

Marguerite Getrud Anna Henrici (1892-1971)

by

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In November 1922 a Swiss scientist arrived in South Africa, a country she was to make her home for close on fifty years. Dr. Henrici was born on 22nd February, 1892, in the city of Basle, Switzerland, and obtained the Swiss matriculation certificate in 1912. After spending a period in France she enrolled in 1913 at the University of Basle where she studied botany, chemistry and zoology, eventually specializing in plant-physiology under Prof. Gustav Senn. In December 1917 she was awarded a doctor's degree *summa cum laude*.

The summer months of her later University years were spent at a small mountain laboratory which Senn had fitted up at Muottas Muraigl above Samaden in the Engadine Alps. Here, with her assistance, Senn worked during the vacations investigating the transpiration, respiration and assimilation of alpine plants. She became private assistant to Prof. Senn from 1919-20 and during 1920-22 she was a research worker in the botanical institute of the University.

At the beginning of her student career in 1913, she sat alongside a thickset bearded man in his middle forties. He was Dr. A. Theiler, later to become Sir Arnold Theiler, founder and director of the world-famed Veterinary Research Institute at Onderstepoort, near Pretoria. Dr. Theiler was home in Switzerland on a refresher course at the time. In after years, recounting her first meeting with the Veterinarian, she referred to it as "that important day in my life".

Dr. Theiler noted the young woman's progress, her capacity for work and her achievements as a research worker. When again in Europe in 1921, he visited Basle and invited her to come to South Africa to join his staff.

LAMSIEKTE—ARMOEDSVLAKTE

A disease among cattle known in South Africa as lamsiekte (botulism) had for long caused severe losses to stock farmers and baffled earlier investigators who had made a study of the disease. About 1912 the farm Armoedsvlakte, near Vryburg in the north-western Cape Province, an area particularly noted for lamsiekte, was taken over by the Veterinary Research Division as a field station for the investigation of the disease. In 1917, lamsiekte was particularly rife in South Africa and Theiler was asked to undertake the special task of lamsiekte research. Early in 1918, relieved of all administrative duties, he took up the post of Director of Lamsiekte Research at the Government farm Armoedsvlakte. By 1919 he was able to explain the cause of the paralysis in animals and how the disease could be prevented. A new field in the science of nutrition had been opened up by Theiler and his co-workers and it was to this field that Dr. Henrici was invited to come and work as a plant physiologist on the phosphorous deficiency of the grassveld.

From the University of Basle (its foundation dates from 1460), a centre of culture and refinement, she was placed in charge of the Armoedsvlakte field station, in an isolated, semi-arid region adjoining the Kalahari Desert. Not only can a greater contrast scarcely be imagined, but it was a precedent in South African Public Service history for a young woman, and a new-comer at that, to be put in charge of an out-station. She entered her new position with trepidation but, with the confidence of her chief, Sir Arnold Theiler, she immediately got down to work, showing the drive and determination for which she was noted throughout her career.

Her laboratory had been fitted up for veterinary research work but was ill equipped for a plant physiologist, and the only literature she had were her own private books and journals.

There was also the difficulty of language. She was fluent in German and French and had a working knowledge of English, but Afrikaans was new to her. In time she overcame this handicap to a certain degree but her reports required an understanding editor and, to the end of her days, she spoke both English and Afrikaans with a heavy German-Swiss accent.

Her first South African scientific paper, written in German, dealt with the transpiration of grasses in Bechuanaland and was published in Basle (1923). She then began a series of publications based on her research on natural pastures. This included work on chlorophyll, carbohydrates, phosphorous content of grasses and the cystine and sulphur content of Karoo shrubs and grasses, and in 1927 the University of South Africa awarded her a D.Sc. degree for a thesis on her plant physiological studies.

From July 1926 to December 1927 she was stationed near Ermelo in the eastern Transvaal in order to study the phosphorous content of highveld grasses, and the results of her investigations were published in the Report of the Director of Veterinary Services (1930).

THE VELD RESERVE, FAURESMTIH

Dr. Henrici was transferred from the Division of Veterinary Services to the Division of Plant Industry in 1929 and was appointed as Officer in Charge of the Veld Reserve at Fauresmith. Situated near Fauresmith in the south-western Orange Free State, the Reserve of some 70 ha (75 morgen) had been allocated by the Municipality in 1926 for the purpose of studying problems connected with the Karoo veld and, to some extent, pasture problems in other parts of the country.

Later, with an additional 25 ha, the land was purchased by the Government and Dr. Henrici was consulted on the planning and equipping of the laboratories and other buildings, including a residence which was to be her home for 29 years. In this small but up-to-date laboratory, with adequate reference books and periodicals, and assisted by competent technical staff, among whom Miss A. J. van der Walt and Messrs. P. E. Potter, A. F. J. Visagie and L. P. Meyer deserve special mention, Dr. Henrici entered a period of long and fruitful scientific research.

Not unnaturally, the conservative farming community did not immediately react favourably to her and her new approach to grazing problems. However, it is to her credit that she overcame these feelings of reserve and soon was regularly consulted on pasture matters. She was called in to visit neighbouring farms, attended their meetings and soon even gained the confidence of the farmers' wives, to the extent of being given their closely guarded cookery recipes.

She spent 1939 on vacation in Europe visiting plant physiological institutes and meeting some of her scientific correspondents.

During the 1940's she undertook a series of transpiration studies. Her techniques came in for some criticism and as a result of divergent opinions on the relative effects of indigenous and exotic trees on ground water resources, a certain amount of controversy followed.

On reaching the age of retirement on 21st February, 1948, Dr. Henrici continued to serve the Department of Agriculture in a temporary capacity. She continued with her work at the Veld Reserve, Fauresmith, until March 1957 when her services with the Department were finally terminated.

Dr. Henrici was not idle in retirement and had been urged to publish a book on Karoo bushes in both Afrikaans and English. She completed the manuscript which is as yet unpublished.

In spite of indifferent health at times, she lived actively and achieved a high scientific output. During the last two years of her life her health deteriorated and eventually she was accommodated in a home for the aged in Bloemfontein where she died on 28th July, 1971.

SOCIETIES AND AWARDS

In 1926 she was elected a member of the South African Association for the Advancement of Science and was a regular supporter of the Association. Their Journal was an outlet for many of her scientific papers. In 1937 she was President of Section C, her presidential address on the occasion being entitled "Transpiration of water supply of South African plants." In the 1950's she was the Vice President for the Orange Free State region.

She joined the South African Biological Society in 1926 and was awarded the Senior Capt. Scott Memorial Medal in 1935 for outstanding scientific achievements. She was an honorary member of Basle Botanical Society and in 1969 the University of Basle awarded her an honorary D.Sc., acknowledging its appreciation of her pioneer work in her field of research.

In 1971 the South African Association of Botanists honoured her by electing her an honorary life member of the Association.

No academic award she received charmed her as much as an illuminated address presented to her in 1968 by the farmers of Fauresmith district.

She amassed a herbarium of between 6,000 and 7,000 specimens, mainly of Karoo plants, and is commemorated in the names *Neohenricia* L. Bol. and *Salsola henriciae* Verdoorn.

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