

graduated in medicine in Edinburgh in 1888, at twenty-four years of age, there can have been few unoccupied hours. In 1889 a happy chance took him to Oxford to be assistant in general practice to Mr. Horatio Symonds. This post gave him a wide clinical experience, and at the same time he was able to develop his scientific bent in the laboratories of the Oxford Medical School. His mental and physical energy seemed inexhaustible. At first his available time was spent in original research in bacteriology: on the nature of bacterial toxins; the theory of germicidal action; the relation of toxic action to chemical constitution of the toxins; the reaction of immunity, etc. Following this, he undertook to teach the subject in the Medical School at the request of Sir Henry Acland, and while preparing for this he wrote, with Prof. Muir, the "Manual of Bacteriology," which was at once accepted as the standard English text-book in this subject.

After Sir John Burdon Sanderson was appointed to the Regius chair of medicine the teaching expanded into a full three terms course in pathology and bacteriology, and in 1902 Ritchie was appointed professor of pathology. In 1907 he returned to Edinburgh. As a result of his work in Oxford he had risen to the front rank in his subject. In Edinburgh he first carried on with great success the work of Superintendent of the Laboratory of the Royal College of Physicians, and in 1913 he was appointed to the newly established chair of bacteriology in the University. The Royal College, the Infirmary, and the University had endless profit from his labour.

For the interests of his subject in the medical schools of the country generally he did exceptional service as secretary of the Pathological Society, and as one of the editors of the *Journal of Pathology*. He held many offices, and his influence on the progress of medicine extended far, and in all his relations with his fellow-men his idealism and faithfulness called forth deep trust and affection.

J. L. S.

MR. W. W. BRYANT.

WALTER WILLIAM BRYANT, whose death on January 31 we much regret to record, was born on January 9, 1865, at Forthampton, near Tewkesbury, where his father was a schoolmaster. He obtained a scholarship to Pembroke College, Cambridge, and secured a first-class in the Mathematical Tripos in 1887, and a second-class in the Natural Science Tripos of 1888. He was for a short time a master at Dulwich College, and in February 1892 obtained a post as assistant at the Royal Observatory, Greenwich. His work was mainly connected with meridian astronomy. He was a most expert observer with the transit circle and was largely responsible for raising the output from 5000 to 10,000 observations. This increase in the annual number of observations remains as a permanent result of Bryant's enthusiasm. His skill and enthusiasm was also shown in observations of double stars made with the 28-inch refractor. He continued to observe regularly with this instrument till the present time.

In the year 1904 Bryant was appointed senior assistant and given the superintendence of the magnetic and meteorological department. He took up magnetic

work about the time when the instruments were being set up on a new site in an enclosure in Greenwich Park. He made a large number of absolute observations, and during the war had little, if any, assistance. He took a great interest in meteorology and was for many years on the council of the Royal Meteorological Society, being secretary from 1916 to 1920, and vice-president 1920-1922. His interest in astronomy did not cease when he took up meteorology. He was a regular attendant at the meetings of the Royal Astronomical Society and the British Astronomical Association, and was the author of a "History of Astronomy," published in 1907, and of biographies of Galileo and Kepler in the "Pioneers of Science" series.

Bryant's recreations were music and hockey. He was one of the founders of the hockey club associated with the Observatory and played regularly up to 1914, and from 1919 onwards he acted frequently as referee.

Bryant married in 1894 and had ten children, of whom one died in infancy, and one was killed in Gallipoli. He was at the Observatory until within a few days of his death. His colleagues were greatly shocked by the announcement of his death following an operation. He was conscientious and industrious and a very pleasant man to work with, who will be greatly missed by his astronomical and meteorological colleagues.

MR. T. V. HOLMES.

MR. THOMAS VINCENT HOLMES, whose death at the age of eighty-two occurred on January 24, was for long a familiar figure in the ranks of English amateur geologists. From 1868 to 1879 he held a temporary post on the Geological Survey, when he was occupied about Carlisle and was the author of the Survey's memoir on that district; he also took part in the mapping of the Yorkshire coalfield in collaboration with the late Prof. A. H. Green, and later had similar experience in the south-eastern counties. Though Mr. Holmes so soon relinquished his official duties for a more leisured life, he maintained to the end his keen interest in local geological problems. An acute observer, he did much useful work in recording new exposures in the south-east of England, and was one of the active members of the Geologists' Association and Essex Field Club, being president of the latter in 1886-1888. He was a fellow of the Geological Society and of the Royal Anthropological Institute.

Mr. Holmes contributed a considerable number of short papers to the Association and Essex Field Club; others appear in the Transactions of the Cumberland Association and the *Essex Naturalist*. His last association with the Geological Survey was a large share in the compilation of the memoir "On Thicknesses of Strata," published in 1916.

WE learn from *Science* that Dr. Fritz Wilhelm Woll, professor of animal nutrition in the University of California, died on December 6 at the age of fifty-seven. Dr. Woll was born and educated in Norway; on going to the United States, he became attached to the University of Wisconsin and was appointed assistant chemist in

1887, and later chemist, to the Wisconsin Agricultural Experimental Station. In 1906 he became professor of agricultural chemistry in the University, a post which he held until 1913, when he went to the University of California as professor of animal nutrition. Dr. Woll issued a number of valuable reports and bulletins on dairy matters and stock feeding while he was in charge of the research stations, and wrote, among other works, "A Book on Silage," "Testing Milk and its Products," and "Productive Feeding of Farm Animals," all of which have passed through several editions. According to *Science*, it was due mainly to Dr. Woll's efforts that the cow-testing associations, of so much importance to the dairy industry of California, have been developed and placed on a permanent basis.

MR. F. E. WESTON, the late head of the Chemistry Department of the Regent Street Polytechnic, died on January 4 after a long illness, and some account of his life and work appears in the *Chemical Age* of

January 20. His death will be regretted by large numbers of chemists who came under his influence. Mr. Weston was the author of some sound and popular text-books, and in addition to his activities as a teacher he made several original investigations.

WE regret to announce the deaths of: Prof. Wilhelm Konrad von Röntgen, at the age of seventy-seven years; Mr. Bernard Bosanquet, on February 8, in his seventy-fifth year; and Dr. A. H. Fison, lecturer on physics at Guy's Hospital, London, and secretary to the Gilchrist Educational Trust, on February 5, at the age of sixty-five years.

THE *Chemiker Zeitung* of January 18 reports the death on December 6 of Prof. Luigi Marino-Zuco, of the Applied Chemistry Department of the Royal School of Engineers, Pisa.

Current Topics and Events.

THE recent decision of the Commissioners of Customs to enforce payment of the entertainment tax by the Committee of the West Highland Museum at Fort William in respect of an exhibition of local objects meets with some caustic comment in the February number of the *Museums Journal*. It is pointed out that the official regulations contemplate the issue of certificates of exemption for "entertainments" of this nature, and that the Board of Education encourages such temporary local exhibitions as the best means of securing the establishment of permanent provincial museums. Thus does one Government Department hinder the efforts of the other; and thus is constructed another argument for a properly thought-out State policy towards museums.

IN view of the withdrawal of oversea contributions to the Imperial Institute, a committee under the chairmanship of the Hon. W. Ormsby-Gore and including the High Commissioners of Canada, Australia, New Zealand, South Africa, and representatives of the Board of Trade, the Colonial Office, the Treasury, and the Associated Chambers of Commerce, has been appointed to investigate the position of the Institute. Mr. E. B. Boyd of the Colonial Office is acting as secretary to the committee. The terms of reference include a consideration of what functions now carried out by the Institute are considered essential and whether they should be transferred to other research organisations. Further, the committee has to consider to what extent the intentions of the founders of the Institute are being carried out and to suggest improvements which may be financially possible should it be recommended that the Institute continue on its existing basis. To us it seems astonishing that, as the Institute is largely concerned with the scientific study of the natural resources of the Empire, the committee does not include representatives of science, who alone are able to understand the significance and value of research aspects of the Institute's work.

THE General Electric Co. of America has had for several years a testing transformer which can produce a potential difference of a million volts between its terminals. We understand also that Prof. Millikan will be able to experiment with a million volts at his new laboratory at Pasadena. According to *La Nature* of January 20, the Compagnie Générale d'Électro-Céramique has decided to instal a battery of transformers in its test-room at Ivry which will give a pressure of a million volts for measuring the electric strength of insulating materials. With these high pressures it is possible to make commercial tests on insulators when arranged in series, as they are on high voltage transmission lines. The Americans have also used them for testing the efficiency of lightning safety devices, and for studying the phenomena which occur when a very high voltage discharge takes place on a network.

To any one concerned with public health, and more especially to those who have witnessed the ravages of small-pox among natives in our overseas possessions and the benefits conferred by vaccination, the exhibit of pictures and relics connected with Edward Jenner now on view at the Wellcome Historical Medical Museum, 54A Wigmore Street, W., cannot fail to be of interest. Here are shown many mementoes of this illustrious benefactor of mankind; an English country doctor, blessed with unusual powers of observation and animated by a scientific spirit, whose work, despite the efforts of cranks and detractors, will stand for all time. In addition to the large number of interesting objects forming part of the Wellcome Museum, special loan exhibits are displayed. Among them is the original pencil drawing of Jenner from life executed by Thomas Drayton, while there are many rare books and the original water-colour drawings of Kirtland showing the results of vaccination and variolation from day to day. Of the lancets Jenner used there are two with ivory points similar to those on which he sent dried lymph to India. The