

Illyd Buller Pole Evans (1879 - 1968)

by

M. D. Gunn

Illyd Buller Pole Evans C.M.G., M.A. (Cantab.), D.Sc. (Wales), LL.D. (Rand), F.L.S., pioneer in botanical research in South Africa, died in his ninetyeth year on 16th October, 1968, at Umtali, Rhodesia. Born at Llanmaes near Cardiff, Wales, on 3rd September, 1879, he was the son of an Anglican clergyman, Rev. Daniel Evans, M.A., whose wife Caroline Jane Pole came from a very old West Country family.

After attending Cowbridge Grammar School he entered the University College of South Wales and Monmouthshire, graduating with the degree of B.Sc. in 1903. He proceeded to Cambridge (Selwyn College) as a research student in botany, specializing in mycology and plant pathology under Prof. H. Marshall Ward F.R.S., gaining his research degree in 1905. In July of the same year he was appointed to the post of Mycologist and Plant Pathologist in the newly constituted Transvaal Department of Agriculture in Pretoria, where he joined J. Burrtt Davy who, two years earlier, had been appointed as Chief of the Division of Botany.

It was a case of starting from zero and, in spite of severe difficulties imposed by lack of office accommodation and laboratory facilities, a programme of research was soon under way in a make-shift greenhouse near his office, and at Skinners Court Experiment Station near Pretoria, on rusts in cereals and other plant diseases. The results were published in a steady flow of scientific papers and popular articles dealing with mycology and plant disease problems in the Transvaal, and he also found time to give advice to neighbouring territories.

In 1912 his services received recognition from the Union Government with the creation of the Division of Mycology and Plant Pathology under his charge. The following year improved accommodation for the Division became available at Vrede Huis, situated in eight acres of ground at the foot of Meintjies Kop, on which the Union Buildings were in process of being constructed.

The year 1913 saw further changes when, with the retirement of Burrtt Davy, the Division of Botany was amalgamated with the Division of Mycology and Plant Pathology, and the Transvaal Colonial Herbarium was transferred to Vrede Huis. In the same year, under an agreement with Medley Wood, the Division took over control of the Natal Herbarium at Durban, with sufficient ground for carrying out experiments on tropical and subtropical crops. At this time his staff consisted of three mycologists: Dr. Ethel M. Doidge, appointed in 1908; Dr. P. A. van der Bijl, appointed in 1911, who became Mycologist in Charge of the Natal Herbarium and later Professor of Plant Pathology at Stellenbosch University; and Miss A. M. Bottomley, appointed in 1913. In addition there was Miss S. M. Stent, appointed in 1904 in Burrtt Davy's Division, who was in charge of the phanerogamic herbarium and economic section of the Division.

In the early days of his career in South Africa, Pole Evans became keenly interested in the rich flora of the country. At first he paid special attention to Aloes, which he brought together in the grounds of the Division, resulting in probably the largest collection of South African species then in existence. In 1915 and 1917 he published descriptions of many new species of Aloe in the Transactions of the Royal Society of South Africa. Cycads (*Encephalartos*) also claimed his attention and specimens which he collected still stand in the grounds of the Division and at the Union Buildings.

An example of the strong and decisive action which he was always prepared to take occurred in 1916 when Citrus Canker was reported in the Transvaal. The disease spread rapidly and drastic action, involving the destruction of infected nurseries and commercial orchards, was called for. After a lengthy campaign, involving large sums of money spent in compensation, the Division succeeded in completely eradicating the disease which otherwise would have had a crippling effect on the citrus industry.

Another problem referred to Pole Evans concerned the serious wastage experienced in shipments of citrus fruits during 1919. In 1920 he published his findings in his "Report on Cold Storage Conditions for Export Fruit at Cape Town," while a second report was issued in 1921 in conjunction with three members of his staff entitled "Further Investigation into the Cause of Wastage of Citrus Fruits from South Africa." In 1925 a Low Temperature Laboratory at Cape Town was created as a result of his persistently stressing the need for research staff and equipment to investigate the engineering and biological problems involved in the precooling, transport and storage of fruit. From its inception to the time of his retirement, the Laboratory enjoyed his personal interest and support.

For some years he had advocated a comprehensive botanical survey of South Africa. The objectives and advantages of such a survey were eventually brought directly to the notice of the then Prime Minister, General Botha, with the result that the Minister for Agriculture, in July 1918, approved of an Advisory Committee for Botanical Survey with the Chief of the Division of Botany and Plant Pathology as Director of the Survey. The Advisory Committee included the following prominent botanists, in an honorary capacity, to co-ordinate botanical research in the various parts of the country: Mrs. L. Bolus and Dr. R. Marloth of Cape Town, Prof. S. Schonland of Grahamstown, Prof. J. W. Bews of Pietermaritzburg, and Prof. G. Potts of Bloemfontein. Also nominated to serve on the Committee were Sir Arnold Theiler, Director of Veterinary Research, and Mr. C. E. Legat, Conservator of Forests. One of the most important aims of the Survey was to publish local floras, memoirs and handbooks dealing with the vegetation. The first memoir was published in 1919 and the series still continues to this day.

Pole Evans, who travelled widely throughout South Africa recording and photographing the major types of vegetation, published a preliminary account of his observations in 1917 in the official Yearbook of the Union of South Africa, in an article entitled "The Plant Geography of South Africa," with an accompanying map in colour. Later, as President of the South African Association for the Advancement of Science in 1920, he enlarged on the subject in his presidential address: "The Veld, its Resources and Dangers," which was published in the South African Journal of Science 17 : 1 — 34 (1920). In this paper he classified the country into 19 botanical regions and gave a brief ecological characterisation of each region.

In 1920 the first part of "The Flowering Plants of South Africa," a serial magazine based on hand-coloured illustrations, was issued under his editorship. The Government sanctioned the publication on condition that the necessary funds for the cost of publication were met by private subscription. With confidence in the success of the venture, Pole Evans raised enough money through personal contact with liberal donors in South Africa and overseas to continue the work for many years. In 1946, some years after his retirement, the title was changed to "The Flowering Plants of Africa" and, from 1948, the Government has assumed full responsibility for its publication both in English and Afrikaans.

Another periodical, intended primarily as a medium for the publication of botanical papers and monographs emanating from the National Herbarium, was initiated by Pole Evans in 1921. He named the official organ of the Division *Bothalia* to commemorate General Louis Botha, first Prime Minister of the Union of South Africa and Minister of Agriculture until 1913, to whose policy and influence much of the rapid agricultural development in South Africa after Union was due.

The field of research under the direction of Pole Evans was enlarged in 1927 to include the Divisions of Entomology and Horticulture and, with the inclusion of a Field Husbandry section in 1929, the title of the organisation was changed to the Division of Plant Industry. In addition to its extensive research programme, this Division was responsible for regulations dealing with plant imports and quarantine, locust control, veld conservation, nursery inspection and the transport of perishable products.

His interest in the natural vegetation led to the establishment of the Dongola Botanical Reserve in the dry bushveld of the northern Transvaal. Here some of the finest examples of baobabs (*Adansonia digitata*) were to be seen. Unfortunately the Reserve was abandoned after his retirement. In 1926 the Veld Reserve at Fauresmith in the Orange Free State was initiated for the scientific study of indigenous grasses and bushes of the Karoo region. With the establishment of an up to date laboratory at this centre and the appointment of Dr. Marguerite Henrici, a series of valuable publications on the physiology and nutritional value of these plants was made possible. Further research centres were developed for the introduction and study of indigenous grasses at Prinshof and Rietondale in Pretoria, and for subtropical horticultural crops at Nelspruit in the eastern Transvaal.

He had for many years supported and taken a prominent part in associations devoted to science. In 1905 he joined the S.A. Ornithologist's Union, later to be amalgamated with the Transvaal Biological Society, of which he was a foundation member and President in 1911. The title of the Society was later changed to the S.A. Biological Society and he continued as a council member, receiving the Scott Memorial Medal in 1919, awarded by the Society for his research contributions. In 1907 he was elected a Fellow of the Linnaean Society (London) and became a member of the S.A. Philosophical Society, later to become the Royal Society of South Africa, and of this Society also he was a Fellow. He was a strong supporter of the South African Association for the Advancement of Science, becoming President of Section C in 1916 and, as mentioned previously, of the Association as a whole in 1920. In 1922 the Association awarded him the South African Medal and Grant for outstanding scientific achievements. The C.M.G. was conferred upon him in 1921 and, in 1933, the University of the Witwatersrand awarded him an honorary LL.D. degree.

On the occasion of the visit of the British Association for the Advancement of Science to South Africa in 1929, a handbook entitled "Science in South Africa"

was published in which the chapter on "Vegetation of South Africa" with an accompanying map was contributed by Pole Evans. This was the fore-runner of the well-known vegetation map on the scale of 1 : 3,000,000, published as Botanical Survey Memoir No. 15 (1936).

He was a member of the Editorial Board of the Empire Journal of Experimental Agriculture. In Vol. 1 (1933) of the Journal he wrote on "Agricultural Possibilities of Some of the African Grasses" and later, in Vol. 18 (1950), on "The Possibilities of Beef Production in Southern Africa." In 1935 he attended the Imperial Botanical Conference held in London, where he read a paper entitled "Pasture Research in the Union of South Africa," which was published in 1936.

In 1934 the House of Assembly expressed concern at the serious deterioration of the natural vegetation cover and the threat to the country's water resources caused by indiscriminate veld burning on the mountains. A programme submitted by Pole Evans was adopted as a basis for immediate action and this included the formation of a Pasture Research and Veld Management Section within the Division of Plant Industry. A series of Pasture Research Stations was established in representative vegetation regions in the Transvaal, Natal and the Cape Province in order to formulate sound principles of veld management.

This was the final official project he was to launch before his retirement in September 1939. In July 1939, in the preface to the bulletin entitled "Pasture Research in South Africa, Progress Report No. 2," he wrote that: "Grass is the foundation of man's existence in our land as in all others. It is surprising therefore that there should be any who are slow to recognize this and some even loth to admit it." "It is my obvious duty again to draw your attention to the fact that large areas of the country which formerly were rich and flourishing pastoral grounds are now wholly depleted of their grazing and are rapidly becoming desert wastes. Nothing but the establishment of well-equipped pasture research stations in these areas can bring any permanent relief and restore health to the land and wealth to the people." "To a small body of men and women under Dr. J. W. Rowland's able direction, credit must be given for lifting the veil that has so long obscured the dangerous trend of South African agriculture. Few thought that pasture research could be of much benefit to the Country as a whole and many begrudged the little that was spent on it in comparison with other State services. Yet, it has remained for pasture research to point out our folly in the past and to indicate safer and sounder methods of approach for the future."

South Africa owes a debt of gratitude to Pole Evans for his farsightedness and drive in building up a large and active body of research workers who were inspired by his own dedication and energy. One of his most important contributions was in stressing the value of the indigenous plant cover, and of grasses in particular, in conserving soil. His search for grasses suitable for grazing and conservation purposes took him beyond the borders of South Africa. Several visits were paid to Botswana and his travels in this territory are recounted in Botanical Survey Memoir No. 21 (1948). In 1938, at the request of the Kenya Government for his advice with regard to soil erosion and pasture problems, he undertook his most extensive expedition, travelling a distance of 13,000 miles through tropical Africa, and collecting over 700 living grasses, a large number of seed samples and nearly 2,000 botanical specimens. This expedition is described with numerous illustrations in Botanical Survey Memoir No. 22 (1948).

In 1922 he married Miss Mary R. H. Thomson B.A. (Cape) M.Sc. (Lond.), who had joined his staff as Mycologist in 1919, and who fully shared his wide botanical interests. Mainly due to her untiring devotion, he was able to accomplish

his many undertakings. After his marriage he made his home at Irene, some miles south of Pretoria and near Doornkloof, the home farm of his friend General Smuts. A keen horticulturalist, he introduced many indigenous plants into his garden. In the early 1950's he settled near Umtali in Rhodesia and continued to collect interesting indigenous plants in the surrounding area for several years until confined to his home through indifferent health.

Though sadly hampered by infirmity during his last few years and no longer able to walk, he retained his interest in natural history and enjoyed particularly the bird life in the beautiful garden he had created. He is survived by his widow and two children: Dr. Jean Pole Evans and Mr. Reginald J. Pole Evans M.B.E.

Many plants which he collected proved to be new to science and several commemorate his name, for example, *Aloe pole-evansii* Christian, *Gladiolus pole-evansii* Verdoorn and a fungus, *Puccinia pole-evansii* Doidge. In view of his interest in grasses, it is fitting that a grass he discovered in the mountains of Lesotho should be given the generic name *Polevanisia* De Winter in his honour.