work done on this important theme.

It happened to be the first student who chose a subject in Prof. Fraenkel's own line of research for a thesis. The work was carried on in closest collaboration with him. He knew and watched every step and, in long and almost daily discussions, an intimate view of the man and his work was obtained, and also no small inspiration from his general attitude towards science and scientific work. His rigorous criticism of any results, be it his own or other workers, without regard to name and reputation, his modesty and his complete devotion to the cause of truth and science, were among his outstanding characteristics.

In spite of the almost pessimistic severity of his general outlook and many personal disappointments, Prof. Fraenkel possessed a keen sense of humour and a caustic wit that spared nobody, least of all himself. All his pupils and his colleagues will honour his memory as that of a man of high principles, a most capable and careful man of science and teacher and a kind and reliable friend.

E. SCHEUER.

Dr. William Cramer

WILLIAM CRAMER was born in the Rhineland on June 2, 1878. After taking his Ph.D. at the University of Berlin in 1901, he worked in its department of pharmacology. There he met E. F. Bashford, and their friendship resulted in his joining the staff of the Imperial Cancer Research Fund in 1903. Thus he came to collaborate with Bashford and Murray in that pioneer work which contributed so much to our knowledge of the growth of cancer under experimental conditions.

In 1905, Cramer went to Edinburgh as lecturer in chemical physiology in Sharpey-Schafer's Department, and took the degree of D.Sc. three years later. He published "Directions for a Practical Course in Chemical Physiology" in 1912, which ran to four editions. His position as a university teacher became somewhat difficult on the outbreak of the First

World War, and through the good offices of Dr. J. A. Murray, then director of the Imperial Cancer Research Fund, he rejoined its staff. Back in London, he completed his medical studies at University College Hospital and took the diplomas of M.R.C.S., L.R.C.P. in 1917. His intellectual versatility and wide scientific interests found expression in the numerous papers he published between 1915 and 1939, which embraced almost every aspect of the cancer problem. Never slow himself to enter the realm of scientific speculation, he protested only last year against a tendency in cancer research "to exalt theories over facts, to make facts fit into the Procrustean bed of a theory". He was specially interested in the hormonal factor in cancer, and a by-product of his investigations in this field was the book he published in 1928, entitled "Fever, Heat Regulation, Climate and the Thyroid-Adrenal Apparatus". He retired from the Imperial Cancer Research Fund at midsummer 1939.

After taking part in the Seventh International Genetical Congress in Edinburgh in August 1939, Cramer journeyed to America for the Third Inter-

national Cancer Congress. Afterwards he joined the research group which Prof. E. V. Cowdry of St. Louis University organized at the Barnard Skin and Cancer Hospital for a special investigation into epidermal carcinogenesis. He became chief pathologist to the Hospital, and in 1941 delivered the Middleton Goldsmith Lecture to the New York Pathological Society.

Cramer died in Denver, Colorado, in August last, a victim of the disease to the study of which he had so assiduously devoted the greater part of his life.

R. J. LUDFORD.

WE regret to announce the following deaths:

Sir Edward Farquhar Buzzard, K.C.V.O., emeritus regius professor of medicine, University of Oxford, on December 17, aged seventy-three.

Dr. E. W. Kemmerer, the well-known international economist, formerly professor of economics and finance in Princeton University, on December 16, aged seventy.

NEWS and VIEWS

Royal Institution: Appointment of Prof. E. K. Rideal, F.R.S.

As recently announced, Prof. E. K. Rideal relinquishes his post as professor of colloid science in the University of Cambridge to succeed Sir Henry Dale as Fullerian professor of chemistry in the Royal Institution and director of the Davy Faraday Research Laboratory. Prof. Rideal's great breadth of scientific interests and achievements, so befitting his new position, must have received considerable stimulus from an unusually varied career. A scholar of Trinity Hall, Cambridge, he graduated there in 1911. Upon the outbreak of the First World War he joined the Royal Engineers and was later invalided from France to the Munitions Inventions Department. During 1919-20 he was visiting professor of physical chemistry at the University of Illinois, and afterwards returned to Cambridge as Humphrey Owen Jones lecturer in the Department of Physical Chemistry.

In 1930 Rideal was elected a fellow of the Royal Society; and the University of Cambridge, assisted by a grant from the International Education Board, set up a Department of Colloidal Physics with Rideal as its first professor. Shortly after, the Plummer bequest enabled the original temporary professorship to be consolidated, and the Department became the Department of Colloid Science, its objects being the study of the physics and chemistry of colloids and their application to biology. Under his guidance a small but enthusiastic nucleus concerned themselves chiefly with the study of insoluble monolayers and catalysis by solid surfaces, laying the basis for a reputation which was soon to become international. The Department grew steadily in numbers; by 1939 it housed some twenty-five research workers, the variety of nationalities represented being paralleled by the diversity of activities, which had by now spread quite naturally into the field of high polymers. To all, however complex the problem, Prof. Rideal's stimulating discussions and detailed personal interest were a never-failing source of inspiration.

War brought inevitable changes in its train. Langmuir troughs were set aside and more urgent problems taken up at the request of Government

and Service Departments. This entailed innumerable committees and considerable travelling; but despite enforced absences, Prof. Rideal still gave his usual courses of lectures and showed an almost uncanny acquaintance with the details of the by now incredible mixture of activities housed in his Department. His inspiration and optimism, which never visibly failed, are familiar to all who met him in those days. The return of peace saw the Department's numbers standing at thirty-five, an acute problem of accommodation but a testimony to his war-time leadership. His many friends in Cambridge and elsewhere, and that widely spread body of his past pupils, will join in expressing their great pleasure at his appointment, and will wish him every success in his new field of activity.

Chemical Engineering at the Imperial College: Prof. D. M. Newitt, F.R.S.

PROF. D. M. NEWITT has been appointed to the Courtauld's chair of chemical engineering in the Department of Chemical Engineering and Applied Chemistry, Imperial College of Science and Technology, London. The recent munificent gift to the Imperial College by Courtauld's, Ltd., has made possible the establishment of this chair; a trust has been set up to administer the funds, which amount to about £118,000.

Prof. Newitt has been associated with the Department of Chemical Technology at the College since 1920, where he studied under Prof. Bone and Dr. Hinchley, who was then in charge of the chemical engineering section of the Department. For many years Prof. Newitt acted as one of Prof. Bone's chief assistants in researches on combustion, being particularly associated with the work on explosions at high pressures. This led him to his well-known studies of the behaviour of materials at extreme pressures up to 20,000 atmospheres, for which skill and originality in engineering design and special knowledge of the properties of highly stressed materials were required. In the development of industrial processes operating at high pressures he has been able to give most valuable advice, and he has