

its erosional power, especially in the Garden where the undercutting of the stream-banks and the loss of deep valley bottom soil has increased dramatically. This will become even more noticeable when the rainfall returns to normal after the extremely dry conditions of the past few years. The deposition of sand and silt on the low lying soils next to the stream channel during flooding and over-flowing of the banks will then in all probability also increase markedly because of the greater rate of erosion higher up.

The soils of the Botanic Garden are no doubt being affected in other ways as well, such as by the deposition of chemical matter through air pollution but the effects are not at this stage noticeable or measurable and are thus best left to future generations to examine.

### Prognosis

If man is the great destroyer (often unwittingly) of his environment, he is also paradoxically a concerned conservationist and restorer of that which his activities have damaged or destroyed. The Transvaal Botanic Garden is no exception in this respect as much is being done there to (i) restore scarred hillslopes by replacing the soil that had been excavated (Photo 4), (ii) counter the increased erosional powers of the stream by placing gabions in strategic places to protect the stream banks, and (iii) decrease the rate of erosion on the slopes by replacing vegetation and taking preventative measures.


These steps, in themselves, will do much to restore and preserve the ecological balance, but the most positive factor as far as the continued welfare of the soils is concerned, is that the Garden is controlled by people who understand fully the inter-dependence and absolute necessity of the various ecological fac-

tors. Although the soils cannot, therefore, help but be affected by the increased population and the industrial and residential development of the surrounding areas, they are in good hands and cannot come to much harm in the foreseeable future.

### SOURCES

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## The Rhinoceros' Favourites

by Blythe Loutit who also did the drawings

THE "DESERT" RHINO lives in an extremely harsh, rugged but fragile part of South West Africa/Namibia. Strange plants grow amongst stranger rock formations, where I have spent many hours, days and weeks exploring this amazing world.

I have always been fascinated by what the animals (herbivores) eat. As a child I would hang on the fence watching the domestic stock on the farm selecting their specials in the pasture. Later, when game reserves became part of my lifestyle, it was what the birds, antelope, rhino etc. were eating which interested me.

Then when we were posted to this desert wilderness in the Skeleton Coast Park, plants immediately took on an even more interesting role in the survival factor. Initially my interest was directed at flowers and succulents growing in rock crevices and along the wide, wind-worn valleys. I collected specimens to start a small herbarium and for the State Herbarium in Windhoek.

### "Pruned" plants left for new growth

As I walked and climbed farther and farther afield, I became aware of another creature also interested in the plants which I was collecting. Very often plants were neatly pruned and others were stripped of pieces of outer bark and inner succulent parts were eaten out, always leaving part of the plant to continue growing. The spoor surrounding the plants was large, three-toed and pan-sized — spoor of *Diceros bicornis* the black rhino.

It was with a feeling of awe and suppressed excitement that I car-

ried on with my collecting. The thought of that prehistoric creature surviving in this forbidding terrain was strangely intoxicating. My interest in plants turned towards those preferred by these large, unpredictable herbivores. Thus my mind was set to wondering why the rhinos traversed such inhospitable mountain country, their paths leading them far from water to reach some very unpalatable-looking plants.

### Finally — the magical encounter

It was almost three years before I finally met up with the elusive rhino whose individual spoor I had come to recognise. Much of my time had been spent plotting the feeding routes of some seven to nine rhinos, all done by following spoor. Suddenly one day I came upon the broad back-end of a rhino quietly pruning a thorny, gnarled *Acacia erioloba*, one of the few trees growing in the arid dry river washes. The encounter was unreal and magical.

The poster which was created for the 1984 SAAB (South African Association of Botanists) Congress held at Cape Town University and which won the Botanic Society's award, depicts two of the so-called armoured plants which are a feature of vegetation in arid country, and are highly favoured by the black rhino during the long dry season.

*Euphorbia damarana* Leach is one of the plants which exudes a milky latex, typical of the Euphorbiaceae; the latex is thought to cause blindness in humans if it enters the eye, and, if spilt on the skin, causes bur-

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*Merremia guerichii*

*Merremia guerichii* Meeuse  
(Illustration for "Our Beautiful Flora", a  
future publication in SWA.)



Top: A black rhino cow and calf in *Euphorbia damarana* habitat in Damaraland. Below: A young black rhino calf feeding on *Welwitschia mirabilis*; the mature female seeds are a great favourite.

ning and blistering. Rhinos feeding on *Euphorbia virosa* which is armed with both latex and fierce thorns, have been noted to become very dark around the mouth, and the skin develops a scaliness.

The other plant depicted is *Blepharis gigantea* Oberm. which displays armour in the form of brittle, sharp "thorns" tipping the leaf midrib. These sharp points cause considerable pain and aching soreness if they puncture the skin of a human. Obviously, the armoured defences of such plants may have little effect on the rhinoceros.

Analyses for the chemical make up and nutrients contained in a number of species selected by the rhino is in progress at the Dept. of Zoology at Cape Town University. During the driest season it would appear that about 90% of the available food consists of plants with armed defences of some sort. The





*Dichrostachys cinerea* (L.) Wight & Arn. ssp. *africana* Brenan & Brummit.  
Illustration from the "Trees and Shrubs of Etosha National Park" by C. Berry; it depicts the interdependence between our fauna and flora.

analyses shall give us an indication as to why some plants are selected in preference to others which are available closer to watering places during the dry season.

In contrast, during the short wet season rhinos feed predominantly

on the ephemerals, annuals and bi-annuals; however, an interesting observation was the fact that Euphorbiaceae are favoured throughout the wet season too. *Merremia guerichii* and *M. multisecta* are the most favoured plants which do not

display any visual form of deterrent and are available for almost the entire year; the flowers vary in colour from white, yellow, pink and salmon. *Welwitschia mirabilis* Hooker fil. is another great favourite of the rhino.