

embryological and anatomical studies on Cladocera and Conchostraca, but in 1926 he published a paper on the feeding of an ostracod, *Pionocypris*, which was the first of a long series of detailed investigations into the complex filtratory feeding mechanisms found in a wide range of Crustacea. He recognized clearly the essential functional components of these mechanisms, describing current producing, filtering, scraping, and transporting limbs, and illustrated them with minute accuracy. The small size of many of these animals, and the difficulty of direct observation of feeding currents, compelled him to rely in large measure on deduction based on the details of structure. His strong interest in functional morphology generally clearly arises from these researches. Papers on feeding mechanisms were followed by a return to internal anatomy, and outstanding papers were those on the ostracods *Doloria* and *Gigantocypris* and the cirripede *Lithotrypa*. In spite of the injuries to his wrists, Cannon showed great skill in fine dissection, and became a zoological artist of distinction. His early papers show the steady development of his technique, and by 1930 his illustrations could truly be described as unequalled. Furthermore, he had the ability to communicate his skill to others, and zoologists generally profited greatly by his publication of a book on methods of drawing and illustration.

In 1948 Graham Cannon was president of Section D (Zoology) of the British Association for the Advancement of Science, and his presidential address on undergraduate zoology marked the beginning of a new interest. From this time on he frequently wrote and spoke on educational matters, and rebelled against increasing specialization in teaching in schools and universities. He turned this interest to practical account by serving on the Northern Universities Joint Matriculation Board, and played an active part in the development of the University of Keele.

Towards the end of his life Cannon became increasingly occupied with thinking and writing on the relationship between Lamarckian and Mendelian inheritance, an interest which clearly had its origin in his work on crustacean feeding mechanisms. He came to hold the view that the fundamental property of protoplasm is its ability to adjust itself to changes in the environment always in the manner optimum to its survival, and that inheritance by the mechanism of the Mendelian gene complex was to be regarded as a later addition to this fundamental property.

In addition to his research and teaching, Graham Cannon played a full part in University administration. He undertook in Manchester periods of office as dean of the Faculty of Science and as pro-vice-chancellor, and was for many years chairman of the Manchester Museum. He served on the Council of the Marine Biological Association, and was well known as an examiner in the University of London. His range of interests was wide, and embraced such diverse interests as music, angling in his early years, cookery, and practical building. But his overriding passion was his love of Japanese objects of art, particularly swords and their furnishings. He was always ready to talk on this topic, publicly or privately, with enthusiasm and understanding.

As a man, Graham Cannon was direct in speech and expressed his views forcibly. He did not easily accept compromise. But those who knew him well saw a genial and kindly scholar who took a real interest in his students and staff. They will remember him with gratitude and affection. Their sympathy and that of his friends will go out to his wife and sons and daughters. R. DENNELL

Mr. A. D. Cotton, O.B.E.

ARTHUR DISBROWE COTTON, who for nearly sixty years was closely connected with the affairs of the Royal Botanic Gardens, Kew, died, after a long spell of ailing health, at Hertford, on December 27, 1962, at the age of eighty-three. He was born in London on January 15,

1879, and received his early education at King's College School, London. During his schoolboy days he developed a strong interest in the British flora, and he built up a considerable collection of pressed plants. His first botanical tuition was received from lectures arranged at Chelsea Physic Garden by J. B. Farmer, and these may well have fostered his liking for gardens and garden plants, an attachment which remained and indeed increased throughout his career. At one time Cotton seems to have determined on a career in horticulture, and he undertook three years' practical training which led to a first-class certificate in the Royal Horticultural Society's general examination.

Later, he decided to follow botany as a vocation, and to this end he spent three years at the Royal College of Science, London, where, under the influence of J. B. Farmer, he specialized in the study of the lower plants. In 1902 he obtained his first post at Owens College, Manchester, where he became an assistant lecturer and, under the influence of O. V. Darbyshire, became interested in fungi and did some research on orchid mycorrhiza. Two years later he entered Government service as an assistant in the Herbarium at Kew under George Masee, the distinguished mycologist. His general duties and research were mainly concerned with the algae, but he also worked with the fungi and lichens, and during this period he published several papers on these groups including his very important contribution to algal ecology in the Clare Island Survey. In 1915, Cotton was placed in charge of advisory services and research on plant diseases in a new laboratory installed at Kew, and indeed he was the first plant pathologist to be appointed in Government service in Great Britain. The laboratory which he initiated was later transferred to Harpenden and has become the Plant Pathology Laboratory of the Ministry of Agriculture, Fisheries and Food. Cotton's continuing interest in mycology is reflected in his sixty years' membership of the British Mycological Society of which he was president in 1913.

Cotton returned to Kew in 1922 when he succeeded Otto Stapf as the keeper of the Herbarium and Library, a post he held until his retirement in 1946. This was a period of active development in the Herbarium with an ever-increasing flow of material to be identified, incorporated and distributed, and about a million specimens were added to the collections during Cotton's keepership. While he retained his interest in the algae and fungi, he turned more to the study of flowering plants. He became an expert on the cultivated lilies, published a number of papers on this attractive group, and largely wrote the botanical text of the *Supplement to Elwes' Monograph of the Genus Lilium* of which latterly he was joint author. For a short time he was editor of *Curtis's Botanical Magazine*, and for this and other services to horticulture he was awarded the Victoria Medal of Honour by the Royal Horticultural Society. Cotton attended the meeting of the British Association in South Africa in 1929 and during his return journey visited Kilimanjaro. The extraordinarily bizarre vegetation of the alpine slopes fired a new interest and he undertook a critical study of the arborescent species of *Senecio* of the East African mountains. One species which he collected on Kilimanjaro bears his name.

He became a Fellow of the Linnean Society in 1902, served for several periods on the Council and was president during 1943-46. In 1934 he was awarded an O.B.E. Cotton was a man of gentle, unassuming manner who will be remembered gratefully by all who had the pleasure of his friendship as a genial, kind and obliging man.

GEORGE TAYLOR

Prof. Karel Hrubý

PROF. KAREL HRUBÝ, professor of genetics in the Charles University in Prague, died in a motor-car accident in Jihlava on December 10, 1962. He was one