units, of rationalized spelling of English, and of universally available cheap electric supply.

Walker married in 1903 Miss Eveline Sargent, and they later adopted two boys in whose education and up-bringing they jointly found much pleasure. The boys are now serving in the fighting forces. Walker married in 1935 Miss Valeria D. Ellis, who survives him.

Walker was an untiring author, having served a notable apprenticeship during his association with Sylvanus Thompson. His best-known books are: "The Specification and Design of Dynamo-electric Machinery", "The Diagnosis of Troubles in Dynamo-electric Machinery", "The Control of Speed and Power Factor of Induction Motors", "Conjugate Functions for Engineers". He served as special lecturer at the Imperial College of Science and Technology in 1911, and at the Massachusetts Institute of Technology in 1921. A. B. FIELD.

Sir John McFadyean

WE record with regret the death of Sir John McFadyean, formerly principal of the Royal Veterinary College, who died on February 1 at the age of eighty-seven.

John McFadyean was born on June 17, 1853, the second son of Andrew McFadyean of Barrachan, Wigtownshire. He received his early education at the Ewart Institute and later proceeded to the Royal (Dick) Veterinary College, Edinburgh, from which he was admitted to membership of the Royal College of Veterinary Surgeons in 1876. On obtaining his diploma he was appointed lecturer in anatomy at the College and while so engaged attended classes at the University of Edinburgh as a medical student, graduated bachelor of medicine and master of surgery in 1882 and bachelor of science in the following year. In addition to his teaching in anatomy, McFadyean turned his mind to pathology and bacteriology, subjects then in their infancy. In 1892 the curriculum of veterinary education was extended from three to four years, and far-reaching changes were made in the general standard of education. McFadyean, who had already made a name for himself by his work on tuberculosis, was appointed professor of pathology at the Royal Veterinary College, London, and two years later became principal, which office he held until 1927.

There are few diseases of the domesticated animals to which he has not contributed valuable information, and numerous select committees and Royal Commissions have been largely guided and assisted by his knowledge and experience. He was a tireless worker, and for many years his private researches were carried out during the night hours. In 1888 he founded the *Journal of Comparative Pathology and Therapeutics*, in which much of his work is recorded.

McFadyean was a great principal and a great man of science; but he will be best remembered by a grateful profession as an equally great teacher, for he possessed the rare gift of imparting his knowledge to his

students in a manner which was readily understandable. By his work he showed nearly half a century ago that there were new and wider fields of veterinary science to be explored. His researches into diseases affecting animals in tropical and sub-tropical countries as well as in Great Britain and in Europe, created what has now come to be known as preventive veterinary medicine and by his teaching he provided the pioneer workers in this new field. We owe it to his sound knowledge and foresight that the veterinary profession was prepared to move in this direction far in advance of official demands.

In 1893 McFadyean was elected a member of Council of the Royal College of Veterinary Surgeons, and was president of that body from 1906 until 1909 and again during 1930-31 on the occasion of the meeting of the International Veterinary Congress in London, "McFadyean's Congress" as it was called by the eminent foreign delegates who attended from all parts of the world. During the forty-seven years that he served on the Council, McFadyean's personality dominated its deliberations, as it did the field of veterinary science, and the profession owes much of its solid progress through that difficult period to his wide knowledge of men and matters. On his retirement from the principalship of the Royal Veterinary College in 1927 he was elected an honorary associate of the Royal College of Veterinary Surgeons, the highest honour that that body could bestow, and in 1933 he received the first award of the diploma of fellowship *honoris causa*. After his retirement Sir John pursued his studies with unabated enthusiasm, absorbed almost until the end in his great life-work for veterinary science.

In 1883 he married Mara Eleanor, eldest daughter of Thomas Walley, principal of the Royal (Dick) Veterinary College, Edinburgh. She died in 1929. He leaves three sons and two daughters, to whom we offer our sympathy in their bereavement.

J. B. BUXTON.

Mr. C. Thurstan Holland

ON November 5, 1897, less than a year after the discovery of X-rays, a paper on the subject was read by Sylvanus Thompson at a meeting which was held to inaugurate the formation of the Roentgen Society. Among those present at this meeting were a few medical men who decided to devote themselves to the application of the new discovery to the needs of medicine. Of this very small band Thurstan Holland was one, and within a few years he had become the most eminent exponent of this new branch of medicine in Great Britain. He was elected president of the Roentgen Society in 1904 and again in 1916. In his address on the latter occasion he wrote: "It is twenty years since I took my first radiograph, twenty years brimful of interest, and of advances which in those days none of us could have even dreamed about, advances which may perhaps be illustrated by the fact that the first successful radiograph I saw taken [by Oliver Lodge in January 1896] was that of a hand, and the exposure was

1½ hours". He lived to see such exposures made as a routine in 1/10 second, even with apparatus that was mobile and could be readily taken round the wards to the patients.

In the rapid evolution of medical radiology and its applications to almost every branch of medicine and surgery, particularly in urinary radiology, Thurstan Holland took a leading part. He was one of the first to demonstrate the presence of a stone in the kidney and to obtain the shadow of the kidney outline as a *sine qua non* of a satisfactory radiograph of the kidney region. His meticulously careful technique and expert knowledge of photography resulted in the production of radiographs that were far in advance of standard practice for many years. Moreover, he brought to the task of the interpretation of his results exceptional clinical experience that was coupled with logical and rapid judgment. Little wonder, therefore, that he made his mark not only as a pioneer but also as a leader.

Although he practised in Liverpool, he nevertheless found time to keep in close touch with his colleagues in London, where he served on almost every radiological committee of importance. His commanding presence and outstanding personality were associated with an exceptional rapidity of judgment and a knack of getting down to essentials. His influence on committees was profound.

Thurstan Holland's contributions to the literature of medical radiology were numerous and covered a wide field. So early as 1898-99 he wrote on the successful treatment of lupus and eczema by means of X-rays. Later he turned his attention to the diagnosis of chest conditions and those of the urinary tract. Working with his friend the late Sir Robert Jones, he made many valuable contributions to the study of diseases and abnormalities of bones. The Royal College of Surgeons acknowledged the value of this work by electing him as a fellow of the College. A list of about a hundred of his papers up to 1922 lies before me, covering practically every field of medical radiology that had been explored up to that time.

During the War of 1914-18 Holland served as a Major in the First Western General Hospital. His common-sense methods in the localization of foreign bodies were adopted by many radiologists.

He attained to all the honours that were possible in his branch of medicine and was president of the Electro-therapeutic Section of the Royal Society of Medicine, of the Roentgen Society (twice), of the British Institute of Radiology, and, highest honour of all, was elected president of the First International Congress of Radiology in 1925.

Outside his profession his hobbies were alpine photography and mountaineering. During the last fifteen years of his life he lived in retirement; but he still took an active interest in radiology and, as *doyen* of the radiologists, he attended many of the public functions until ill-health supervened. With his passing on January 16 at the age of seventy-seven, radiology has lost a leader, the last of the pioneers, who did much to establish this branch of medicine on a sound basis. A. E. BARCLAY.

Prof. T. R. Wilkins

NEWS has been received of the sudden death on December 10 of Prof. Thomas Russell Wilkins, professor of physics in the University of Rochester, New York. He was in his forty-ninth year.

Born in Toronto, Canada, he graduated at MacMaster University and came to Great Britain for post-graduate work at Cambridge. Before going to Rochester he held teaching posts at the University of Chicago, and at Brandon, Canada.

When the Institute of Applied Optics was founded at Rochester in 1928, Wilkins was placed in charge, and the success of the Institute owed a great deal to his interest and enthusiasm. His main scientific interests were always, however, in the realm of atomic physics, and he recently relinquished the optics post in favour of Prof. Brian O'Brien.

Wilkins was an enthusiastic research worker and his main line consisted in the study of cosmic ray and radioactive processes with the aid of photographic emulsions, a technique to which he made notable contributions, but not without long and laborious hours at the microscope.

Prof. K. F. Wenckebach

PROF. K. F. WENCKEBACH, an eminent Viennese physician and a founder of modern cardiology, whose death has recently been announced, was born at The Hague on March 24, 1864. After serving as an assistant at the Institute of Zoology and Pathology of Utrecht, he was appointed professor of internal medicine at Groningen in 1901, where he remained until 1911, when he was transferred to the corresponding chair at Strassburg. He held this post until 1914, when he was appointed professor of medicine at Vienna, retiring in 1929. He at first devoted his attention to embryology, but his subsequent work, for which he is best known, was concerned with the pathology and clinical aspects of cardiovascular disease and particularly cardiac arrhythmia. In 1920, in association with Prof. Jagic, he founded the *Wiener Archiv für innere Medizin*, of which his students offered him a *Festschrift* on the occasion of his retirement in 1929. During the occupation of his chair at Vienna he attracted a large number of practitioners and students interested in cardiology. He had many friends in Great Britain, where he was elected an honorary fellow of the Royal College of Physicians in 1928 and of the Royal Society of Medicine in 1930. J. D. ROLLESTON.

WE regret to announce the following deaths:

Sir Frederick Banting, K.B.E., F.R.S., professor of medical research in the University of Toronto, on February 21, aged forty-nine.

Prof. William J. A. Bliss, emeritus professor of physics in the Johns Hopkins University, on December 27, aged seventy-three.

Dr. J. G. Priestley, reader and demonstrator in clinical physiology in the University of Oxford, on February 9.