scattering of X-rays and the properties of β -rays. He continued his researches first as Mackinnon Student of the Royal Society, later as Fellow of St. John's, and started his teaching career as demonstrator and lecturer in the Cavendish, a post which he held until 1924.

In the early days of the First World War he was associated with Alfred Robb in running an X-ray laboratory to help Addenbrooke's Hospital with the many war casualties pouring into Cambridge. This early experience, when X-ray facilities for radiological diagnosis were practically non-existent, no doubt deflected part of his research interests into the field of medical radiology, and one of his books was written on this subject; while his editorship of "The Handbook of Industrial Radiology" proved his realization of the import of X-ray radiological techniques in industry. He was lecturer in medical radiology in the University of Cambridge during 1921-24, and he became president of the British Institute of Radiology in 1936.

Crowther held the chair of physics in the University of Reading during 1924-46, when he retired as professor emeritus. During his tenure of the chair at this young and expanding university, Crowther spread his abundant energies in wide and influential spheres. His quick and ready brain, coupled with a flowing, happy pen, gave scope to his expository powers in a number of valuable text-books. The best known to students perhaps is "Ions, Electrons and Ionising Radiations", kept up to date in a series of editions, and deservedly popular with many generations of young students. A number of other books stand to his credit and will be a very real monument to his memory.

A powerful influence outside that of the written word flowed from his connexion with the Institute of Physics. A founder Fellow, he served continuously on its Board for twenty years, until his death, and was honorary secretary during 1932-46. During this period the Institute increased its membership and importance by leaps and bounds, due in great measure to his enthusiasm and self-sacrifice in its service. It was at the end of this period, 1944-46, that he became vice-chairman of the Parliamentary Science Committee.

Crowther was a Yorkshireman, born on August 28, 1883, in Sheffield, where he went as a boy to the Royal Grammar School. He had little of the traditional bluntness of the North—his was the gentle, kindly outlook of the true student—and those privileged to see behind the shy exterior always felt the better for the glimpses. He enjoyed a happy domestic life, and he leaves a widow and two sons.

R. WHIDDINGTON

Prof. Thomas Hugh Milroy

DR. T. H. MILROY, who died on March 20 at the age of eighty at his home in North Berwick, was the eldest son of John Milroy of Kirkeowan, Wigtownshire. He was educated in Edinburgh, Berlin and Marburg, and after a period as lecturer in physiological chemistry and assistant to the professor of physiology at Edinburgh, he was appointed to the Dunville chair of physiology at Queen's University, Belfast, a post which he held from 1902 until his retirement in 1935.

This was a period of rapid progress in the Belfast Medical School. Before the foundation of the Dunville

chair, physiology had been taught by the professor of anatomy. Milroy's predecessor was the first occupant of the separate chair and had held it for only a short time. The development of the new Physiology Department depended, therefore, almost entirely on Milroy; and it is a monument to his successful efforts. Among the duties of the holder of the Dunville chair in its early days was the delivery of a series of public lectures on human physiology. Milroy's lucid and interesting addresses attracted crowded audiences.

His teaching in the medical school was equally effective; not a few of his former students now hold chairs and other important positions in Great Britain and elsewhere. For many years his chief research interests lay in the physical chemistry of blood and the physiology of muscle, and he published a number of important papers on both these subjects. His profound knowledge of physiology and physiological literature was always at the service of other workers. With his brother, the late Prof. J. A. Milroy, he published a "Textbook of Practical Physiological Chemistry". This notable book contains much information not to be found in any similar work; and the methods described in it were tested personally before they were included.

Milroy had no undue regard for degrees and distinctions. Honours, which he doubtless appreciated but which caused no change in his unassuming disposition, came to him from various sources. He was an honorary D.Sc. of Belfast and of the National University of Ireland, an honorary M.D. of the University of Dublin, and an honorary LL.D. of Edinburgh.

He was a man of fine character with a keen and critical mind. He took a kindly interest in the welfare of his students, many of whom he helped by every means in his power. He enjoyed the esteem and affection of his colleagues. He and his brother occupied for years a unique place in the life of Queen's University and formed many lasting friendships in Belfast. Milroy's decision to return to Scotland when he retired was greatly regretted by his Ulster friends, who have heard with deep sorrow of his sudden death.

Prof. W. J. Dakin

THE death of Prof. W. J. Dakin occurred at Sydney on April 2 after a long and tragically hopeless illness which began on the eve of his retirement. He held the Challis chair of zoology in the University of Sydney from 1928 until two years ago.

William John Dakin was born at Liverpool in 1883 and after an unusually distinguished student career at the University of Liverpool he proceeded to further postgraduate studies at Kiel. He became an 1851 Exhibitioner, and working at Heligoland, Norway, Naples and at home made fundamental contributions in the physiology of marine animals. During the period 1909-13 he held lectureships at Belfast, Liverpool and University College, London, after which he became professor of biology in the University of Western Australia. He held the D.Sc. degrees of Liverpool and the University of Western Australia, and in 1920 was appointed to the zoology chair in the Liverpool department where he received his early scientific education. From there he went to take up the Sydney appointment that he held until shortly before his death.

Dakin's experimental work on the oxygen requirements, nitrogen absorption and osmotic and reproductive phenomena in marine animals in Europe is well known, and he showed no diminution in productivity when he went to Australia. At Sydney he established a marine biological station which, at the same time, resulted in a perhaps unfortunate lopsidedness in the Department there. His work of this period turned largely toward the ecology of marine and lacustrine fauna, and much of his most valuable results appeared in the monumental "Plankton of the Australian Coastal Waters" (with A. N. Colfax) published by the University. It was unfortunate that an appreciable proportion of the edition was lost by enemy action at sea and so did not reach Great Britain. One of the many admirable productions of Dakin's restless activity was his translation from the German of Goldschmidt's "Mechanism and Physiology of Sex Determination". Less well known, probably, was his war service to the Commonwealth in civil camouflage during the dark period when, with most of the Australian forces absent in other theatres, Northern Australia was severely bombed and invasion seemed imminent. For this work Dakin never received adequate recognition. Last year, however, he was awarded the Mueller Medal for distinguished service to Australian science.

Among other important works, Dakin wrote a textbook, "The Elements of General Zoology", that is notable for its physiological approach, and in 1935 there appeared "Whaleman Adventurers"—a remarkably fine and readable account of the history and practice of whaling in southern seas. While at Sydney, Dakin reached a wide public in a series of fortnightly broadcasts called "Science in the News", and his students found him a brilliant lecturer though many regretted that they did not hear him more often. He possessed, and demanded of his pupils, a high standard of scholarship, and his research students in marine ecology and colleagues in two continents will remember him with admiration and gratitude.

A. J. MARSHALL

WE regret to announce the following deaths:

Mr. G. H. Nash, C.B.E., a director during 1927-38 of Standard Telephones and Cables, Ltd., known for his work on the seismophone and the hydrophone, on April 7, aged sixty-nine.

Prof. G. W. Robinson, F.R.S., professor of agricultural chemistry in the University College of North Wales, Bangor, on May 6, aged sixty-one.

Dr. Herman Shaw, director of the Science Museum, South Kensington, on May 4, aged fifty-eight.

NEWS and VIEWS

The National Institute for Medical Research: Opening by H.M. the King

ON the afternoon of May 5, the ceremony of opening the new buildings at Mill Hill of the National Institute for Medical Research (see p. 744 of this issue) was performed by H.M. the King, who was accompanied by the Queen. Lord Addison, Lord Privy Seal and chairman of the Medical Research Council, read an address of welcome in the Fletcher Memorial Hall of the Institute, to which the King replied: "This new building marks yet one more advance in man's fight against disease and in his struggle to bring a healthier and fuller life to each of us. The opening of this building is a great encouragement because it shows that, in spite of the serious setbacks of war, the search for new knowledge for the benefit of humanity persists, and by its enthusiasm surmounts all difficulties. The Medical Research Council, in providing this centre, show that they are preparing for still greater efforts and progress in the future. . . . The work of the Institute exemplifies that spirit which inspires the State and science to work together for the health and happiness of mankind. The results of this union are available to all without distinction of race, colour, or creed. . . . I congratulate the Institute on what it has already done and on the world-wide reputation for distinguished scientific work which it has long established. . . ." After declaring the Institute open, the King and Queen, accompanied by Sir Charles Harington, director of the Institute, made a tour of the buildings and inspected the work of the various departments.

Geological Survey of Great Britain:

Dr. W. F. P. McLintock

It has been recently announced that Dr. W. F. P. McLintock, director of the Geological Survey of Great

Britain since 1945, is to retire in the autumn. Educated at the University of Edinburgh, Dr. McLintock became assistant curator of the Museum of Practical Geology (which is the museum of the Geological Survey) in 1907; he then spent some ten years in charge of the Geology Department at the Royal Scottish Museum, returning to the Museum of Practical Geology as curator in 1921. His more important personal contributions to geology relate to mineralogical and geophysical subjects, and he has done much to establish geophysical study as a branch of Geological Survey activity. His service as curator of the Museum has covered the building and arranging of the new premises in South Kensington, London; this 'shop window' of the Geological Survey has probably done more than anything else in recent years to widen public interest in geology and to display the ways in which geological science is contributing to the economic life of Great Britain. From 1937 Dr. McLintock acted as deputy to his predecessor, Sir Edward Bailey, and, on becoming director at the end of the War, he vigorously set out to re-establish the Museum and to organise the Geological Survey to deal with its rapidly expanding responsibilities.

Prof. W. J. Pugh, O.B.E.

PROF. W. J. PUGH, who will succeed Dr. McLintock, received his training at the University College of Wales, Aberystwyth. During the First World War he was commissioned in the Royal Welch Fusiliers and was engaged in air-photography work with the Second and Fourth Armies and later with the Army of the Rhine. For his services he was awarded the O.B.E. and the Croix de Guerre and was twice mentioned in dispatches. Afterwards he received a course of training in surveying for service with a boundary commission; but in 1919 he was elected to the chair of geology at Aberystwyth. In 1930, Prof.