

Obituary.

PROF. W. D. HALLIBURTON, F.R.S.

IN a nursing home at Exeter, William Dobinson Halliburton passed away, peacefully, on the evening of May 21. With his death the physiological world loses one of its most outstanding personalities, King's College one of its most loyal friends, and those who knew him, one who occupied, in their affection, a place it will not be possible to fill. For Halliburton was unique. To many is given knowledge, to many also the power to impart it. A few have the intuitive faculty of investigating the fundamentals of their subject and of guiding the steps of others in the uncharted pathways of original research. How restricted is the number who combine these attributes with patience apparently unlimited, calmness in times of stress, encouragement when disappointments came, and never, by word or deed, acted other than in the spirit of reasonableness. Yet such was Halliburton.

Born in London seventy years ago, educated at University College School, trained under distinguished teachers at University College and Vienna, Halliburton graduated in medicine and became Sharpey scholar and assistant in the Department of Physiology under Prof. [now Sir Edward Sharpey] Schafer, following in this position MacWilliam, who until recently held the chair of physiology at Aberdeen. Further academic attainments followed; he obtained his M.D. in 1884 and his membership of the Royal College of Physicians twelve months later.

It was, however, four years after this that Halliburton's life-work began, for in 1889 he was elected to the chair of physiology at King's College, London, rendered vacant through the retirement of Prof. G. F. Yeo, an appointment he held until his illness at Christmas 1922, an illness which, unfortunately, caused him to relinquish his professorship in the following July. Since then his physical vigour has gradually failed and, while on holiday in his favourite Cornwall, a sudden relapse demanded his removal to Exeter, where he died.

The present Department of Physiology at King's College is a tribute to the organising ability of Prof. Halliburton. On taking up his duties, he found the physiological laboratory situated in ill-adapted premises in the basement. But it was there, though handicapped in many ways, that some of his finest work commenced, and shortly after his appointment a move was made to the present position, where under his guidance it grew and prospered. It was a source of gratification to him and to others that five years after his retirement, he was able to open extensions to his old department, extensions for which he had hoped and worked and, by his labours, justified.

In his choice of staff and colleagues in research, Halliburton was singularly happy—one has but to name Dr. [now Sir Charles] Martin, Sir Frederick Mott, T. G. Brodie, F. S. Locke, and Otto Rosenheim.

Despite excursions into other parts of physiology,

it was the chemical side to which Halliburton always returned, devoting much attention to the problems connected with the properties of nerve, of muscle, and of protein. As an investigator his name is perpetuated in the pioneer work in these questions. Halliburton made physiological chemistry his own. It is largely to him that the present position of biochemistry is due. By his earlier work and by his writings he laid the firm foundations of his subject, and his researches are now part of the heritage of physiology.

Handicapped as he was in personal experimental work, his capacity for compiling and classifying information was little short of marvellous. His "Text-Book of Chemical Physiology and Pathology" (1891) is monumental; his "Handbook of Physiology" has completed nineteen editions; his "Essentials of Chemical Physiology" is now in its fourteenth. In addition to these labours, at the request of the Physiological Society he became, in 1916, editor of *Physiological Abstracts*, a task which involved the issuing of a monthly précis of papers on biological subjects appearing throughout the world. Almost unaided for five years, he not only edited and managed this journal, but also did the major part of the abstracting. Other publications include "The Chemical Side of Nervous Activity" (Croonian Lectures, 1901), "The Biochemistry of Muscle and Nerve" (1904); "Physiology and National Needs" (1919). As contributions to original work, there appeared from his laboratory some three hundred papers by himself and by others. He delivered the Oliver-Sharpey (1907), the Goulstonian (1893), and the Croonian (1901) Lectures of the Royal College of Physicians. He commenced and for several years compiled the invaluable section of physiological chemistry in the "Annual Reports on the Progress of Chemistry."

In 1891 Halliburton was elected a fellow of the Royal Society; the degree of LL.D. was conferred on him by the Universities of Aberdeen and Toronto. He was a fellow of both King's and University Colleges, senator of the University of London, member of the council of the Royal Society, and, in turn, vice-president of the section of Anatomy and Physiology at the meeting of the British Medical Association in 1893. Twice, also, he was honoured by being president of Section I (Physiology) of the British Association.

As a speaker Halliburton was supreme. He brought to King's not only a scientific knowledge possessed by few, and a command of his subject coveted by many, but a facility of expression envied by all. It was, indeed, a tragedy, in his later years of leisure, to see the gradual loss of this great gift.

Halliburton's whole life reflected his personality. Never physically strong, his ability to carry out the strenuous programmes that he did was due to the unflagging devotion of Mrs. Halliburton, who until the end was untiring in her watchful care.

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Church Cottage, their home in Marylebone Road, was open house to friends of all ages. In this oasis from London's rush, many sought both help and advice; none was refused. Free from worry over the more material aspects of life, his help to those in straitened circumstances was often more than words. Generations of students think with affection and speak with reverence of their old teacher and friend. Childless himself, *they* were his 'boys and girls'. When he came to King's, our College was enriched; by his death the whole scientific world is made poorer.

It is difficult to write truthfully about Halliburton without appearing to exaggerate. His character, his scientific accomplishments, his nature, his industry, his very life itself, make him one we can but mourn and do no more than try to copy.

J. A. HEWITT.

DR. RUDOLF MARLOTH.

WE record with deep regret the death of Dr. Rudolf Marloth, the distinguished botanist, who has been so closely associated with botanical work in the Union of South Africa. Dr. Marloth's profession was that of a consulting analytical chemist, but it is with regard to his botanical work that he is best known in the domains of science.

On the foundation of the Botanical Survey of South Africa, he was appointed a member in the year 1918, but before that time he had gained a reputation as a botanist with a wide knowledge of the flora of the Cape region. He was president of Section B of the South African Association for the Advancement of Science in Cape Town in 1903, and was president of the whole Association at Kimberley in the year 1914. He was also president of the Cape Chemical Society in 1913.

Marloth was the author of many botanical works and in particular "Das Kapland", which was published in 1908 and gives a general phytogeographical account of the vegetation of South Africa. This fine work is profusely illustrated, mainly from photographs taken by himself; for Dr. Marloth was, among other things, an expert photographer and an acute observer of biological factors in relation to plant life. Another monumental work is his "Flora of South Africa", planned to occupy four volumes, three of which have now been published; the first volume appeared in 1913, and this also was magnificently illustrated with both photographs and coloured plates. This is not a 'flora' in the strict sense of the term, as only a portion of the genera and species is dealt with and the Gamopetalæ have not yet been published. It is, however, a work which all those interested in the wonderful flora of the Cape region find indispensable for the proper study of the flowers of South Africa. He also published, in the year 1917, a "Dictionary of the Common Names of Plants of South Africa". In this volume, some two thousand records of common names of plants found in South Africa are given, and the list is particularly useful to the overseas visitor, since the Dutch have common names for most of the more conspicuous and gener-

ally distributed plants. One of his earliest works was his "Elementary Botany for South Africa", which was published in the year 1897.

Dr. Marloth travelled widely in Africa in the course of his duties as an analytical chemist, and had a wide circle of friends, particularly among the Dutch, who helped him considerably in his botanical studies. In connexion with his work on the Botanical Survey, he collected together a fine herbarium, which was remarkably rich in the Euphorbiaceæ and other succulent plants belonging to the Cape Province. The collection was rendered all the more valuable by the inclusion of photographs of these plants, giving their characteristic features in careful detail. Such photographs in the case of 'fleshy' plants are of very great value to the botanical student, and his herbarium, which will pass to the National Herbarium at Pretoria, will be invaluable to botanists carrying on researches on the flora of South Africa.

Dr. Marloth was a man of great energy and a delightful companion in the course of a botanical ramble. Having had an opportunity of spending some nine strenuous hours in his company on Table Mountain last November, one was able to realise the great extent of his knowledge of the Cape flora, and also his untiring energy as a walker; for, despite his age, he was able to outwalk many a younger man. His unexpected death will be a very great loss to botanical science, not only in South Africa but also to the world in general.

A. W. H.

PROF. JAKOB ERIKSSON.

JAKOB ERIKSSON, whose death, on April 26, we regret to record, was born in Hyllie, near Malmö, Sweden, in 1848. After a course of study at the University of Lund, he obtained his Ph.D. in 1874, and the same year was appointed lecturer (Dozent) in botany at the University. A year later he was called to Stockholm, where, besides teaching botany in one of the State colleges, he was engaged as plant physiologist at the experimental station of the Academy of Agriculture. In 1885 he became professor and director of the department of plant physiology of the Academy, a position which subsequently comprised the department of agricultural botany. Prof. Eriksson held this position until 1913, when he had reached the age limit, entitling him to a pension. He, however, continued his research work until shortly before his death, and published several books and monographs during his retirement. His primary interest centred on the study of the diseases of agricultural plants, more especially mildew, parasitic fungi, etc. It was very largely due to his energy and initiative that the plant physiological laboratory at Frescati, near Stockholm, was created.

Prof. Eriksson was a member of scientific academies in several countries and received numerous awards for his contributions to the knowledge of plant diseases and their treatment. A species of fungus in the Hysteriaceæ group has been named after him, and in 1923 an international prize for