Between the Sunlight and the Thunder

The Wild Life of Kenya

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described him as " one of the great men of East Africa," met him again in London at the time of the conference. Grogan recalls von Wissmann saying: " I cannot understand your people. You have a virtual monopoly of the big game specialists of the world and yet you send, as your representative, a young gentleman who has once been on a diplomatic mission to Zanzibar. His contribution to the debate is that we should concentrate on the protection of hyaenas because they pull down the old males and thus help in the improvement of the breed."

Sir John Kirk, writing from Sevenoaks, Kent, on 31st July, 1897, after his retirement from Zanzibar, recommended that the British representatives should press for large defined areas to be set aside wherein no shooting would be allowed. He emphasised that such reserves should preferably cover a variety of habitats, but should exclude areas which might, at some future date, be required for agricultural purposes. He suggested the Tana, the " Kikuyu or Kenia region " and the " Mau heights and plateau " as suitable areas, although he recognised that additional reserves would undoubtedly be required at a later date. In 1899, a game reserve was, in fact, declared over " the whole of the Kenia district of the Province of Ukamba, except the area within 10 miles around the Government Station at Kikuyu." In addition, " the areas comprised within a radius of 10 miles round each of the Government Stations at Naivasha, the Eldoma Ravine and Nandi " were similarly declared game reserves under the Uganda regulations.

The advice of Dr. Sclater and Mr. F. C. Selous was also sought. Selous, writing from Montreal on the 15th August, 1897, gave as his opinion " that the destruction of game in South Africa had been brought about by three agencies: firstly, by Europeans (principally Boers of Dutch and French descent) who killed immense numbers of antelopes, quaggas, etc., for the sake of their hides, and large numbers of elephants and ostriches for their tusks and feathers; secondly, by native Africans possessed of firearms, who have been the principal factor in the destruction of game between the Limpopo and the Zambezi; and, thirdly, by the rinderpest which has been altogether beyond human control." Selous therefore strongly advocated laws which would curb the indiscriminate destruc-

tion of wild animals by Europeans, but he agreed that slaughter by natives (which, in the parts of Africa to which he was referring, was almost entirely by Africans possessed of fire-arms) would be exceptionally difficult to control. He considered that " at the present moment, it is hardly too much to say that 997 out of every 1,000 elephants, whose tusks come to the London market, are killed by African natives." Selous recognised the absurdity of introducing laws to control European hunting unless there was also effective control over Africans, and he believed that this could be done only through disarming the tribesmen or preventing them from obtaining ammunition, much of which originated from Portuguese settlements on the West Coast. Selous reinforced his argument by emphasising that in his time " the white rhinoceros has been exterminated in northern and north-eastern Matabeleland entirely by native hunters," and added that game along the Upper Zambezi was also being ruthlessly destroyed by natives who were well armed with guns and rifles.

This argument was supported by Mr. A. Sharpe, Commissioner of the British Central Africa Protectorate, writing from Zomba on 12th February, 1900, who stated that " the cause of the cessation of the wholesale slaughter of game (in Nyasaland) has not been so much that Europeans have been controlled but that the natives of the Protectorate have been stopped from shooting. The native gun tax, although a small one, has deterred natives from carrying guns . . . and we have thus been able to keep the killing of game within reasonable bounds."

A glance at figures showing the importations of guns and ammunition at that period indicates that there was adequate cause for concern. Returns made from the Custom House showed the quantities of arms and ammunition imported into Zanzibar, from 1st January to 23rd June, 1888, to have been:—

Firearms of all sorts	37,411
Pistols	188
Bullets	1,000,000
Caps	3,100,000
Cartridges	70,650
Gunpowder	69,350 lb.

in an English park. These giraffes are the finest development we yet know of the northern form. . . . The male of this particular variety . . . develops an extra pair of horns on the base of the skull. . . .

But giraffes are not the only large game on these glorious downs. Elephants may be seen in great herds close by, but they affect rather more the scattered forests than the open plains. Where you see the giraffes you see also numerous rhinos in couples. . . . It is a glorious sight, say an hour after the sun has risen . . . to traverse this grass country and see this zoological gardens turned loose. Herds of zebras and Jackson's hartebeest mingle together, and in face of the sunlight become a changing procession of silver and gold, the sleek coats of the zebras in the level sunlight mingling their black stripes and snowy intervals into a uniform silver grey, whilst the coats of a hartebeest are simply red-gold.

Dotted about on the outskirts of this throng are jet black cock ostriches with white wings, a white bob-tail and long pink necks. Red and silver jackals slink and snap, grotesque wart hogs of a dirty grey, with whitish bristles and erect tails terminating in a drooping tassel, scurry before the traveller till they can bolt into some burrow of the antbear. Males of the noble water buck, strangely like the English red deer, appear at a distance browsing with their hornless, doe-like females. . . . Grey-yellow reed buck bend their lissom bodies into such a bounding gallop that the spine seems to become concave as the animal's rear is flung high into the air. The dainty *damaliscus*, or sable antelope, with a coat of red, mauve, black and yellow satin bordered with cream colour, stands at gaze, his coat like watered silk as the sunlight follows the wavy growth of the glistening hair. Once black buffalo would have borne a part in this assemblage, but now alas! they have all been destroyed by the rinderpest. The eland still lingers in this region, but seems to prefer the scattered woodland to the open plain. Lions and leopards may both be seen frequently in broad daylight. . . .

To-day, with the whole of the Uasin Gishu Plateau given over to farming, scarcely any wild animals remain in this erstwhile faunal Garden of Eden. A few forest-dwelling species still roam the forest reserves but they are tolerated only in comparatively small numbers, and are likely to be shot if they set foot outside. Plains game has been virtually eliminated, except for a small herd of Rothschild's giraffe which wanders from farm to farm. Along the banks of the Nzoia River, a few hundred Thomas's kob have contrived to survive in the riverine habitat but, since they cannot resist the temptation of invading standing crops they, too, are likely to be eliminated. Attempts are being made to capture them with the aid of narcotic drugs in order to transfer them to a fresh habitat but, so far, these efforts have met with little success. Perhaps a hundred sitatunga remain in a swamp on private land. It is doubtful whether any would be alive to-day had it not been for the enthusiasm of a small number of interested land-owners.

True, the upper reaches of Mount Elgon have been proclaimed a sanctuary, but, even there, the elephants, buffaloes and other species are subjected to constant poaching, mainly by tribesmen from across the Uganda border: but the immense assemblage of plains game is now only a fading memory. The thunder of the hooves has ceased and the roar of the lion no longer reverberates across the plateau. Little more than an occasional timid duiker remains to remind one of the glory that has passed beyond recall.

In 1903, few parts of East Africa were better endowed with wild life than the Rift Valley, especially in the vicinity of the three lakes, Naivasha, Elmenteita and Nakuru. Not only was the climate pleasant but the grass never became excessively long; game was plentiful and varied, and the whole region was covered with " burr clover " which appeared to attract large numbers of Thomson's and Grant's gazelles. This was particularly true in the region between lakes Elmenteita and Nakuru.

According to Chapman, one of the very best places for seeing concentrations of wild animals in the Rift Valley was close to the confluence of the two Nderit rivers with Lake Nakuru. A small area, perhaps no more than 500 acres in extent, dotted

with trees, either singly or in clumps, and with thick riverine forests along the stream banks, literally swarmed with herds of ungulates, and mere words could hardly do justice to the profusion. There were crocodiles in the Nderit River and lions abounded on the plateau. Francolin and guinea fowl were more plentiful than grouse on a Scottish moor, while quail were so numerous that " half a dozen would spring up at every (*sic*) step."

In the broken bush country, lying to the north-west of Nakuru, rhino, lion and buffalo were common. Percival considered the horns carried by rhino in this area to be the biggest he had seen.

This zone was also the common boundary of two races of hartebeest—Jackson's and the Nakuru hartebeest. They could be seen in separate herds within a few hundred yards of each other. A herd of eland lived in and around Menengai Crater, while in the higher country to the north game was very plentiful.

During the course of a pre-dawn march from Nakuru to Elmenteita, Percival passed through herds of zebra which extended for miles. " It was too dark to see them but we could hear the half bark, half neigh, of the old stallions and the rush of hoofs as a herd got our wind and went off. As dawn broke, the sight was wonderful; for miles one could see troop after troop of these pretty beasts. They were massed together in this way as all had been down to drink during the night and were just returning to their feeding grounds. . . . Zebra bones were strewn all over the country. They are most likely killed by lions of which there are considerable numbers. . . . At first the only game seen was zebra, but some few miles further on, game in general was plentiful—hartebeest, Grant's and Thomson's gazelles; ostrich were also very numerous, particularly in the Elmenteita District. Jackal are far too plentiful and do great damage to young fawns. . . . Both Thomson's and Grant's gazelles will chase jackal off their feeding ground if they have young about."

In both lakes, hippos were numerous and well able to fend for themselves, particularly in Lake Elmenteita, where the many small grass-covered islands afforded adequate shelter.

Lake Nakuru, being more open, was more vulnerable. Near both lakes, waterbuck, impala and reedbuck were to be found as well as duiker, steinbok and dikdik.

Percival correctly assumed that the Rift Valley would be the first game district to suffer, because " the country is so suitable for settlers that the game is sure to be driven out." He thought that all might be well, providing the land was utilised for large-scale ranching enterprises but, if split up into numerous small-holdings, the game would have " absolutely no chance." If the herds of wild animals were forced to vacate the Rift, the high bush and forest country (through which the Great Rift Valley runs) was entirely different from the undulating grass plains of the valley floor, and would not constitute a suitable alternative habitat. He hoped that the floor of the Rift could be turned into a Masai reserve " as, owing to the fact that the Masai did not kill game, they would do well together."

On the Mau Plateau, Percival reported game as numerous, " though, owing to long grass, not easy to bag." The more common species were Jackson's hartebeest, topi and oribi while, in the higher parts of the Mau, there were elephant, buffalo, eland and bushbuck. Several herds of roan were also reported in this region: on the " Guaso Ngishu " Plateau, roan " are quite numerous."

In the Baringo District game was plentiful, although very wild near the caravan route, and there were some fine impala heads " obtained by nearly every hunting party." Away from the caravan route rhinoceros were " extremely numerous."

Percival's forebodings were amply justified, and the Rift Valley went the same way as the Uasin Gishu Plateau.

In spite of the impact of settlement game, though considerably reduced, was still relatively abundant in most of the settled areas of Kenya until 1939. When in that year the youth of Kenya joined the Forces, they left behind them a prosperous fauna. When they returned, six years later, the game in many areas had generally ceased to exist.

From the plains around Lake Ol Bolossat to Thomson's Falls; from Ndaragwa to Nyeri, Nanyuki and beyond; and indeed all the country sandwiched between the Aberdares and Mount Kenya carried, until 1939, an abundance of wild life.

Part of Kenya's war effort was to act as a holding ground for thousands of prisoners-of-war captured in Abyssinia and North Africa, and their camps were distributed across the face of the Highlands. Teams of hunters were employed in shooting game to provide meat for the camps. Each party of hunters was accompanied by lorries which collected the carcasses and ferried them to their destination. Day after day, month after month, for several years the slaughter went on. At night there was scarcely a pause and a constant fusillade went on with the aid of spotlights. The demand was so great that the Railways were called in to assist and carcasses were carted away by the train load.

The demands of war outweighed every other consideration, and an attempt was even made to grow cereals on a large scale on the Athi Plains. Giant ploughs cut through the virgin veldt, but the appearance of the first green shoots served only to entice thousands of wild animals to the cultivated land. Hundreds were shot, but this did not deter others from coming forward to take their place. The Athi wheat-growing scheme was eventually abandoned. No doubt it was necessary in the circumstances prevailing, but it resulted in a heavy loss of wild life.

The immediate post war period witnessed a concerted drive to develop Kenya's agricultural potential. Many of the isolated pockets of game which had managed to survive the war were ruthlessly eliminated. On the Kinangop, for example, thousands of acres of new land were broken and sown to cereals. All game was classified as vermin and treated as such. It was considered to be in the country's interests to destroy everything on four legs, and there were no rules. Amateur hunters sallied forth each morning, their pockets filled with ammunition, and returned in the evening having exhausted it all. Horsemen rode down the herds, shooting at anything within range and, after dark, spotlights were again brought into use. The carcasses were far too numerous to move, so were merely left where they fell, and the hyaenas, bloated to capacity, were unable to compete with the carrion. Where a few years before the plains had been white with zebra and Thomson's gazelles, and kongoni had roamed at will, there

Concentrations of troops inflicted many casualties on Marsabit's wild animals. The greater kudu in particular, which have never been numerous anywhere in Kenya, suffered severely at their hands. These stately animals, not merely because of their rarity in Kenya (though common farther south), must surely qualify as the most imposing of the African antelopes. The Marsabit kudu probably did not exceed 200 all told. During the post-war period they gradually recovered from the depredations of the military, only to be struck by an outbreak of rinderpest in 1960 which has once more drastically reduced their numbers.

Farther west, the beautifully timbered South Horr Valley is the abode of numerous elephants and is in stark contrast to the forbidding lava-encrusted shores of Lake Rudolf. To the east and north-east, the coral pink wilderness of the Hedad and Koroli deserts once carried an abundant fauna, which was exterminated in the early years of the century by armed raiders from the fastness of the Abyssinian Highlands. To-day, only an occasional gazelle, giraffe and ostrich remain. Very few rhino have survived in the Hedad, and most of those in the Koroli Desert have been exterminated by raiders from the north and local Gabbra tribesmen.

The valley lying between the Matthews and Ndoto mountains on the one hand and the Karissia Hills on the other, is dissected by three great sand rivers—the Seya, Swian (meaning "wild dogs") and the Barsaloi—which finally merge to become the Milgis. At the junction of these three rivers lies El Gerai, a delightful oasis of shady palms and papyrus swamps, which is a favourite spot for elephants and buffaloes, while rhinos are relatively common. The El Barta and the El Bonuki plains to the north, carry sizeable herds of *Oryx beisa*, eland, zebra (both Grevy's and Burchell's), Grant's gazelle and ostrich. In general, the forested heights are well populated with elephant, rhino and buffalo but, during the rainy season, there is an exodus from forest to plain.

The Uaso Nyiro River, which is about ten miles from the southern boundary of the province, contains the only permanent water for many miles and, in the sweltering heat of the Northern Frontier, is a life-giving artery in every sense. It

pulsates with wild life of all kinds. Only a few hippo are to be found in the river, but the maze of tracks threading their way down to the tree-lined banks attest its popularity with other species.

Stretching northwards from Mount Kenya is an extended procession of hill features and mountain ranges which stride across the Northern Frontier to merge with the Abyssinian Highlands. These include Marsabit, the Matthews, Ndoto's, Mount Nyiro, Mount Kulal, and the Hurri Hills.

The Matthews Range is named after General L. W. Matthews, who at one time commanded the Sultan of Zanzibar's Army. The range is separated from the Ndoto's by the Milgis, an extensive seasonal river which drains the surrounding high country. Only for a few days each year does the river flow in the normal sense and then it rushes down in spate, enveloping or thrusting aside everything in its path. It then subsides as rapidly as it began. There are no permanent streams and, apart from the extremely limited rainy season, all living things must depend for water upon the few springs, rock pools or rough excavations in the sand rivers.

The Matthews Range is also one of the homes of the Wandorobo who, for countless generations, have utilised the large caves on the slopes beneath the summit for their dwellings. As a collector of honey the Ndorobo is unsurpassed. His hoard is stored in large wooden barrels with lids made from buffalo hide. Many a large cylindrical *mzinga* is seen suspended with hide ropes either from a tree, or, occasionally, over some deep defile. Few Wandorobo own any livestock. Sometimes a cow or two, or a handful of sheep or goats, are herded on the foothills, often inter-mixed with Samburu livestock while, in some of the remote forest glades, an occasional patch of tobacco may be grown.

Relative to the surrounding plains the various hills and mountain ranges appear well endowed with water but they are not by normal standards adequately watered. The Matthews, to give but one example, has barely a dozen springs which have to provide for the needs of the entire population. It is within convenient reach of these precious water supplies that the Samburu tend to congregate and, as a result, the lower country

and baboons. In places where the forest has managed to creep in, the groves and thickets offer cover to a variety of small animals. The upper parts of the mountain are covered with forest, with sheltered glades and unexpected clearings, in stark contrast to the shores of near-by Lake Rudolf, with its terrible belt of coal-black, stony debris which affords no vestige of shade or shelter.

Nowadays, with the possible exception of kudu, very little game is to be found on the mountain, although sometimes a few rhino and buffalo are present, and an occasional dikdik or bushbuck or, more rarely, lion can be seen. The retreat is shared by baboons, hyrax and leopards, and klipspringers leap with unerring skill over fearful crevices and knife-edged pinnacles. Conditions are favourable to a variety of birds of prey, including the enormous Verreaux's eagle, which nests in fissures in the rock face, the handsome lanner falcon, the repulsive Rüppell's griffon and even a pair of the rare lammergeyer.

The Northern Reserve has endured many vicissitudes since its inception. The huge block of territory that constituted the original reserve was unable to withstand many of the pressures which were directed against it, and has been whittled down to a fraction of the size of the parent Jubaland and Sugota reserves.

The difficulties of administration, while less than formerly, remain formidable and, of these, overstocking stands forth as the thorniest problem. Overstocking has led to a drastic lowering of what was in any event an impoverished and precariously balanced habitat. The future of the Northern Frontier depends very largely on resolving this difficult question.

From a conservation standpoint, the area is every bit as essential as it was when first conceived, for it still remains a vast region in which development on any scale is impracticable and likely to remain so. Although the numbers of wild animals have seriously declined, the region still has great faunal potentialities. Ways in which those potentialities can be realised are considered in Chapter 14.

8. The Southern Reserve

KENYA relied on two principal areas for the protection of wild fauna until the end of the Second World War, the Northern and Southern Game Reserves. At a very early stage the Government recognised that ordered development of the country must inevitably lead to large-scale elimination of wild animals in the high potential areas, and that wild life could only hope to endure in regions which, for one reason or another, were unlikely to be developed. The Southern Reserve was selected, not only because it contained an abundance of wild animals and a wide variety of species, but because it lay within Masailand. For reasons which have already been explained, the traditionally tolerant attitude of the Masai towards wild animals appeared to indicate that wild life would stand a far better chance of survival under the custodianship of the Masai than almost anywhere else in East Africa and, at the same time, would not interfere with the customary Masai mode of life.

Regulations governing the numbers of wild animals allowed to be shot, and instituting a licensing system, had been introduced from the earliest days of British influence in East Africa. The Queen's Regulations, promulgated under "The African Order in Council, 1889," contained a clause which made a breach of the game laws a punishable offence, but not for another ten years was an attempt made to establish reserves. The nearest approach to this was a regulation, published in 1897, which simply stated that "no shooting of any game is allowed within a radius of 25 miles of a Government Station, except with the special permission of the officer in charge of the district, under authority from Her Majesty's Commissioner."

On 11th August, 1899, the Foreign Office, in proclaiming the Game Regulations, authorised the establishment of a game reserve to include "the whole of the Kenia District of the Province of Ukamba, except the area within ten miles around the Government Station at Kikuyu. . . ."

British East Africa's first officially recognised wild life sanctuary was originally called the "Ukamba Game Reserve"[1] but within a few years became known as the Southern Game Reserve, covering some 10,695 square miles. In April, 1906, the area was re-gazetted and the boundaries defined as follows:

An area bounded by:

(1) The north-eastern limit of the Uganda Railway zone from the Tsavo River to the bridge across the Ngong River, near Nairobi.

(2) By the right bank of the Ngong River to the edge of the Kikuyu Forest and along the edge of the forest to the Mbagathi River to its source.

(3) By a line drawn from the source of the Mbagathi River straight across the northern slope of Donyo Lamuyu (Ngongo Bagas), thence across Suswa to Mau Escarpment, which it follows south to the Guaso Nyiro and thence to the German frontier thence following the German frontier to the Tsavo River.

(4) By the left bank of the Tsavo River from its source to its intersection by the Uganda Railway.

The aforesaid area shall be known as the Southern Game Reserve.

This extensive region, wedged between the Uganda Railway on the north-east and the Anglo-German territorial boundary, was all superlative game country at that time, and extended from near the eastern edge of the Loita Plains, embracing the Athi Plains, Amboseli, and stretching as far as the fringes of what is now the Tsavo National Park (West). The Southern Reserve varied in altitude from 2,500 to 7,000 feet and comprised a great variety of country from forest to high and low veldt, open plains and thorn scrub. It contained extraordinary numbers of wild animals and on one occasion, when camped

[1] Sometimes referred to as the "Kenia Game Reserve."

on the Olgerai River, Percival saw "20 rhinos at a waterhole within 150 yards of my tent."

One of the earliest descriptions of the area, later incorporated in the Southern Reserve, comes from the pen of Sir Frederick Jackson:

> My first trip to East Africa was undertaken in the years 1884 to 1887, when that country was perhaps at its best with regard to the quantity of game. Within the last few years, however, since the country has been opened up, and the terrifying accounts of the dangers of entering the Masai country have proved to be absurdly exaggerated, various sporting expeditions have been undertaken and large bags have been made. Some of the game is certainly reduced in quantity, especially rhinoceroses, owing to the ease with which these beasts can be stalked.
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> The Kapite Plains to the west and the Athi Plains to the north-west of the Ukambani Hills . . . form another grand country with regard to the quantity of game in it, though it does not afford quite such a variety as the Kilimanjaro District. . . . Lions are very plentiful here and are seen perhaps more often than elsewhere, owing to the open nature of the country. The cheetah is by no means uncommon. Rhinoceroses have here rather a bad reputation for charging, which may possibly be accounted for by the fact that they are so much harassed by the Wakamba who, when out hunting, and unable to get within bow-shot of game by fair stalking, have to resort to driving, and wound far more rhinoceroses than they kill.
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> . . . M'Kameni, the last camp before striking across the Siringeti[1] Plains, between Teita and Taveta, a stretch of some 35-40 miles. These plains are often teeming with game, more particularly when the grass is beginning to shoot after being burnt. In September, 1886, this place was literally crawling with hartebeest and zebra, besides impala, g. Grantii, oryx colotis, and a few

[1] There are two Serengeti Plains in East Africa. The one mentioned here is not to be confused with the well known Serengeti National Park, but is the relatively smaller region lying between Amboseli and the Tsavo National Park (West).

eland and giraffe, with an occasional steinbuck and wart-hog.

Mr. Blayney Percival, the Protectorate's first "Ranger," wrote an extremely interesting account of his first two safaris into the interior of this great stretch of country. On the first occasion he marched from the Athi River to Nyiri Marsh (Amboseli) and on to Taveta: on the second trip he went from Taveta via Lake Chala to the Tsavo Swamps and River, thence to the Railway line between Makindu and Simba. He thus covered the region extensively and could justifiably report his satisfaction at finding "game abundant in nearly the whole of the country, in some parts extraordinarily so." Percival considered this region, which was uninhabited except for a few Masai in the Ngong Hills and at the foot of Kilimanjaro, to be exceptionally fine game country and recorded that he did not think "a better tract of suitable ground could be found anywhere." He was, however, concerned at the evidence of large-scale poaching at the base of Mount Kilimanjaro by the Wachagga from the German side of the mountain, "who have honey-combed the country with game pits."

It took Percival three days to cross the Athi Plains from the vicinity of the headwaters of the Stony Athi River. Zebra, Coke's hartebeest, wildebeest, Grant's and Thomson's gazelles were extremely numerous, particularly when well clear of the Railway line. Some idea of what this statement meant in terms of numbers, can perhaps be gauged from contemporary reports by passengers travelling on the Railway. The Uganda Railway ran through country in which wild life was found for nearly 400 miles of its total length of 581 miles; and it bounded the Southern Reserve for the whole length of its north-eastern border for a distance of 194 miles. In fact throughout the Empire there could hardly have been a more interesting or beautiful sight than the immense numbers of wild animals visible from the train. Even a seasoned sportsman like Dickinson, who had previously seen large concentrations of game in other parts of Africa, could scarcely believe his eyes: "East Africa is a paradise in more than one sense of the word. The quantity of game in certain parts, easily get-at-able, is absurd. I remember when in Somaliland, before I came here,

hearing fellows talking about the amount of game one could see in a day from the windows of the comfortable carriages on the Uganda Railway, which passes through the heart of the game country. I said little, but thought every time 'All men are liars.' All I can say now is if you don't believe it go there and see for yourself, and you will be badly startled."

The region in the immediate vicinity of the Railway (within the so-called "Mile Zone") was, of course, disturbed a good deal during the course of construction, particularly as each camp had its quota of rifles and there was a reward offered by the Railway Authorities for lion. Ostriches were plentiful, while Percival thought there were "almost too many rhinoceros; fully 30 must have been driven out of the way during three days' march. At one time I looked round and counted 8 within a half mile of the caravan."

Grant's gazelle were "extremely numerous and outnumbered everything else." Wildebeest were plentiful and several packs of wild dogs were reported on the Athi Plains, while lion were numerous and seen each day. Giraffe were common, "two or three troops being seen every day."

On the way to Amboseli, Percival saw his first Waller's gazelle (gerenuk). After two days' very hard marching, he reached Lake Amboseli only to find it brackish, although one pool fortunately contained a fresh spring. While the men, who "were very done up," rested, Percival explored the district. *Oryx callotis* were particularly plentiful, although very shy and wild, and there were large numbers of Grant's gazelle and wildebeest as well as other animals too numerous to mention.

Rhino were of course common. Even to-day Amboseli is still the best place for seeing and photographing rhino in Kenya.

A few miles farther on, game became scarce on the edge of the Loitokitok District, where the "country is hunted over by the Masai and the Chagga." Similarly, there was very little game to be seen on the lower slopes of Kilimanjaro or on the mountain proper, and only a few animals to be seen in the vicinity of Taveta. However, "within a few hours" of Taveta, game, including eland, again became numerous.

through four in a march of about twelve miles." (Percival, 1906.)

The sport was so popular that Percival thought that " if the number of parties during this year 1906-7 is up to expectations, I do not see where they are all going to shoot, as very few care to leave the beaten track."

The country was so gaining in popularity day by day that it was often impossible to obtain porters in Nairobi for Government purposes at certain seasons particularly favoured by shooting parties, on account of the number of sportsmen in the country who had already snapped them up. By 1906, the number of shooting parties visiting East Africa had increased to such an extent that fears were expressed that some of the rarer species were in danger. The Earl of Elgin therefore decided to restrict the total of sportsmen's licences issued in any one year to a maximum of 500.

In 1908, when various amendments were being made to the game regulations, certain fibre-growing concessions were granted in the Southern Reserve on land fronting the Railway between Kibwezi Station and the Tsavo River, and an area between the Railway and the Chyulu Hills from the Kiboko or Makindu River to the Tsavo. The resultant excision was authorised on the grounds that the area was said to contain a large amount of good fibre and very little game. This was the thin end of the wedge, the official reasoning being that " if it is found later on that the preservation of game is incompatible in this area with the development of the fibre industry, it will be for consideration whether the eastern boundary of the reserve in this part should not be moved back. . . ."

Alterations to the boundaries of the reserve to satisfy the concession created a precedent which was to be followed on several occasions in the years ahead.

The First World War left its mark on the Southern Reserve, since it was in this region, between the Railway and the German border, that much of the fighting took place. It was not surprising that the game suffered severely in the process. The blundering antics of rhinos scarcely endeared them to the troops, particularly as rhino paths were frequently the most convenient routes to follow. After numerous collisions between

rhinos and patrols, each going about his lawful occasions, instructions were issued to kill any rhino in sight. By 1917, Percival expressed doubt as to whether the species would ever recover. There were, of course, many troops who could not resist taking a pot shot at any animal that moved, whether harmless or not, and the destruction must have been great, apart from the numerous animals which escaped wounded.

The troops lived off the country to a large extent and depended for their meat rations on whatever game they could procure. Percival estimated that not less than 40,000 game animals were slaughtered for meat within a two year period.

Giraffe were shot on sight because of their unfortunate practice of playing havoc with telephone and telegraph lines.

For once hyaenas and other scavengers were tolerated if not actually welcomed. In that inhospitable country there was a heavy mortality among transport animals. The hyaenas performed a useful, if grisly, function in disposing of the dead horses and mules which would otherwise have become a distinct menace to health. To the troops on the ground the ever present vultures, wheeling obscenely overhead, must have served as a depressing and constant reminder of the grim realities of war.

The Southern Reserve has held a predominant position in the history of wild life conservation in Kenya from the earliest years of the East Africa Protectorate down to the present day. Boundary adjustments and changes of status, some of which are considered elsewhere in this book, have not altered the fact that the area included within the Southern Reserve was, still is, and will continue to be one of the most important faunal regions in Kenya. In recent years the number of wild animals has seriously declined; water supplies and vegetation have been grievously impaired; and excessive numbers of domestic animals have reduced much of the land to near-desert conditions. The new proposals, which are described in Chapter 16, will not be able to restore the Southern Reserve to its former grandeur, but they should go far to ensure the area retaining its position as a faunal region of the first magnitude.

9. The Tsavo National Park

THE TSAVO NATIONAL PARK, 8,069 square miles in extent, has the distinction of being the largest faunal national park in Kenya. Only a small portion of the western sector of the present park was included within the original Southern Reserve, but to some extent the Tsavo Park can be regarded as partially replacing the Southern Reserve.

The park is situated in the south-eastern part of Kenya and is bisected by the main road and railway from Mombasa to Nairobi. The southern boundary runs with the Kenya/Tanganyika inter-territorial boundary from Lake Jipe to Kavuma; on the west it adjoins the Masai and Kamba Native Land Units, while to the north and east the boundary passes through uninhabited bush country. For administrative convenience the park is divided into two parts. Tsavo West, covering 3,000 square miles, is administered from headquarters situated five miles from Mtito Andei. Tsavo East, with headquarters four miles from Voi, extends to approximately 5,000 square miles.

The park owes its existence to C. G. MacArthur, Senior Assistant Game Warden to Archie Ritchie who possessed a remarkable knowledge of that remote part of Kenya. He strongly urged the 1939 Game Policy Committee to establish a national park in the region situated between the Wakamba Reserve, the Masai Reserve, the Coastal Strip and the Tanganyika border. One of the main advantages of his proposal was that this immense area contained practically no legal human inhabitants.

The boundaries, as finally agreed at the time the park was gazetted in 1948, represented a substantial reduction of the area recommended by the 1939 Game Policy Committee.

Even the reduced boundaries were not agreed until Government was satisfied that the area was hardly likely to be required for any other purpose. The result is a huge chunk of mainly poor country, for the most part badly watered, lacking dry-weather feed and almost totally devoid of forest cover, except for narrow belts of riverine forest along the banks of the principal rivers, and clumps of montane forest on the Chyulu Hills. Furthermore, by far the greater portion of the park had, for years prior to being gazetted, been a no-man's-land beyond administrative reach, a sort of Kenya Badlands, much frequented by bands of poachers who could and did undertake their reprehensible activities undetected and undisturbed.

The boundaries, having been pruned and lopped to avoid including areas which might at some future date prove useful for an alternative purpose, resulted in an ill-gotten and strangely misshapen piece of land, as a glance at the map will show. A similar-sized region, properly shaped and more compact, would have been infinitely more valuable from a conservation standpoint.

Here is an outstanding example of the fallacy of the map method of creating faunal sanctuaries. Eight thousand square miles is an immense stretch of country, and space is without question an extremely important factor in its own right when designing national parks. But it is entirely fallacious to assume that space, or, for that matter, remoteness, are sufficient in themselves to provide adequate sanctuary.

This might not be so bad if it were not for the fact that the Tsavo Park is the *only* major national park in the whole of Kenya and the evidence available makes it abundantly clear that it became a park only because it was so poor and worthless. The question of whether the area might be suitable the year round for the species it was designed to contain and perpetuate appears not to have been considered. Indeed, it is misleading to use the word " designed " in the faunal context, for the park was not really designed at all—at least not in the sense of supporting faunal populations. The park, in short, is characteristic of the whole approach to conservation in Kenya, symbolised by the impressive entrance gates, an elegant but empty façade, with little behind it and which, in the years

ahead, may come to serve as an effigy to remind us of our folly in failing to appreciate the true value of our wild life while the opportunity existed.

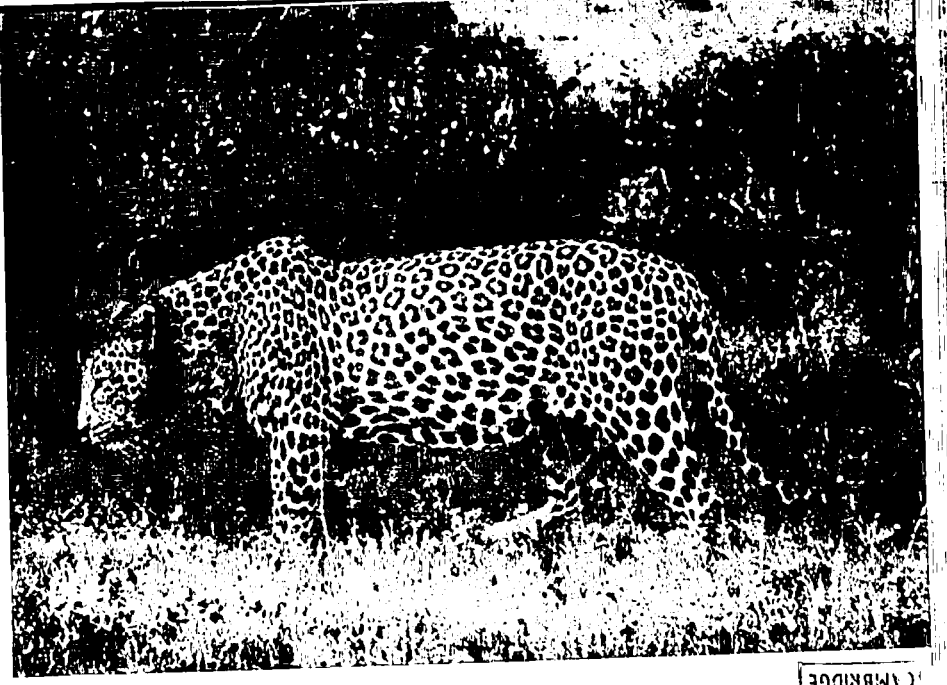
Very nearly half the Tsavo Park lies to the north of the Galana River. This little-known country is extremely difficult of access and, being almost devoid of water, does not support a large wild life population. Even the Galla who, in their unceasing search for grazing, do not hesitate to range the most forbidding regions far beyond their own boundaries, are seemingly reluctant to enter this territory.

Although the Tsavo Park contains an interesting variety of wild forms, it cannot be said that any of them is numerous, with the exception of baboon and elephant. Apart from these species, rhino, lesser kudu, oryx, buffalo, gerenuk, bush pig, wart-hog, kongoni, impala, waterbuck, lion, zebra, reedbuck, giraffe, hippo, bushbuck, duiker, Grant's gazelle, eland, leopard and cheetah may be seen but never in large numbers. A small herd of roan was observed on the southern extremity of the Chyulu Hills in 1955, the first report of this species for many years. Until the Second World War, greater kudu were known to inhabit parts of the western sector of the park and, although it is possible that a few may still exist in some remote parts, they have not been seen for more than ten years, except for a lone bull on the Yatta in 1960.

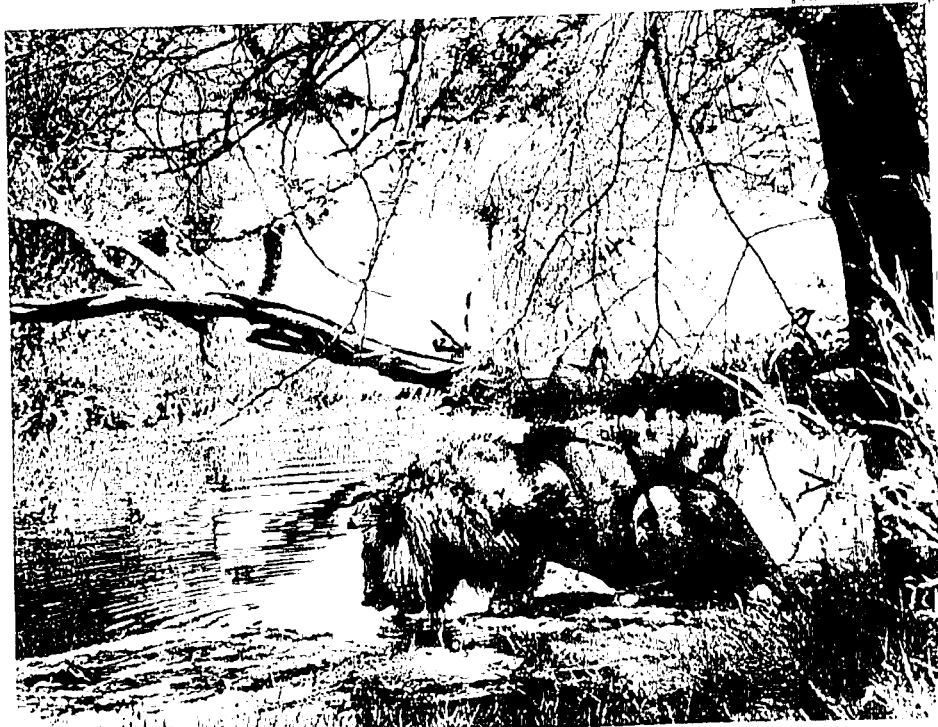
Rhinos were once extremely common and parts of the Tsavo Park carried a large rhinoceros population, but their numbers have been drastically reduced and, to-day, there are strong grounds for concern regarding the chances of the species' survival. Those that remain are generally aggressive and many bear wounds or scars attributable to poachers. One rhino was found to be carrying no less than eight arrow-heads embedded in its body, some of which had caused huge suppurating sores. It is scarcely surprising that they resent the presence of man.

Similarly, buffalo, though widely distributed throughout the park, have learned the ways of man and generally remain in thick cover during the hours of daylight. They are, therefore, seldom seen.

Until quite recently, it was thought that the park still carried large numbers of animals. The fact that they were seldom



The two major African carnivores, the leopard and the lion



selves survived partly through their ability to forage far afield and partly because they are able to utilise a wide variety of vegetation. Not so the rhinos, whose diet is limited to a very narrow range of plant species and who, even in the extremity of starvation, seem reluctant to move far from their own particular territory. They have paid with their lives for the damage inflicted by the elephants.

The heaviest concentration of rhinos remaining in Kenya in 1960 was to be found in an area of about 800 square miles in the vicinity of the Athi and Tsavo rivers. The estimated population was between 500 and 600. During the thirteen months October, 1960 to October, 1961, more than 282 rhinos were found dead in this region. A small number had been poached but the great majority had died of starvation. This represents about half the rhinos inhabiting the area and the actual percentage may be higher since it is improbable that all the casualties were located. Heavy rain broke the drought at the end of September, 1961, resulting in the flush of vegetation which saved the lives of the remainder. At the end of the drought the survivors were in the advanced stages of malnutrition, readily distinguishable, even at a distance, by their emaciated appearance and extensive darkening of the upper part of the body caused by coagulated blood.

These tragic consequences could have been at least partially avoided had the reasons for the situation been assessed and appropriate action taken sooner than actually happened. There can be no more compelling example of the fundamental weakness of the preservation (as distinct from the conservation) concept. The only solution lies in thinning out the elephants and then re-introducing rhinos into the park from areas where they are no longer required.

Many of the earliest travellers recorded their impressions of the immense concentrations of wild animals in what is now the Tsavo National Park. One of the original slave routes followed the course of the Galana River and, before the days of the Railway, most of the caravans leaving Mombasa for the interior marched across the (Kenya) Serengeti Plains, via Lake Jipe, to Taveta which, at that time, provided a convenient spot for resting and reorganisation before advancing up-country.

Even as recently as up to the outbreak of the Second World War, this country was classified as some of the finest game country in Kenya. When, in 1928, arrangements were made to show the Prince of Wales some of Kenya's most impressive concentrations of wild animals, it was to the western sector of the present Tsavo Park that he was taken. A special road, constructed for his benefit, is still in use and still referred to as the " Prince of Wales' track." Driving along the track to-day one feels that visiting Royalty would scarcely be impressed with the small numbers of animals now to be seen.

Fire constitutes an ever-present hazard for the wardens of the Tsavo Park. During the dry season, when all is tinder-dry, fires can sweep across country bringing death and destruction with devastating impartiality. A blaze relentlessly advancing on a hundred mile front is an awe-inspiring sight. The larger animals can usually make good their escape, but the smaller creatures suffer heavy casualties. On one occasion the heat was so intense that flocks of birds hovering and soaring above the smoke and flames as they reaped a rich harvest of insects forced by the heat to become airborne, were themselves sucked into the holocaust.

Fire is nothing new in the Tsavo Park, but in days gone by, the fleeing animals had plenty of alternative safe areas to which they could retreat. Nowadays, even if they succeed in escaping beyond the park boundary, they have to run the gauntlet of the human predator. Fifty years ago, even if quite substantial numbers of animals were destroyed in a blaze, there was always an enduring reservoir of replacements, whereas to-day there is not. Once the ranks are depleted, there are only slender reserves for rehabilitation.

Natural fire risks are difficult enough to deal with but added to that is the constant danger of fires started by honey-hunters trespassing in the park. Honey barrels made from hollow logs are wedged in the upper branches of many of the baobab trees and a series of wooden pegs are driven into the trunks to facilitate access. Periodically the owner goes his rounds and, with astonishing disregard for the bees, removes the accumulated honey. This in itself is of no importance but in the process of smoking out the bees the hunter sometimes sets the tree

rhino horn and leopard skins are surreptitiously run over the frontier to Somaliland and Abyssinia by camel caravans, a loophole which is extremely difficult to plug owing to the immense distances involved and the nature of the country.

Poachers hack out the tusks with axes, and the butts and tips, which are the least valuable portions, are sawn off and usually abandoned to save weight. When ivory has to be carried long distances by hand weight is an important consideration.

Sometimes, the tusks themselves are cut in small sections to make them less conspicuous, and anyone who has ever attempted to cut ivory with a light hand-saw will appreciate what an excessively arduous undertaking this can be.

Each poacher buries his cache of ivory beneath the sand near some tree, or other prominent feature, which he can readily identify, or, occasionally, in some remote hideout known only to himself. The ivory remains buried until the end of the hunting season or until a suitable opportunity occurs for transporting it across country to a middle-man who, in turn disposes of the loot to an Asian receiver. Numerous methods of avoiding detection have been devised. A saloon car may stop on some remote road at dead of night and a few tusks or rhino horns are quickly slipped into the boot. A lorry carrying a load of charcoal may have tusks hidden in the sacks. Even the Railway unintentionally played a part when, on one occasion, casks of honey being transported by rail were found to contain ivory secreted in the sticky substance.

The Waliangulu poachers operating in the coastal hinterland are men of the wilds, and it is difficult not to respect their courage and resourcefulness when operating on foot in such fearful country. But their skill in the bush is not equalled by their business acumen, and it is the receiver who reaps the fattest profits from the labours of these ingenuous tribesmen. A poacher usually receives between three and four shillings a pound for ivory which is worth twenty shillings or more. The lion's share goes to the unscrupulous and parasitic receivers lurking in the back streets and bazaars of Mombasa and Zanzibar.

Ivory poaching is extremely profitable in East Africa and

quite a number of "respectable" citizens of Mombasa and elsewhere are involved in the racket. It has been conservatively estimated that not less than £100,000 a year is being lost to Kenya's revenue through the activities of receivers. Some idea of the profits involved can be gathered when it is realised that one Asian, caught red-handed with illegal ivory in his possession, promptly offered a bribe of £15,000.

SOMALI HUNTING METHODS

Brigadier-General Swayne, writing as Commissioner of Somaliland in 1905, stated that the Somalis hunted on horseback and killed numbers of oryx and ostriches by riding them down. The bull oryx was especially prized for his heavy hide, shields being made out of the shoulder and neck skin, which is more than an inch thick. These little round shields were embossed in crude patterns or painted red and black with quotations from the Koran. "Every Somali buys a dozen or so of these shields in his lifetime. Thus, the execution must be very great. When rain has fallen in the 'Haud' oryx become hogged and may be easily caught on foot. When lions have killed men of note the young men turn out on horseback and gallop round and round them. As the lion turns swiftly around in a cloud of dust, he becomes dazed and is plied with poisoned arrows. Hyaenas, which are a greater scourge to the flocks by far than lions, are killed by pitfalls furnished with a short spear blade. In the west, rhinoceroses are killed for the sake of the hide, which cuts up into seven good shields, leaving besides some strips for making whips."

The wealthy Somalis employed Midgans to guard their flocks and herds, and they subsisted almost entirely by hunting. This servile aboriginal hunting tribe used bows and poisoned arrows, as well as packs of dogs, and developed the technique of wearing wild animals down by following them day and night without pause, frequently using a camel as a stalking horse. The Midgans also erected long thorn fences in which gerenuk were snared, the skins being in great demand as soft prayer mats. These activities were not confined exclusively to Somali-

strung, or their legs broken, so that they will remain alive until the hunters care to dispose of them at their leisure.

The Wakamba used to construct long bush fences extending for several miles. Bowmen lay stationed at intervals behind the fence. Infinitely slowly, the herds of wild animals would be driven towards the fence but, rather than jump it, they would wander down its length seeking a way through. The hidden bowmen were then able to effect a great slaughter. This technique is nowhere near so commonly used by the Wakamba as formerly, but only because their unscrupulous methods have entirely eliminated the game in their own district.

WHEEL TRAPS

The Turkana are one of the few tribes to have evolved a method of trapping elephants and rhinos. They construct a wheel trap some three feet across, the rim of which is of twisted rawhide: bayonet-sharp spikes are attached to the circumference, all pointing in to the centre. This contrivance is then placed in position over a shallow hole set in a track known to be frequented by elephants, and carefully camouflaged with earth and vegetation. The trap is firmly attached by a long hide rope to a heavy log. When an elephant steps in the trap, the spikes penetrate the flesh all round its leg and the terrified beast drags the tree trunk until it is exhausted, often for many weary days. It is then quite simple for the Turkana to track down their quarry and finish him off with poisoned arrows.

A smaller wheel trap, constructed entirely of wood, is similarly used for antelopes. This device is also favoured by certain coastal tribes, particularly Muslims, whose religious custom insists on game being captured alive.

GAME PITS

Game pits have been used for centuries in Africa, particularly in the forests. Security Forces found numbers of them in the

Aberdares and Mount Kenya forests during the Mau Mau uprising. Judging from their appearance, they must have been many years old. The pits were originally excavated by the Wandorobo along paths used by elephants. They were usually about twelve feet long, three broad and nine deep, wedge-shaped, with the bottom about the breadth of an elephant's foot. The pit was carefully concealed with sticks and grass, and the normal path or track diverted towards it. Elephant dung was strewn about to create a natural effect. When an elephant fell into the pit, two of his feet became firmly wedged in the bottom in such a way that he could not extricate himself. A series of long spears or sharpened stakes were then driven into the creature's back behind the head.

Along the foothills of Kilimanjaro, the Wachagga relied extensively on game pits but they finally defeated their own object. The whole region became so honeycombed with pits that, in Percival's words, " the slaughter eventually ceased for the sufficient reason that nothing remains to be caught."

Major Monty Moore, v.c., states that prior to his appointment as Game Ranger in charge of Tanganyika's Lake Province in 1931 (including what is now the Serengeti National Park) the Waikoma used massed game pits. The elders informed him that there was nothing unusual in catching 2,000 or more animals in a day's drive. They would take whatever meat they required and leave the rest.

When pits are employed in open country, they are generally sited in lines up to half a mile long and well camouflaged. The spaces between the holes, which are sometimes as much as 12-15 feet deep, are blocked with thorns and *Sansevieria*, to form an impenetrable barrier. It frequently happens that the brush takes root and grows into a living fence. At either extremity of the line of pits, an additional bush fence is laid at 45 degrees, designed to prevent the animals escaping to either flank, and funnelling them into the trenches. Beaters then slowly drive the herd into the traps and, as the only apparent exits are the gaps above the pits, few animals escape.

The labour of excavating a series of pits is very great but is regarded in the nature of a long-term investment which remains in regular use for many years. This method is now

and to take all possible measures to put down poaching.

As a result of that directive, and of active campaigns undertaken against poachers in the field, the illegal killing of game animals was for a period brought under control.

Recently, however, there has been a resurgence of this form of law breaking and I wish all officers to redouble their efforts to suppress it. Wire snares and poisoned arrows together account for the greatest toll of animals thus killed and every possible step must be taken to put down their illegal use or possession.

I wish in particular that every effort be made to save the dwindling number of rhinoceros from the attentions of poachers and to bring to justice those guilty of unlawfully killing them or of dealing in their horns.

There appear to be two alternatives if large-scale poaching is to be effectively contained. The Government must be prepared to maintain adequate mobile anti-poaching Field Forces as a permanent feature of Game Department organisation—"Flying Columns," which would be free to move wherever required at short notice. This strong-armed approach would need to be a continuing operation and would probably cost more than the Government is willing to afford. Each Field Force costs approximately £15,000 a year to maintain and at least two would be required for full-time operations.

Apart from the difficulty of financing anti-poaching operations, it is in any event doubtful whether a repressive policy will achieve satisfactory results in the long term. A more positive and practical alternative appears to be the adoption of a system whereby the African tribesmen concerned are brought into some form of active partnership, or ownership, in game management schemes designed for their benefit. Africans must be shown that it is more worth-while and more profitable to participate in controlled harvesting of the wild life crop, than to continue indulging in indiscriminate and wasteful slaughter, which can only lead to total extinction of wild life, to their own eventual detriment. There would then be at least a reasonable chance that the African might come to realise that game management is in his own interests. This subject is considered more fully in Chapter 14.

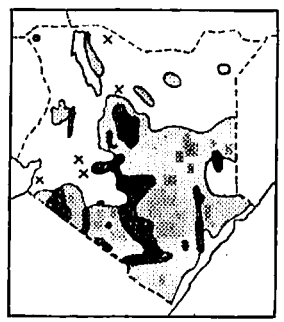
The Tiva Sand River, showing elephants, rhinos, buffaloes and sand-grouse drinking at holes excavated by the elephants. It is unusual to see this scene by daylight

be seen along the Tana, Galana and Mara rivers, but in small numbers.

A Game Department count along 30 miles of the Tana River above Garissa in September, 1960, revealed an average of 2·7 hippos per mile. Approximately 100 are reported in the Tana River for 10 miles upstream from Kipini, and the Mara River carries about 4 per mile in the vicinity of the Mara Triangle.

The rocky shore of Lake Rudolf does not make the lake particularly attractive to hippos, except in the vicinity of Illoret, Alia Bay and El Molo Bay in the east, and other limited areas on the western side. It is rare to see more than 5 or 6 hippos together anywhere in the lake. The heaviest concentrations in East Africa occur in Uganda's Queen Elizabeth National Park, where the authorities have found it necessary to reduce the hippo population, which was causing excessive damage to the habitat, from an estimated 14,000 to about half that figure.

BLACK RHINOCEROS
(*Diceros bicornis*)



The decline in the number of rhinos during the past half century is more marked and more serious than with any other single species, lion alone excepted. Johnston described rhino as "found pretty well all over British Central Africa, though nowhere in such large numbers as was the case in East Africa before the advent of British sportsmen." Jackson agreed that "there is no place where they exist in greater numbers at the present day."

This observation was confirmed by many other individuals, among them Willoughby who, in 1887, when hunting in what is now the Tsavo National Park, regularly shot four or five rhinos a day for many days on end close to the Mzima Springs. Forty-three rhinos were shot by his party within a fortnight and other animals were equally abundant. This region was superlative game country and Sir Charles Eliot tells us that "it was generally considered that the greatest variety, if not the greatest quantity of game was to be found either in the scrub-covered plains between Voi and Taveta, or in the open country between Nakuru and Baringo."

African tribesmen had little use for rhino horn although a few tribes—the Masai and the Wachagga for example—at one time fashioned the front horn into knobkerries, the Wataveta made snuff boxes from the tip, and in Abyssinia sword-hilts manufactured from rhino horn were much esteemed. The fact that they were not easy to kill with simple weapons, allowed rhinos to enjoy a certain degree of immunity from attack in most parts of the Protectorate. "It is a curious fact that natives are, as a rule, more afraid of a rhinoceros than of either elephant or buffalo. They also find him more difficult to kill, but this is entirely owing to his tough hide, and the primitive nature of their weapons. The people of Turkwel in the Suk country, who live by hunting, and who kill large quantities of game, including elephant, all of which they kill at close quarters with spears, told me that they feared a rhinoceros more than anything else, and rarely cared to attack him." (Jackson, 1894.)

This attitude was evidently not shared by the Wakamba, and Dickinson described the extraordinary number of rhino skulls and skeletons to be seen all over Ukamba as evidence of the immense slaughter by the Wakamba, who carried on a great trade in rhino horns.

The Southern Reserve, which supported a large rhino population became a focal point for African poachers and an early official report stated: "Last quarter three thousand pounds weight of rhino horn passed through the Customs at Mombasa in transit from Kilima Njaro. It is not improbable

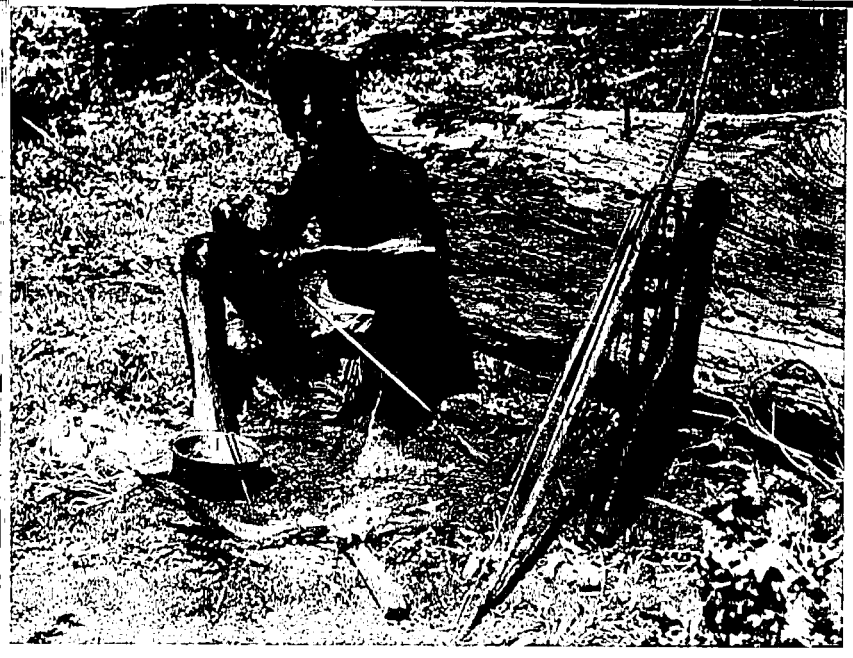
that a large proportion of these horns were obtained in our Southern Reserve." (Jackson, 1906.)

Rhinos were widely distributed throughout most parts of Kenya, although they were quickly shot out in close proximity to the old caravan routes. According to Percival (1902) they were "found over more than half the Protectorate in fair numbers, and in smaller numbers over the rest" but owing to their wide distribution it was "impossible to make even a guess at their numbers." "From all sportsmen and prospectors who have visited out-of-the-way districts I have heard the same story of the great number of these fine old beasts."

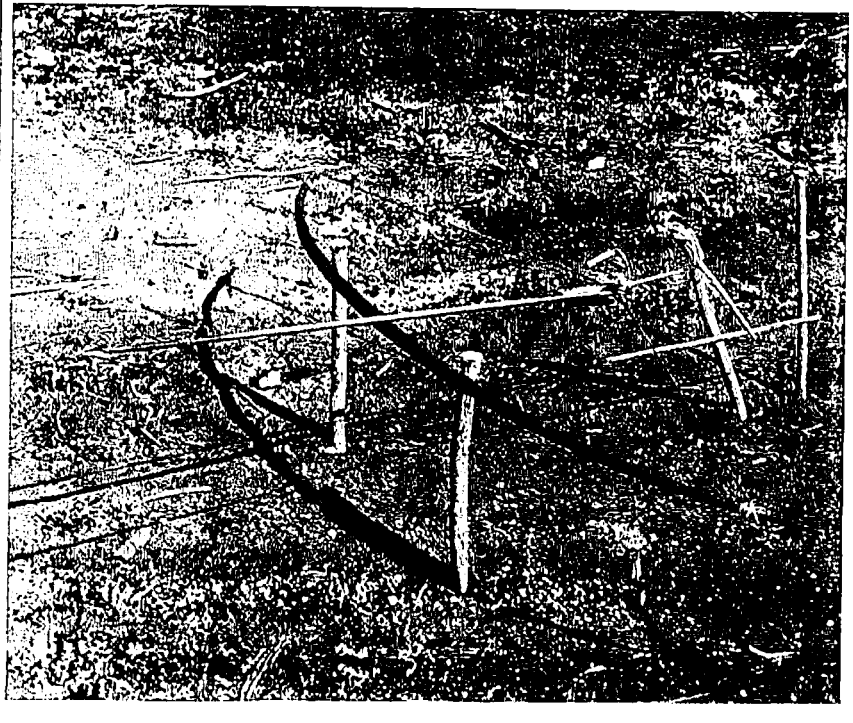
The story was the same in almost every part of Kenya. In Laikipia, Thika, Tana and Kitui districts, as well as the Northern Reserve, Percival described them as plentiful. On the Thika River, where Percival saw five or six every day, and between Ol Donyo Sabuk and the Tana River they were common. Close to Nairobi, rhinos were to be found both in the reserve and on the open side of the Railway. On Ol Donyo Sabuk they were very plentiful "as the thick patches of forest and long grass makes the hill particularly suitable for them." In the Southern Reserve they were extremely numerous. Percival noted "more than 150 while crossing to Kilimanjaro, several times having six or eight in view at once." He returned by a different route and saw just as many. In Baringo District they were more numerous than anywhere else. (1902.) They were common in the Elgeyo Valley and although very plentiful on the Yatta their horns were considered poor.

Rhinos were inimical to settlement, as well as extremely vulnerable to modern firearms. In the course of a few years their numbers were drastically reduced and in 1906 Sir James Hayes-Sadler recommended the number of rhinos on a licence to be reduced from two to one. "This interesting pachyderm, though sometimes dangerous, is always a stupid animal and, from his bulk and the nature of the country he inhabits, with but few exceptions falls an easy prey . . . in fairly open country he is easily driven away and therefore the necessity of shooting to protect life is not nearly so frequent as has sometimes been alleged."

In the half century since these words were written the



Above, a poacher applying poison to his arrows. *Below*, a bow trap set along a game path. The arrow is released when an animal walks into the string stretched across the path



rhinoceros population has seriously declined. In 1936, C. W. Hobley estimated that the rhinoceros population had been reduced to 20 per cent of its former numbers. By 1960 the National Park Authorities estimated the numbers in Kenya to be no more than 2,500 but this figure included the Tsavo rhino population which has since been heavily depleted. (See page 134.) On the credit side, recent Game Department investigations have shown signs of a flourishing population of rhinos on the east shore of Lake Rudolf in the neighbourhood and to the south of Alia Bay.

Fraser Darling considers:

> that the rhinoceros is a key species in management of African vegetation, and that its wanton and drastic reduction in half a century is one of the factors which have led to a decline of much habitat. The black rhinoceros eats vegetation of coarse and prickly nature which does not seem to be affected by other species. Observation of the diligent action of the rhinoceros in getting hold of young plants of gall acacia and pulling them out of the ground leads one to wonder what effect the animal has had in the past in keeping land open. If 250 of such plants were eaten by each rhinoceros *per diem*, a conservative estimate, the influence must have been considerable. What we do know now, is that gall acacia has vastly increased its areas, to the impoverishment of game-carrying capacity of the land. The rhinoceros should be protected absolutely throughout Kenya. The slaughter of rhinoceros during the last 10 years has been extensive and intensive—and senseless. The name of this animal should be removed from the schedule of game which may be killed for sport, because there is no sport in killing a rhinoceros. Its so-called tendency to charge, too much encouraged by those safe in a Land-Rover, is largely a spurious evocation of behaviour, despicable in the human being provoking it for a false thrill of danger.

In most parts of Kenya rhinos live in constant danger of poaching and the scarcer they become the greater the incentive to the poacher. With a breeding potential of only about 5 per cent per annum, the black rhinoceros stands in grave peril of

extinction in Kenya, unless effective protection can be afforded at least in recognised sanctuaries. The recent development of immobilisation techniques has made possible the translocation of rhinos from districts where they are not wanted into national parks, and a number have been moved in this way. Successful development of new methods of translocation will achieve their purpose only if complete safety can be assured after the rhinos have been released, and at the moment there is no absolute guarantee of this.

WILD ASS (*Equus asinus somaliensis*)

Herodotus recorded that some of the Indian contingents in Xerxes' army were equipped with chariots drawn by wild asses, but in Egypt and Mesopotamia the ass had been domesticated at least 3,000 years before Xerxes' time and is known to have been hunted by Rameses III.

In 1861 Baker saw the Nubian form along the Atbara River and the species evidently impressed him. "Those who have seen donkeys in their civilised state have no conception of the beauty of the wild and original animal . . . the animal in its native desert is the perfection of activity and courage; there is a high-bred tone in the deportment, a high-actioned step when it trots freely over the rocks and sand, with the speed of a horse when it gallops over the boundless desert. No animal is more difficult of approach; and, although they are frequently captured by the Arabs, those taken are invariably the foals, which are ridden down by fast dromedaries, while the mothers escape. The colour of the wild ass is a reddish cream, tinged with the shade most prevalent of the ground that it inhabits; thus it much resembles the sand of the desert. . . . It was with extreme regret that I saw my beautiful prize in the last gasp, and I resolved never to fire another shot at one of its race. This fine specimen was in excellent condition, although the miserable pasturage of the desert is confined to wiry herbage. . . . The height of this male ass was about 13·3 or 14 hands; the shoulder was far more sloping than that of the domestic ass, the hoofs were remarkable for their size; they

were wide, firm, and as broad as those of a horse of 15 hands."

Swayne (1905) estimated ten thousand in the Maritime Hills of the eastern part of the Somaliland Protectorate. In the Berber Province of Somaliland it was the practice to tether domesticated she-asses away from the villages, so that they were served by wild ass stallions.

The wild ass is not generally associated with Kenya, but Sir James Hayes-Sadler (1905) believed that they were to be found in Rudolf Province. Though he was unable to give any information regarding numbers or distribution, he took the precaution of including the species in the 1906 Uganda Game Schedule.

Sir Harry Johnston had this to say in 1900: "The wild ass, which is the parent of our domestic donkey, is indigenous to the desert region round the northern shores of Lake Rudolf and possibly also between Lake Rudolf and the Upper Nile. This ass is seemingly very easily tamed. It has long been domesticated by the negroid inhabitants of the Rudolf countries and has passed down from their lands through the Rift Valley to the Masai. The Masai again, in times gone by, passed this donkey down to the lands south of the Victoria Nyanza, where it was eagerly adopted by the Wanyamwesi people. The result is, curiously enough, that at present day these donkeys of East Africa which are absolutely indistinguishable from the wild animal, are known as 'Unyamwezi donkeys.'"

The species is now probably extinct.

official Tanganyika Game Department returns showed that 26,192 crocodiles were taken in 1957. Adults are the first target of the hunters and, when they have been eradicated, immature reptiles are taken. Dr. Cott's observations have led him to the conclusion that *C. niloticus* does not reach breeding condition until about nineteen years of age, by which time it will have attained a length of about 8 feet 6 inches. On Lake Victoria and elsewhere, hunters are now killing the three to four year age groups. Unless proper control measures are instituted, these practices can lead only to extermination. It is essential to declare *C. niloticus* a game animal and treat it as such.

There appears to be no reason why crocodiles should not be cropped in exactly the same way as has been suggested for other animals. Because of the nature of their environment and their habits, crocodiles would probably lend themselves more readily to a system of game cropping than many mammals. Along the Tana and other rivers, especially in arid and semi-desert regions, there would be little difficulty in building up a valuable and productive self-perpetuating rural industry, designed to harvest crocodiles on scientific lines.

This would necessarily involve a close season at breeding time and, in the initial stages at any rate, special measures might be necessary to protect the breeding grounds and nests from egg-eating enemies, such as the monitor lizard, baboon and maribou, with the object of re-stocking the waters as quickly as possible. Due to the reptile's slow maturing characteristics, and scant breeding stocks, crocodile management schemes would take a number of years to become properly established but, in the long term, they would prove valuable to the economy of rural regions.

Rhinoceros horn is the most highly priced animal commodity of all and, as the rhinoceros population decreases, so the value of horn soars proportionately, and the pressure of poaching on the survivors becomes more excessive. The principal markets are India and China, where horn is in great demand as an aphrodisiac—the very countries where, judging from their teeming millions, one would assume such artificial stimulants to be entirely superfluous. Talbot says of Asian rhino horn that

> a horn brought half its weight in gold in Calcutta in 1935 . . . its weight in gold in Siam in 1937 . . . and nearly £500 in Sumatra in 1933. . . . In Saigon, traders told me they could get 100,000 piastres for a large horn. That was then the equivalent of 2,000 dollars (£700). In Palembang a Chinese merchant was offering a new American car for a whole dead rhino. In Telukbetung, Sumatra, a Chinese trading group had a standing offer of 100,000 rupiah, then $2,500, for a large horn.

Talbot's description of the economic value of the rhinoceros can hardly be bettered:

> Every part of the body is highly prized, from hide, hair and toenails to the blood and visceral organs. In many cases the belief extends even to the urine and faeces of the animal. In 1955, tiny bamboo vials of urine, presumably from zoo rhinos, sold in Calcutta for 12 annas (about 15 cents).
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> The most valuable single part is the horn. In the past, rhino horn has been an important part of the export trade of all the south and south-east Asian countries. The greatest market was China. Even in Borneo, rhino was considered one of the three most important wild products in the trade with China (Harrisson, 1956).
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> Rhino horns were carved by the Chinese and others into a number of highly prized articles from buttons, belt-plaques and ended up as cups. Most of these were libation cups, important in certain religious ceremonies. Others were kept, especially by the rulers, because of the belief that they protected the user from poison. Such cups have been used in Asia up to recent times, but they also have been used by some British and European monarchs and popes.
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> As a protection against poison, the use of rhino horn varies by locality. In Sumatra, it should be drunk as a purgative if one feels the first signs of poisoning. In Burma, a belief exists that when one puts rhino horn shavings into a cup containing poison, they will bubble and smoke. In Nepal and parts of India, the belief is that if poison is placed in a rhino horn cup the poison will bubble,

discolour or become harmless, or else the cup will slowly disintegrate or shatter. Interestingly enough, there may be some basis for this latter belief. Many of the old poisons were strong alkaloids, and the horn is what amounts to an agglutination of hair, closer in structure to toenails than to cattle horns or deer antlers. Such a structure would indeed be affected, although the shattering and other dramatic behaviour is probably an embellishment.

To-day, the greatest demand for rhino horn is based on its supposed value as an aphrodisiac and this widespread belief accounts for the greater part of its market value. China still provides the biggest market, with Singapore acting as the main collection point for horns, whether they come from Africa, India or South-East Asia.

Usually the horn is ground to a powder and mixed with water or coconut oil. Among the cures this mixture is supposed to effect are the following: to remove a thorn from the palm of a hand, apply the horn oil to the back and the thorn will work right out; to ease childbirth, the expectant mother should drink some of the mixture just before the baby is born; to shrink lumps, stop infections, close cuts, soothe irritations or cause broken bones to heal properly, just apply the mixture to the nearby skin surface and rub well.

The horn may be sold in small pieces, in powder, in a coconut oil or other solution, or in combination with other parts of the rhino. In the latter case, a mixture is made of rhino horn, toenail, rib, foreleg and occasionally other parts of the rhino body, all mixed in coconut oil. This is placed in a small bamboo vial and is sold by itinerant "medical men." I saw a mimeo-graphed paper giving the proportions of rhino in one mixture being sold by such a travelling druggist. The sheet described the parts of rhino included and the various ailments they were good for. I saw similar charts, along with large drawings of rhinos, in druggist shops in some of the larger cities of Indonesia.

The astronomical value of rhinoceros products brings to mind the 1,088 rhinos shot by J. A. Hunter a few years ago.

The process of destruction. *Above left*, during the dry season when grazing is scarce, Samburu women (*right*) lop off the branches of trees for fodder. *Below*, destruction of trees and heavy overgrazing lead to extensive erosion

He was commissioned by the Game Department to exterminate them in the Makueni District, in order to open an area of 50,000 acres for a Kamba agricultural settlement scheme. When considering these figures, it is difficult to avoid the conclusion that either the rhinos were so thick on the ground (one to 50 acres) as to be unnaturally abundant, or they were being taken from farther afield beyond the area allocated to the settlement scheme and, therefore, more were shot than was strictly necessary.

The rhinoceros was the one animal to really thrive in the Makueni District, and was more plentiful in this region than any other comparable place in the world. Yet conventional thinking resulted in complete eradication in order to make way for a settlement scheme on marginal land which was incapable of supporting more than the crudest form of subsistence agriculture. From 1946-1959, a total of £307,535 was spent on bush clearance and water supplies, and a further £15,377 in the form of loans and grants. But these subsidies have not prevented the scheme from becoming a failure through lack of co-operation from the Wakamba settlers, and there is little to show for the heavy capital expenditure incurred. The destruction of the Makueni rhinos does not, therefore, appear to have served any constructive purpose. The value of rhino products is so high that it might have been more profitable for the Wakamba to have cropped rhinos.