

"And as the old bull elephants teach the young bulls, his father had taught them the things of the forest. About the trees. The difference between a kalandar — the Outeniqua yellow-wood — and an upright, the real yellow-wood. He taught them to know a white pear, a wild alder, red alder, white alder, about assegai and hard pear, ironwood, candlewood, kamassie . . . Some you know by the bark others by the leaf. At the beginning a stinkwood tree and a saffron looked alike until you learned to look for the two hard buds near the stem of the stinkwood's leaf. They came to know the shrubs of the underbush: which were medicine and which were not. Which berries you could eat and which not."

From *Circles in a Forest*
Dalene Matthee

History

Since the earliest history indigenous forests have played a very important role in the development of the country. The early settlers were largely dependent on the wood from these forests for their normal timber requirements. When the Dutch East India Company founded the first settlement in the Cape in 1652, wood from the surrounding forests was used extensively for building dwellings and wagons; for making furniture, tools and other household articles; for erecting protective fences and for building boats and quays. These forests were soon exhausted and the settlers had to go eastwards to the forests near Swellendam, George, Knysna and the Tsitsikamma.

This has always been a common pattern where new land was colonised. There existed such an urgent need for timber that it was almost impossible to control exploitation of the forests. Although forest supervisors were appointed in the Cape, they did not have full control over the forests, due to slow transport over the large areas, as well as a shortage of staff.

An important milestone in the history of forestry was reached in 1880 with the appointment of the first trained forest official, Count de Vasselot de Regné, as Superintendent of Forests. With the co-operation of district forest officers and foresters, he laid the foundation for systematic, scientific forestry in South Africa. The first **Forest Act** of 1888 and the **Forest Act** of 1914 were also important milestones. The then Department of Forestry gained full control over indigenous forests such as those of Knysna, Tsitsikamma and the Eastern Cape for the first time. Woodcutting was restricted since 1913 by compulsory registration and in 1939 the woodcutter system was finally abolished to prevent over-exploitation destruction of the forests.

Conservation and recovery

In the meantime various exotic tree species from countries with a similar climate to that of South Africa were introduced. In 1883 a plantation of pine, blackwood, wattles and eucalyptus was established at Concordia near Knysna, but many of the exotic plantations were established between 1890 and 1910. During this time well-known plantations like Jonkersberg and Goudveld, which are mentioned in *Circles in a Forest*, as well as Witfontein, Bergplaas and Buffelsnek were started. These exotic forests replenished indigenous forests and protected them from over-exploitation, thus saving them from being reduced to scrub forest.

From 1939 to 1965 the forests were left alone except for the removal of windfalls and dead trees. Research in the forests continued and provided the information on which the present management system of multiple use could be based. The first proper management plan according to this system was put into

practice at Diepwalle in 1970. Such a plan is based on the scientific management of forests in order to ensure optimum utilisation in accordance with the concept of "multiple land use". This means that due account is taken of the natural relationship and interaction between all the organisms in a forest, its growth, its recreational potential, the economic utilisation of, for instance, dead trees and preserving the natural beauty of the forest.

Fauna

The indigenous fauna, much of which still survives, forms an integral part of the forests. Unfortunately the animals are not easily seen. Larger mammals, apart from elephant in the vicinity of Diepwalle and Gouna, include the bushbuck "with its brown body and speckled necklace", as described by Dalene Matthee in *Circles in a Forest*, leopard, caracal, baboon, vervet monkey and, described by Dalene Matthee as the most beautiful of them all, "the blue buck from the dense underbush. So tiny so nimble of foot that you seldom found their dotted tracks, except perhaps where one of them had crossed the driftsand near a stream or a sandy spot in a footpath". Bushpigs are herd animals and live in groups of six to 20. They are omnivorous, eating bulbs, fruit, grass and insects. Bushbuck hide in the forest during the day, while they graze in areas with more food and sparser vegetation, such as pine plantations, during the night. Baboons are plentiful, but prefer to stay in rocky areas rather than in the forest. Leopards are also quite common here but they are shy animals and often prefer to stay in the mountain areas rather than in the forest.

The forests of the Southern Cape have a smaller bird population compared to that of the Transvaal Bushveld and approximately 35 to 40 species of the so-called typical forest birds are found here. More species can be found in the areas adjacent to the forest, such as the scrub forest or fynbos and next to rivers, swamps, lakes and the sea. The rare crowned eagle can sometimes be seen here. Its strong wings enable it to fly almost vertically up into the air through openings in the roof of the forest. Its prey includes vervet monkeys, small buck and dassies.

The African sparrow-hawk is the forest birds' biggest enemy. There are numerous rammers and they can easily be distinguished from other pigeons by their bright yellow beaks and feet. The Knysna lorie and the forest lorie are also quite common. The forest lorie (*narina trogon*) is the only kind of its family in South Africa. It is described by Dalene Matthee as being just as beautiful as the Knysna lorie, but "more stupid". The members of the thrush family are the best songsters in the forest. They are the olive thrush, chorister, Cape robin and starred robin. Because of poor visibility in the forest vegetation, the birds in the forest tend to have rather loud penetrating calls. Sound takes priority over sight as a means of communication as well as to advertise and protect territory.

Flora

A part of the Outeniqua hiking trail passes through the forests. Here and there, however, isolated patches of fynbos can be seen, which are locally known as "islands". Patches of scrub forest with a strong fynbos element are often found at forest edges.

The composition of the indigenous forest varies from place to place, depending on height above sea-level, rainfall, type of soil, aspect and other factors. The forests are therefore divided into six forest types which vary from "dry" forest to "moist" and "wet" types of forest.

The "dry" type of forest is generally found on the steep northern and north-western

slopes of the coastal belt. It reaches a maximum height of 15m and has a scrub-like appearance. Thorny bushes are common to this type of forest (e.g. num-num — *Carissa bispinosa*).

The "moist" type of forest is found on the plains and hills and attains heights of 15m to 30m (hence also known as "high forest"). Valuable species such as stinkwood, yellowwood, white pear, candlewood, ironwood and many others occur here. The forest floor is very dense with vegetation and there is a great deal of witch-hazel (*Trichocladus crinitus*).

The "wet" type of forest is found in the deep, perennially damp ravines. The height of this type of forest is usually about 15m, and a dense undergrowth of ferns is common. The most important trees in this forest are red alder, white alder, Cape beech, stinkwood, tree fuchsia and Cape holly.

Management classes

In management plans certain areas of the forest are allocated to one of five management classes, viz research, reconstruction, production, protection and recreation. The more accessible moist areas were heavily and selectively exploited in the past. These areas are allocated to the production management class in an attempt to render them productive again through silvicultural treatment. Damaged areas or areas invaded by exotics are cleared and artificially re-established by planting indigenous species.

Large areas, especially of the "dry" and "wet" types, are set aside as protected areas for indirect uses, such as water, soil, flora and fauna conservation and, last but not least, for their scenic value.

The recreation management class enables the public to share in this heritage, for instance, by providing the opportunity to stroll along hiking trails.

The policy, therefore, is one of conservation management for multiple use.

Topography, climate and geology

The topography of the area consists of a long range of terraces which stretch gradually from east to west, from the coast upwards to the slopes of the Outeniqua Mountains. The upper plateau starts approximately 5km - 15km inland and reaches a height of 300m - 600m. The Outeniqua Mountains behind it reach heights of approximately 1 200m. Rivers have cut deep mountain valleys through the plateaux down towards the sea.

The area receives rain throughout the year, but the highest rainfall occurs from September to April and the rainfall varies from 700mm - 800mm annually at the coast to 1 100mm - 1 300mm in the mountains. There is a drop in temperature from the sea to the mountains. Temperatures vary from an average daily minimum of 7,4°C in July to 24,5°C, an average daily maximum in January. Dry, warm berg winds often blow from the north. Between June and August snow can sometimes be seen on the mountains.

The geology is dominated by Table Mountain sandstone with conglomerate and shale bands. Pre-Cape sediments (shales, schists and fillites) and granite are found on the low plateaux. The acidic loam soil of the plateaux and the sandy loam soil of the slopes were derived from the parent rock. The loam soil has a characteristic bottom layer of clay. The soil in the coastal region is sandy. The never-ending cycle of life and death has left a fertile layer of humus in forest and valley, which enables a wide variety of plants to grow on a layer of soil scarcely 300mm deep in places.

Issued by the Department of Environment as an aid to pupils studying the prescribed book "Circles in a Forest".