

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