

Obituary Notices

Mr. C. F. M. Swynnerton, C.M.G.

THE recent death of Charles Francis Massy Swynnerton, as a result of an aeroplane accident in Tanganyika Territory on June 8, has been a heavy loss to science and especially to all who are interested in the development of tropical Africa; and it is particularly deplorable in that it occurred at a time when he had just been placed in a position to apply on a much larger scale the scientific ecological methods that he had devised for the control of tsetse-flies.

Swynnerton was born on December 3, 1877, in Lowestoft, going to India later, where his father was senior chaplain to the Indian Army, his mother being the daughter of Major W. H. Massy, of Grantstown Hall, Tipperary. He was educated at Lancing College and went out from there to Southern Rhodesia at the age of nineteen years, where for many years he was engaged in farming in the Melsetter District, then generally known as Gazaland.

Being a very keen all-round naturalist, Swynnerton soon turned his attention to the birds of that area, and during 1907 and 1908 he published a series of papers (250 pp.) in the *Ibis* recording his observations. Owing largely to the fact that his farm comprised a portion of Chirinda Forest, a most interesting patch of residual tropical rain forest which was then quite unknown botanically, he soon took an interest in the plants of the district and sent home a large collection to the British Museum (Natural History). This was eventually worked out by various specialists, and an account of it was published in the *Journal of the Linnean Society* in 1911. The collection contained nearly 1,100 species, of which 190 were new to science; several of these were described by Swynnerton himself, including two fine new mahogany trees.

Swynnerton then became interested in the problem of the significance of form and colour in Nature, and as he possessed to an unusual degree a capacity for precise and impartial observation, without any trace of that unfortunate urge to bolster up one's own theories or to smash those of other people, I suggested to him that he should undertake a really large-scale experiment to test unpalatability in insects and the deductions based on it in the theory of mimicry. He then began a long series of experiments lasting over five years in which very large numbers of insects of all kinds were used, the butterflies alone totalling more than 17,000. These experiments were made not only with captive animals, but also with wild birds, and were the first scientifically precise investigations in this field, and served to show the unreliability of much of the earlier work and also of criticisms based only on a few casual observations, or on the examination of the contents of birds' stomachs. The mass of evidence obtained was so great that less than half of it has been published (principally in *J. Linn. Soc., Zool.*, 33, 203-385; 1919), though he rejected his first five hundred

experiments for fear that they had not been done critically enough. He demonstrated that his birds when really hungry would eat almost anything, becoming increasingly discriminative as the stomach filled, so that a graded series of preferences could be compiled with considerable accuracy.

In 1918 a breakdown in health necessitated Swynnerton getting away from the worries of farming, but with his characteristic untiring energy he considered that a change of work was the best type of holiday. At my suggestion he turned his critical mind to a study of the tsetse problem, for which his intimate knowledge of the fauna, flora and geology of the country specially fitted him. With the assistance of the Mozambique Government he spent three months in analysing the tsetse situation in the Mossurise District of Portuguese East Africa. His comprehensive report (*Bull. Ent. Research*, 2, 315; 1921) contained a number of original ideas, and threw an entirely new light on the ecological aspects of the complex tsetse problem. It was here that he first recommended the use of controlled grass-fires as an economical method for eliminating these flies, a suggestion the value of which has been amply demonstrated in parts of Tanganyika and southern Uganda, where the vegetation was suitable for it. In 1919, he became the first game warden of Tanganyika, with instructions to study the relations between game and tsetses, and in 1921 he made a preliminary survey which showed that two-thirds of the Territory was infested by these flies. An outbreak of human trypanosomiasis, carried by *Glossina swynnertoni*, in Mwanza district started him on the practical work of controlling the fly, and he inspired and organized the first voluntary communal effort on a large scale by the natives themselves to stop the advance of the fly by well-planned clearing of bush. The successful results led to a great increase in this work, and a timely visit to the country by the then Under-Secretary of State for the Colonies, the Hon. W. Ormsby Gore (now Lord Harlech), led to official recognition of the importance of his work, so that funds were made available for its extension. Nevertheless, incessant and unjustifiable difficulties were placed in his way by critics of his methods, which nearly disheartened him, but thanks to his unflinching persistence a special Department of Tsetse Research was established in 1929, and Swynnerton left the Game Department to become its first director.

Here Swynnerton soon collected around him a small band of first-rate scientific workers and field officers, whom he trained and inspired by his own untiring energy and enthusiasm. These men have carried on a precise and intensive investigation of the ecology and habits of *Glossina* in all their complex aspects, and the work accomplished has been summarized by Swynnerton in his outstanding publication "The Tsetse Flies of East Africa", which will long be the standard work on the subject.

The results obtained are such that it can now be said with some assurance that the recovery of large areas of valuable land from the tsetse-fly has become economically feasible under the control of specially trained men; and it is to be hoped that the Department that Swynnerton built up will be allowed to continue its separate existence and carry on the great work for Africa which he initiated.

GUY A. K. MARSHALL.

Mr. B. D. Burt

THE tragic loss, through an aeroplane disaster, of Mr. C. F. M. Swynnerton, Director of the Tsetse Research Department, and of Mr. B. D. Burt, botanist to the Department, robs East Africa, at one blow, both of a distinguished zoologist and administrator and of a field worker who had a more intimate knowledge of the vegetation of Tanganyika, and probably of East Tropical Africa as a whole, than any other living botanist. The loss is the greater since news had just been received that the work of the Department was to be extended.

Bernard Burt was the son of Dr. A. H. Burt of York, who was himself a botanist. Young Burt, who was born in 1902, was educated at the Friends' School, Ackworth, and at University College, Aberystwyth, and came to Kew in 1923. He did not shine in examinations, but as an all-round naturalist he was outstanding. Although he held a temporary post in the Kew Herbarium, his real interest was in the open—the living collections, the local insect fauna, and the bird-life in Richmond Park. Later he assisted his cousin, Dr. J. Burt Davy, who was preparing the first volume of his "Flora of the Transvaal". Burt's opportunity came when the tsetse fly campaign was organized. The writer well remembers Swynnerton visiting the Herbarium in search of a botanist for field work in Tanganyika. Burt's services were pressed with every confidence. He went out to East Africa in 1925 as District Reclamation Officer, an appointment in the Tsetse Reclamation branch of the Game Preservation Department. When that branch later became the independent Department of Tsetse Research, he became the survey botanist for that Department. He threw himself with all his enthusiasm into the work, the interrelationships of the fly, the game and the vegetation, and it is doubtful which of the three held the greatest attraction, for one possessed, as he was, of such intense biological interests and sporting instincts. Though not the official ecologist to the Survey he became an ecologist in the widest sense. At the same time he always appreciated and fostered taxonomic studies, both botanical and entomological.

Burt was an excellent collector. His herbarium material was usually sufficient for a five-fold distribution; a set each for Kew, the British Museum and the Imperial Forestry Institute, Oxford, a fourth and fifth set being retained in Africa for Amani and for his own Department. The collections as a whole were dealt with at Kew, though specialists at South Kensington and Oxford helped in the identification

of their respective groups. Burt's energies taxed the Kew staff to its utmost, one of his last sendings consisting of thirty-one cases. His material was always good, and often represented little-known or new species. But though he collected many novelties, they were not his first interest. He was concerned with the vegetation as a whole, the component species and the fly, though he was quick to spot a "beautiful new species", as he fondly termed them. He did not care for writing, and published little. When on leave, mountain exploration always had a strong appeal; he collected on Hanang and the Ngoro-Ngoro crater and surrounding mountains, besides the better known summits, and he was probably the only British botanist to climb and collect on the difficult ground of the old crater of Mount Meru.

Latterly Burt travelled much by air, surveying the vegetation and the haunts of various species of tsetse-fly. In order to see more of Central Africa he curtailed his last leave and travelled back to Tanganyika by car with a friend by way of Nigeria, French Cameroons, Belgian Congo, Ituri Forest, Kivu and Uganda, and of this he has left a graphic account. His love of fun, kindheartedness and fondness of children were evidences of a most attractive personality. Always abounding in energy and good spirits, he was exactly the man for the post, and his loss will be severely felt not only by botanical institutions in Britain but very specially by the Department of Tsetse Research. As a correspondent in the Territory writes: "I do not know how the Department will fill his place, for not only had he a unique knowledge of our country's flora, but he had to an unusual extent the gift of enthusing others". A. D. C.

THE above accounts of the loss which science in general, and East African science in particular, has sustained in the untimely deaths of Mr. Swynnerton and Mr. Burt, have come from two writers who are in a far better position than I to appraise the magnitude of that loss. As one who has worked for the last thirteen years under the direction of the one and in constant close association with the other, I am glad of this opportunity to add a few words about them in their capacities as leader and colleague. Mr. Swynnerton, in addition to displaying the qualities which have been described above, so treated his staff that they one and all looked to him more as guide, philosopher and friend than as to an official superior; he was an inspiration to greater and ever greater efforts to achieve the objects for which his Department was created, and by his kindly appreciation of all efforts, even the smallest, made each feel that his contribution formed a vital part of the general scheme. He never asked from anyone more than he was prepared to perform himself, and his visits to lonely workers were like an invigorating tonic, difficulties which had previously seemed insuperable disappearing, for the time at least, under his magic touch. His work was inspired by a genuine love for the Africans in whose country he spent so much of his life and his treatment of them was characterized by a patriarchal attitude in the best sense of that word.