

From Whitehill to Worcester



The Karoo Desert National Botanical Garden has its origins in a garden near Matjiesfontein that was started over eighty years ago

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The Karoo Desert National Botanical Garden (at the time known as the Karoo National Botanic Garden and later as the Karoo National Botanical Garden) had its beginnings in 1921 through the generous donation by James D. Logan of 16 ha of his Rietfontein Estate adjacent to the railway line at Whitehill, 5 km east of Matjiesfontein in the Western Cape. Approximately 250 km from Cape Town, the Garden lay north of the Witteberg mountain range (33°14'6.4"S and 20°18'21"E) at an altitude of 863 m a.s.l. The name Whitehill probably originated from the abundant white quartzite rocks occurring naturally on the site and on the nearby Witteberg range.

The locality of the garden was identified by Prof. Robert Harold Compton (Director: National Botanic Gardens, based at Kirstenbosch from 1919 to 1953) and Dr Neville Pillans (of the Bolus Herbarium; who had previously been instrumental in introducing Prof. Harold Pearson to Kirstenbosch on 10 February 1911) during a journey they made across the western Karoo in 1920. The exact site was chosen by railways horticulturist Frank Frith, Prof. Compton and James Logan. It was a roughly rectangular strip of land with a frontage on the south side of the main railway line, immediately east of the Whitehill Station. Prof. Compton described the area as a 'perfect natural rock-garden'. The rock foundation in the garden area was mainly shale and Dwyka conglomerate with large quartzitic inclusions, known to be especially rich in succulents.

The Garden received an annual rainfall of about 125 mm per annum. Between 1923 and 1928 rainfall at Whitehill ranged from 64 mm to 185 mm per annum, with less than 100 mm received for four of the six years. Rainfall records main-



TOP: Blocks of Dwyka conglomerate with large lenticular quartzite inclusions rise like whale heads out of the ground at Whitehill. Photo: Christopher Willis. MIDDLE: The Whitehill site was named after the abundant quartzite in the area and the adjacent Witteberg mountains. Photo: Christopher Willis. ABOVE: Louis Pieterse looked after the collections at the Whitehill site during the Second World War. He was also responsible for moving many of the living plant collections from Whitehill to Worcester in the mid 1940s. Photo: SANBI Collection.

tained during the past nine years have indicated an average of 200 mm per annum.

The Karoo National Botanic Garden, sometimes referred to by Prof. Compton as an 'outstation' or 'substation' of Kirstenbosch, was initially placed under the general surveillance of the railway staff at Whitehill. Funds for fencing were raised by Mrs H. Burton, and the Railway Department erected the goat-proof fence, which still stands today. Paths were laid out and much planting was done as a result of special collecting trips and contributions from people interested in succulent plants. Remnants of some of the pathways are still visible in the area today, some 80 years after they were established.

The Garden was established for the cultivation and study of the flora of the arid areas of South Africa – especially the succulent plants. According to Prof. Compton, the purposes of the Garden were: (a) to be a nature reserve, (b) to be a 'repository of some of the most remarkable forms of life that the world contains', (c) to interest the gardener, and (d) to act as a centre for the supply of plants to the succulent garden at Kirstenbosch, to the railway rock-gardens under the control of the railway horticulturist and to members of the Botanical Society of South Africa. It was established that about £230 a year for five years was necessary to 'set the garden on a sound footing'. In reality, income to the Garden at Whitehill seldom reached £200 a year. The total expenditure of the Garden in 1930 was £184.

Whitehill staff

Joseph Archer, former Station Master at Matjiesfontein, was appointed as the Garden's Curator in January 1925. Archer, who lived at Matjiesfontein, had a strong interest in succulents, and his station garden, comprised mainly of succulents, had several times been judged the best in the whole railway system. Initially working single-handedly in the Garden, he was allocated one staff member in 1927. Archer was helped by the railways horticulturist, Frank Frith, who in 1925 created an award-winning South African succulent garden at the British Empire Exhibition in London. Archer was commemorated in *Drosanthemum archeri*, *Tanquana archeri* and other succulent plant taxa. He resigned in 1939, after fourteen years devoted service to the Karoo National Botanic Garden at Whitehill.



TOP: Whitehill Station in 1925. Photo: SANBI Collection.

ABOVE: Whitehill station and associated buildings alongside the railway line linking Cape Town and Johannesburg, today. Photo: Christopher Willis.

LEFT: Early days. Aloes lining a pathway to the Karoo National Botanic Garden at Whitehill. Photo: SANBI Collection.

BELOW: Joseph Archer standing alongside the reservoir at Whitehill in 1927. Photo: SANBI Collection.





ABOVE LEFT: *Tylecodon reticulatus*. Photo: Christopher Willis.

ABOVE RIGHT: The red-flowered parasitic plant *Hyobanche rubra* growing at the base of a dry Karoo shrub on Whitehill. Photo: Christopher Willis.

BELOW: A species of *Holothrix* (Orchidaceae) growing on the Whitehill site. Photo: Christopher Willis.



Subsequent to the Curator's resignation, Louis Pieterse, who had assisted him for several years, maintained the Garden together with one labourer. The post of Curator was not filled until 1945, due to lack of funds during the Second World War and lack of accommodation at the Garden.

Water

In 1926 a reservoir (with a capacity of 63 000 litres) was excavated in the solid rock at the highest point of the Garden, and a well was sunk in the bed of the adjoining Baviaans River. Pipes were laid to carry water to vari-

ous points in the Garden, thereby saving much labour. Unfortunately the water from the Baviaans River proved to be very brackish and unsuitable for garden purposes. The well was later abandoned and the reservoir, still visible in its original position today, was filled with water supplied from railway tanker trucks.

Botanical Society support

The Garden's running costs were covered through voluntary contributions and by small amounts derived from the sale of seeds. In effect, the Garden was run by the South African Railways. In

1933 the Botanical Society, through altering its constitution (which up until that time had allowed the Society to give support only to Kirstenbosch), decided to give support to the Karoo Garden, but this support consisted entirely of voluntary subscriptions paid by members in addition to their ordinary subscriptions earmarked for Kirstenbosch. The voluntary subscriptions comprised not less than 10 shillings per subscription, 5% of which was deducted to cover the cost of administration of the Society. Ten packets of Whitehill seed, as chosen from the appendix to the Kirstenbosch seed list, were sent to individuals paying the additional subscription. By 1935, after a period of only two years, the number of subscriptions taken out by members to support the Garden at Whitehill was 189, approximately 10% of the number of Kirstenbosch subscribers at that time. The separate subscription towards the Karoo Garden was abolished in 1948 and at the same time the general rates of annual subscriptions were raised. Over seventy years later, the Kirstenbosch Branch of the Botanical Society of South Africa is still giving financial support to the Karoo Desert National Botanical Garden at Worcester, successor of the old Garden at Whitehill.

Whitehill plants

The natural vegetation at Whitehill generally consists of a comparatively uniform layer of knee-high 'Karoobossies', usually with gnarled stems appearing to be centuries old. Their leaves are fine, thin and non-succulent. These shrublets are perfect nurse plants for the multitude of miniature succulents that germinate under their shady protection. In fact, most of the succulent species of the area spend their entire life cycle under these environmentally less harsh conditions.

Repeated visits by Kirstenbosch staff to the Whitehill area culminated in 1931 in a publication on the flora of the Whitehill District, including the prominent Witteberg range a few kilometres south-east of the Garden, by the Royal Society of South Africa. In this publication, four new genera and fifty-two new species were described. The flora of Whitehill is typified by a high percentage of succulents, small woody plants and geophytes. Common genera occurring naturally in the area include *Astroloba*, *Avonia*, *Crassula*, *Conophytum*, *Drosanthemum*, *Euphorbia*, *Hermannia*, *Ruschia*,

Tylecodon, *Berkheya*, *Pteronia*, *Galenia*, *Stapelia*, *Duvalia*, *Huernia*, *Haworthia*, *Senecio*, *Anacampseros*, *Eriocephalus*, *Helichrysum* and *Pelargonium*.

During the early years of the Karoo Garden at Whitehill, many plants were brought into the Garden, either through donations or through plant collecting, to supplement the natural flora of the site. In 1946 most of the cultivated plants, such as the large specimens of *Aloe dichotoma*, other *Aloe* species and other succulent plants, were moved

from Whitehill to the new garden site at Worcester. Most of these plants were sent by rail and fetched from the Worcester Station by the staff of the new Garden. A few of the cultivated plants that were left at the old site, such as *Pleiospilos compactus* and *Cheiridopsis denticulata*, are still growing there today.

Although the location of the original Karoo Desert NBG at Whitehill Station is in a region very rich in succulents, it does not coincide with the natural

distribution range of a single species of *Aloe*. On one of the black-and-white photographs taken during the early days of the Garden's development at this locality, a number of aloes, almost certainly *Aloe ferox*, are shown where they had been planted in a series of rows flanking a path. Today, there is no sign of these plants, or any other *Aloe* species for that matter. The plants were either lifted and transported to the new location of the Garden at Worcester, or they eventually succumbed to the



ABOVE LEFT: *Crassula columnaris* at Whitehill. Photo: Christopher Willis.

ABOVE RIGHT: *Crassula pyramidalis* at Whitehill. Photo: Christopher Willis.

BELOW: The succulent-stemmed *Euphorbia mauritanica* (foreground) and succulent-leaved *Crassula rupestris* (background) and adjacent rocks provide a spectacular rock garden on the Whitehill site. Photo: Christopher Willis.



harsh aridity of the Whitehill location once irrigation ceased. A few kilometres from the Garden, on the road to Ceres, two species of *Aloe* occur in abundance. The first, *Aloe microstigma*, is a medium-sized aloe with a short trunk clothed in the remains of dried leaves. It has copiously spotted leaves that are borne erectly. The second species is the miniature *Aloe variegata*, or partridge-breasted aloe, which nestles in the dappled shade of low-growing Karoobossies, or karoo shrublets. Whitehill is near the south-western extreme of its distribution range.

Move to Worcester

Between 1944 and 1945 investigations and negotiations took place with a view to finding a more suitable site for the Garden. A combination of drought, diversion of the national road to a distance of 5 km away from the Garden and poor public support, especially during the Second World War, forced Kirstenbosch to vacate the Whitehill site in 1946 and re-establish the Karoo Garden at Worcester, where land had become available through donations from both the Worcester Municipality and Mr Charles Heatlie.

The new site was also less than half the distance from Kirstenbosch and therefore far more accessible to Kirstenbosch

staff. Jacques Thudichum, a Swiss horticulturist and former cattle rancher in Argentina, was responsible for establishing the new Garden at Worcester in the mid-1940s, using many plants transferred from the Whitehill site near Matjiesfontein, and served as Curator of the Garden from 1945 to 1958. Prof. Compton described the move as follows: 'Materials, water pipes etc. were moved

from Whitehill, but the fence was left to continue the old garden's function as a nature reserve, the land reverting to the Logan estate, and the plants left in charge of Louis Pieterse pending their removal to Worcester. This took place in July, 1946. A house for the Curator was built in the Garden by the Public Works Department and was occupied in 1948.'



ABOVE: *Pleiospilos compactus*.

BELOW: View looking southwards towards the Witteberg mountain range from Whitehill.
Photos: Christopher Willis.



The Karoo National Botanic Garden was officially opened at Worcester on 25 September 1948 by the Governor-General, Mr G Brand van Zyl, who had been a member of the Board of Trustees of the National Botanic Gardens for several years. The Botanical Society contributed £1 000 to the initial costs of establishing the Garden.

Whitehill today

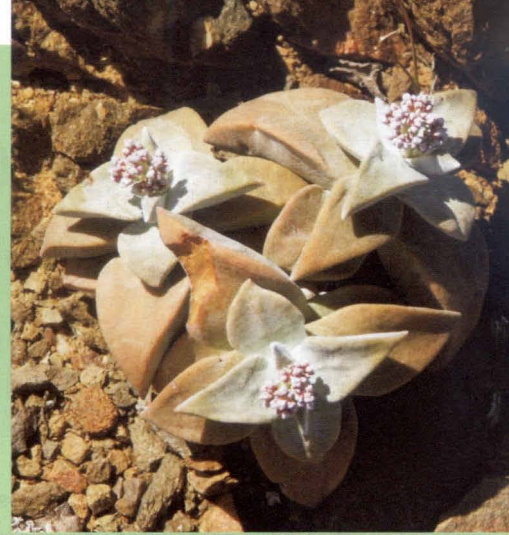
The Whitehill site east of Matjiesfontein was purchased by Alan and Jean Veasey in 1996. The former garden site was included within their Rietfontein Private Nature Reserve in September 2002, when the area was declared a private nature reserve by Cape Nature Conservation. The 4 000 ha undulating and mountainous reserve is open to the public and offers a variety of outdoor activities including hiking, a 4-wheel drive trail, bird-watching, mountain biking, game viewing and donkey-cart rides. The Rietfontein Private Nature Reserve includes five self-catering cottages located at varying distances from Matjiesfontein, which can be booked by visitors to the area. For additional information, Alan and Jean Veasey can be contacted either via the e-mail address aj@veasey.co.za or on the number 082 5573 844.

The establishment and subsequent experiences of the Karoo Garden at Whitehill form an interesting part of the rich history of the South African National Biodiversity Institute since its modest beginnings, together with the Botanical Society of South Africa, in 1913. Fortunately, much of this Garden's history at Whitehill has been captured for posterity by Prof. Compton in various editions of the *Journal of the Botanical Society of South Africa* and in his publication entitled *Kirstenbosch, Garden for a nation* (1965).

Many lessons can be learnt from the Karoo Garden's experience at Whitehill, particularly when considering the establishment of new national

RIGHT: *Crassula deltoidea* at Whitehill.

BELOW: An old rock-lined pathway still clearly visible on the Whitehill site in 2005.
Photos: Christopher Willis.



botanical gardens today. Experiences at Whitehill show how various factors (such as the Second World War, drought, remoteness and the re-alignment of the national road connecting Cape Town and Johannesburg), often beyond the control of the organization, can significantly impact on the viability and sustainability of a national

botanical garden. They also emphasize the importance of partnerships, staff commitment (both horticultural and research) and community support (in Whitehill's case from the South African Railways, members of the local community and the Botanical Society of South Africa) to the survival of a national botanical garden. ♾

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Further reading

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