Obituary.

SIR WILLIAM PETERSON, K.C.M.G.

NOT only his own university, but also the university world at large, has suffered a great loss by the regretted death, on January 4, of Sir William Peterson at the comparatively early age of sixty-four. Among university presidents Peterson's range of college experience and activities was exceptional and probably unrivalled. A Scottish education at the High School and University of Edinburgh was followed by a course at the University of Göttingen, from which he went with high classical distinction to Oxford as a scholar of Corpus. After Oxford an assistant mastership at Harrow introduced him to the life of an English public school, and as assistant professor of classics at Edinburgh he strengthened his association with that ancient university. From that post he was selected at an unusually early age for the principalship of the newly established University College of Dundee, over the growth of which he watched for thirteen years. Its affiliation with St. Andrews gave him intimate acquaintance with that ancient institution.

When, therefore, Peterson went to McGill in 1895 to enter upon the main work of his life, he carried with him the classical and literary spirit of the old Scottish and English universities, the critical training of Germany, and experience in directing university work on modern lines at an industrial centre. It was an excellent preparation for one who had to build at Montreal on the foundations so nobly laid by the distinguished Canadian man of science, Sir William Dawson. He had to deal with the practical needs of a young country busy in developing great natural resources, and at the same time to uphold the best intellectual traditions of the motherland. Both aims were kept steadily in view during his twenty-five years as principal of McGill.

Peterson had the good fortune to secure the support of men whose ample means were reinforced by high ideals of civic duty. Sir William Macdonald had already begun his generous benefactions to the university in aid of applied science. To the Schools of Engineering and Physics and of Chemistry and Mining, and for the foundation and endowment of the Macdonald College of Agriculture, Household Science, and Teaching, he gave during his life or by his will more than 12,000,000 dollars. The School of Medicine had already gained a well-earned fame, but large contributions from Lord Strathcona helped to confirm its place in the front rank of medical institutions. The same benefactor supplied the money for building and endowing the Royal Victoria College for Women, and, in conjunction with Sir W. Macdonald, that for the Conservatorium of Music, both in close alliance with McGill.

In giving direction to these and other streams of munificence, Peterson found a large and congenial field for his marked organising ability. His knowledge of English and Scottish universities

and the close connection he maintained with them gave him a great advantage in filling the numerous posts created by the new foundations.

A striking proof of the growth of McGill under Peterson's rule, of the large lines on which he planned, and of the insatiable demands of a great and growing modern university is furnished by the fact that his successor in office, Sir Arthur Currie, found it necessary to appeal for a further sum of 5,000,000 dollars to carry on the work. That the graduates of the university and the citizens of Montreal responded by subscribing more than 6,000,000 dollars indicates the confidence felt in McGill as Peterson left it.

Peterson's selection as one of the trustees of the Carnegie Foundation for the Advancement of University Teaching—of which he was for some time chairman—opened up for him a new field of experience, since it gave him an intimate acquaintance with the leading university presidents of the United States, and made him familiar with all aspects of American university life. It emphasised the unique position he held among heads of universities.

The strain put upon Peterson by the war broke him down. An ardent believer in the British Empire, he spared no personal effort in speech and writing to maintain Canada's interest and full share in the struggle for its safety. What he accomplished in his own institution to this end is best shown by the terms in which the Carnegie Foundation made it a grant of a million dollars "in recognition of the noble and devoted service and sacrifice of McGill towards Canada's part in the Great War." It was while speaking in support of an appeal for the sick and wounded that the collapse occurred which closed his academic career.

G. R. P.

ALEXANDER MUIRHEAD, F.R.S.

ALEXANDER MUIRHEAD, F.R.S., who died at Shortlands, Kent, on December 13, 1920, was born in East Lothian in 1848. His father, John Muirhead, abandoned farming and was attracted to London in the early days of cable telegraphy, starting a business in Regency Street, Westminster, in partnership with Mr. Latimer Clark. Young Alexander, who was afflicted with partial deafness all his life, the result of a childish accident, went to University College School, Gower Street, and then to the college, where he made rapid progress in chemistry and mathematics, and became a devoted pupil of De Morgan. He afterwards worked at St. Bartholomew's Hospital under Mathiessen, in whose laboratory, amongst other things, he worked out the problem of the Latimer Clark standard cell, and laid the foundation of life-long accurate work in connection with electrical standards. He took the D.Sc. in 1872, in electricity, and became scientific adviser to his father's firm, where John Perry and many another later distin-

guished man took advantage of the opportunities, then novel, for accurate and absolute electrical measurement.

Muirhead's great achievement was the invention of the artificial line with distributed capacity, and the consequent duplexing of submarine cables. This he accomplished, in the first instance at Aden, with great and permanent success.

After carrying on research work in his own private laboratory, and perfecting the electrical standards of capacity, which he practically established and afterwards handed over to the National Physical Laboratory, Muirhead began instrument-making at Elmers End, constructing especially those beautifully designed instruments employed in cable telegraphy.

In 1894 Muirhead's attention was directed to the possibility of practical telegraphy by means of Hertzian waves, and he afterwards devoted his attention to getting them recorded by a syphon-recorder, with elimination of all disturbances, and with accurate tuning. He communicated a joint paper to the Royal Society on this subject (see *Proc. Roy. Soc., A*, vol. lxxxii., 1909, pp. 240-256).

But in the early 'nineties a serious illness had made Muirhead permanently lame, and his bodily disabilities were such that only his pertinacious and enthusiastic spirit enabled him to continue in harness and to remain as mentally alert as ever. He gave sound and helpful advice in connection with the Pacific cable, and his judgment and experience and scientific caution, together with his profound devotion to accuracy, were universally respected.

Muirhead was elected a fellow of the Royal Society in 1904, but a few years later a slight paralytic stroke added to the already formidable incapacities which prevented him from taking his true place among British men of science. By the few who really knew him he was highly esteemed and much beloved.

OLIVER LODGE.

AN excellent Colonial servant of the Empire has passed away in the person of WILLIAM HARRIS, Government Botanist and Assistant Director of Public Gardens in Jamaica. Mr. Harris was born at Enniskillen on November 15, 1860, and after some years' experience in gardening was in 1879 taken on the staff at the Royal Botanic Gardens, Kew. Two years later he was appointed, on the Director's recommendation, to take charge of King's House Garden, Jamaica, Sir Daniel Morris then being Director of Public Gardens and Plantations. In due course Mr. Harris acted as superintendent in each of the five gardens in that island. On Mr. W. Fawcett's retirement in 1908, Mr. Harris became Superintendent of the Public Gardens in the Department of Agriculture; in 1917 he was appointed Government Botanist, and in 1920, a few months before his death, he was promoted to be Assistant Director. By his loss botanical exploration in Jamaica has suffered greatly. He was an indefatigable collector, and spent his holidays in the

botanical exploration of every part of the island, roughing it in the bush, with the most meagre shelter for the night. Last year he suffered from his throat, and went to Kansas City, where his eldest son was living, to consult a specialist. The disease was found to be cancer, and he died in hospital on October 11, 1920. Mr. Harris had been a fellow of the Linnean Society since 1899. Botanically, he is commemorated by the genera *Harrisia*, Britton (Cactaceæ), and *Harrisella*, Fawc. and Rend. (Orchideæ), and many species have been named after him.

THE death occurred on Friday, January 7, of MR. S. A. VASEY, who for twenty-eight years directed the *Lancet* laboratory. Mr. Vasey was born on March 9, 1866, and received his medical education at Charing Cross Hospital Medical School, but he was early attracted to chemistry, and in 1883 became a fellow of the Chemical Society, and assistant to Prof. Heaton at the medical school. Prof. Heaton was at that time also supervising the *Lancet* laboratory, so Mr. Vasey joined him there as assistant, and on the death of the former in 1893 he took entire charge. His investigations covered an extraordinarily wide field; he undertook inquiries into the physics of gas lighting and cooking, the standardisation of disinfectants, the chemistry of natural waters, the food value of oysters and the risks involved in their breeding and supply, and many similar questions relating to public health. These topics will be sufficient to indicate the extent of the work he accomplished. Mr. Vasey was largely self-taught, and he was remarkable for the natural and easy way in which he applied the facts of science to the most commonplace occurrences of life. By his untimely death both the public health service and our contemporary have lost an old and trusted servant.

THE death has occurred of the veteran microscopist, MR. THOMAS MALTWOOD, in his ninety-fourth year. Mr. Maltwood was a fellow of the Royal Microscopical Society, and took an active part in the proceedings of that society in the middle of last century. He is best known as the inventor in 1858 of the Maltwood finder, which consists of a scale of vertical and horizontal lines reproduced photographically upon a glass plate, by reference to which the location of a particular object or structure in a microscopic specimen may be recorded.

THE death of MR. WALTER PITT is announced in *Engineering* for January 14. Mr. Pitt was one of the leading authorities on harbour construction plant, and was chairman of the firm of Messrs. Stothert and Pitt, Ltd., of Bath. He was born in 1853, and was a member of the Institutions of Civil Engineers and Mechanical Engineers; he served on the council of the latter body from 1907 to 1917, and was chairman of the institution's research committee on wire ropes.