Obituary.

PROF. E. W. MORLEY.

IN the issue of *Science* for April 13, appears an appreciative notice by Prof. O. F. Tower, professor of chemistry in Western Reserve University, of the life and work of Prof. E. W. Morley, whose death was announced in NATURE for April 28, p. 578.

Edward Williams Morley was born in Newark, New Jersey, on January 29, 1838, and in 1869 went to Western Reserve College, then in the town of Hudson, as professor of natural history and chemistry. In 1882 the College was moved to Cleveland, becoming Adebert College of Western Reserve University, and there Prof. Morley taught general chemistry and quantitative analysis until his retirement in 1906 as emeritus professor.

Prof. Morley's first work of importance, undertaken while he was still in Hudson, was on the relative proportion of oxygen in the air (1878–81). The work for which he is best known to chemists, however, was on the densities of oxygen and hydrogen and the ratio in which they combine; this was carried out at Cleveland and published in 1895. It is a remarkable tribute to his work that now, after nearly thirty years, the accepted values of these quantities are practically identical with those found by him. Prof. Morley was also eminent as a physicist, and his characteristic for precision of measurement is shown in his early papers on rulings on glass and on the probable error of micrometric measurements. While at Cleveland, he collaborated with Prof. A. A. Michelson in the development of the interferometer, and with this instrument the well-known Michelson-Morley experiment on the relative motion of the earth and the ether was carried out. The experiments, though giving negative results, were resumed later in conjunction with Prof. D. C. Miller.

The accurate work on the determination of the relative atomic weights of hydrogen and oxygen won for Prof. Morley the Davy medal of the Royal Society in 1907; while in 1904 he had been elected an honorary fellow of the Chemical Society. He was also an honorary member of the Royal Institution. In the United States he received the honour of being made president of the American Association and of the American Chemical Society in 1895 and 1899 respectively. He died on February 24, about a month after his eighty-fifth birthday.

SIR SHIRLEY MURPHY.

SHIRLEY MURPHY'S name during the last thirty years has been a household word in the ranks of public health workers; and his work as medical officer of health for the county of London during a period of twenty-two years was marked by great improvements in the administrative control and prevention of disease. From this post he retired a few years before the War, but at its onset his services were utilised in taking charge of the sanitary services of the London area, for which work he was created K.B.E. in 1919, having been previously knighted in 1904.

It is, however, rather in Sir Shirley Murphy's contributions to the science of epidemiology that NATURE is chiefly interested. The factors making for or reducing the prevalence of such acute infectious diseases as scarlet fever, diphtheria, measles, and whooping-cough are complex; they differ from such diseases as typhus fever, typhoid fever, cholera, smallpox, and epidemic enteritis, which can be entirely controlled, given the adequate application of general and specific sanitation. Like the uncontrolled and only partially controllable diseases enumerated above, the members of this last-named group are subject to cyclical waves, seasonal and longer waves; but the vehicles of infection can be put out of action, or by vaccination in the case of smallpox, personal immunity is obtainable. Murphy made many contributions in his annual reports and in the Proceedings of the Epidemiological Society to the study of seasonal influences on scarlet fever and diphtheria, showing that there have been in London seasonal variations in both the fatality (*i.e.* case-mortality) and age distribution of notified cases of these diseases. The cases of these diseases at ages under five form a larger proportion of the total cases at the beginning and end of the year than in its middle; and even when the necessary corrections are made for variations in age and sex of the cases, the fatality from these diseases is subject to seasonal variations. Murphy advanced the view that the change in the age incidence of death-rates from phthisis is explicable by successive additions by birth of a more resistant race, a tenable hypothesis, though not supported by international facts as to the phthisis death-rate.

The presidential address delivered by Murphy to the Epidemiological Society on "The Study of Epidemiology" is perhaps the best illustration of his wide knowledge and keen interest in epidemiological problems. At the same time it shows very clearly the complexity of factors making this study a formidable struggle with difficulties. He did much to assist in laying the foundations of a more accurate science of epidemiology; and in the pursuit of this study his annual reports to the London County Council will always be a valuable mine of information.

Murphy's work was recognised by his own profession, for he was awarded the Jenner medal by the Royal Society of Medicine and the Bisset Hawkins medal for distinguished services to public health by the Royal College of Physicians. His personality was singularly attractive; modest and unassuming, he was always ready to help his colleagues, and generous in his appreciation of their work.

MR. JOSEPH WRIGHT.

THE death of Joseph Wright of Belfast on April 7, at the age of eighty-nine, removes one of the fine old school of naturalists whose interests were bounded only by the earth itself. Though prolonged attention to specific details might have seemed to outsiders a sign of a mind cabined and confined, Wright's enthusiasm over the sheer beauty of the organisms that he studied was an inspiration to the wide circle of his friends.

Joseph Wright was born at Cork in 1834, and, his parents being members of the Society of Friends, he was educated at the Friends' School in Newtown, Co. Waterford. His wife came also from Cork City, and,

when he settled in business in Belfast in 1868, he brought the healthy and tolerant atmosphere of his upbringing to his new surroundings in the north. For a very long period of years Wright's daylight hours had to be at the disposal of firms for which he worked, and only on occasional holidays could he make excursions into the country. He was a warm supporter of the Belfast Natural History and Philosophical Society and of the Belfast Naturalists' Field Club. During his years in Cork he had made a fine collection of Carboniferous fossils, which is now in the British Museum; in Belfast he devoted himself mainly to the study of foraminifera, fossil and living, and was especially successful in extracting forms preserved in hollow flints or in friable chalk from the Cretaceous beds of northern Ireland. He was able to recognise forms derived from these beds in detrital deposits of the district, and he remained convinced that the occurrence of Pleistocene foraminifera in the glacial deposits studied by him necessarily implied an incursion of the sea over northern Ireland.

Wright joined, as a recognised expert, dredging expeditions in the Irish Channel and off the western coast, the latter being organised by the Royal Irish Academy. His judgment became sought by naturalists throughout our islands and abroad, and many of his correspondents, while appreciating the fulness of his knowledge, must have remained ignorant of the life of hard work and devotion in the intervals of which his researches were carried on. Those who became personally acquainted with him in his home could not fail to recognise his truly lovable personality.

Wright was elected a fellow of the Geological Society of London in 1866, and in 1896 received the honour of the award of the proceeds of the Barlow-Jameson fund. He contributed numerous papers to scientific journals, and his unique collection of foraminifera, mounted by his own hand, is now among the treasures of the National Museum in Dublin.

An excellent account of Wright's life and work, to which we are indebted for some of the details given above, appeared in the *Belfast Telegraph* for April 7.

Mr. Sidney H. Wells.

Mr. Sidney H. Wells, who died at St. Leonards on March 28, was formerly Director-General of Technical, Industrial, and Commercial Education in Egypt. Born in 1865, he was educated for the engineering profession at Birkbeck and King's College, London, and in 1885 he won a Whitworth Scholarship. Four years later he founded the Institution of Junior Engineers, of which he was chairman for five sessions. In 1889 he became a master at Dulwich College on the science and engineering side. Two years later he removed to the University of Leeds as senior assistant in the engineering department, and in 1893 he returned to London at the age of twenty-eight to become the first principal of the Battersea Polytechnic.

In 1906 Mr. Wells was requested by Lord Cromer to visit Egypt and report on technical education, certain branches of which had been previously entirely neglected. As a result of this visit, Mr. Wells was offered in 1907 the newly created post of Director-General of Technical, Industrial, and Commercial Education, a position which he held until his retirement eighteen months ago owing to continued ill-health. His fifteen years' work in Egypt was that of a pioneer, and the agricultural, commercial, and industrial schools which are to-day flourishing in all the larger towns of that country and in many of the provinces owe their existence entirely to Mr. Wells's untiring energy and far-seeing wisdom.

For his War work as Director of Civilian Employment for the Egyptian Expeditionary Force in 1917–19 Mr. Wells was made C.B.E.; he was twice mentioned in despatches, and held the second-class orders of the Medjidieh and the Nile. He was vice-chairman of the Egyptian Commission of Commerce and Industry, 1916–18.

Mr. Wells was an Assoc. M.I.C.E. and an original member of the Faculty of Engineering of the University of London, of which he was afterwards secretary, and also secretary of the Board of Studies. He was formerly a member of council of the Headmasters' Association, a member of council and for four years honorary secretary of the Association of Technical Institutions, and a member of the Examinations Board of the City and Guilds Institute, of the Teachers' Registration Council, and of the Consultative Committee of the Board of Education. He was the author of various text-books.

General E. A. Lenfant.

By the death of General E. A. Lenfant at the age of fifty-eight, France has lost one of the most noteworthy explorers of her African empire. He began his work in Africa in 1898, when he studied the course of the Senegal, and later the floods of the Niger. In 1901–2 he twice traversed the middle and lower Niger, passing the rapids successfully and collecting much useful information on the regime of the river and the geography of its valley. In 1903 Lenfant was again sent to Africa to investigate the possibility of water transport from the coast to Lake Chad. On this occasion he explored the Logone, a tributary of the Shari; the Kabi, a tributary of the Benue; and Lake Tuburi, which lies between the two. Between 1906 and 1908 Lenfant's explorations were in the western part of the Ubanghi-Shari country, around the head waters of the Shari. He showed that the Bara-Shari is a branch of the Shari, and that the Pende, which is the same as the Logone, provides the best route from the Sanaga to the Shari, and so to Lake Chad. Lenfant was the author of several works on Africa, including "Le Niger" (1903), "La grande route du Tchad" (1905), and "La découverte des grandes sources du centre de l'Afrique" (1909).

We regret to announce the following deaths:

Prof. J. Cox, lately professor of physics in McGill University, Montreal, on May 13, aged seventy-two.

Dr. G. H. Hume, for many years lecturer on physiology in the University of Durham College of Medicine, Newcastle-upon-Tyne, on May 8, aged seventy-seven.

Prof. C. Niven, F.R.S., lately professor of natural philosophy in the University of Aberdeen, on May 11, at seventy-eight years of age.

Colonel G. F. Pearson, formerly Inspector-General of Forests in India, on April 25, aged ninety-six.

Lieut.-Colonel J. C. Robertson, according to the *Times*, director of hygiene and pathology at Army Headquarters, Simla, and in 1912 sanitary commissioner with the Government of India, on May 14.