

diagrams. He produced or edited with valuable introductions many atlases of the physical features of Russia. He paid special attention to hypometrical work and completed a map of the altitudes of European Russia in six sheets on the scale of 1:2,500,000.

Schokalsky planned and carried out an important series of researches on the temperature regime of Lake Ladoga during the years 1897-1902. The supreme contribution which he made to oceanography was the organization of physical investigations in the Black Sea. This was carried out under his personal leadership during 1924-27 in conditions of much difficulty and even privation. The result was to throw new light on the remarkable physical and chemical changes proceeding in the lifeless deep water of this anomalous land-locked basin. A special feature of the work was the collection for the first time of very long cores of deep-sea deposits; the length of these ranged up to one and a half metres.

Prof. Schokalsky had much charm of manner and great kindness of heart combined with dignity and a fine sense of honour. He made himself welcome wherever he went despite the deafness which latterly grew upon him. His later years were cheered by the companionship of a devoted daughter, herself distinguished in the modern science of soil analysis.

HUGH ROBERT MILL.

Sir James Mackenna, C.I.E.

SIR JAMES MACKENNA, who died on April 3, aged sixty-seven, belonged to the small band of members of the Indian Civil Service who, though not scientific workers themselves, employed their long service in India in encouraging the application of science to the solution of the agricultural problems of the country. I first met him in 1904, when he had been some ten years in Burma and was already recognized as one of the most successful directors of agriculture of his time. Even then he showed those qualities which distinguished him throughout his career—a thorough grasp of the problems of rural development, a strong belief that agricultural research was likely to lead to a great improvement in Indian crops and stock, and a faculty for getting things done. From this time on, his work as a member of the Indian Civil Service was chiefly concerned with agricultural development in Burma, until he was appointed agricultural adviser to the Government of India in 1916.

Mackenna's work in the last-named position was of outstanding importance. On his recommendation, two committees were appointed to consider, respectively, cotton and sugar production in India in all their aspects, and the results on the development of these industries have been very great. The former committee, among other things, recommended the establishment of the first self-supporting research organization for a purely Indian industry, and the existence of the Indian Central Cotton Committee, a permanent body with ample funds which controls research on cotton problems throughout India, has

been very much of a landmark in the later agricultural history in India. Similar bodies have more recently been formed in connexion with other industries, but the idea came from the Mackenna Committee, and was probably the idea of Mackenna himself.

In 1920 he went back to Burma, and for the next five years he was the life and soul of many development projects which date from that period. After retirement to England in 1925, he was almost at once appointed a member of the Royal Commission on Agriculture in India, and toured the country again between 1926 and 1928. The chief result of that Commission has been the establishment of the Imperial Council of Agricultural Research and it is impossible not to see Mackenna's hand in a good deal of the organization of that Council, which has become the centre of scientific activity in connexion with Indian agriculture.

After his final retirement from India, Mackenna continued his interest in scientific work, especially as concerns Indian agriculture. He remained active to the end and was still the same inspiring personality as he had been in his prime. His principal claim to scientific recognition is that he never ceased to use the strong influence which he could exert, for the encouragement of research, while he had the faculty of inspiring those who were entrusted with the carrying out of the work which he had in mind.

H. H. MANN.

Sir Gilbert Barling, Bart.

SIR GILBERT BARLING, BART., died suddenly of heart failure at his home in Edgbaston on April 27, within three days of his eighty-fifth birthday. Sir Gilbert was the second vice-chancellor (afterwards pro-chancellor) of the University of Birmingham which he served for twenty years, having succeeded Charles Gabriel Beale in that office in 1913. From 1913 until 1933 he gave invaluable service to the University, which derived great benefit from his forceful personality and his unremitting personal devotion to its interests. Himself actively interested in outdoor sports, he did much to encourage the athletic side of university education. At the annual meeting of the Birmingham United Hospital, only a week before his death, Sir Gilbert was presented with an address of congratulation on completing sixty years of strenuous service to the hospitals of Birmingham.

WE regret to announce the following deaths:

Mr. Owen Cattell, director of the annual exhibition of the American Association, assistant to the editor of *Science*, on March 26, aged forty-two.

Prof. Alexandre Desgrez, emeritus professor of medical chemistry in the University of Paris, aged seventy-six.

Captain E. E. M. Joyce, the well-known Antarctic explorer, on April 2, aged sixty-five.

Mr. G. W. Partridge, a pioneer of electricity supply, on May 3.