

Lake Manyara National Park

A Guide

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Illustrated by Sally Northwood

Kees Rockmarker
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15/-

LAKE MANYARA
NATIONAL PARK

A Guide to your increased enjoyment

Visitors are welcome to get out of their cars in marked picnic sites to admire the scenery or eat their packed food but remember that lion, buffalo, rhino and elephant may be nearby, especially if there is thick cover. Please do not attempt to walk in the bush itself or you will certainly frighten the animals and the animals will, often enough, frighten you.

Ideally a full day is needed to explore the park, but a number of morning and evening trips will achieve the same result, but with much more travelling. We suggest an early start, a leisurely picnic lunch during the heat of the day, followed by a return homeward in the afternoon and early evening.

Please make sure you are clear of the park gate by 6.30 p.m.

Reprint: September 1979

Introduction

It is hoped that this booklet will help to increase your enjoyment of the park by bringing to your notice some interesting facts and figures about the countryside and the animals which inhabit it.

It has been said that a naturalist could make the study of a cubic foot of pond water into his life's work: we are not suggesting that you should go to such extremes, but, on the other hand, a realization of some of the more detailed aspects of the area will certainly add to your pleasure and allow you to speak with more authority of what you have seen.

It is entirely understandable that visitors will want to see the lions, but we hope that, this ambition realised, they will not think that the park has little or nothing more to offer.

We suggest strongly that you **take your time** when park visiting. The most interesting and unusual things are always seen by people who have time to 'stand and stare'. A hurried trip rarely pays off in terms of out-of-the-ordinary happenings.

Unless you are very familiar with the park **take a Guide**. He will know where the wildlife is to be found at any given time and also has a sound knowledge of the park's tracks. For example, he can advise you how close you dare go when approaching some of the more pugnacious animals and will also be able to tell you how trustworthy the ground is underfoot, as when trying to get close to the lake shore, thus avoiding the unpleasantness of getting bogged down and having to dig yourself out!

We wish you a most enjoyable visit.

The Setting

Lake Manyara National Park lies 121 km. southwest of Arusha en route for Ngorongoro Crater, Oldupai Gorge, and the unique Serengeti plains. The name Manyara is derived from the plant *Euphorbia tirucalli* which is much used by the Maasai people as material for making living stockades around their kraals. Eventually this plant will produce a stock-proof hedge more durable than anything made of cut thorn branches. In the Maasai language the word emanyara, possibly through association, means a kraal. Whether the kraal was named after the plant or the plant after the kraal is another matter !

As you approach the village of Mto wa Mbu (Mosquito Creek) from the direction of Arusha the most outstanding feature is the spectacular escarpment of the rift wall. Here, where the Maasai plains give way to the cultivated uplands of Mbululand, lies the Lake Manyara National Park. Although some cultivation can be seen below the Rift Wall, the Maasai are traditionally pastoralists, with no interest in the raising of crops. On the other hand, the Iraqw people of Mbululand are both stock-keepers and agriculturalists, growing a considerable quantity of Tanzania's wheat.

The Great Rift Valley, to give it its full name, is part of a fault in the earth's crust stretching from Turkey to the mouth of the Zambesi, and follows the line of the Dead Sea and other lakes in Israel, through the Red Sea, along the line of the Ethiopian Highlands and so down through the Sudan, Kenya, Tanzania and Malawi. When the fault reaches Kenya, it divides into eastern and western arms. Manyara is situated on the eastern arm.

This is a volcanic area with Oldonyo L'engai (the mountain of God) still active only 73 km. away from the park headquarters. It was after lava from neighbouring volcanoes had, some two or three million years ago, buried the northern

part of this area that the earth's crust was subjected to tremendous tension and eventually split along the line of the present day rift wall.

In the Manyara area there is no eastern wall to the rift valley as there is in Kenya. Here the flattish country falls very gently into a depression, while in Kenya there is a trough-like subsidence with walls both to east and west.

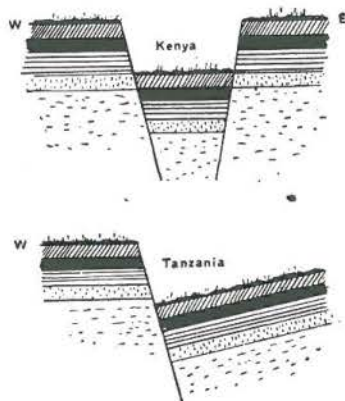
Because the park lies within an earthquake zone, periodic shocks of very small intensity are recorded, showing that minor movements are still taking place along the rift fault. Such movements are extremely small and constitute no danger.

The northern part of the park, nearest the entrance, is composed mainly of volcanic rock which, being porous, allows many streams of clear water to flow out of the base of the wall. Further south, around the Msasa river, the volcanic rock gives way to ancient crystalline rock which, being hard and non-porous, permits of fewer springs and streams, except those that cascade down the entire face of the wall, such as the Ndala, Bagayo and Endabash rivers.

The Park

At one time the Manyara area was a well known hunting ground where many professional hunters brought their clients, but now its wealth of wildlife is conserved in a National Park for all to enjoy. Considering how much shooting was done here it is remarkable how docile the animals now are. It is wise, however, to give elephants a reasonably wide berth, as from time to time strange animals, not used to the Park and its visitors, come in from outlying areas where they may have been hunted and generally harried, in which case they can be dangerous if approached too closely.

Despite the fact that Lake Manyara National Park is only



330 square km. in area (of which about 229 square km. are lake) it contains a large variety of country: the rift wall, the ground water forest, acacia woodland, areas of open grassland, the lake foreshore, swamp and the lake itself. It carries a remarkably high biomass, or weight of live animals per acre or square mile. This is possible because of the varied habitat which provides optimum conditions for many animals of different species, and also because the various creatures exploit separate parts of the same habitat. Wildlife areas tend to carry heavier biomasses than rangelands used for cattle because all the individuals in a herd of cattle are exploiting the same resource — grass.

There is a fantastic profusion of bird and animal life in Manyara, not least of which are the famous tree-climbing lions. Over 380 species of birds, some migratory, have been recorded in the park to date, some of these only occurring seasonally.

The park roads are normally open to saloon cars at all seasons of the year, but a very heavy rainstorm may cause temporary closure of some tracks. If this happens at all it is most likely to be in April or May, but African weather is always unpredictable and more often than not confounds the prophets.

Your Visit

The direct distance from the park gate to Maji Moto (Hot Springs) is 40 km. but there are many side tracks and loop roads which the visitor will wish to explore. From Maji Moto to Yambi, the farthest point, is 8 km. but the road is not suitable for saloon cars. During a full trip you can expect to travel 113 km. or so in the park, so make sure you have enough petrol. If petrol is available fill up at the gate as there are no filling stations inside the park but there *are* wild and potentially fierce animals!

Although it will not be possible to see everything during a single visit to the park, it is rare for the visitor to leave without having had a chance to photograph lion, buffalo and elephant as well as the docile zebra, giraffe, impala and a host of lesser creatures. Bird photography, of course, is particularly good in Manyara at certain times of the year.

Both rhino and leopard are resident in the park and should be looked for in the early morning and late afternoon.

We reiterate the suggestion that you take a Guide, as he will be familiar with the network of park tracks and will know where the best wildlife viewing is to be had. Surprisingly enough it is easy to drive straight past a tree full of sleeping lions unless you are trained by constant practice at spotting them.

AS THERE IS ONLY ONE ENTRANCE/EXIT TO THE PARK
ALL TRAILS MUST START AND END AT THE GATE.

The Gate

The small gatehouse museum, which was opened in 1962, is built of local stone and timber and contains a number of exhibits of interest to visitors including eggs, butterflies and mounted specimens of some common birds.

Those who wish to identify birds may make use of the collection of study skins which are to be found in the cabinets to the left of the entrance. A bird checklist for the park is obtainable for a small sum at the desk.

The Ground Water Forest

Upon entering the park you will find yourself immediately in the ground water forest. Here the tall trees are maintained by water which seeps out of the volcanic rock of the rift wall, thus raising the water table to a height suitable for their growth. In many ways this type of forest is reminiscent of rain forest, but here at Manyara the rainfall, of approximately 76.2 cm. per annum, is inadequate for this, and no such stand of forest trees would be possible if it were not for the high water table. One obvious difference between true rain forest and ground water forest is the absence, in the latter, of epiphytes such as mosses and lichens. In rain forest these are able, because of the dampness of the atmosphere, to get a hold everywhere and festoon the branches of the trees.

As is usual in forest of this sort there are three types of vegetation growing at three separate levels: tall trees, shrubs and grasses, including reeds, and other flowering plants.

Among the forest trees will be seen MKUYU, the wild fig, *Ficus sycomorus*; the tamarind, *Tamarindus indica*, MKWAJU



in Swahili; the strange 'sausage tree', *Kigelia africana*, MWEGEA, as well as doum and wild date palms, the Swahili names of which are MKOCHE and MKINDU respectively.

At the intermediate level grow a variety of flowering plants such as species of hibiscus, abutilons, and wild ginger *Aframomum angustifolium*. The reed *Cyperus alternifolius* is very common on drier ground beneath the trees.



In places the water table is too high for the successful growth of forest trees: in such areas the forest gives way to swampy glades in which tall reeds of *Typha* and *Cyperus immensus* predominate, but on the edges of which *Cynodon dactylon*, a star grass, is found. *Typha* reeds are often mistakenly

called bullrushes, but should be known as Mace Reeds or Reedmace. In a famous painting by Rubens, Jesus is depicted holding a reed in his hand to represent a mace or sceptre, symbol of sovereignty, which no doubt accounts for the name.



Some of the more common trees and shrubs have been marked with numbered tags; you will find a key to these numbers in the back of this book.

Before visitors arrive in East Africa they are often under the impression that they are going to be besieged by snakes at every turn, and are surprised when they find that this is not so. Although it is obviously impossible to make a 'game count' of snakes, there is no doubt that there are a great many about, but the fact is that they are rarely seen and only in exceptional circumstances constitute a problem.

Elephants are frequently seen in the deep forest or in the marshy glades, but by far the most common animal here is the baboon, NYANI in Swahili.

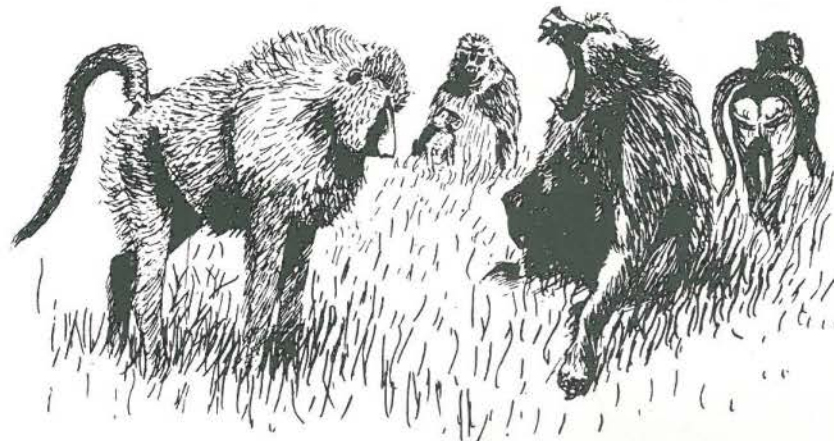
Manyara, because of its position on the rift wall, is situated on the geographical junction of the ranges of two species of baboons, and there is evidence that hybridization between them has occurred in the vicinity of the park although this has not been fully investigated scientifically.

Although the Yellow Baboon, *Papio cynocephalus*, is mostly confined to the lowlands in the southeast of Tanzania while the Olive Baboon, *Papio anubis*, lives in the highlands to the north-west, the population found in the park includes many individuals which seem to bear the characteristics of both species.

The Yellow Baboon is a lighter built, leggier animal than the Olive and is not as dark in colour, being a light olive brown as opposed to dark olive grey.

Baboons are extremely territorial, spending the daytime moving round their range on the ground feeding on such delicacies as insects, grubs, spiders and even scorpions. They also

consume fruit, roots, leaves and the eggs and young of birds. When seriously alarmed they climb into trees and onto rocks for a better view, but frequently descend and make off over the ground once the source of danger has been located. It is apparently rare for two troupes to meet across a territorial boundary, but if such a confrontation did occur, most likely by accident, it is probable that the border dispute would be settled by demonstration only, and that actual fighting would not take place. Baboons have solved their territorial problems by learning to avoid their neighbours. They sleep in favourite trees.



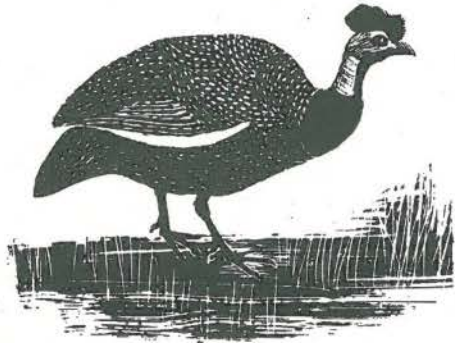
A baboon troupe consists of the females with their young, adolescent animals of both sexes and a group of from three to eight fully mature males who appear to share the leadership. More junior males, because they fear the leaders, stay around the edge of the group, where they play the part of sentinels and give early warning of danger. The old males seem to dominate the breeding without jealousy and band together in the face of danger to lead an attack on an approaching predator, often a leopard. In such cases it is not unknown for the leopard to be torn to pieces, although most frequently it is able to snatch a baboon and spring to safety.

Despite the fact that the old males are stern disciplinarians, a good deal of bullying goes on. Often an adolescent will force a young animal out onto the end of a flimsy tree limb, where it hangs screaming with fear.

Adult males are probably sexually active at all times and exhibit blue skin round the hindquarters. Adult females when not in season have pink hindquarters which swell and turn to a vivid red when in season, at which times they mate, apparently indiscriminately, with the troupe leaders and sometimes with the junior adult males as well. The grooming of dominant males by females seems to be a regular practice, as does mutual grooming by other members of the troupe.

NEVER ATTEMPT TO FEED THE BABOONS AS THEY CAN BE VERY AGGRESSIVE AND ARE CAPABLE OF INFLECTING SERIOUS WOUNDS, ESPECIALLY IF THWARTED.

Although bird life is comparatively scarce in the forest, possibly as a result of the depredations of baboons on eggs and fledglings, you are sure to see and hear the Silvery-cheeked Hornbill, *Bycanistes brevis*, with its conspicuous casque, especially in the morning or evening as it flies past with creaking wing beats or settles with braying cry and loud honks into the top of the trees.



Also seen in the forest, but usually on the ground, are Crested Guinea Fowl, *Guttera edouardi*, one of the five species found in East Africa. The Crested Guinea Fowl has darker plumage than the helmeted variety, also found in the park, and

has a crest of black feathers, rather like that of a Roman soldier's helmet, on top of its head. All species of guinea fowl are known as KANGA in Swahili.

Blue Monkeys. *Cercopithecus mitis*, although nothing like as common as baboons, are also found in the forest, from which

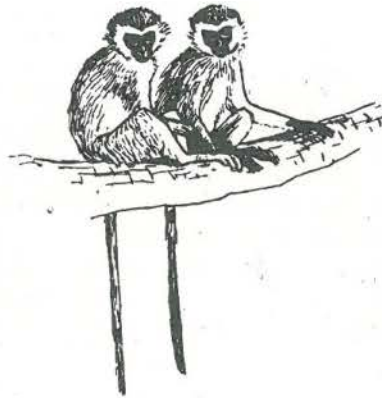


they rarely stray. Seen at a distance, especially in shade, they appear black, but are in fact a dark bluish grey. They have very full cheeks and

tend to carry their tails bent over at the tip, somewhat in the manner of baboons. Their diet consists mainly of leaves which they pluck from the forest trees. Their sharp cry, which can be rendered as 'nyah', is often heard near the park gate even though the monkeys themselves are invisible. Their Swahili name is KIMA.

One of the commonest monkeys in East Africa, the Vervet, *Cercopithecus aethiops*, although not a true forest monkey, is often seen in this area. TUM-

BILI, as he is known in Swahili, is a small grey monkey with a black face and long, black-tipped tail. He has white cheek tufts and the underside of his body tends to be white also. The sexually mature male's scrotum is bright blue. Vervets are great thieves in cultivated areas but in the park live on insects, grubs, fruit and the



young and eggs of birds: they are also fond of the gum which exudes from the bark of acacia trees.

Their main enemies are the larger eagles, particularly the Crowned Hawk Eagle, *Stephanoaëtus coronatus*, and the leopard.



There are many places where the road is the dividing line between the rift wall vegetation and that of the ground water forest. As you drive into the park you will have tall forest on your left while to your right the steeply rising, boulder strewn slope will be covered with entirely different species of trees and shrubs, most noticeable of which is the grotesque baobab, which, as someone once remarked, looks as though it was planted upside down. The baobab, *Adansonia digitata*, is called MBUYU in Swahili. Its gourd-like fruit provides the villagers with a handy vessel which has many uses including bailers for canoes and dippers for drinking-water and beer. The young leaves are edible as a type of spinach and the fruit and seed pulp can be used to prepare a cooling drink. The wood, which has a long fibre, makes strong paper.



In certain areas of East Africa elephants do considerable damage to baobab trees, ripping them open at tusk height so as to chew the fibrous pith within, but so far in Manyara the elephants have confined themselves mainly to damaging acacia trees. As many baobab trees are hollow they frequently serve as reservoirs for rain water and are also often the site for a nest of wild bees. Ghosts and spirits of one sort or another are also said to dwell in them.

Mahali Pa Nyati

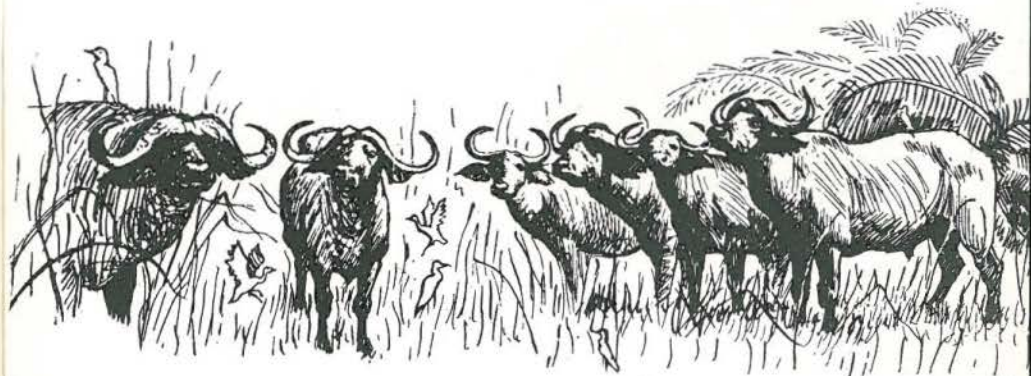
About half a mile after crossing the Marera river bridge you will come to a fork in the road. It is suggested that you bear left in the direction of Mahali pa Nyati (The Place of the Buffalo) and continue through the ground water forest until you come to a large open grassy area. This is where one of the

resident herd of buffalo, usually about 400 strong, spends most of the year. The buffalo, NYATI or MBOGO in Swahili, are most likely to be found near the lake shore, and can often be spotted by first catching sight of the attendant Buff-backed Herons, *Bubulcus ibis*, which feed by snapping up insects disturbed by the hooves of the grazing buffalo, and are not above riding on a buffalo's back. An extremely interesting fact about these birds is that they are now found in the New World as well as the Old, probably having been blown across the Atlantic by easterly gales, or by hitching a ride on a west-bound ship. They were recorded in Guyana as early as 1937 and nowadays may even be seen trotting at the heels of a herd of Longhorns or white-faced Herefords in the State of Texas, where they have successfully adapted themselves to their new environment. Those who are familiar with buffalo in other parts of East Africa may note the reddish colouring of the Manyara animals, the reason for which is not fully understood. There are more than 1,000 buffalo in the park.

Impala and Zebra are often to be found in this area, as are lions. Hippo inhabit the marshy area to the south-east of the open grass plain and may be seen provided the foreshore is not too soft for your vehicle.

CARE SHOULD BE TAKEN WHEN NEAR THE LAKE SHORE IN THIS AREA AS THE GROUND CAN LOOK DECEPTIVELY FIRM WHEN IN FACT IT IS DANGEROUSLY SOFT.

The buffalo feed mainly on a sedge, *Cyperus laevigatus*, which thrives on the alkaline flats close to the lake shore. In an undisturbed state this sedge is rather tussocky but when trampled and grazed by the buffalo spreads out to form a good ground cover, and provides them with food throughout the year.



In this area you will certainly notice the characteristic smell of the alkaline land and will see deposits of soda forming a crisp crust where the soil has partially dried. Some of the local people, especially the old men, collect the white soda crystals, known as MAGADI in Swahili, for mixing with their powdered tobacco leaves in order to make snuff.

HAVING EXPLORED THE AREA OF MAHALI PA NYATI YOU SHOULD TURN TOWARDS THE ESCARPMENT AND FOLLOW THE ROAD SOUTHWARD THROUGH THE TREES.

Mto wa Mkindu

The wild date palms which are so common in this area give their name to the stream of sweet water which flows from the escarpment into the lake. The wild date, *Phoenix reclinata*, grows into an elegant palm eventually, but for some years may remain in the form of a low-growing mass of fronds often as big as a small house. Palms, unlike trees, have only one growing



point, damage to which causes withering and subsequent death. *Phoenix reclinata*, as its name suggests, has a far less upright growth habit than other palms. The fronds of the wild date are plaited into temporary baskets by the local people in order to convey their goods to market; the fruit is eaten by birds, but is unpalatable to man.

Also very much in evidence here are the Yellow-barked

Fever Trees or Yellow-barked Acacias, *Acacia xanthophloea*, which were thought by the early explorers to cause malaria. In fact they tend to grow in damp and, therefore, malarial areas. Many of this species of acacia will be seen to be gnarled and knotted a few feet above the ground where elephants have tried to prise off the bark with their tusks. White-backed Vultures, *Pseudogyps africanus*, often nest on the very top of Yellow-barked Acacias. In the heat of the day elephants will often be found in this patch of forest or on the road. Don't forget to give them right of way!

Mto wa Mchanga

At Mto wa Mchanga (Sand River) you are still in the tail-end of the ground water forest, but about to emerge into more open country. Here you can see huge Wild Fig Trees, *Ficus sycomorus*, with pale bark like sycamores, beside the road. The

fruit, a smaller drier and rather seedy edition of the familiar edible fig is eaten by a large variety of creatures including all the fruit-eating birds. In December, when the fruit is ripe, it is possible to watch a troupe of baboons feeding greedily but untidily in the branches overhead while elephants with deft trunks, pick up



the fallen figs and convey them smoothly to their hairy mouths.

After leaving the Sand River you will soon clear the cover of the forest and find yourself in light bush country where, as in other parts of the park, Von der Decken's Hornbill, *Tockus deckeni*, in his black and white plumage, is often seen either perched on a tree or in undulating flight. Superficially similar to Von der Decken's is the Grey Hornbill, *Tockus nasutus*, whose bill is duller and whose plumage drabber than his cousin. The food of both species consists almost entirely of fruit and berries, but they probably eat the occasional grasshopper or locust. The staccato call of Von der Decken's hornbill, characteristic of the bird, is repeated from seventeen to twenty times in quick succession.



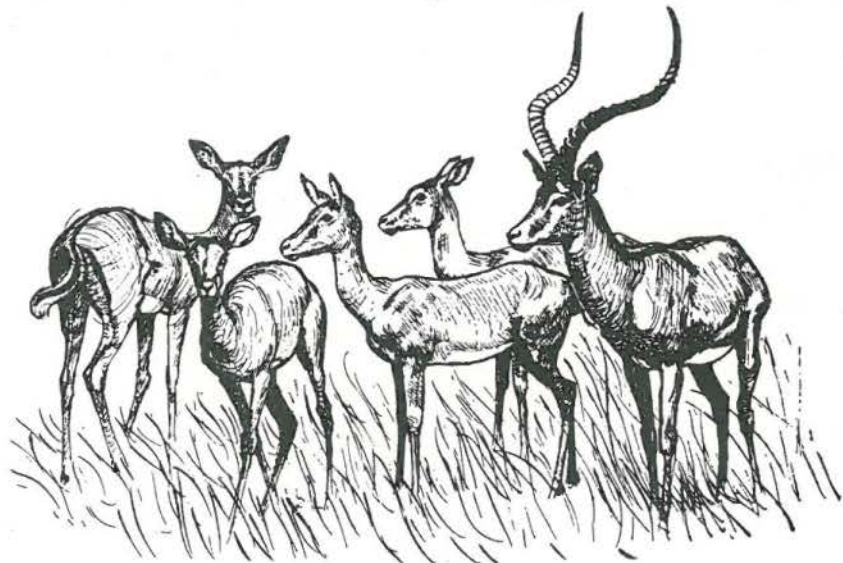
As you emerge into the area of open grassland, with the lake visible to your left hand side and flat-topped acacia trees to your right, you are likely to see Impala, either in large breeding herds or in small groups of elegantly horned bachelors.

The Impala, *Aepyceros melampus*, is probably the most graceful antelope in East Africa with its rufous coat, dark above, blending into fawn below. A black stripe borders the white rump patches.

Known as SWALA PALA in Swahili the Impala is both a browser and grazer and needs to drink regularly. In Manyara it is seldom found far from cover of some sort and, although extremely docile in the presence of visitors, is constantly on the alert for danger, often in the form of a prowling leopard. Breeding herds, consisting of females and young, are dominated by a fine male who usually brings up the rear when the herd moves: he can be easily recognised by his beautiful lyrate horns, which are not found in females. Impala have scent glands just above the heels of the hind legs concealed in tufts of black, wiry hair.

Males, unlucky enough not to have a harem of their own, band together in bachelor herds from which individuals

occasionally venture forth to challenge the master of the breeding herd, whereupon furious fights ensue. If successful, the



challenger takes over control of the herd, but if defeated returns to his bachelor way of life. Actually it is thought that the fighting is concerned more with the males' territorial rights than with the actual herd of females, as possession of territory gives at least temporary mastery of the harem.

Impala are said to be able to clear a height of over ten feet and cover a length of more than thirty feet in one jump.



If you see large, black, turkey-like birds feeding on the ground they will be Ground Hornbills, *Bucorvus leadbeateri*, known as MUMBI in Swahili. Although these big birds spend much of their time on the ground, feeding on insects and reptiles, they will fly slowly and heavily to perch in a tree, at which times their white primary feathers are conspicuous.

In the distance the call of the Ground Hornbill sounds very like human voices in conversation, a fact that can be disconcerting when you think you are alone or disappointing if you are in need of help. Many superstitions surround MUMBI who is traditionally protected by some African people.

Msasa River

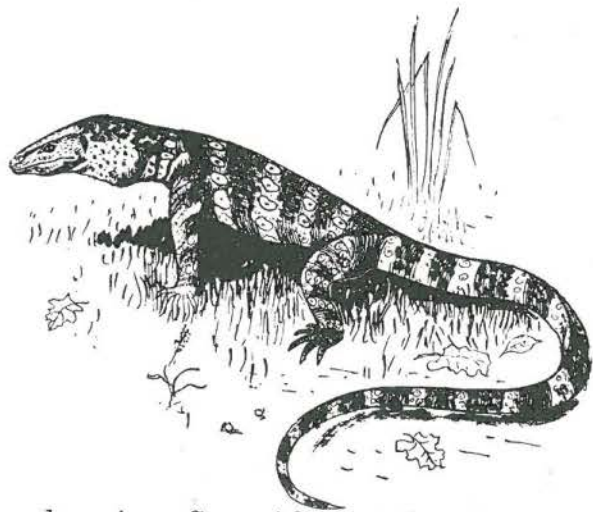
On leaving the open grassy area you will, after passing through a narrow belt of trees, come out on to the main park road near the bridge over the Msasa river. This river is named after a small tree, *Cordia ovalis*, which has broad rough leaves. In Swahili the word for sandpaper is also 'MSASA'.

Stop, traffic permitting, for a few moments on the bridge. You may well be rewarded by the sight of any of the eight species of kingfisher which have been recorded in the park or by a glimpse of a

Monitor Lizard sunning himself on the bank of the stream. The Monitor Lizard, KENGE in Swahili, is always to be found in damp, marshy places where it lives on eggs and fledglings of ground-nesting

birds, frogs, fish and carrion. Some African tribes make drums out of the skin of these huge reptiles, which may grow as big as 2 metres in length. In areas where crocodiles are present (there are none in Lake Manyara) monitor lizards are known for their habit of digging up and eating their eggs.

Soon after crossing the bridge you will find a track to your left leading down to the lake shore. Small groups of old buffalo



bulls, retired from herd life, spend their remaining days on the foreshore. Often they are massive animals apparently in good health, but it will be noticed that they are stiff on rising and



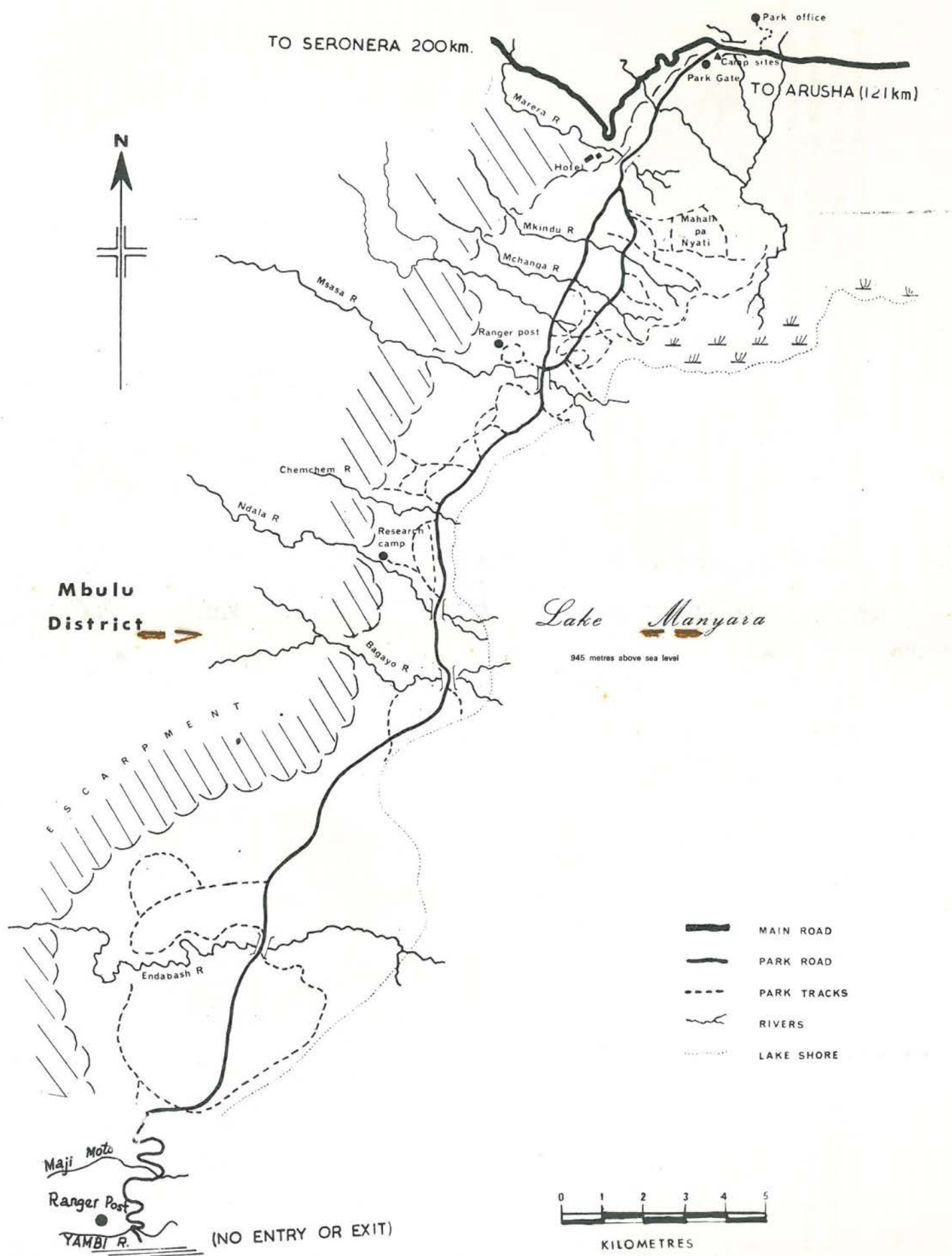
their sight is not as keen as it used to be. Nevertheless they are not creatures to be trifled with, and should be approached with caution. There are about 150 such lone bulls in the park.



This is a fine spot from which to observe Pied Kingfishers, *Ceryle rudis*, as they hover over the Msasa river delta with their sharp eyes alert for the movement of small fish in the water below.

On spotting suitable prey they plunge into the water and, if successful, carry the food to the branch of a nearby tree where it is quickly gulped down.

The nests of these birds are situated in the vertical sandy banks of the river — 1.2 metre tunnels with a nest chamber at the end containing from three to six nearly round, whitish eggs.



TO SERONERA 200km.

Park office

Camp sites

Park Gate

TO ARUSHA (121 km)

Marera R

Hotel

Mkindu R

Mchanga R

Mahali
pa
Nyati

Msasa R

Ranger post

Chemchem R

Ndala R

Research
camp

Bagayo R

Lake Manyara

945 metres above sea level

Mbulu
District



ESCARPMENT

Endabash R

Maji Moto

Ranger Post

YAMBI R.

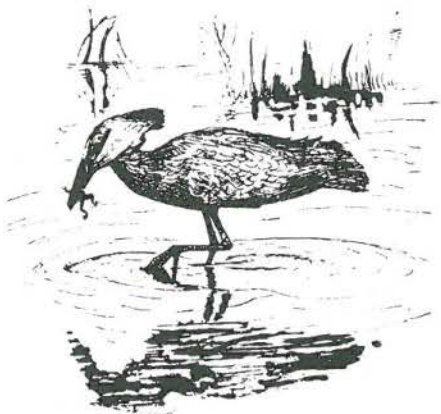
(NO ENTRY OR EXIT)

-  MAIN ROAD
-  PARK ROAD
-  PARK TRACKS
-  RIVERS
-  LAKE SHORE

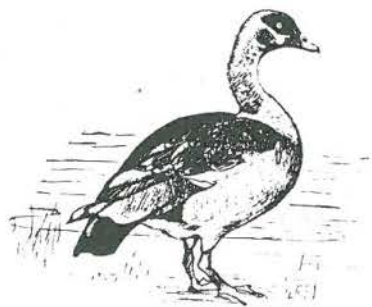


KILOMETRES

Hammer-headed Storks, *Scopus umbretta*, often called Hammerkops, are frequently seen in this area. They are brown birds with dark bills and feet and can easily be distinguished by their typical hammer head. Many legends surround these birds, and it is considered bad luck to kill one. They live on frogs, and other aquatic creatures, including tadpoles. Their nest is an enormous affair of sticks and grass built in the fork of a tree, usually near water. It has a mud-lined chamber inside which is used year after year. The half-built nest is sometimes appropriated by a pair of Egyptian geese.



Delta fans, such as that of the Msasa river, are caused by material deposited by the rivers and streams as they flow off the escarpment of the rift wall into the lake. Naturally, the heaviest deposits of gravel, pebbles and coarse sand are left further inland than the lighter sands and silts, which spread out to form cone-shaped deltas through which the river cuts its course to the lake.



The grassy foreshore here is grazed by Egyptian Geese, *Alopochen aegyptiaca*, BATA MAJI in Swahili. These birds are strong fliers and swimmers but spend much of their time feeding on the ground. Unlike many birds they pair for life.

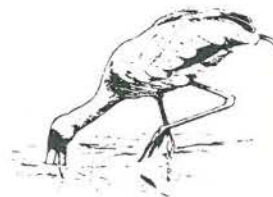
Their call is a quacking honk and, in common with the domesticated goose, hissing when upset or annoyed. The male bird weighs about 3 kilos.

At the lake's edge many of the larger wading birds can be observed as they hunt for food in the shallow, alkaline water.



The Lesser Flamingo, *Phoeniconaias minor*, can be distinguished from the Greater, *Phoenicopterus ruber*, not only by its smaller size but also by the very dark red beak and generally more crimson colour of its body. Both have a black tip to the bill. Flamingoes move about in large flocks from one East African soda lake to another, so it is not possible to say with certainty when they will be at Manyara, but when present they provide an unforgettable spectacle, not only when feeding in the lake but also as they fly with long necks and legs outstretched. Flamingoes dredge for the small crustacea on which they feed by drawing their sieve-like bill, held upside down, through the mud of the lake bed. Breeding has not been recorded at Manyara, although abandoned nests have been found.

Wood Ibises or Yellow-billed Storks, *Ibis ibis*, are also common here and may be seen, with gaping bill, goose-stepping through the shallow water in search of fish, frogs and aquatic insects.



The wholly white bird, somewhat smaller than a Wood Ibis, with blue-grey spatulate bill and pale pink feet, is the African Spoonbill, *Platalea alba*. Spoonbills fly with their necks outstretched like storks, not tucked in like herons. They feed on water-insects, locusts and grasshoppers.

White and Pink-backed Pelicans, *Pelecanus onocrotalus* and *P. rufescens* are also readily observed from this point. The White Pelican is larger than the Pink-backed but has, despite



its name, a pinkish tinge especially in the breeding season. In other ways the two species are superficially rather similar although the Pink-backed is duller in plumage and has a pronounced crest on the back of the head. Both live mainly on fish which they catch by gulping them into

their pouches as they swim along on solitary feeding excursions or, occasionally, as a concerted effort by many birds, after driving their prey into shallow water. Pelicans fly strongly and may often be seen in large flocks soaring on thermals and hill-lift from the rift wall escarpment. There seems to be no other explanation for this behaviour than that they enjoy it.

Acacia Woodland

As you leave the lakeshore south west of the Msasa river bridge you will soon pass through an area of extensive Acacia woodland. This is composed of *Acacia tortilis*, which is easily recognised by its umbrella-like thorny canopy and gnarled and twisted branches. The predominant grass growing beneath them is Naivasha star-grass, *Cynodon plectostachyus*. It is in these trees that the lions like to rest during the heat of the day, often sprawling lazily on a stout limb twenty feet above ground level.



Various theories have been advanced as to why the Manyara lions, as in a few other areas of East Africa, spend so much time resting in trees: to avoid the unwelcome attention of biting flies; to catch the breeze; to obtain a view; to find a spot a degree or so cooler than the ground below or, most probably, to keep out of the way of the buffalo and elephant herds. Someone has said that they probably climb these trees simply because they are climbable, and this seems as good a reason as any. In any case, whichever way it is, the widely held belief that you can escape a lion by climbing a tree is no longer tenable!

The lion, *Panthera leo*, is a creature of hot, dry country, seldom occurring in the cold mountain regions of East Africa, although lone animals occasionally wander into these populated areas in search of domestic stock; such animals often prove to be old or in bad health.

An adult male lion will measure somewhere in the region of nine feet from tip of nose to tip of tail, while an exceptionally large one may reach 2.9 metres. When fully fed, the weight is around 180 kilos for a male and 135 kilos for a female.

The Manyara lions kill mostly buffalo, zebra and, when available, wildebeest, as well as some smaller animals. Hunting is often carried out at night although it is not infrequent for them to kill in broad daylight in National Parks and other places where they are unmolested, if not undisturbed.

Lions are very gregarious, often associating together in prides of up to thirty animals and seem very tolerant of each other. Even a large male will allow cubs to tumble around him in play without showing too many signs of annoyance. Two to

four cubs are born every second year in clumps of tall grass where they are guarded by their mother and other lionesses of the pride. They remain, at least partially, dependent on their mother for about a year and a half. The lion population in Lake Manyara National Parks is low, 0.2 to the square kilometres of land area, despite the wealth of prey species.

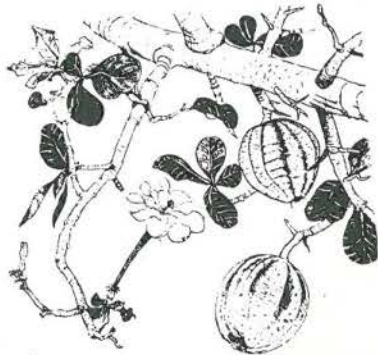
Lions have a hard, keratinous spike concealed in the tuft of the tail for which zoologists can provide no satisfactory explanation. In ancient Egypt it was thought that lions, in order to work themselves up into an invincible rage, would goad themselves by thrashing their tails against their own sides. In actual fact, no lion has ever been observed to put the spike to any practical use whatsoever.

NEVER GET OUT OF YOUR VEHICLE NEAR LIONS

They may look placid as they doze on the ground or in a tree, but they are potentially dangerous creatures of great power and speed. For some reason they tolerate the close proximity of cars, so you may approach them with safety . . .

AS LONG AS YOU STAY IN YOUR VEHICLE.

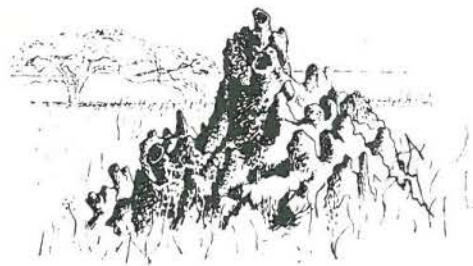
Throughout the acacia woodland you will see bushes of a species of gardenia, *Gardenia jovis-tonantis*, or Jove's Thunderbolt tree with its pale spiky branches, waxy, white, sweet-smelling flowers and strangely ridged fruit, much eaten by elephants. The flowers turn yellow once they are past their prime. The specific name of this bush refers to a belief held by some Angolan people that the plant will give protection against lightning, but it is not clear how this is achieved.



This should not be confused with the wild cucumber, the vines of which festoon many trees and shrubs, and whose smooth, spherical fruit often appears as though borne by the trees themselves.

In and around the Acacia woodland you will see the Sodom Apple, *Solanum sp.*, with its mauve, potato-like flowers and small, spherical, yellow fruit. This plant is a pernicious weed in cultivated land, and it will be noticed that it is usually left alone by the browsing animals in the Park. Specimens of the fruit, when available, are displayed in the Gatehouse Museum at the Park entrance along with samples of wild cucumber, gardenia and other fruit.

Throughout Manyara Park, as in most parts of East Africa (and in many other parts of the world, too) you will find the huge earthen mounds of Termites. These creatures, often incorrectly called White Ants, are neither white nor ants, but are



a very primitive form of insect life distantly related to Cockroaches: they are known as MCHWA in Swahili.

The mounds, varying in size and shape according to the climatic conditions and soil types of the locality in which they are situated, are marvels of engineering, incorporating in their complicated galleries a system of air-conditioning which keeps temperature and humidity at a constant level suitable to their thin-skinned vulnerable inhabitants.

Termites are divided into castes of Queen, King, Soldiers and Workers, each with a recognised function to perform. The Queen, often as large as your index finger, has the sole duty of producing young and may lay as many as 10,000 eggs in a single day: the three million or so inhabitants of a colony may all be her progeny.

Not only do termites feed on wood, as many people who live in wooden houses know to their cost, but also on a fungus which

they 'cultivate' inside the mounds. Apart from providing food, this fungus 'garden' also helps to regulate the temperature and humidity by generating heat while it grows and absorbing surplus moisture which it returns to the air when the humidity falls. Wood may not seem to be a very likely diet for any creature, however humble, but termites developed their wood-eating habits long before man appeared on the earth. They are able to digest this indigestible-seeming material because of an unusual partnership with a protozoa which lives in the termite's gut and breaks down the cellulose into a form readily digestible by the termite.

During the rainy season vast numbers of winged reproductive insects fly out from the mounds, but only a few of these will be successful in founding new termite colonies as they form a well-liked item of diet for many creatures, being greedily eaten by birds, lizards, frogs, toads, dragonflies, bats and other beasts such as jackals and even man himself. The wings of these reproductive termites break off close to the body along a pre-determined line of weakness after they have flown a short distance. Only those able to find shelter underground manage to avoid the waiting predators and start a new colony.

Although Zebra, in Swahili PUNDA MILIA (striped donkey), are usually associated with open plains country and are, in fact, to be seen in huge numbers in the Serengeti National Park and other plains areas, they are found in Manyara wherever there is a stretch of open grassland such as is found between the Msasa and Chemchem rivers. Contrary to what children are often taught, the distinctive colouration of zebras is not intended for camouflage in the ordinary sense of the word, but is thought to be a form of cryptic colouration intended not so much to disguise the animal, which would be impossible where there is no cover, but to confuse a hunting predator as regards speed and distance by the creation of an optical illusion.

Another theory is that the balance of black and white in the coat is connected with the regulation of body heat, but it seems unlikely that such a distinctive colouration pattern would have been evolved unless it played a greater part in the zebras' adaptation for survival than merely the control of temperature. The stripes of zebra, like human fingerprints, can be used by observers to identify individual animals.

The Zebra found in Manyara is Burchell's, *Equus burchelli*, not the Grevy's Zebra which is only present in the northerly arid areas of Kenya and has much narrower stripes. A Burchell's Zebra stallion may measure up to 12 hands and weigh from 225 to 315 kilos. If they do not fall victim to lions which are

fond of their flesh, they live to over 12 years and have even been known to reach nearly 30. When excited, they make a barking sound not unlike that of a dog, a fact which can cause confusion to those unfamiliar with their ways.



Crowned Cranes, *Balearica regulorum*, are often seen in this area and may be photographed without difficulty. They are the national emblem of Uganda, but are to be found throughout East Africa.

Ndala River Area

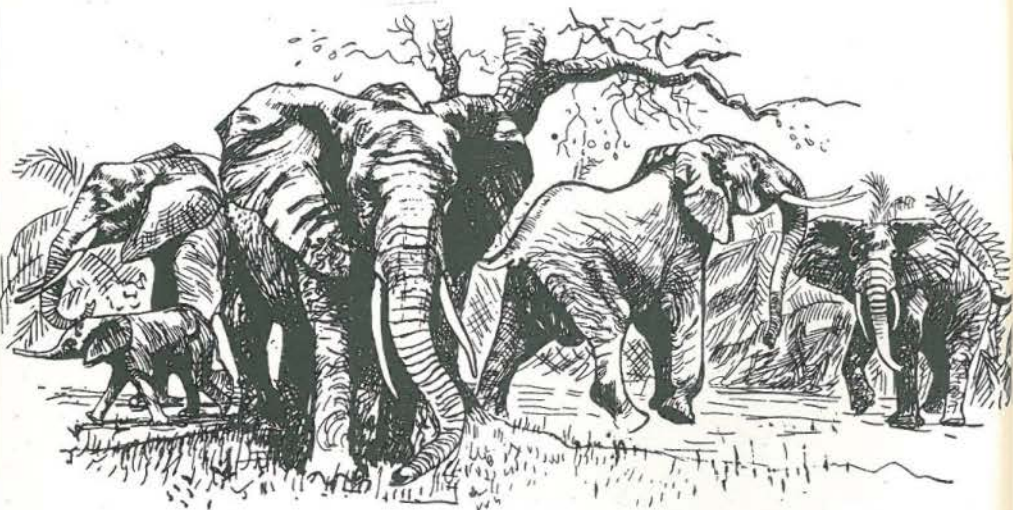
Although elephants are to be seen throughout the park and, because they are great travellers, often outside it in the Marang forest, they will be described in connection with Ndala because the Elephant Research camp is situated here.

The African Elephant, *Loxodonta africana*, TEMBO or NDOVU in Swahili, is somewhat larger than its Asiatic cousin and has a more concave back and larger ears; the tip of its trunk is also different in that it has two projections (used for gripping) to the Asiatic's one. There are approximately 350 elephants in the park.

Attempts have, in the past, been made to domesticate the African Elephant, but although it is known that Hannibal used them for his famous crossing of the Alps, they have never taken to domestication in the same way as the Asiatic and have not played an important part in the economy of African countries as their cousins have in India and Burma, nor have they participated in the ceremonial life of the people to any extent.

The elephant commonly seen in circuses is Asiatic, not African.

African Elephants are intelligent creatures who live in family units the leadership of which is exercised by the oldest



and largest females. Males only stay with the herd until they reach the age of maturity at about thirteen years old, when they leave of their own accord to live alone or in temporary all-male herds. If you are threatened when watching a herd of elephants it is likely that the aggressor will be an old female.

Mature males do not normally come into contact with cow-calf family units except when a female comes on heat, when she is trailed by several males and often mated by more than one. Fighting may break out between the rivals, but is seldom serious. When oestrous wears off the association between the female and her male admirers ends immediately.

Healthy adult elephants are almost entirely immune from predation, but the babies, only 80 cms. high at birth, would soon fall victim to lions if they were not so well protected by the family unit which bunches together with the calves in the centre at the first sign of danger. Thereafter, reactions will vary according to conditions: either the herd will retreat or, led by the largest female, will put on a show to intimidate the intruder.

In the threat display the ears are spread and the head is shaken violently from side to side and, at a higher intensity, trumpeting and a dummy charge will follow.

IT IS INADVISABLE TO WAIT AND SEE WHETHER THE CHARGE IS GENUINE OR NOT.

The Manyara elephants are remarkably placid, but do not drive closer than about thirty yards and do not switch off the ignition of your car. If elephants are encountered on the roads, as they often are in the morning and evening, allow them to pass before proceeding on your way.

The cows carry a good deal less ivory than the bulls, and are occasionally quite tuskless. In bulls the weight varies considerably, but is often between 23 and 45 kilos. The longest recorded tusk from an African elephant measured 4 metres along the curve, while the heaviest on record weighed 106 kilos. Nowadays elephants with very heavy tusks are rarely seen, probably because the best of the tuskers were killed off during the early years of European exploration and settlement of East Africa.

There is a good deal of evidence of elephant damage to the

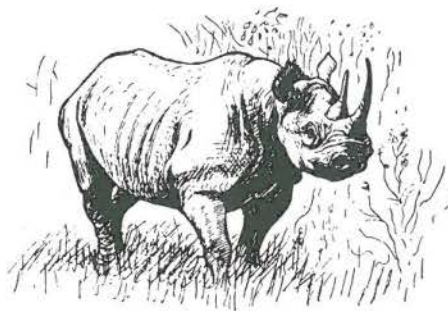
trees of the park, as there is in many parts of East Africa. Here, the elephants supplement their diet of grass and leaves with the bark of the *Acacia tortilis* which they prise off with their tusks before eating. Damage to the bark, started by the elephants, allows entry to a species of borer beetle which eventually kills the tree.

On the other hand elephants are the agents responsible for the 'sowing' of large numbers of tree seeds, many of which germinate better after having passed through the digestive tracts of these great beasts.

There is no truth in the stories of 'elephant graveyards', but it is true that these huge animals sometimes lie down to sleep.

Bagayo River

The Black Rhinoceros, *Diceros bicornis*, called KIFARU in Swahili, is often encountered in this area although also to be found throughout the park. The Black Rhino weighs about two tons and is an animal of uncertain temper: when annoyed he is not above charging a vehicle and even inflicting super-



ficial damage upon it. Because the Manyara rhino leave the park from time to time for the area above the rift wall, where they are harried by the local people, they have little faith in the goodwill of human beings, especially when on foot, and may show their spleen by spirited charges.

These prehistoric-looking beasts have a good sense of hearing and scent, but their eyesight is poor, a factor which causes them to make feint or dummy charges so as to ascertain where the intruder is by making him move. A full-grown male lion will give way to a truculent rhino.

Unlike the White Rhino, whose square mouth is adapted for grazing, the Black Rhino is a browser with rather pointed

and prehensile lips. Despite the misleading names there is little or no difference in colour between the two species, both being a dull grey, but as they are fond of wallowing in mud this is not always apparent. White Rhino are not present in Manyara, being confined to north-western Uganda and southern Sudan. A recent census showed a total of 35 rhino in Manyara.

Rhino horns, present in both sexes, are not composed of horn but of keratinous material of a fibrous nature like hair which does not fuse with the skull as in other horned animals but rests in a slightly hollow base from which, on occasion, it becomes detached. There is no truth in the story that rhino horn contains aphrodisiac properties, whether ground into powder or not, but because of the persistence of this myth large numbers of rhino are killed simply in order to remove the horn.

Rhino have the curious habit of repairing regularly to a selected place to deposit their dung, a fact which gives rise to a number of amusing folk tales.

The Lake

Between the Bagayo and Endabash rivers some very fine views of Lake Manyara are obtained because of the slightly higher elevation of the road.

The lake lies at an altitude of 945 metres above sea level and comprises an average total area of 390 square km., of which 229 sq. km. are in the park. After the formation of the rift valley some two or three million years ago, streams began to cascade down the rift wall and, as there was no outlet, their waters formed a lake in the saucer-shaped depression below. This lake probably reached its greatest size a quarter of a million years ago when it stretched eastwards as far as the present hamlet of Makuyuni at the junction of the Arusha/Dodoma highway where travellers to Manyara turn off the paved road.

Even today the lake level varies considerably: in 1961 it was completely dry and could be driven across in a Landrover, while the following year, a particularly wet one, caused the lake to rise so high that many trees on the shore were killed by the unusually high water table.

When the foreshore is reduced in area during a year of heavy rains it is the wildebeest and zebra who are the main sufferers. Being plains animals they fear the bush or woodland country and with good reason, as the predators, especially lions, are able to pick them off at their leisure. Previous to 1962, there was a good resident herd of wildebeest occupying the lake shore, but in that and subsequent years, when the lake level was high, they were systematically killed off by the lions until only a few remained. Some of them were able to make their way round the end of the lake to the open country to the eastward, but few of their numbers survived. When the lake was very high these animals spent as much time as they could up to their hocks in the water: a position relatively safe from attack by lions.

Although fishing is illegal in that area of the lake which lies within the park boundaries, it is carried out by local people with dugout canoes and gill nets in the remainder of the lake. Both catfish or barbel, *Clarias*, and bream, *Tilapia*, are present. Like all large East African lakes, this lake has its own species of bream.

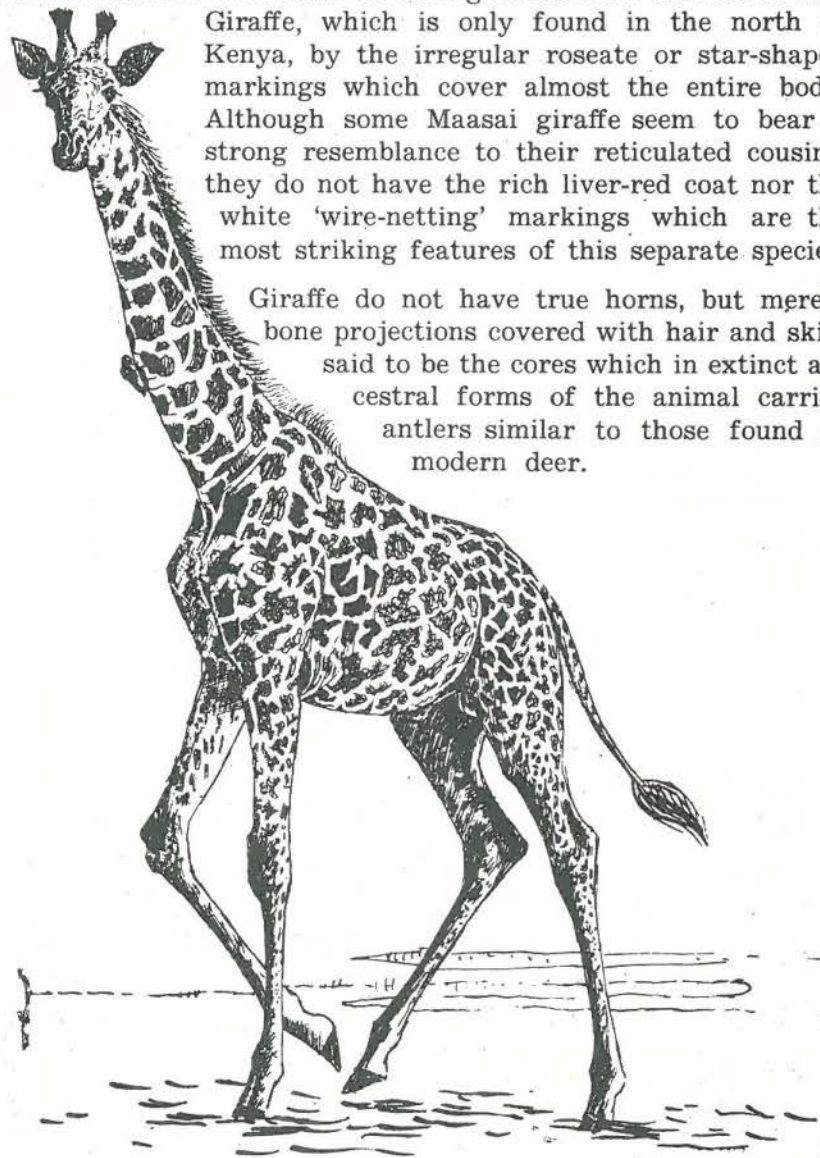
Reedbuck, *Redunca redunca*, are often seen in small groups by the lake shore and should not be confused with Impala who also frequent the shore from time to time. This is the Bohor Reedbuck, TOHE in Swahili, and can be identified by its uniform sandy-rufous colouration. The tail is very bushy with a white 'flag'; only the males have short forward-curving horns. Reedbuck are difficult to see when lying down in a patch of tall grass or reeds, but can be recognised when alarmed by

their shrill whistling cries and the typical 'rocking-horse' gait which they adopt when running away.

Endabash River Area

Giraffe, *Giraffa camelopardalis*, are found in this area as they are throughout the park. The species occurring is the Maasai Giraffe which can be distinguished from the Reticulated Giraffe, which is only found in the north of Kenya, by the irregular roseate or star-shaped markings which cover almost the entire body. Although some Maasai giraffe seem to bear a strong resemblance to their reticulated cousins, they do not have the rich liver-red coat nor the white 'wire-netting' markings which are the most striking features of this separate species.

Giraffe do not have true horns, but merely bone projections covered with hair and skin, said to be the cores which in extinct ancestral forms of the animal carried antlers similar to those found in modern deer.



These animals, which were known to the Ancients as camelopards, presumably because they thought they were a cross between camels and leopards, are called TWIGA in Swahili. Actually giraffe have one similarity to camels in that they walk by bringing both limbs on the same side forward together, which gives them their characteristic gait.

The long neck of the giraffe is a perfect example of adaptation for survival as it enables them to browse off the tender leaves of acacia trees at a height impossible to other creatures. Despite its great length, it has only seven vertebrae, as in human beings.

Contrary to popular belief, giraffe sometimes lie down to sleep, but usually keep their necks up and often post a 'sentry' who remains on his feet.

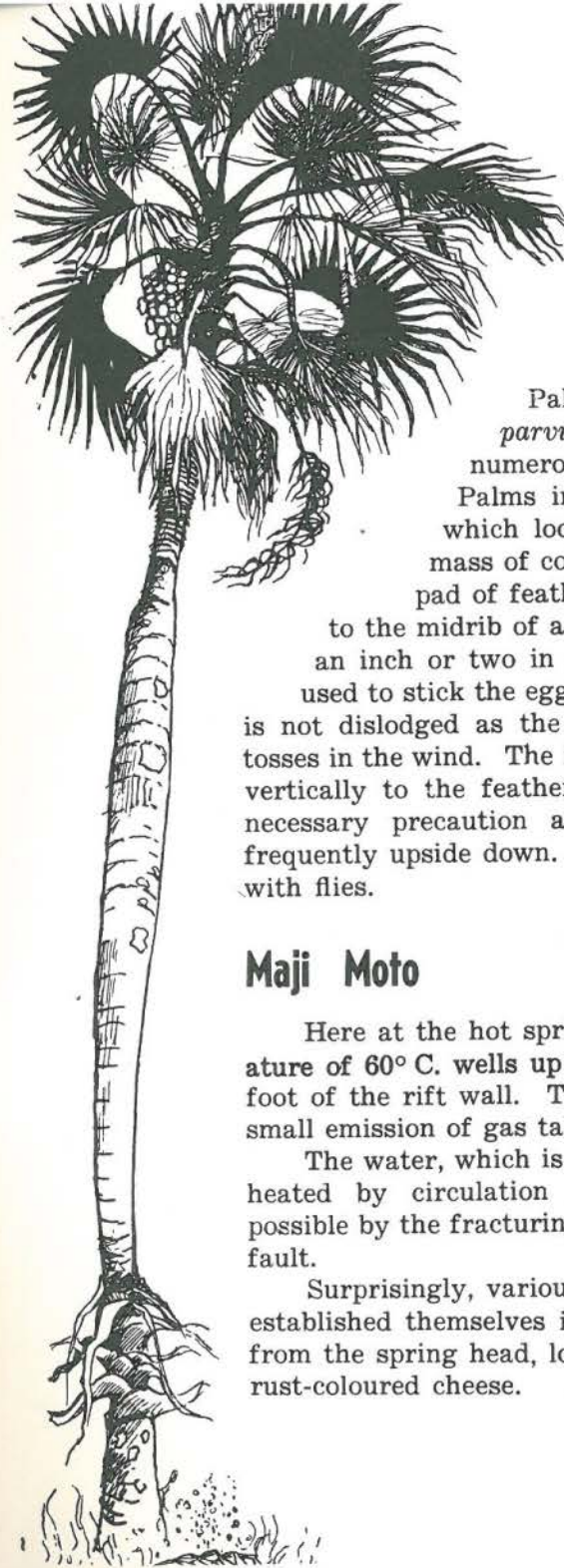
The starling-sized brown birds seen clambering all over giraffes and other large animals, except elephants who do not seem to tolerate them, are Red- or Yellow-billed Oxpeckers, *Buphagus erythrorhynchus* and *B. africanus*. Yellow-billed Oxpeckers are larger than the Red-billed, but in feeding habits they are similar, living on ticks and biting flies which they peck off their host's body. On balance they are undoubtedly beneficial to the wild animals they groom, but they do keep open wounds and sore places which might otherwise heal, in order to feed on the body tissue of the animal itself. They are often seen to advantage when attending buffaloes, even exploring the eyes, ears and nostrils of these great beasts.

If you see lines of reddish-coloured ants crossing the road they will probably be Safari Ants, called SIAFU in Swahili.



These are extremely fierce creatures, attacking anything in their path, so beware of stepping on them or you will be severely nipped by their sharp pincers.

When SIAFU, *Dorylus sp.*, are travelling they will kill and eat quite large creatures: if they get into a hen run or rabbit hutch from which the occupants are unable to escape, they quickly reduce all living things to mere skeletons. They are particularly active during the rains, and at this time the elephants often avoid the ground



water forest for fear of getting them up their trunks. If this does happen, the maddened elephants will be anything but docile, and should be avoided at all costs.

Palm Swifts, *Cypsiurus parvus*, breed in the numerous Doum (Hyphaene) Palms in this area. Their nest, which looks at a distance like a mass of cobwebs, is composed of a pad of feathers and saliva glued on to the midrib of a leaf and is usually only an inch or two in diameter. Saliva is also used to stick the egg on to the pad so that it is not dislodged as the palm frond sways and tosses in the wind. The incubating bird clings vertically to the feather pad with its claws, a necessary precaution as the nest is not infrequently upside down. The nest often swarms with flies.

Maji Moto

Here at the hot springs, water at a temperature of 60° C. wells up from a delta fan at the foot of the rift wall. The water is fresh, but a small emission of gas takes place.

The water, which is normal ground-water, is heated by circulation at great depth, made possible by the fracturing of the rocks of the rift fault.

Surprisingly, various form of an algae have established themselves in the hot water not far from the spring head, looking like lumps of soft rust-coloured cheese.

Ruppell's Griffon Vultures, *Gyps ruppellii*, regularly make their nests on the sheer rock face of the escarpment here at its highest point in the park where, being almost entirely inaccessible, they are able to breed in peace.



Tsetse flies, looking like large house flies but with the wings crossing at the back may be troublesome in this area as they can inflict an unpleasant bite, but are not harmful to human beings although they cause *Trypanosomiasis* sickness in domestic stock which, unlike the wild animals, have built up no resistance. This species of tsetse fly does not carry sleeping sickness.

This is the southernmost point of the park, and although you must return north to the gate, as there is no exit here, you need not cover the same ground as on your outward trip. By taking advantage of the numerous loop roads which form a network throughout the park you can strike new ground as you return.

This is the end of the trail as far as this booklet is concerned. We hope you have enjoyed your visit to Lake Manyara National Park and that this publication has helped to enhance your pleasure.

You may not, in one visit, have seen all the animals and birds mentioned here, but it must be remembered that time and patience are needed for really successful wildlife watching. In any case, you are sure to have seen a large number of interesting things **not** mentioned in this book.

KEY TO NUMBERED TREES

In order to assist with identification, certain individual trees in the park have been fitted with small numbered tags; these numbers correspond to the list given below. Unfortunately very few of these trees have common English names.

- | | |
|---|--------------------------------------|
| 1. <i>Trema orientalis</i> | 20. <i>Albizia zimmermannii</i> |
| 2. <i>Celtis zenkeri</i> | 21. <i>Acacia xanthophloea</i> |
| 3. <i>Trichileia emetica</i> | 22. <i>Cordia africana</i> |
| 4. <i>Croton macrostachys</i> | 23. <i>Phoenix reclinata</i> |
| 5. <i>Celtis africana</i> | 24. <i>Sorindeia obtusifoliolata</i> |
| 6. <i>Antiaris toxicaria</i> | 25. <i>Hyphaene ventricosa</i> |
| 7. <i>Drypetes natalensis</i> | 26. <i>Ekebergia buchananii</i> |
| 8. <i>Bridelia micrantha</i> | 27. <i>Ficus wakefieldii</i> |
| 9. <i>Ficus vallis-choudae</i> | 28. <i>Diospyros abyssinica</i> |
| 10. <i>Rauvolfia caffra</i> | 29. <i>Blighia unijugata</i> |
| 11. <i>Ficus thonningii</i> | 30. <i>Balanites aegyptiaca</i> |
| 12. <i>Chaetacme aristata</i> | 31. <i>Tamarindus indica</i> |
| 13. <i>Ficus sycomorus</i> | 32. <i>Acacia tortilis</i> |
| 14. <i>Kigelia africana</i> | 33. <i>Ziziphus pubescens</i> |
| 15. <i>Acacia clavigera</i> | 34. <i>Acacia albida</i> |
| 16. <i>Cordia goetzei</i> | 35. <i>Acacia sieberiana</i> |
| 17. <i>Zanha golungensis</i> | 36. <i>Adansonia digitata</i> |
| 18. <i>Tabernaemontana usambarensis</i> | 37. <i>Sterculia stenocarpa</i> |
| 19. <i>Chlorophora excelsa</i> | 38. <i>Commiphora baluensis</i> |

OTHER PUBLICATIONS

For those with more than a passing interest in birds and animals, we suggest the following books :—

“Lake Manyara National Park — Checklist of „Birds” published by and obtainable through Tanzania National Parks. Available at the park gate.

“Birds of Eastern and North Eastern Africa” by Praed and Grant, published by Longmans.

“The Birds of East and Central Africa” by J. G. Williams, published by Collins.

“Animals of East Africa” by C. T. Astley Maberly, published by D. A. Hawkins Ltd., Nairobi.

OTHER GUIDES

Other guides uniform with this booklet.

“Serengeti National Park”

“Arusha National Park”

“Mikumi National Park”

“Ruaha National Park”

“Tarangire National Park”.

Published by, and obtainable through, Tanzania National Parks.

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