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Front Cover Picture: The path passes through a glade in the forest.

Back Cover Picture: Aerial view of Umhlanga Forest on the left, the Lagoon, Hawaan Forest on the right, and Umhlanga in the distance.

Dwindling Forests of the Natal Coast

by

Vincent A. Wager M.Sc. (Hons.) D.Sc.
All photographs by the author

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veld fires which raged annually burnt the forest edges, slowly pushing the trees back.

Fortunately the government stepped in and proclaimed large areas as protected Forest Reserves. But the rest of the forests became private property and were at the mercy of the owners, to be plundered at will.

In Natal most of the coastal area was covered with forests and as the country became settled so the appearance of the land changed, and the forests dwindled.

Nearly a hundred years ago the Natal Forest Commission of 1878 reported that in the 13 Natal Divisions, Heavy Timber Forests on Crown Lands were estimated at 32 000 acres, on private lands and locations 133 000 acres. Acacia Bush on Crown Lands 200 000 acres and on private lands and locations 1 650 000 acres. The Division of Pietermaritzburg had more extensive forest lands than any other Division: the Zwartkops Native Location alone contained about 8 000 acres of forests. The portions of Forest Land belonging to the City of Pietermaritzburg yielded timber for buildings and waggons but the supply dwindled to firewood until even that was exhausted. At Karkloof the forest extended for 20 miles and a mile wide. Every native hut required about 400 small trees cut, not to mention poles for kraals — the forests were denuded of young growth. The Acacia Bush near Table Mountain was cut for

firewood for sale in Pietermaritzburg at the rate of 500 tons per month. The Division of Durban had 160 000 acres of Forest and Acacia Bush and there was the same story of wholesale destruction.

The ravage has accelerated with the population explosion, millions of ha have become sugarcane fields and plantations of exotic trees, new townships spring up all along the coast, there are roads, factories, dams, airfields, mining operations, harbours: all take their toll.

The swamp forests and mangroves have suffered particularly, but there are a few left, and fortunately one swamp forest in its original form and some 10 ha in extent has been preserved near Sheffield Beach about 60km north of Durban, and a fair-sized mangrove swamp still exists on the northern bank of the Umgeni River mouth.

A few patches of forest, small and large, still remain along the coast particularly at Port Edward, Umhloni Park, Umhlanga, the Hlogwaan at the Tugela mouth, the Ndukuduku at St. Lucia and others up through Tongaland.

These forests are in general very much alike but differ in many of their components. To describe each one adequately would fill a large volume. This booklet deals with a few remnants that still exist along the north coast not far from Durban.

THERE IS AN URGENT NEED THAT ALL THESE REMNANTS OF FOREST SHOULD NOT BE ALLOWED TO DISAPPEAR. THEIR OWNERS WANT THESE FORESTS TO REMAIN AS WILDERNESS AREAS, AND TO THIS OUR SOCIETY WHOLEHEARTEDLY AGREES. WE HAVE BEEN ISSUED WITH A PERMIT TO ENTER THEM AND THOSE WISHING TO VISIT THESE PLACES SHOULD CONTACT ONE OF THE UMHLANGA CENTRE COMMITTEE MEMBERS WHO WILL CARRY THE PERMIT AND ARRANGE TO ACCOMPANY THEM. OUTINGS WILL ALSO BE ARRANGED AT FREQUENT INTERVALS.

Early Days

When Durban was a mere village in the early eighteen hundreds, the rolling coastal belt of Natal was mainly covered with bush or forest interspersed with grassy hillsides. Every few miles rivers or streams meandered through valleys to the sea, generally with lagoons at their mouths. Some of these estuaries were lined with Mangroves, others had large expanses of reeds. Swamp forests occurred in some of the smaller streams as they widened out on their approach to the ocean.

This country was inhabited by creatures of all sorts from the lumbering elephant, rhino and hippo to the graceful and fleet antelopes, and giraffes and all the various predators, and monkeys, antbears, crocodiles, snakes and other reptiles and amphibia, and birds and insects in untold numbers.

The coast forest extended almost unbroken northwards from the banks of the Umgeni River. In 1849 Edmund Morewood produced the first sugarcane at Compensation. This was the deathknell of the forest monarchs and the myriads of creatures that lived in their shadow: the end of an era. Daily the sound of the axes grew louder.

By 1855 sugar was being produced on a commercial scale. Durban North was cleared and the sugarmill built on the bank of the Umgeni River at Springfield was totally destroyed by the great flood of 1856 with 27 inches of rain in 4 days, causing the river to rise 20 feet: Virginia was cleared and another sugarmill was constructed from the local forest hardwood timber at the bottom of the road now known as Old Mill Way.

In 1859 William John Campbell settled at Umdhloti, and later, under his son Sir Marshall Campbell, the Natal Sugar Estate at Mount Edgecombe was established.

William Campbell's grandson, known as 'Wac', often described the hunting parties in the early days of this century when friends, and a horde of Zulu beaters, combed the forest in quest of Bushbuck and Wildpig. It was said that Crested Guineafowl were never seen here, so 'Wac' imported a number from Zululand and liberated them, and they have flourished ever since.

Great-grandson Urban Campbell recalls the wonderful times he spent as a youngster.

"We used to ride from Mount Edgecombe and camp for weekends at the Umhlanga Lagoon which had a very much larger water area in those days. We caught some fine rock salmon towards the rice garden in the southern branch of the lagoon near the mouth. Prawns were there for the taking at night with the aid of an old paraffin lamp in hand nets, all we wanted for bait, and several meals. All types of fish were plentiful and we hooked bream, grunter, etc., all up to 3 or 4 pounds. A great joy to us was to watch the Fish Eagles — there were several pairs. The bird life on the mud flats and on the edge of the bush was terrific. Flamingoes were often seen. It was the draining of the vast swamp area (for planting cane) at the head of the lagoon that spelt its doom, causing the rapid silting of the deep areas, and the extensive growth of reeds which previously had been held in check by the inflow of tidal, salty water."

Foreword

Although I am a Botanist and Plant Pathologist my main interest has always been animals. As a small boy I can remember the aquaria my father, then Professor of Botany at the Pretoria University, had given me, and the happy days we spent together with net and bottle collecting small fish, water-bugs and tadpoles. Even then I wondered what frogs belonged to the different tadpoles, and thus was born the life-long hobby of studying the habits of our 101 different kinds of Amphibia, and their eggs and tadpoles, culminating in the book THE FROGS OF SOUTH AFRICA.

In 1940 I went to live in the tiny and delightful village of Umhlanga Rocks, and for the next five years I explored every bit of the huge forest that surrounded it, almost unbroken from Durban North to Umdhloti, and learned to know the birds and their calls.

I still get great enjoyment from walking through the forest and one day I decided that it was high time I also got to know and recognise some of the plants, and also those of the adjacent sand dunes.

The object of this booklet then, is to describe the forests that remain not far from Durban and the creatures that inhabit them, and so add to the enjoyment of those who wander through. The world becomes a better place when you walk with your eyes open and know what you are looking at.

We have wonderful assets here which must be safeguarded for ever.

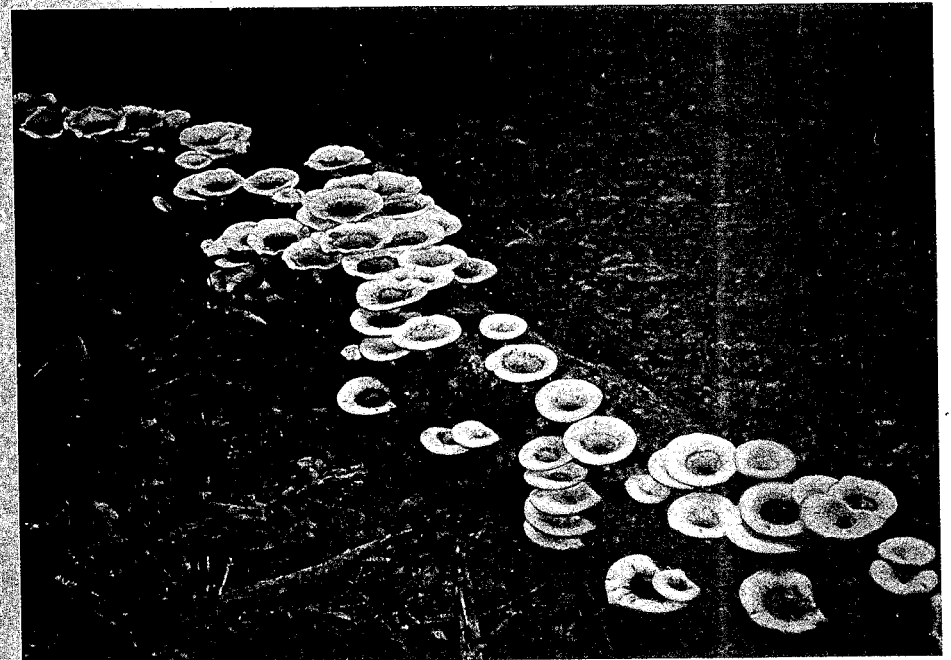
I am indebted to Roddy Ward for checking the plant names, for the bird comments by Keith Cooper and for the list of snakes by Ray Parker.

Vincent Q. Wager

Hon. Life Member, Wildlife Society



Introduction



These 'wineglass' fungi *Lentinus sajorcaju*, in Hwange Forest suddenly appear on a log, last a few weeks, die and disappear, and develop again on the same log the following summer.

Forests all over the world are dwindling at an alarming rate. Trees are felled for their timber and to make way for agricultural crops. This destruction has been taking place in South Africa since man first arrived. The indigenous people cut small trees for hut making, larger ones for cattle kraals. Their agricultural methods were wasteful, making clearings in the forest by felling and burning the trees, planting crops for a couple of years, and repeating the process.

When Europeans arrived there was a demand for timber for buildings, and yellow-wood, stinkwood and other

forest giants were felled. With the discovery of gold there was such a demand for timber and firewood that vast areas were denuded of all sizeable trees, and hundreds of ox-waggons loaded with wood trekked daily from Natal and other parts of the country to the Witwatersrand.

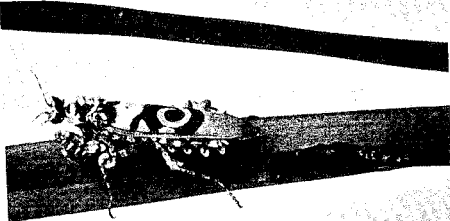
With the rapid expansion of civilization all over South Africa, more and more land was cleared to make way for agriculture and towns, and the forests began to disappear. If not completely eradicated, large timber trees were removed, cattle grazed making paths to let in light and trample the young trees,

The Forests

Fortunately two large remnants of forest of the original Campbell estate still exist about 25km north of Durban. These are the Hawaan and Umhlanga forests.

A few short years ago the Umhlanga forest stretched along the coast from Durban North to Umdhloti. Now that the southern section known as La Lucia has been opened as a residential area, the unspoiled Umhlanga forest is now restricted to an area north of the Umhlanga Lagoon for about 2 ½ km to Umdhloti, and is up to 800m wide in parts. This is typical dune forest characterised by the presence of the Red Milkwood trees.

The Hawaan forest, covering about 50ha is on the west side of the national



This beautiful Praying Mantis, found frequently along the coast has a fearsome name *Pseudocrobotra wahlbergi*. It sat motionless for a week on a flower, suddenly a male appeared, and mated; he was not eaten by the female (as happens so often to male Mantids) but remained nearby, and 3 days later the eggs were laid in a cake about 25mm long (Bottom right): they hatched 2 months later.



Occasionally a termite garden blooms overnight with tiny parasol-like toadstools.

road, and extends back for about 2km from the Umhlanga Lagoon which is its northern boundary. On the east side of the national road there is an arm of the lagoon separated from the sea by high forest-covered dune. All that is left of this once magnificent Hawaan forest is thus an inverse, L-shaped strip about 800m wide.

These two forests, although on opposite sides of the Umhlanga Lagoon are very different, many kinds of plants are common in one and rare or absent in the other. Hawaan is different from the dune forest having few Red Milkwoods. It is unique in South Africa in that it has such an abundance of two trees, *Cola natalensis* and *Cavacoa aurea*: the latter is known only from a few other places, Stainbank, nDukuduku and Tongaland.

The forest is made up of a large number of different trees mostly reaching to a height of 25m growing close together and intermingled with other vegetation, and sunlight occasionally filters through. A few paths, like tunnels, possibly follow old animal trails and meander through the forest.

The floor is carpeted with dead leaves: there are butterflies, all manner of insects and the curious pill millipede: the air is full of bird song. Step quietly and you may see the little mPiti buck, as large as a small dog, a family of Banded Mongoose, and you may hear the chattering of monkeys and the hoarse bark of the Bushbuck, or the characteristic calls of the Purple Crested Loerie, the Hadedah Ibis, and the Trumpeter Hornbill.

To make it more interesting for those wandering through the Hawaan and Umhlanga forests, it is now possible to identify the more common trees, for some sixty of the large number of different species have been given

numbered labels. A list of these numbers, with names and short descriptions, will be found at the end of this booklet.

The *Ficus* species are most valuable for the prodigious number of edible fruits they produce, thousands on each of the vast number of branches of the huge trees. These fruits are eaten by all manner of creatures from tortoises to antelopes, fruit bats and birds, and both ripe and rotten fruit are food for hordes of insects. Sitting quietly beneath a fruiting tree is like being in a well-stocked aviary. Moreover many of the species bear twice a year, and it is also curious that one fig may be full of fruit and an adjacent one has none, and vice versa. The Natal or Strangling Fig is common in the coastal forest. When a seed becomes lodged in a tree it germinates and sends thin, wiry roots down the trunk, and when they reach the ground they increase in girth very rapidly. More aerial roots are produced and wherever one touches another it fuses, and the host becomes surrounded with a network, and is slowly 'strangled' and dies, and in a short space of years the fig replaces the monarch that may have stood there for a century.

A tree whose home is more usually in the dry bushveld is occasionally found in the coast forest. It is *Euphorbia ingens*, the Naboom, umHlonhlo, whose green, angled, jointed stems are reminiscent of an Arizona cactus. It was first described and named from a specimen discovered near Durban in 1831. Dingaana had his throne under a particularly large Naboom where Piet Retief was killed in 1838.

A small tree that occurs frequently in the Umhlanga forest is *Acokanthera oblongifolia* known as Bushman's Poison. Elephant poachers in Kenya used poison from another species *A. longiflora* to tip their arrows. The finely chopped-up branches and leaves were boiled in water, more being continually added until the liquid became too thick

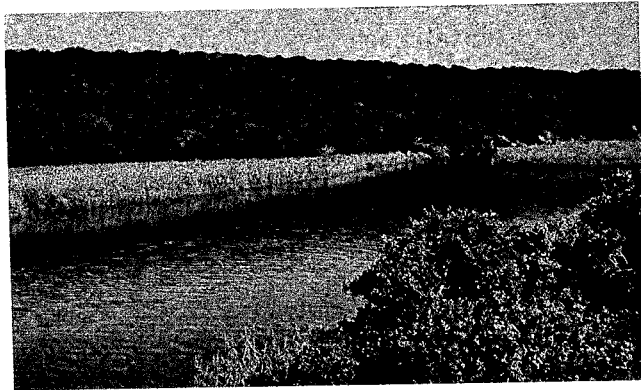
to pour. To add to its effectiveness other 'witch-doctor' ingredients were added, such as some species of milky Euphorbia, the gall-bladders of puff-adder and crocodile, and a live elephant-shrew an animal that follows a path and thus inducing the poisoned elephant to stick to a path while being pursued. The mixture was highly priced and sold in pots or in strips of banana leaf. Once in the blood stream death is rapid, and man is particularly susceptible. An elephant shot with a poisoned arrow might run for a couple of hundred metres and die, or might stagger about in agony for a few hours, or even days. There is no antidote. Thousands of elephant died in this way in Tsavo Game Reserve. The poachers could hit a target the size of one's head at 50 paces, using a bow up to 2m long and as thick as one's wrist, and incidentally, twice as powerful as the English Longbows used at the battle of Crecy.

Compared to inland mountain forests with high rainfall and frequent mists, the coast forest is a dry one having an annual rainfall around 1000mm, and is subjected to frequent winds off the sea. Also, as the soil is well-drained porous sand, the forest floor does not remain wet for long so there are few mosses, ferns, orchids and other epiphytic plants. A parasitic, mistletoe-like plant *Loranthus kraussiana* is found occasionally attached to a branch. Its orange-brown honey-suckle-like flowers attract the sunbirds.

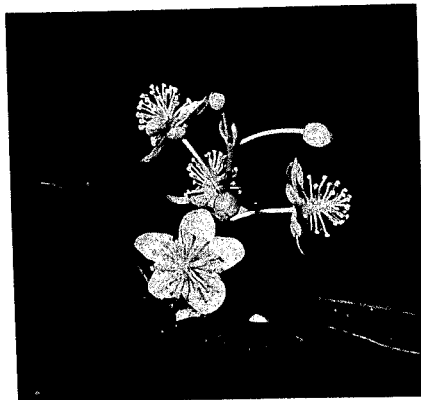
A forest is an example of climax vegetation, but even so is not static as there is constant change. When a large tree dies or crashes to the ground, sunlight enters the clearing and a succession immediately starts of herbs, shrubs, bushes and creepers until the forest trees again take over, and the gap is filled.

In 1920 a section of the Hawaan adjacent to the present western boundary was cleared, planted to cane and then abandoned as the soil proved to

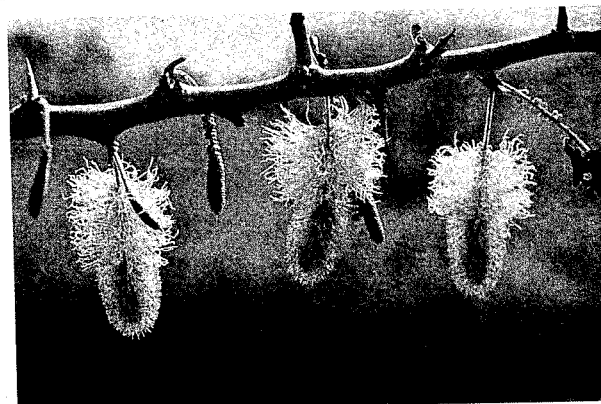
Looking across the Lagoon to the Hawaan Forest. ➔



➔ A path through the forest.



Flowers of *Cavacoa aurea*.



Beautiful lanterns of *Dichrostachys cinerea* which grows on the forest verge.

be poor. Now, over half a century later the area is covered with shrubs and trees, but it may take another 50 years before it returns to its original forest state.

Why Forest Trees Die

When the forest undergrowth is removed for a building site, or to make a park, the large trees left standing often slowly die, to the consternation and disappointment of the owners of the property. It may be hard to believe that the trouble is probably due to drought, although the rainfall in the area has not changed.

On a very windy day, there is little movement of air inside the forest. It cannot get in from the sides as the verges are formed of scrub, often almost smothered with creepers, and the branches and leaves on top form an unbroken canopy. Thus transpiration is mostly from the topmost leaves, and the floor, being covered with a thick layer of mulch of dropped leaves, is not exposed to the sun and remains cool and moist.

Now isolate one of these big trees. Its large leaf surface is exposed on all sides, and even a slight breeze causes a high transpiration rate. The mulch cover is replaced by grass and the ground becomes dry and hot. Although the lawn may be watered daily to a depth of 50mm or so, it does not take long for the soil below to get dry, and the tree suffers in consequence. So to keep it alive, it needs a heavy watering fortnightly or monthly depending on the weather conditions, not just in a small basin around the trunk, but at least as far as the 'drip', or outside edge, of the tree.

When buying land in the coastal forest, you are urged to save as many of the indigenous trees and shrubs as possible.

Dune Succession

The Umhlanga forest covers undulating ground reaching down almost

to high water mark. The dune vegetation starts off being short, getting larger and larger as the land rises sharply from the beach, and suddenly you are in the forest.

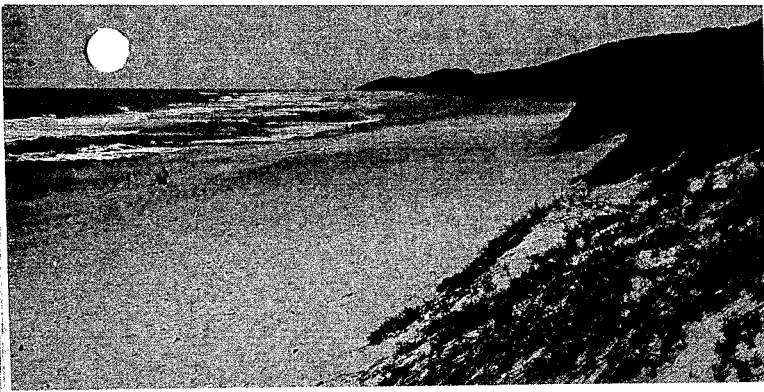
The sand-dunes have arisen due to the action of various sand-binding creeping plants with long, spreading, underground stems and stolons, and whose leaves are continually being covered, and then push through the wind-blown sand. Thus the dunes rapidly increase in size and height and may become hundreds of metres long and many high.

How speedily they can grow was shown when in January 1953 torrential rain, 17 inches overnight, brought the Umhlanga River down in flood and completely washed away all the dunes along the lagoon shore. They soon started to develop again and are now densely covered with creeping vegetation, and are possibly larger than before.

There are three most important sand binders: *Hydrophylax carnosa* is like a carpet on the sand, having small, oval, fleshy leaves about 25mm long and small flowers like white crosses: *Scaevola thunbergii* is a sturdy plant standing knee-high, with fleshy leaves about 100mm long, white flowers and light green to yellow, spherical fruits about 20mm in diameter.

The third important sand binder is a grass *Sporobolus virginicus* which is wiry, about 300mm high with compact heads about 50mm long. It spreads through the sand and produces dunes much more rapidly than the first two.

When the dunes rise sharply from the shore, shrubs gain a foothold, possibly the most common being *Chrysanthemoides monilifera*, growing shoulder high, with flat, fleshy leaves, white-velvety when young, and small, yellow-daisy flowers. *Eugenia capensis* also is common, a stiff shrub with hard, round leaves 12mm long, small, white, pompom flowers in Feb-Mar, and small



Dunes rise steeply from the sea shore, and over the top you are in the forest.



Runners of *Ipomoea* and *Canavalia* creepers spread up the dunes.



Windblown sand covers the *Hydrophylax* sand-binder which soon breaks through again.



A red bracket fungus grows on dead wood alongside an *Achatina* snail shell, and the

purple fruits.

In amongst this the Red Milkwood *Mimusops caffra* quickly takes over, and from being a small, wind-swept shrub, rapidly and uniformly increases in height as it leaves the beach, and as the forest gets thicker and more protected, may become veritable giants with trunks up to 1½ m in diameter.

An important member of this progression to forest is the mPahla *Brachylaena discolor* whose shiny, green leaves are light-grey to white on the underside, and like all the others is unaffected by strong, salt-laden sea breezes.

In places the wild banana flourishes, *Strelitzia nicolai*, with its long, wind-torn leaves and interesting, large, white flowers which are pollinated by a sun-bird sitting on the protruding, blue, staminal tube as it flits from one to another.

Exposed to the sea spray along the edge of the beach may be the tall and stately *Aloe thraskii* with its large sprigs of yellow-brown flowers.

The sand dunes, for instance those adjacent to the Mangrove swamp at the Umgeni mouth have an interesting vegetation of their own. Creepers now appear amongst the sand-binding plants and the dune rapidly becomes established.

A common pioneer is *Ipomoea brasiliensis* with large, bi-lobed leaves up to 100mm long and large, open-trumpet, pale-purple flowers and brown, spherical seed pods. Another is *Canavalia maritima* with large, trifoliolate leaves and purple, pea-like flowers on sprays, and long, hard, flat pods up to 150mm long. Both it and the *Ipomoea* have runners spreading out over the sand and up to 30m long.

Gazania rigens var *uniflora* has narrow leaves, white on the underside, with yellow, daisy-like flowers: *Launaea sarmentosa* has long, recumbent stems with rosettes of leaves at

intervals, and small yellow, thistle-like flowers: *Osteospermum fruticosum* has fleshy leaves 35mm long and white daisy-like flowers with purple centres.

A common feature of the dunes is a Mesem or Vygie *Carpobrotus dimidiatus* with fleshy, angular leaves and pinkish-mauve flowers.

Other plants found in the dune scrub are *Passerina rigida*, growing head-high, with small, heath-like leaves pressed closely against the stem: the aMatungulu *Carissa macrocarpa* with its paired thorns, white flowers and large, egg-shaped, red-purple, edible fruits.

You may find the beautiful Flame Lily *Gloriosa superba* f. *virescens*, the yellow, ground orchid *Eulophia speciosa*, another ground orchid with green and white flowers *Bonaatea speciosa*, and a fern with large lobed leaves growing in the sand *Phymatodes scolopendria*.

A brick-red bracket fungus *Polyporus sanguineus*, which has a wide distribution, frequently grows on dead branches of *Passerina rigida* lying amongst the dune vegetation.

There are many other pioneer plants spreading upwards from the beach to provide canopy and shelter for the multitude of different species of plants making up the forest.

Creepers and Climbers

The word "impenetrable" applies to much of this coast forest, for in places the vegetation is so dense it is, in fact, impossible to force a way through. Horrible, thorny creepers add to the difficulties, such as *Smilax kraussiana* with its 75mm long, 5-veined leaves: *Asparagus falcatus*, not to be confused with the small, dainty Asparagus 'fern' *A setaceus*: and the creepers with a multitude of small, re-curved prickles *Entada spicata*, and *Acacia kraussiana*.

The vegetation on the forest fringes, or in small clearings, or disturbed places, is usually densely covered with

many different kinds of small creepers, amongst which is a cucumber-like plant *Coccinia palmata* with hanging, elongated, red fruits which never seem to be eaten, so are presumably poisonous. Very common is *Ipomoea ficifolia* with its large, trumpet-like, pale-mauve flowers.

And in May/June there is a blaze of yellow from two creepers *Senecio macroglossus* with palmately-veined leaves and daisy-like flowers about 25mm across, in bunches, and *Senecio tamoides* with pinnately-veined leaves, and smaller, more golden, flowers about 6mm in size.

A curious creeper with bunches of aerial, finger-like tubercles, and delicate sprays of small, cream flowers is *Anredera baselloides*, an introduced plant originally from Ecuador, which has run wild in many parts of the world.

The bamboo-like *Flagellaria guineensis* is an interesting creeper with its curly tendrils on the tips of its strap-like leaves, and bunches of small, red fruits. *Jasminum multipartitum* is a small creeper with pretty, trumpet-like, white flowers.

A shrub which becomes a creeper is *Acridocarpus natalitius* with large, shiny leaves and lovely, yellow flowers 25mm in size in clusters, in December, and fruits with a large keel, or fin.

Then there are the large variety of climbers, lianes or monkey-ropes, some as thick as your arm, or more, that twine in and out, and up into the canopy for long distances.

Dalbergia obovata has hooked twigs on the stems, compound-pinnate leaves with leaflets 50mm long, and flat pods, green turning brown, with 2 to 3 seeds. The Hluhluwe Creeper *D. armata* is covered with large, fearsome spines, also with compound, pinnate leaves, but leaflets only 6mm long.

A climber with a thick, green, double-barrel stem is *Cyphostemma hopleucum* with compound, palmate

leaves, and round, 12mm fruits with furry skin, green turning to mauve, in bunches.

An easily identifiable liane *Adenia gummifera* has a green stem with white, powdery streaks on it, and palmately-veined leaves about 75mm across, and tri-lobed seed pods.

A huge monkey-rope having lumps on the stem is *Capparis fascicularis*.

Another thick-stemmed liane is *Rhoicissus tomentosa* with round to heart-shaped leaves, and fruits like bunches of grapes: its main feature however, are the large number of straight, string-like roots hanging down to the ground.

Shrubs and Smaller Plants

The commonest plant covering the Umhlanga forest floor is the Buckweed *Isoglossa woodii* which is much sought after by the various antelopes. Its small, white and purple flowers are said to be produced after about 7 years, seeds are formed and then the plants all die and a new lot quickly takes their place.

A shrub about 1.5m high *Mitrostigma axillare* has flat sprays of leaves and beautiful, tubular, pink flowers about 25mm in size in bunches.

A plant common to some parts of the forest is *Dracaena hookeriana*: it has a mass of long, narrow leaves up to 1m long by 150mm wide surrounding a bare trunk which may be 2m or more in height.

A lovely sight in April-May is the mass of mauve flowers, each 25mm across, produced by a small shrub *Barleria obtusifolia* found on the open edge of the forest, and amongst the dune vegetation.

A most unpleasant plant is the stinging nettle *Laportea peduncularis*, knee-high with heart-shaped, serrated leaves and small sprays of cream flowers. It grows in disturbed places, usually along the paths. Another common plant is *Cyperus albostratus* and

two very similar broad-leaved grasses carpet the forest floor, one with hairy flower sprays is *Oplismenus hirtellus* and the other with a spray of small seeds is *Panicum hymenochilum*.

A plant known as Mother-in-Law's tongue is *Sansevieria guineensis* with green-mottled, stiff, tapering leaves up to ½m long.

The Wandering Jew, *Commelina eckloniana* is common with its delicate pale-blue flowers. At times *Haemanthus magnifica* appears in patches producing lovely, large, red, pin-cushion-like flowers.

Unfortunately two introduced noxious weeds also occur along the verges and open spaces and paths, *Lantana camara* and *Eupatorium odoratum*.

Birds

A large number of the trees and shrubs in the Havaan and Umhlanga forests bear edible fruits or seeds most of the year round, so provide food for animals and birds. Thus there is a great wealth of bird life both within and on the outskirts of the forest, and over 100 different species have so far been observed, not counting those that inhabit the lagoon or adjacent beach. Also, forest birds migrating along the east coast of southern Africa such as the Natal Thrush, Natal Kingfisher, Paradise Flycatcher and Narina Trogon use this area as a 'stop-over' refuge during their northerly and southerly passage. Furthermore birds such as the Cape Robin, Chorister Robin, Yellow-throated Flycatcher, Fiscal Flycatcher and Red-chested Cuckoo move to these coastal forests during the winter months from the cooler interior or higher regions of Natal.

Human visitors are frequently disappointed at seeing so very few, or no birds when they enter these forests in groups or parties. Besides the voices of people, movement also disturbs the birds, and the combination usually puts them to flight long before the group

arrives on the scene. To really see forest birds well, one should be alone, move stealthily, and be prepared to sit and watch.

You may be thrilled to see a flock of rare Crested Guineafowl, usually in a hurry as though they have an urgent appointment. Stop and listen to the bird calls: the gold and grey Natal Robin with its lovely repertoire of song and wonderful mimic of other bird calls: the Bou-Bou Shrike, like a buff-coloured Jackie Hangman, also with its numerous calls: the Yellow-bellied Bulbul with its belly-aching chatter 'wa-wa-wa-wa': the Sombre Bulbul often ending its call with 'iwili'.

The Golden-rumped Tinker Barbet, the counting bird, whose calls run from 3 to 7: the Red-fronted Tinker Barbet which calls continuously and monotonously up to 200 or more.

The 'clack, clack, clack' of the Bleating Bush Warbler, a tiny bird that builds an astonishing nest by sewing living leaves together, or 'rivetting' would be a better word, for it pushes threads of silky material through holes pierced in the leaves, making a knot on one side and another on the opposite side — so many rivets that one cannot pull the leaves apart.

The beautiful gold and chocolate Forest Weaver with its harp-like song and coarse, untidy, hanging nest: the Paradise Flycatcher with its blue head and crest and long brown tail: and many other birds, a list of which is appended. You may even be lucky and see the most beautiful of all our birds, the Narina Trogon.

Mammals

Animals commonly encountered in the bush are Vervet monkeys *Cercopithecus aethiops*, Bushbuck *Tragelaphus scriptus*, Red Duiker *Cephalophus natalensis* and the Blue Duiker or mPiti *Cephalophus monticola* that creeps quietly through the undergrowth like a small dog, and dashes off when disturbed.



↑ Hanging roots of the *Rhoicissus* monkey-rope.

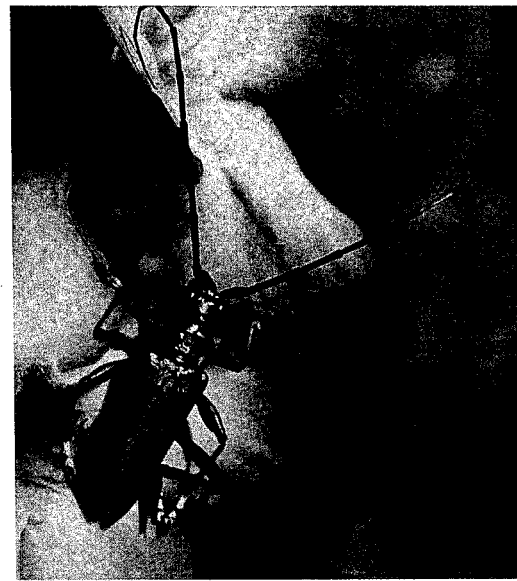
↓ The Banded Mongoose lives in chattering colonies.



↑ The colourful, little Natal Kingfisher lives on insects and frequents the forest verge.



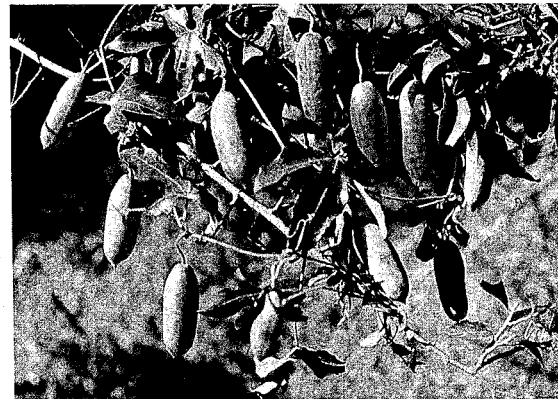
↓ When encountered in the Havaan Forest this 4m python was engorging a young bushbuck, but immediately withdrew on being disturbed.



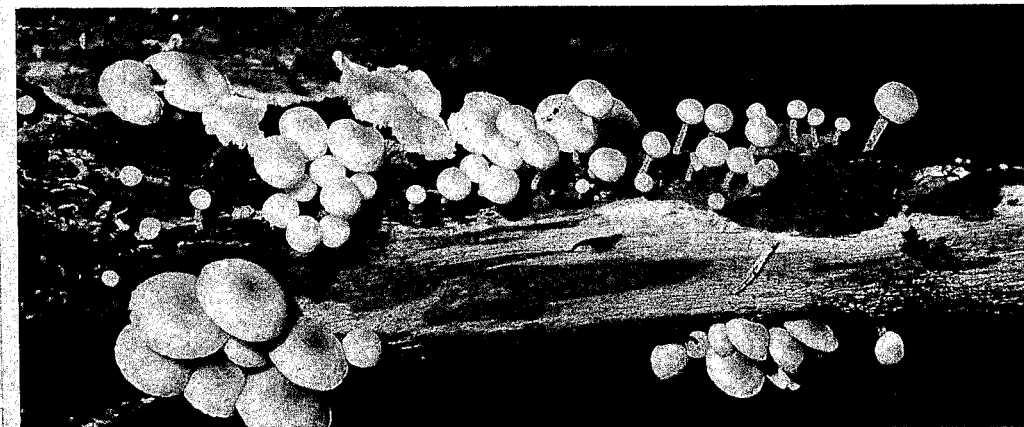
↑ One of nature's jewels: the exquisite Longicorn beetle.



↑ A Bagworm lives on the dune vegetation. Inside its home the caterpillar pupates and the moth hatches, is visited by the male, lays her eggs and dies without ever leaving.



↓ The fruits of the *Coccinia* creeper are possibly poisonous for they are not eaten by any creature.



↓ Elfin toadstools on a log in the forest.

Sit quietly and you may see a colony of Banded Mongoose *Mungos mungo* busily scratching in the ground looking for grubs and other insects, twittering continually and occasionally standing on hind legs looking around for danger. They are marauders, also eating young birds, eggs, frogs, lizards, and they even tackle snakes. They have an interesting method of breaking open an egg — or a pill millipede for that matter — by hurling it with their paws through their back legs against a large boulder or tree trunk.

By day the Fruit or Bell Bat *Rousettus aegyptiacus*, which is up to 150mm long and with a wing span of more than three times this, hangs asleep from the branch of a shady tree, but at night its bell-like call can be heard, occasionally interspersed with blood-curdling shrieks. One Umhlanga resident related how one year the large umKovothi tree alongside his house was laden with berries, and nightly hundreds of fruit bats fought over them making sleep impossible, and evicting with force a dark-coloured liquid excrement which splashed on the walls to such an extent that the house had to be completely repainted.

An increase in the monkey population due to depletion of their natural enemies, could have serious repercussions on bird numbers, for the monkeys easily find and reach the nests, and eat the eggs and fledglings.

Other animals that occur in the Coastal forest but are seldom seen are Bushpigs, Porcupine, Slender Mongoose, Water Mongoose, Bushbaby, Forest Dormouse, Genet, Cane Rats and Moles.

In 1852 The Natal Mercury stated that five elephants were grazing on the grassy flats that are now the Mount Edgecombe Golf Club.

Snakes

Occasionally you may see a snake and if so it may be a short glimpse as it disappears. Identification is thus diffi-

cult: however, the following have been recorded as occurring in the Havaan and Umhlanga Bush and environs: Python, Green Mamba, Puff Adder, Night Adder, Bibron's Adder, Black-necked Cobra, Herald Snake, Cape File Snake and Nyasa File Snake, Brown House Snake and Olive House Snake, Natal Green Snake, Green Grass Snake (both often mistaken for small, Green Mambas), Variegated Bush Snake, Brown Egg-eater, Worm or Thread Snake, Vine or Bird Snake, Natal Black Snake, and Olive Grass Snake. Short descriptions and scientific names can be found in DURBAN SNAKE PARK GUIDE, by Ray Parker.

There are still a number of Pythons in the bush and many are the old tales of encounters with 'enormous' ones. In the early days, as mentioned in the Mount Edgecombe Womens' Institute Area Annals of August 1964, there was only one cottage at Umhlanga Rocks called Oyster Box. "One day an old man, Mr Isles who was living alone in a shack in the forest was grabbed by a huge Python. There was a desperate struggle as the snake wound itself around the old man, who managed however, to get out his pocket knife and slash at the snake. Gradually its coils relaxed. Mr Isles was unconscious when by chance a Mr Manning called to see him. With the aid of Mr Isles' native boy they managed to disentangle the coils, a Doctor was called and it was found that the old man's ribs were cracked. He was never the same again and died not long afterwards."

Lizards and Chameleons

A number of other reptiles have been recorded, not only in the bush but in the open spaces and adjacent grass verge, or lagoon. Monitor Lizard or Leguaan. *Varanus niloticus*: Blue-headed Agama, *Agama atricollis*; Plated Lizard, *Gerrhosaurus flavigularis* — long and cylindrical and runs very fast; Common Garden skink, *Mabuya striata*, Dwarf Skink, *Ablepharus*

wahlbergii — small cylindrical with undulating movement; Burrowing Skink, *Scelotes sp.* — almost limbless; House Gecko, *Hemidactylus mabouia* — light coloured; Dwarf Gecko, *Lygodactylus capense* — small and dark coloured.

There are two chameleons, the large Common or Flap-necked Chameleon, *Chameleo dilepis* — it lays up to 60 eggs in a hole which it digs in the ground usually in March: these hatch 10 to 11 months later the following January to February.

The Dwarf Chameleon, *Microsaura melanocephala* has more pronounced spikes along back and throat — it produces about a dozen live young.

Amphibia

As water in the form of open pools is usually lacking in the coastal bush only a few species of frogs are found. The large Forest Tree Frog, *Leptopelis natalensis*, — buff with green markings, and the small, pretty, Painted Reed Frog, *Hyperolius marmoratus*, and the Green Reed Frog, *Hyperolius tuberilinguis*, may occasionally be seen asleep on a leaf.

The Common Toad, *Bufo regularis* often wanders about the floor of the

forest, but the real Amphibian adapted to these conditions is the Bush Squeaker, *Arthroleptis wahlbergi*, which occurs in vast numbers (as you realise when you hear its squeaky call). It lays its dozen or so large eggs under damp leaves — they turn into tadpoles and the minutest frogs without ever seeing water.

Insects and Others

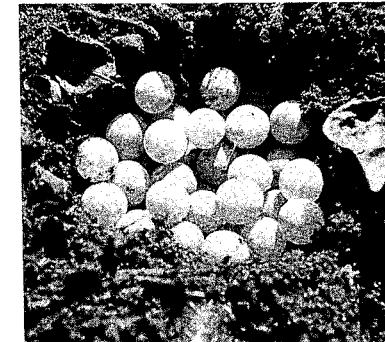
The forest has an extremely large population of invertebrates — or creatures that do not have a spinal column, such as insects, spiders, millipedes, crustaceans, molluscs, etc. One can be made aware of this by watching a pair of Black-bellied Glossy Starlings returning every few minutes to their young in a hole in a tree with beaks full of grubs, beetles, butterflies — and even a small frog.

There is a large variety of butterflies, some drab, but mostly beautiful and spectacular, and a list is available of all the species which have been encountered in the Umhlanga bush.

There are hawk moths, carpenter bees, wasps, hornets, damsel flies, dragon flies, fire-flies (actually beetles) and glow-worms, bees both community and solitary forms, and bush mosquitoes which breed in the water



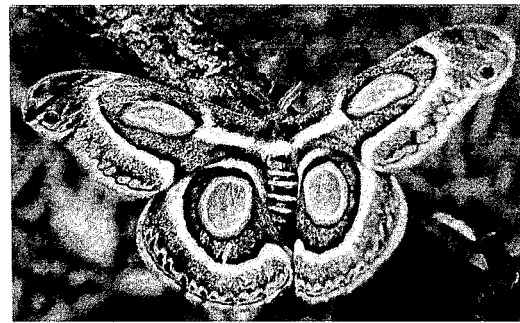
The *Natalina* snail has a spiral shell up to 60mm across. It eats other snails and slugs.



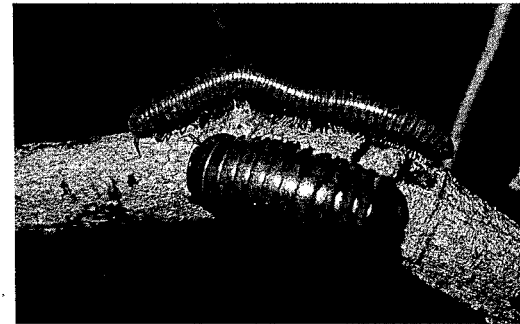
The *Natalina* snail eggs, like miniature ping-pong balls, are laid in a nest in decaying leaves. It takes about 6 weeks for them to turn slowly into tiny replicas of the adults.



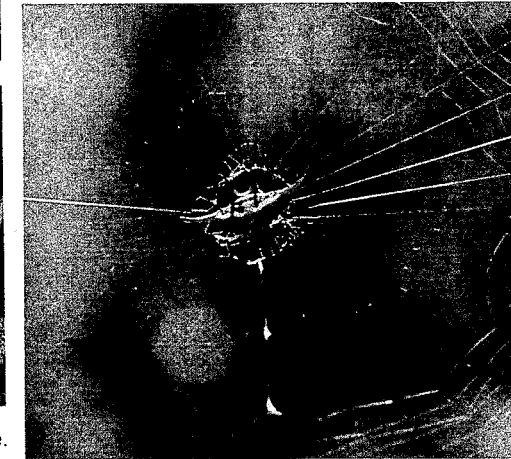
A pair of Bush Squeakers, the male is smaller than the female: they are the commonest frogs of the coastal belt and are generally found on the forest floor.



◀ A moth recently emerged from its cocoon in the forest floor, *Epiphora mythimnia*.



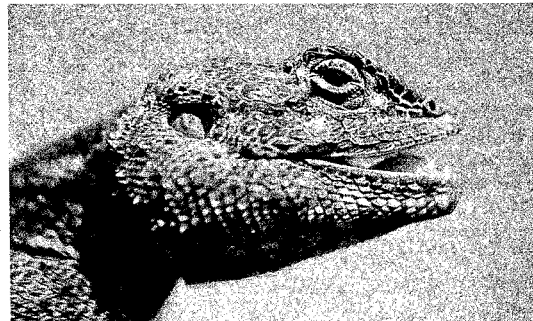
⬆ The Red Millipede and the Pill Millipede.



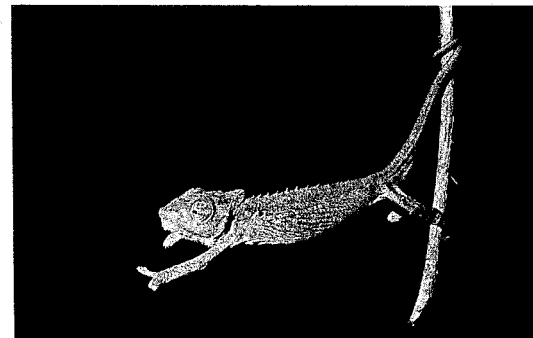
⬇ The spectacular little *Gasteracantha* spider spins its web across a path.



The Green Reed Frog calls at night near water, but may often be seen asleep on a shady leaf during the day.



The Blueheaded Agama has his spectacular colour only in the breeding season.



20 A Dwarf Chameleon anchored by its tail stretches out to an adjacent branch.



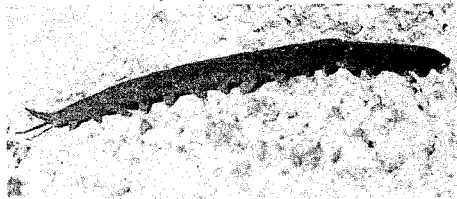
Bracket fungi *Polyporus occidentalis* crowd a log, growing larger year by year.

collecting in holes in trees, or in the leaf axils of wild banana and other plants.

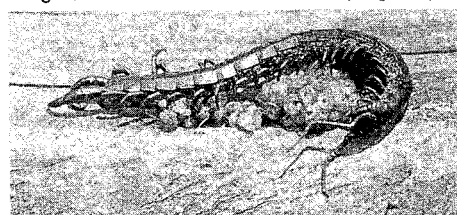
Spider webs are suspended in the paths: some of the occupants are spiky and beautifully coloured like the *Gasteracantha* sp. One has to be clever to find the wonderfully camouflaged nest in the bark of a tree of the Trap-door Spider. Ticks unfortunately are also present.

There are mantids and stick insects, and scorpions, bugs and beetles of many different kinds. The tree-boring Longicorns, some up to 70mm long have antennae often longer than their bodies: if you are lucky you may see one of the smaller ones, the unbelievably beautiful, shiny, green *Philematium virens*, one of nature's jewels. In summer the air vibrates with the incessant, high-pitched note of the Cicada.

Crawling over tree trunks one can see the large, black millipede *Cymnostreptus* sp. and the smaller, red *Chersastus* sp. The millipedes differ from centipedes having paired legs instead of single, per segment. Possibly



The Peripatus is a 'missing link' in the animal world: it grows to about 30mm in length, and lives under decaying logs.



Centipedes travel fast and are carnivorous: millipedes move slowly and are vegetarians. A centipede lays its eggs in a nest under a log or decaying vegetation and looks after them until the young can fend for themselves: if disturbed it may eat the lot.

the most amazing creature to be seen is the Giant Pill Millipede *Sphaerotherium giganteum* feeding on the green algae on the bark of a tree — rolling itself into a ball for protection, when disturbed — a marvel of mechanical ingenuity. Nothing appears to be known of its life-history so here is a project for one of our members. Somewhat similar, also rolling itself up into a ball is the small, grey Woodlouse *Cubaris* sp.

On the verges, or edges of clearings in the forest you may see a black nest as large as a football encircling a thin branch. Disturb it and you will realise what it is, as myriads of black ants *Crematogaster castanea* emerge and give painful bites.

Peripatus

Under a pile of damp humus or a decaying log you may find *Peripatus mosleyi*, a curious primitive creature, a 'living fossil' and a 'missing link' between the worms and insects. It looks like a thin velvety caterpillar, grey to black in colour and about 30mm long, and has snail-like horns or tentacles.

The Peripatus can spit out with considerable force a viscous slime for defence, or to ensnare insects upon which it feeds. It produces its young alive, one or two at a time, similar in appearance to the adult, and about 8mm long, and the gestation period is surprisingly as long as thirteen months. The young fend for themselves and take about a year to reach sexual maturity, and then may live another six or seven years.

A number of species have been found in widely separated parts of the world: such as South America, Australia and New Zealand.

Snails

There are many different kinds of snails in the coastal bush, from those with shells 100mm or more to those very delicate small ones only 5mm long. Two of the larger and common

ones are *Natalina cafra* with a flat, spiral shell, and *Achatina immaculata* with a shell running to a point. Both lay up to 50 or so large, white eggs in a hole in a pile of compost, or in the ground: it takes about a month for them to change into a small replicas of the adult.

Slugs have no shells: their eggs are in long strings of small, jelly-like beads, in a hole. There are 746 species of molluscs in South Africa, but very little is known of those in the coast bush.

The Forest Floor

As you walk through the forest you do not realise the incessant activity taking place beneath your feet. The fallen leaves, branches and tree trunks are being turned into humus. They decompose and rot due to the activity of bacteria, protozoa, algae and fungi which attack and devour or absorb the cellulose of the plant tissue. Occasionally one may be lucky and find a skeleton leaf — the veins are left but the tissue between has gone leaving a beautiful design.

The bacteria are so small, 20 million could be present in a gram of soil — a mustard-spoon-ful. A microscope gives a new perspective, and awe, at the infinite forms and designs of the protozoa, and of the diatoms, desmids and other unicellular and filamentous algae. Yeasts and fungus threads permeate the decaying leaves. There may be a million protozoa and 100 000 algae in a gram. The amount of invisible fungus is more than 30 times the weight of the bacteria in the soil. The visible fungi are present in the form of mushrooms and brackets of all shapes, sizes and colours, and many cause the decay and rotting of tree trunks and fallen branches.

Then there are the Cryptozoa — a name given to those myriads of different creatures found in roughly the top 150mm of humus, seldom above the forest floor level. In few of them has flight been developed. They are

generally of small size: 33% of the population is less than 1mm in body length and 95% less than 5mm. Most of them require damp environment — dying when exposed, and cannot stand sunshine, so generally are nocturnal.

The Cryptozoa include the round worms, flat worms, snails and slugs, crustaceans, myriopods (millipedes, centipedes, etc.), arachnids (spiders, scorpions, mites etc.) and insects. These creatures occur in incredible numbers. It was estimated that 2 million and 304 million per acre, that is in a North American forest an observer stated that armies of millipedes of various kinds consumed dropped leaves and rotting wood, and that large ones excreted about ½ cc each per day — contributing to the formation of humus at the rate of 2 tons per acre per year.

Counts of small samples in two South African forests have put the estimated population of the Cryptozoa in the top 150mm of soil as 287 million and 304 million per acre — that is 60 000 per square metre. (The figure for our drier coast forests is probably vegetal matter, and on each other, and also, by their burrowing habits, keep the soil porous, thus allowing more rain water to be absorbed and retained.

Every fallen log is a habitat in itself. Its holes provide hiding places, or nests, for doormice and other rodents, for lizards, geckoes and hibernating chameleons and frogs: there are wood-boring beetle larvae and other insects under the bark: in the rotting wood and under the log are worms, various kinds of millipedes and centipedes, spiders, pseudo-scorpions, beetles, cockroaches, flea-like jumping crustaceans, woodlice, spiders, ants, peripatus: perhaps a scorpion, *Breviceps* frog, legless lizard or small snake: and grubs, caterpillars, larvae and cocoons of beetles and other flying insects. If you turn over a log, always put it back in the position you find it.

If the floor were sterile the dropping leaves and twigs would accumulate and finally smother the forest.

Fungi

During periods of wet weather, fungi, often brightly coloured, develop on the forest floor or on dead logs, in the form of small mushrooms, brackets or wine-glasses. Frequently seen is the bird's nest fungus *Cyathus sp.* a small, upright, grey cup, 10mm across, with a few 'eggs' at the bottom.

Occasionally white ants, or termites,

bring chewed-up wood pellets to the wet surface on which countless small, white, parasol mushrooms up to 50mm high, grow within a few days, *Termitomyces microcarpus*. It is an unbelievable sight as they cover large areas of the forest floor: they are food for the termites, but are greatly sought after by monkeys and antelopes.

A fantastic display is made by a wineglass-shaped mushroom *Lentinus sajorcaju*. It is about 100mm in size, a brilliant white, and dozens crowd each other on a fallen log.

The Swamp forest

At one time numerous swamp forests were present in Natal occurring up and down the coast, but today only widely scattered patches survive. That at Sheffield Beach, is the largest piece left near Durban, and covers about ten hectare. It is still in the natural condition it has been for centuries. A few paths have been cut through it, and when exploring it one has to be prepared for deep, black, oozy mud.

A swamp forest is very different from other South African forests, and has numerous species of trees and other plants of its own, the characteristic tree being the *Voacanga*. As the name implies, this is a swamp, but of sluggish-moving and not stagnant water, usually covering a flat valley, and generally not far from the coast. Sometimes it may consist of a narrow belt alongside a stream or fresh-water lake.

The dominant trees may grow close together and range up to 25m in height. Huge figs often grow horizontally, and the trees are frequently draped and garlanded with a dense tangle of monkey-rope climbers, ferns and an occasional epiphytic orchid. Undergrowth is dense, and a distinctly tropical feature is the large climbing fern *Lygodium kirstenii* that festoons

the tree trunks sometimes to a height of 15m, with its long, dangling leaves.

In mid-summer the forest is a particularly beautiful sight as a red-flowered swamp lily dots the floor with a blaze of colour. This is *Haemanthus katharinae*, named after Katharine Saunders who discovered it in 1868 in the Tongaat Swamp Forest (which has since disappeared). Also a small, white-flowered orchid *Platylepis glandulosa* is found here, growing in the black mud.

The swamp forests are the homes of many birds and animals. Most of the plants have edible fruits and seeds which provide food for Green Pigeons and Loeries, monkeys and wild pigs.

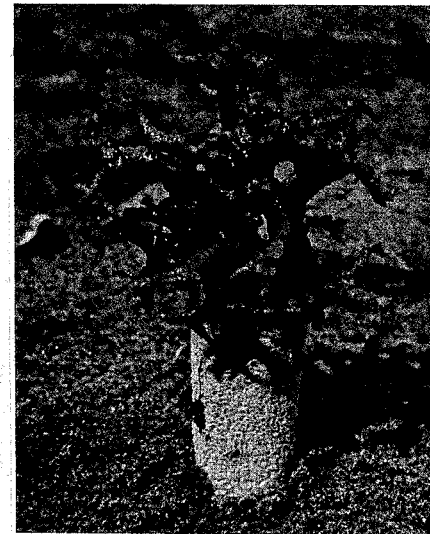
In the trickling water and pools are a number of fresh-water shrimps and small eels and catfish, or barbel. Very few frogs are encountered, occasionally a toad and a *Rana*. More common in the drier parts are the Bush Squeakers — small squat frogs about 25mm long. They lay their dozen or so large eggs, under decaying leaves: these turn into tadpoles and the minutest of frogs without ever seeing water.

The following short descriptions will help to identify some of the common trees in the swamp forest.

Syzygium cordatum — umDoni —



← The dunes and mangrove swamp looking towards Durban: in the foreground is the *Scaevola* sand-binder.



← The lovely *Haemanthus Katharinae* in a swamp forest.



← Far left: A curious spongy fungus produces red branches covered with an evil-smelling, slimy, black spore mass which is disseminated by the attracted flies, *Kalchbrennera corallocephala*.

← Shortly after the barrier at the mouth of the Umgeni mangrove swamp was removed the reeds, which had choked the waterway died and disappeared as the salt water could now move with the fluctuating tide. Most of the White Mangroves had been killed.

evergreen, leathery, oval-oblong, blueish-green leaves in pairs, clasping stems: white flowers in terminal sprays: fruit small, blue-black, edible cherries: closely related to Guava, Clove and Blue Gum.

Voacanga thouarsii — wild frangipani — narrow leaves, 250mm long: white to yellow, 50mm flowers: fruit like two green cricket balls joined together, eaten by animals and birds.

Macaranga capensis — swamp poplar — slightly hairy leaves up to 300mm wide, with long petioles.

Barringtonia racemosa — brackwater mangrove — shiny, slightly serrated leaves up to 450mm long, hardly any petiole; flowers in pretty, long, drooping tassels; round, golf-ball-size fruit.

Cussonia sphaerocephala — cabbage palm-Kiepersol-palmate, narrow leaves serrated around tips only, very long

petioles: flowers erect, candlelike spikes: small fruits eaten by birds. *Schefflera umbellifera* — forest cabbage palm — palmate, wide leaves serrated all around: clusters of flowers at the ends of branches.

Ficus hippopotami — swamp fig — large leaves up to 300mm long, with prominent white veins: fruits in pairs in leaf axils, eaten by birds and animals. *Ficus vogelii* [= *F. quibeba* = *F. nekbudu*] broad-leaved fig — hard, shiny leaves up to 400mm long by 200mm broad with petioles up to 150mm long: fruits are covered with hairs, have no stalks, 20mm in size, produced in dense clusters at tips of twigs, eaten by birds and animals. Both figs have horizontal branches supported on stilt-like adventitious roots, and thus stretch quite a distance into and over the swamp.

The Mangroves

Mangroves lined the banks of many rivers and estuaries, not only from the eastern Cape up the coast of Africa, but also in many other parts of the world. There were enormous mangrove swamps in Durban Bay and at Isipingo, but these have largely disappeared. The biggest remaining area of mangroves in the vicinity of Durban is at the Umgeni mouth.

Mangroves live on muddy, water-logged soil lacking in oxygen, so in order to survive, special roots have become adapted to absorb oxygen from the air. These roots project above the ground and are periodically covered by alternating tides. Their tissue is very spongy so air and oxygen is able to pass around and between the cells.

Although some 9 species of Mangroves occur on the African coast, 5 reach as far south as Kosi Bay in Zululand and 3 are to be found in Natal. Around 1945 Mangroves appeared on the islands in the Umgeni River and

have spread and flourished. But the main Mangrove swamp extends from the mouth north along the tidal creek which now originates at the Beachwood Golfcourse. In the past there were probably freshwater swamps extending much further into Durban North. The present Mangrove swamp consists of a long, rectangular area covering about 2 sq. km.

On the seaward side there is a belt of undulating sanddunes about 100mm wide showing a very interesting succession of creeping plants and pioneer scrub.

The 3 mangroves can be readily distinguished from one another.

The Black Mangrove *Bruguiera gymnorrhiza* has its aerial roots in the shape of knees or knuckles projecting above the mud, and the trunk becomes widened towards the base, black in colour, and may have numerous buttress roots. The tree is large, has a fairly conical shape with a dense mass of



↑ White Mangrove seeds and seedlings.

↙ The elongate, knobbed fruits of the Red Mangrove.

↘ The flowers and torpedo-like fruits of the Black Mangrove.



↑ Many *Cerithidea* snails congregate on the trunks of the mangroves.

dark green leaves 150mm long, 50mm wide and a petiole 25mm long. The flower is yellow red, and later looks like a cap on the developing ovule which is torpedo-shaped and increases in size up to 250mm long. When ripe the torpedo drops straight down into the mud where it starts to grow, sending out a root from below and a leafy shoot from the top. This is a most extraordinary and rare phenomenon that such germinating seedlings should develop on the tree. Thus thickets arise around the parent trees, or alternatively the torpedoes get washed up or down by the tides, or out to sea, to wash up and start colonies in other places.

The Red Mangrove *Rhizophora mucronata*. In the Umgeni swamp only a few Red Mangroves can be seen. They could be mistaken for the Black Mangrove as the growth and shape of leaves are similar except that each has a micro or minute spike at its tip. But the trunk is slender and aerial roots up to 50mm thick emerge from it, and even hang down from side branches, often branching before entering the mud. The Red Mangrove also has a torpedo but the cap is a large yellow cross when young, and later surmounts a large, black, inverted pear-shaped knob from which the torpedo emerges, thin and up to 300mm long.

The White Mangrove *Avicennia marina*. This plant is quite different from the other two — being a tall tree with smaller leaves which are alternate and opposite and up to 75mm long, light-grey in colour and almost white beneath. The main roots run straight from the trunk just below the mud in many directions, and at intervals send up pencil-like aerial roots which project about 300mm above the surface. It has orange-yellow flowers and flat, oval fruits about 30mm long. These drop off and are carried about by the tides, rapidly producing new plants.

Another plant commonly found near the Mangroves is the Beach Hibiscus *H. tiliaceus*, a large tree with large,

heart-shaped leaves about 150mm long and same length petioles, and flowers at first yellow and then brown.

The closing of river mouths

Mangroves are salt-loving plants and too much stagnant fresh water may be harmful. Thus if a river mouth becomes closed and no sea water can enter, possibly the combination of the fresh water and lack of oxygen due to stagnation causes the death of the Mangroves. This happened at Kosi Bay in 1965 when Cyclone Claude closed the mouth of the estuary and heavy rainfall raised the level 1½m, virtually wiping out the Mangroves.

Heavy mortality, especially of the White Mangrove, has also occurred recently in the Umgeni Mangrove Swamp when the construction of a bridge over the creek prevented the inward movement of the tide and impeded drainage. Reeds then took over the freshwater channel and other plants thrived in amongst the Mangroves in the upper reaches such as Bullrushes, Water Hyacinth and the *Salvinia* waterfern known as Kariba weed.

Since the bridge was removed in 1974 the tide has been able to move up and down the creek and a great change has taken place. The reeds that densely blocked the channel have died and disappeared, and the other freshwater plants will probably soon only be found in the top end of the stream. Young Mangroves are appearing.

Mangrove Fauna

The Mangroves provide shelter but little food for the large population of birds that occur in the adjacent dunes, seashore, swamps and coastal forest: these have not been listed. One bird of interest, however, is the Mangrove Kingfisher, with blue head, back and wings, white throat and chest, and red-beak — it is said to live on crabs and fish — there have been rare sightings. In the adjacent dune scrub watch out for the Curlew, Water Dikkop and the

Natal Nightjar.

In the Mangrove swamp a snail may be seen congregating, often in large numbers, on the trunks of the trees, even up to 3m or so above mud level. This snail *Cerithidea decollata* is light grey, about 30mm long, conical and heavily whorled. Another Mangrove snail, very similar but larger and up to 100mm in size, *Littorina scabra* used to be very common in Durban Bay Mangroves and also occurs in the Umgeni area.

The mud flats, both on the edge and in amongst the trees are the homes of incredible numbers of crabs from 10mm across to those whose burrows are large enough for one to insert a hand. A spectacular and memorable sight are the legions of Fiddler Crabs, *Uca sp.* that are usually seen in Mangrove flats. The males only are armed with one claw larger than the body and usually a brilliant red or pink. These large claws are forever being waved in the air in a courtship display, and as one crab approaches another,

one expects a battle to ensue, but the opponent is intimidated and withdraws.

The tidal water of the creek running through the Umgeni Mangroves teems with a multitude of fish of many different species: also shrimps and prawns. To the casual visitor these are invisible, but are of great interest to marine biologists. One fish however, that is common is the Mudskipper *Periophthalmus cantonensis*. It sits on the mud or root of a tree out of the water and blinks at you with its large protruding eyes. Try and catch it and it hops and skips rapidly over the shallow water and finally dives under and disappears. This fish has a wide distribution being found up the coast of Africa and in many other tropical parts of the world.

A visit to the Beachwood Mangroves can thus be very rewarding, giving one the opportunity also of seeing dune development, identifying the creepers and dune scrub, and watching the birds on the mudflats and estuary, all a few kilometres from the centre of Durban.



The mudskipper can often be seen on the bank, or with its head protruding from its nest-hole in the mud: when disturbed it skips back into the water.

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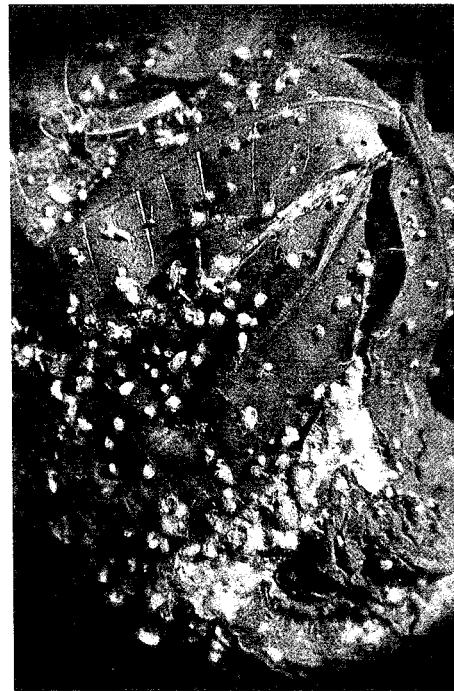
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**LIST OF NUMBERED TREES IN THE HAWAAN AND
UMHLANGA FORESTS**

- 39** *Celtis africana* - White Stinkwood - umVumvu
Large tree with smooth trunk with grey-white horizontal bands; leaves slightly serrated, lopsided, with 3 veins from base; small, round fruit on long stalk in each leaf axil, sought after by birds and monkeys.
- 42** *Trema orientalis* - Pigeon-wood - umBhangabhanga
Leaves lopsided, soft, serrated, 3 veins from base, in flat sprays: small flowers in small bunches in the leaf axils; fruits on short stalks, small, round, black, sought after by birds.
- 43** *Chaetacme aristata* - umKhovothi
Large tree, spiky shoots at base: twigs zig-zag; one to three 6mm thorns at base of each leaf: each leaf has a mucro (short needle-like tip): fruit pink, round, 12mm at base of each leaf, in August.
- 57** *Ficus natalensis* - umThombe
Leaves about 75mm long, stalk 25mm: fruits slightly pear-shaped, each with short stalk, in clusters, produced at irregular periods during the year, eaten by large variety of birds and animals: roots entwine and encircle and finally strangle host tree.
- 58** *Ficus burkei* (= *F. petersii*)
Very similar to 57: fruits, round, hairy, having no stalks.
- 59** *Ficus polita*
Leaves about 50mm long, same length petiole: fruits in mid-summer of golf-ball size, in bunches from trunk. One specimen only on north end Hawaan forest — two others known from Botha Gardens.
- 148** *Albizia adianthifolia* - Flat Crown - iGowane
Leaflets oblong, 15mm long: yellow pom-pom flowers like Mimosa, in mid-summer: bark frequently removed for medicinal purposes by the Zulus.
- 190** *Dichrostachys cinerea* - Chinese Lantern - uluGagana
Small tree: leaflets 5mm: dangling, beautiful, yellow and mauve flowers.
- 224** *Baphia racemosa* - Violet Pea
Soft, shiny leaves, small lump where leaf meets stalk: small, 8mm, white pea flowers with yellow centres, in bunches in leaf axils in December: flat, pointed pods.
- 253** *Fagara capensis* - Knobthorn - umNungwane
Trunk and branches covered with knobs, each having a short, sharp thorn at end: leaflets about 25mm long: small, red berries in clusters in April.
- 254** *Fagara davyi*
Differs in leaflets being about 60mm long.
- 263** *Teclea gerrardii* - uMozane
3-palmate leaves, leaflets with rounded ends: small, yellow flowers in clusters in leaf axils: small, fleshy fruits.
- 264** *Teclea natalensis* - uMozane
Leaflets pointed at ends (could be confused with 426): bark peels in large thin plates leaving concentric, oblong markings: fruit long, oval, 12mm, all over lumpy, pink to brown, short stalk, one in each axil.
- 300** *Trichilia dregeana* - Natal Mahogany - umKhuulu
Large evergreen tree: large pinnate leaves, leaflets pointed at ends: white bunches of flowers in November: fruits yellow-brown with 3 to 6 black and red seeds in early spring, greatly sought after by birds, especially Trumpeter Hornbills and Loeries, and animals.
- 316** *Drypetes natalensis* - Ironwood - umGunguluzane
Leaves in flat sprays, stiff, very spiky around margin: cream-colour flowers in December: yellow, 30mm fruit in February in bunches attached to stem, eaten by monkeys.
- 318** *Antidesma venosum* - Tassel berry - umHlalanyoni
Leaves in flat sprays with ridged veins on back: small, wax-like, white, pink, red, black berries hanging down in tassels, much sought after by birds, monkeys and buck.
- 330** *Croton sylvaticus* - umZilanyoni
Large trees: large leaves up to 100mm, rough texture, serrated margin, petioles 25mm or more: cream flowers in long tassels: small, salmon-red fruit in tassels in February, eaten by birds: bark used as a laxative, leaves as poultices by Zulus.
- 332** *Cavacoa aurea* - Cavacoa - umBuku
Fluted trunk: evergreen leaves 150mm, stiff shiny: lemon-yellow flowers in small bunches at end of twigs in December: male and female on different trees: fruits on long stalks: shallow rooted, often blown over at an angle.
- 332.2** *Micrococca capensis* - uBubu
Crenate leaves 75mm long, with long stalks, and 2 small thorns at base of each.
- 343** *Sapium integerrimum* - Nyala Berry - umHlalampunzi
Leaves in flat sprays, soft, shiny, serrated margin: small, yellow flowers: 6-pointed flat, green capsule about 25mm across, sought after by buck, and seeds eaten by birds.
- 360** *Sclerocarya caffra* - Marula - umGanu
Large, deciduous tree, rare in coastal forest: leaflets 50mm or more long: small, pinkish, flowers in spikes: plum-size, yellow fruits in March, eaten by large variety of animals including rhino and elephant: holes in trunk common breeding place for mosquitoes.
- 361** *Harpephyllium caffrum* - Kaffir Plum - umGwenya
Large evergreen tree: pinnate leaves: red fruits from August to November eaten by birds and animals: grows readily from truncheons.
- 364** *Protorhus longifolia* - Red Beech - umHluthi
Leaves 100mm or more long, old ones often red, new leaves brilliant bronze-yellow, long petioles, milky juice: small, purple fruits eaten by birds and monkeys.
- 412** *Cassine crocea* - umBornvane
Leaves serrated. Small bunches green-yellow flowers: green fruits eaten by wild pigs.
- 425** *Allophylus melanocarpus* - umHloshazane
Leaves 3-palmate, leaflets broad, serrated margin: small flowers in long spikes in March, highly scented: 6mm fruits in long bunches, green, yellow, red and black in August: small green Longicorn beetle sucks nectar from flowers.
- 426** *Allophylus natalensis*
Very similar but leaflets narrow: small, round, red fruits.

- 430 *Deinbollia oblongifolia* - Soap Berry - iGololenkama
Large pinnate leaves: upright bunches of yellow fruits at tips of branches each fruit with 2 small, round knobs at base, in August, eaten by birds and monkeys.
- 447 *Ziziphus mucronata* - Buffalo Thorn - umPhafa
Large tree, often with thorny shoots at base: leaves similar to 39 but smaller, lopsided, serrated, 3 veins from base: 2 small thorns at base of each leaf stalk, one forward, one retracted: round, yellow fruit on long stalk from each leaf axil, eaten by large variety of birds and animals.
- 459 *Grewia caffra*
Rambling shrub or climber: square stems: yellow flowers: rounded fruits eaten by birds and monkeys.
- 463 *Grewia occidentalis* - Kruisbessie, Assegaai wood - iKlolo
Small tree: soft leaves, serrated: mauve-purple flowers in bunches in December: 4-lobed, flat, green fruits almost 10mm across, eaten by birds.
- 478 *Cola natalensis* - Wild Mango - umQhoshu
Large tree: leaves shiny, up to 300mm long, lump at base of leaf, and petiole at an angle: small, yellow flowers 20mm in size in leaf axils in December: orange-brown fruit about 12mm, in 3 or 4 segments.
- 493 *Xylotheca kraussiana* - African Rose
Small tree: leaves soft, velvety large, beautiful, white flowers: oval, yellow fruit about 5cm in size.
- 498 *Scolopia zeyheri* - Thornpear - umHlambahlale
Tall, very thorny tree, 2 to 20cm long on trunk and branches: hard leaves, sharply toothed: small, yellow flowers: small, red berries eaten by birds.
- 503 *Trimeria grandifolia* - Wild Mulberry
Round, large leaves, serrated, 5 veins from base: small flowers in sprays: red fruits eaten by birds.
- 510.1 *Dovyalis longispina* - Wild Apricot - umQokolo
Reddish bark: long spines in axil of single or multiple leaves: red berried fruit with small, white spots.
- 517 *Peddiea africana* - Sterkbas - isiFufufu
Leaves alternate and opposite: flowers small, greenish-yellow, open trumpets in bunches in April: fruits 20mm, oval, green then red, 1 to 3 in leaf axil: fruit, leaves and bark are said to be poisonous.
- 553.1 *Eugenia capensis*
A small bush: small, round leaves: small purple fruit.
- 555 *Syzygium cordatum* - Waterberry - umDoni
Leaves blueish-green, clasping stem in pairs: flowers white, terminal sprays like Eucalyptus: fruit small cherries, blue-black, ripe in February, eaten by large variety of birds and animals.
- 583 *Mimusops caffra* - Red Milkwood - Moepol - umThunzi
Enormous trees: small, leathery leaves with rounded tips: broken twigs exude milky latex: pink berry, 12mm, on stalk 25mm, 1 to 2 in each leaf axil, produced in large numbers from October to March, eaten by birds and monkeys.
- 584 *Mimusops obovata*
Narrow leaves with pointed ends.
- 597 *Euclea natalensis* - Natal Ebony - umZimane
Stiff leaves, serrated: small flowers in bunches in leaf axils: fruits small, yellow, red, black in dense clusters, eaten by birds.
- 607 *Diospyros natalensis* - uMasinda
Small leaves, 25mm long, bright, shiny in flat sprays: small flowers: fruit like small, yellow acorns.
- 618 *Olea capensis* - Black Ironwood - umNquma
Broad leaves, wavy margins, in opposite pairs: small, white flowers in sprays: small, olive-like fruit, purple, black eaten by birds and animals.
- 620 *Olea woodiana* - Wild Olive, Coast Assegaai.
Very similar to 618 but smaller leaves.
- 626 *Strychnos madagascariensis* - Monkey Orange, umGulugulu
Shiny leaves with 3 veins from base: small, yellow flowers in bunches: fruit like small oranges, yellow, very hard shell: flesh eaten by large variety of birds and animals: large, yellow, poisonous seeds.
- 629 *Strychnos spinosa* - Monkey Orange - umHlala
Bark flakes, leaving bare patches: leaves with 5 veins from base: spines on branches, small flowers in clusters: fruits large up to 10cm, hard-shelled, speckled, contain edible pulp: seeds thought to be poisonous.
- 638 *Acokanthera oblongifolia* - Bushman's poison - inHlunguyembe
Small tree: dull-green, stiff leaves, 100mm long, with sharp mucro (small spine) at tip: milky latex: white flowers: fruits 25mm long, green turning purple to black: leaves, twigs, bark, fruit all deadly poisonous.
- 647 *Rauvolfia caffra* - Quinine Tree - umHlambamasi
Long and narrow leaves in whorls, exuding milky juice: small, white flowers in sprays: green berries with white dots, later black and wrinkled, eaten by birds and animals.
- 652 *Cordia caffra* - umLovu
Whitish, flaky bark: large, serrated leaves, petioles 60mm long: minute flowers in catkins: orange-red fruits in bunches, eaten by birds.
- 667 *Clerodendrum glabrum* - Stinkblaar
Leaves crinkly, attached to stem in threes: small, white flowers in compact heads in December, attract large numbers of butterflies: green-brown fruits, pea-size in March, eaten by birds.
- 689 *Xeromphis obovata* - umKhwakhwane
Leaves 25mm, smooth, shiny lumps in vein axils: thorns opposite side branches: fruits like small green guavas.
- 692 *Gardenia thunbergia* - Wild Gardenia - umKhangazo
Leaves in whorls of 3, have lumps in vein axils: large, flat, spiral, creamy-yellow flowers: large, grey, hard, woody fruit.
- 708 *Canthium inerme* [= *C. ventosum*] - umVuthwanini
Two spikes, 75 to 150mm, opposite leaves: small, yellow flowers in bunches in leaf axils, fruit in bunches, black berries, 12mm, greatly favoured by birds.
- 711 *Canthium obovatum* - Black Alder - umHlelehlela
Soft, rough-textured leaves with lumps in vein axils: dense, coppice-like growth, dark, streaky bark: masses small, white or yellow flowers in

- bunches: fruits green turning black, 10mm, in clusters, eaten by birds.
- 713 *Canthium spinosum*
Leaves 30 to 50mm: thorns 10mm, opposite in pairs.
- 723 *Psychotria capensis* - iZeLe
Small tree: leaves with light-coloured midrib; small lumps on back of leaf against midrib; yellow flowers in bunches, October: small, red berries in bunches, July, eaten by birds and animals.
- 724 *Brachylaena discolor* - Coast Silver Leaf - umPhahla
Leaves serrated, almost white beneath: heart wood used for assegais: white flower heads and seeds: grows on edge of dunes, withstands salt winds.



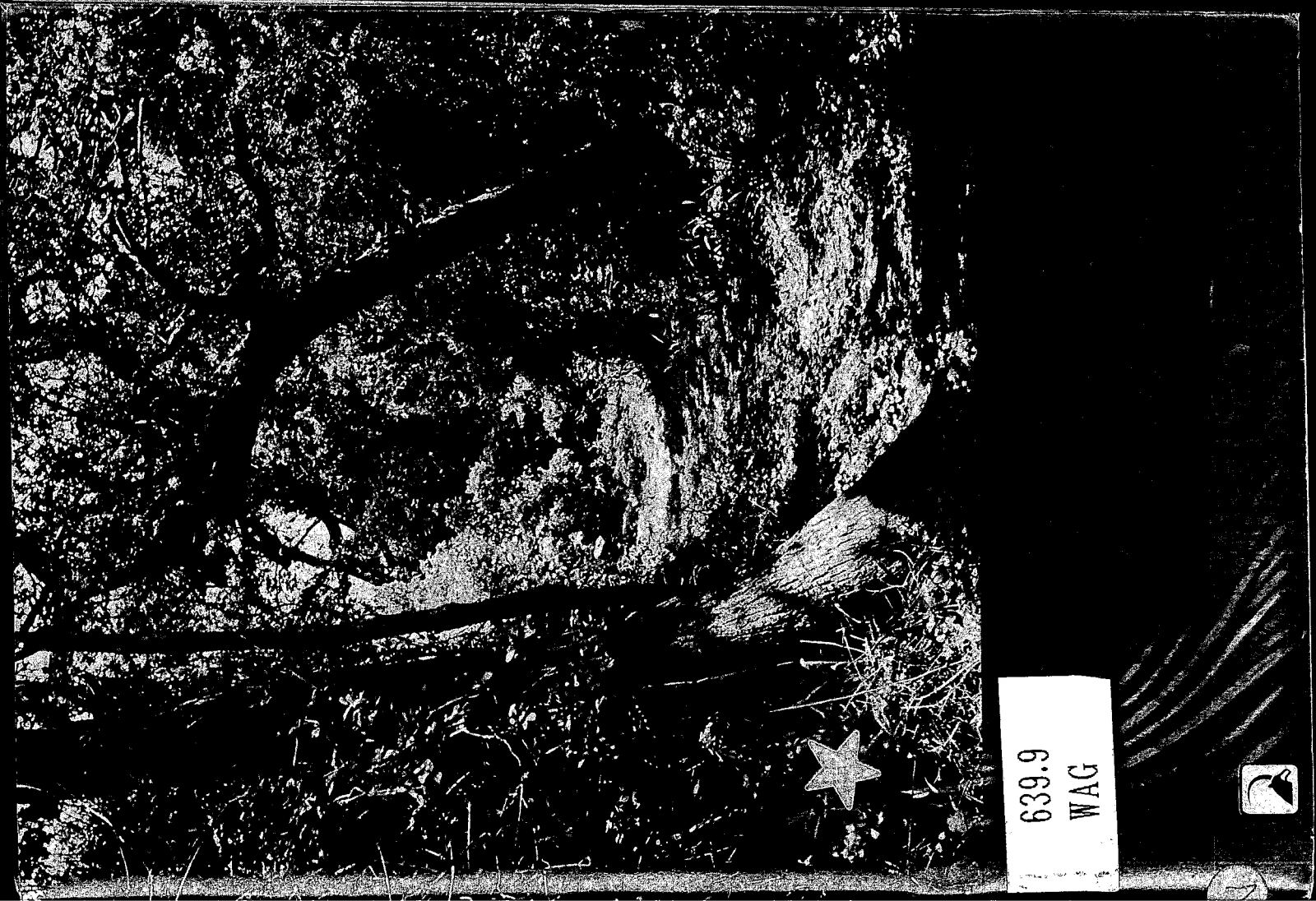
Nest of Bleating Bush Warbler made of leaves sewn together with thousands of silky "rivets".

LIST OF BIRDS SEEN IN THE HAWAAN AND UMHLANGA FORESTS

Compiled by V. Wager, K. Cooper, R. v.d. Elst, P.M. Starling, R. Cassidy

- | | |
|---------------------------------|------------------------------------|
| 61 Cattle Egret | 546 Terrestrial Bulbul |
| 72 Hamerkop | 550 Yellow-bellied Bulbul |
| 84 Hadeda | 551 Sombre Bulbul |
| 129 Yellow-billed Kite | 552 Kurrichaine Thrush |
| 149 Fish Eagle | 553 Olive Thrush |
| 160 African Goshawk | 558 Natal Thrush |
| 172 Osprey | 578 Chorister Robin |
| 193 Crowned Guineafowl | 579 Natal Robin |
| 195 Crested Guineafowl | 581 Cape Robin |
| 205 Red-chested flufftail | 584 Brown Robin |
| 313 Bronze-naped Pigeon | 588 White-browed Scrub Robin |
| 314 Red-eyed Turtle Dove | 622 Bar-throated Apalis |
| 317 Laughing Dove | 625 Yellow-breasted Apalis |
| 319 Tambourine Dove | 637 Neddicky |
| 321 Emerald-spotted Wood Dove | 655 Dusky Flycatcher |
| 337 Purple-crested Loerie | 656 Blue-grey Flycatcher |
| 343 Red-chested Cuckoo | 664 Black Flycatcher |
| 344 Black Cuckoo | 665 Fiscal Flycatcher |
| 350 Emerald Cuckoo | 671 Yellow-throated Flycatcher |
| 351 Klaas's Cuckoo | 672 Cape Batis |
| 352 Diederik Cuckoo | 677 Wattle-eyed Fly Catcher |
| 357 Burchell's Coucal | 678 Fairy Fly Catcher |
| 358 Green Coucal | 682 Paradise Flycatcher |
| 359 Barn Owl | 707 Fiscal Shrike |
| 373 South African Nightjar | 709 Boubou Shrike |
| 375 Natal Nightjar | 712 Puffback Shrike |
| 376 Mozambique Nightjar | 717 Olive Bush Shrike |
| 390 Speckled Mousebird | 719 Orange-breasted Bush Shrike |
| 393 Narina Trogon | 721 Gorgeous Bush Shrike |
| 398 Natal Kingfisher | 723 Grey-headed Bush Shrike |
| 402 Brown-hooded Kingfisher | 740 Black-bellied Glossy Starling |
| 410 Little Bee-eater | 756 Purple-banded Sunbird |
| 418 Hoopoe | 765 Grey Sunbird |
| 419 Red-billed Hoopoe | 766 Olive Sunbird |
| 422 Trumpeter Hornbill | 771 Collared Sunbird |
| 427 Crowned Hornbill | 772 Black Sunbird |
| 431 Black-collared Barbet | 775 Cape White-eye |
| 433 White-eared Barbet | 790 Forest Weaver |
| 436 Red-fronted Tinker Barbet | 791 Spectacled Weaver |
| 438 Golden-rumped Tinker Barbet | 799 Cape Weaver |
| 439 Crested Barbet | 800 Yellow Weaver |
| 447 Golden-tailed Woodpecker | 802 Brown-throated Golden Weaver |
| 450 Cardinal Woodpecker | 804 Thick-billed Weaver |
| 452 Olive Woodpecker | 823 Bronze Mannikin |
| 493 European Swallow | 824 Red-backed Mannikin |
| 495 White-throated Swallow | 827 Green Twinspot |
| 503 Lesser Striped Swallow | 833 Fire finch |
| 507 House Martin | 839 Blue Waxbill |
| 511 Black Saw-wing Swallow | 842 Grey Waxbill |
| 517 Fork-tailed Drongo | 846 Pintailed Whydah |
| 518 Square-tailed Drongo | 859 Yellow-eye Canary |
| 521 Black-headed Oriole | N.B. Birds of Sea-shore and Lagoon |
| 527 Black Tit | have not been included. |
| 545 Black-eyed Bulbul | |





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