WILD LIFE IN SOUTH AFRICA

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BY

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AUTHOR OF

"GUN AND CAMERA IN SOUTHERN AFRICA"

"KLOOF AND KARROO" "ENCHANTMENTS OF THE FIELD"

ETC.

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TO

MY GRANDSON

JOHN HEWGILL ANDERSON BRYDEN

IN THE MOPE THAT HE MAY SOME DAY ENJOY
SOUTH AFRICA AND ITS DELIGHTS AS MUCH
AS HIS FATHER AND GRANDFATHER
HAVE DONE

PREFACE

THIS book is the outcome of a series of visits to South Africa made over a long period of years. My journeyings have taken me to many parts of the Cape Colony—a land of boundless interest still to the naturalist and the sportsman. They have taken me also into Griqualand West, British Bechuanaland, the wide territory of the Bechuanaland Protectorate, Khama's Country of Bamangwato (first put before the world by Roualeyn Gordon Gumming), and the Kalahari Desert, a waterless region, full of interest to the field naturalist.

My ramblings in search of sport and nature included as well the unfamiliar country of Ngamiland, made known by Livingstone and Oswell when they first crossed the Kalahari Desert and set eyes on Lake Ngami in 1849.

Much though all these territories of South Africa have been explored by the early travellers and hunters, there yet remains a remarkable amount of interest throughout the whole region, and I am in hopes that this account of its fauna and avifauna may prove not unacceptable to the traveller and the field naturalist of the present day, especially to those of the younger generation.

Some portion of this book has appeared in the pages of *The Field, Chambers's Journal,* and *The Spectator,* and I have to thank the editors of these publications for their kindness in allowing me to reprint here. I am also indebted to *The World Field Sport* and Colonel

R. A. B. P. Watts for permission to reproduce as my frontispiece the charming picture of a giraffe in its native wilderness, taken from a photograph by Major Anderson in Tanganyika.

H. A, B.

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I

THE CAPE HUNTING DOG

ONE of the most dreaded of all the South African carnivora is the Cape hunting dog *(Lycaon pictus)* the *wide honde* of the Boers, an animal which is undoubtedly far more dangerous to the farmers' flocks and herds and to the numerous antelopes of the country than the lion, leopard, hyena, or any others of the larger beasts of prey. Although these wild dogs have long been known to naturalists and sportsmen, few writers seem to have paid much attention to their habits. Gordon Gumming has a fair but brief description of them in his book of adventures, the Hon. W. H. Drummond touches on them in *Zululand,* and Mr F. Vaughan Kirby, in his excellent volume *In Haunts of Wild Game,* also makes some mention of them. Mr W. L. Sclater, the well-known zoologist, formerly curator of the Capetown Museum, has a more extended notice of the *wilde honde* in *The Fauna of South Africa,* and in various books of sport and travel in Africa one finds here and there some occasional, but usually very cursory, reference to this dreaded beast of prey. The works of the late Captain F. C. Selous provide an exception. In more than one of his books Selous has a good deal to say about this animal.

The Cape hunting dog, which is, in fact, one of the most characteristic and most remarkable of all the wild *Canidtfy* has a very wide distribution, and at the present day is found from Cape Colony, where it has now become scarcer than of old, as far north as Abyssinia

and Somaliland. After crossing the Zambezi its distribution seems to favour the eastern regions of Africa, and it may be observed through Nyasaland to Tanganyika Territory, and thence to Kenya Colony, Uganda, Somaliland, and Abyssinia.

In height the *wilde honde* stands about as tall as an English foxhound, from 23 to 24 inches, but in other respects the animal bears little resemblance to that most highly specialized of all the hunting hounds. There is, in fact, something about the head of the African hunting dog which reminds one irresistibly of the hyenas ; a casual observer fairly well used to the sight of wild animals would probably class this beast as a connecting link between the wolf and the hyena. Unlike the hunched-up and ungainly hyena, however, the *mlde honde* is a clean-built, limber-looking brute, well set up on excellent legs and feet, and carrying a fair brush, which adds not a little to its sporting appearance. There is plenty of room in the frame for lung-power, an endowment essential to one of the finest and most untiring gallopers in the world ; the waist is slim, the frame well ribbed up ; the head is rather short; the face, muzzle, chin, and throat are invariably black or brownish black; the ears, brownish yellow in colour, are upstanding, wide, and large; a dark streak runs from the pointed muzzle upward between the ears. The body coloration varies a good deal, even among members of the same pack. It may be described as usually of a pale sandy yellow with irregular dark brown or blackish markings, the whole effect being to impart a curiously blotched or brindled appearance to the animal. Here and there also occur whitish patches, which contribute further to the blotchy appearance. The limbs are generally mottled in yellow, brown, and white. The tail is usually mottled to nearly as far as

the centre, the lower portion being pure white. The coat is coarse and somewhat woolly in texture, as a rule thicker about the neck, producing in some individuals even the appearance of an incipient ruff. Occasionally these animals, when shot, are found to be very much out of condition: the hair comes away very easily, the skin is often mangy, and the whole carcass highly offensive. It is for this reason, probably, that so few skins are sent to museums and private collections. Yet this wild dog is by no means to be classed as a carrion-feeder. On the contrary, it prefers on all possible occasions to run down its own game and devour fresh meat, which it does in extraordinary quantities and with the most amazing rapidity. In two points the Cape hunting dog differs markedly from the rest of the *Canida*—the head and feet. The skull, for example, is shorter and broader, and the teeth are stronger and more massive than those of other *Canida* whether wild or domesticated. The forefeet as well as the hind-feet carry four toes only, whereas, as most people are aware, the typical *Canida* have five toes on the forefeet and four only on the hind-feet.

These wild creatures are in their habits among the most remarkable animals in Africa. To anyone who is familiar with English hounds and English hunting the marvellous skill of the African hunting dogs in the chase, the method and forethought which they evince in planting relays of the pack along the probable line of the hunt, their wonderful running powers, their ferocity, courage, and determination, are especially calculated to arouse interest and observation. To the white farmer of South Africa and to native herdsmen they are, of course, unmitigated and hateful nuisances, their habits hideously wasteful and destructive, and among a flock of sheep or goats they are more likely

than not to rip, tear, and slaughter five or six times as many victims as they actually devour. I remember well, as a youngster on my first visit to Cape Colony in 1876, hearing some Karroo farmers discussing the assaults of these fierce carnivora. One flockmaster from Sneeuwberg, near Graaff Reinet, had some years before found between fifty and sixty dead sheep ripped and mangled by a pack of these wild hounds. These had been slain for the pure mischief and devilry of the thing, and the brutes, having eaten what they required, had passed on. This was by no means an uncommon tale among Cape farmers in the old days. At the present time, thanks to poison, the rifle, and trapping, these wild dogs are far less plentiful in Cape Colony than they used to be. They still exist, however, here and there in the more remote and unsettled districts, and are found in the dense Addo Bush and the Fish River Thickets of the eastern part of the colony. Farther up-country they are still fairly abundant, and most hunters of big game have at one time or another had the chance of seeing them in full cry in pursuit of some antelope, which, having been singled out of a troop, they drive before them and attack until it is disabled and run to a standstill. Once, while in pursuit of giraffe in the Northern Kalahari, south of the Botletli River, I saw at early morning a pack of these hounds running full cry on the trail of a kudu. It was a biggish pack—some thirty or forty hounds—and, passing close to our wagons and, I suppose, getting our wind, they halted for a minute or two, sat down and had a good stare at us, occasionally yapping with sharp cries. My comrade and I were standing on our wagon boxes. Then, flinging off, the pack took up the chase and swept on. Twice I have seen fresh bands of these hounds join the pack which first started the

game and push on the chase; and I have no doubt that the universal testimony of South African natives, hunters, and colonists that these animals hunt in relays and take it in turn to press the quarry they are running is absolutely correct.

The Hon. W. H. Drummond, who so well describes the habits of the game of South-east Africa,[1] has an excellent passage on the methods of these wild dogs. In my experience they do not run so closely together as he asserts; usually three or four leaders press the game and run up to bite at it, while the main pack follows at a short distance.

These hunting dogs run every kind of antelope and pull it down—kudu, pallah, eland, sable and roan, gemsbok, reedbuck, and even the fleet and untiring sassaby and hartebeest. They hunt, of course, by scent as well as in view when they are getting to the bottom of their game, and have manifestly very fine scenting powers. Those who, like the writer, have seen English foxhounds hunting steinbok and duiker in South Africa are well aware that antelopes give an excellent scent, as good, no doubt, as a red deer over Exmoor. The pace of a Cape hunting dog is very good—so good that it can gallop up to the stem or flank of its quarry long before the latter is anything like thoroughly beaten and take a snap at its flank, under-parts, or hind-legs. A pack of European hounds press their game steadily until it is run to a standstill, and overwhelm it in a body. But the *wide honde* hunts quite differently. Each of the fleetest hounds in turn, or as it gets a chance, races up to the game and tears with its strong teeth at some portion of its hinder parts ; the flank and tender under-parts and the hock tendons are favourite places.

[1] See *The Large Game and Natural History of South and South-east Africa.*

By this method the unfortunate antelope is finally overcome; as its paces become shorter and more feeble the attacks grow fiercer and more deadly, and finally, maimed, hamstrung, and partially disembowelled, the quarry is pulled down and devoured,

One of the most extraordinary facts recorded of these fierce carnivora is related by Selous in his first book, *A Hunter's Wanderings.* While hunting near the Umfuli River, in Mashonaland, he and his fellow-sportsmen saw a single hunting dog attack and run a sable antelope bull. Now, the sable antelope is, like the roan and the gemsbok, one of the most courageous as it is one of the largest of all the antelopes, and with its powerful horns is capable of keeping at bay a whole pack of wagon dogs, and slaying or wounding many of them. That such an animal should allow itself to be attacked by a single wild dog speaks volumes in favour of the latter's prowess and determination. In this instance Selous saw the *wide honde* easily run up to the sable antelope, although the latter was fresh, and twice bite at the flank of its big quarry. It was repeating this assault for the third time when the animal scented the white men and stopped dead. In another minute, chased by one of the hunters, the hound went off one way while the antelope escaped by another. A sable antelope, although yielding in fleetness and bottom to such magnificent movers as hartebeest, sassaby, or even blue wildebeest, is capable of galloping at a great pace, probably the pace of an English red deer, and that a wild dog should thus be able to run up to one of these animals in the fashion described by Selous proves that the Cape hunting dog has a very high turn of speed as well as great staying powers. Terrible, indeed, must a pack of such pursuers be to any antelope or zebra that roams the veldt. Natives

assert, and probably with truth, that even the lion gives a wide berth to the hunting dog, and it is pretty certain that a pack of these wild *Canida* could, if they chose, overcome even the so-called king of beasts.

The strength of a pack of these wild hounds varies a good deal; it may be as small as eight or ten or as strong as fifty or sixty. From twenty to forty may be taken as about the number of a fairly strong pack. Gordon Gumming and other authorities state that these animals have three differing cries: a sharp, angry bark, used when they are surprised; a chattering like that of monkeys, usually only heard at night; and a soft, melodious note, somewhat like the second call of the cuckoo. This last is generally uttered as a rallying note when the pack is scattered. The sharp, angry bark is characteristic, and is almost invariably given out when these hounds encounter human beings; the second or chattering cry I have never heard; but these hounds certainly use a melodious note, something like *hoo-boo*, when scattered and calling to one another. In their encounters with human beings they often display extraordinary assurance and boldness—far more, in fact, than almost any other of the carnivora. Gordon Gumming once sustained a most terrible fright from a big pack of them. He was shooting at night, according to his custom, by a pool of water, and had fallen asleep in the *scberm*, or shooting-hole. Suddenly awakened by noises about him, he started up, to find himself surrounded by a strong troop of some fifty or sixty *wilde honden*, which assumed a most menacing aspect and were chattering and growling volubly one to another. Gumming, springing to his feet, waved his blanket and, raising his voice, managed to recover his rifle and scare away the intruders; but he experienced a shock which seems to have

impressed him more than almost any other of his many adventures.

These wild dogs do not make use of ' earths ' except when the females are with young; the puppies are brought forth usually in large holes—often those of the aard-vark (Cape anteater)—upon open plains. From ten to twelve puppies are said to be the usual number at a birth. The young of the Cape hunting dog have been occasionally captured and domesticated by farmers. They are never satisfactory, however, in captivity, their tempers being savage and uncertain. They have, I believe, been once or twice crossed with domestic dogs, but the product is said to have been a " mongrel of bad character." So one might expect from the ferocity and bloodthirstiness of the wild parent stock.

Captain S. L. Hinde, who, in his book *The 'Last of the Masai,* has some excellent field notes on the game of East Africa, seems to be of the opinion that a second species of wild hunting dog is found in that region. He says :

> It is so much darker [than the well-known species *Lycaon pictus]* that the greater number of living specimens, seen at a short distance, appear to be black except for the white point to the large bushy tail.

Elsewhere he says:

> A pack of dogs were hunting a herd of impala, and stopped short in front of my party; they barked with the short, sharp note of a collie, and sat up on their haunches like a dog begging, to enable them to see over the grass, which was about two feet high. The size of the dogs varied considerably, the largest in the pack being about the size of a retriever but of stouter build. In colour they were black or grey, with long, bushy tails, the extremity of which for about one-third was snow-white. Some of them appeared to have ruffs like Pomeranians, and some were of a yellowish tint on the sides.

The habits of these hounds as described by Captain Hinde do not seem to me to differ from those of the

Cape hunting dog in other parts of Africa. We now know that there are packs or local races in East Africa somewhat darker in colour than those in other parts of the continent. But even in South Africa I have seen living specimens and skins which carried much more of the dark colouring than is usually to be observed among the majority of a pack of these animals. Captain Hinde's mention of the white-tipped tail and of grey and yellowish tints seems to me to point to the fact that these East African specimens were true members of the species *Lycaon pictus.* Cornwallis Harris's description of the colour of this animal, written as far back as 1837, is :

> Ground colour of the hair sandy bay or ochraceous yellow, irregularly blotched and brindled with black and variegated spots of exceedingly irregular shape.

Major Powell-Cotton, while camped near Lake Baringo, in Kenya, in 1902, shot six wild hunting dogs, which he thus describes :

> These wild dogs stood a little under two feet in height, had very large rounded ears and a mangy coat of rusty black, blotched with brown and white. There was a large brown patch on the neck, and the tail and forelegs showed a good deal of white.[1]

The late Mr Oldfield Thomas, one of our most distinguished naturalists, who had the advantage of comparing a large number of skins, separated the various races of African hunting dogs as follows :

(i) The Cape form *(Lycaon pictus venations* of Burchell) is characterized by the prevalence of the orange-yellow over the black, the partially yellow backs of the ears, the large amount of yellow on the under-parts, and a certain number of whitish hairs on the throat ruff.

[1] *In Unknown Africa,* p. 148.

(2) The typical *Lycaon pictus* from Mozambique is distinguished by the nearly equal development of the yellow and black, both above and below; the back of the ears and the throat ruff are black, and the amount of white in the coat is much less than in the Cape form.

(3) The East African race *(Lycaon pictus lupinus)* is specially characterized by its extremely dark colouring, the yellow being reduced to a minimum.

Mr Oldfield Thomas also felt justified in distinguishing the Somali hunting dog as (4) *Lycaon pictus somalicus.* This form is nearly allied to the East African race, but is distinguished by its smaller size, shorter coat, and less powerful teeth. The yellow in this race is of the buff tint characteristic of the Cape animal, and thus decidedly different from the richer and more orange hue found in the East African representative of the species.

The Zululand hunting dog Mr Oldfield Thomas distinguished as (5) *Lycaon pictus zuluensis.* This is a small animal, profusely mottled on the back with white as well as yellow and black, of which the last two are in nearly equal proportions. The coat is long and coarse; the backs of the ears are blackish; the blatk streak on the back of the head stops short of the nape ; the under-parts are tri-coloured; the throat is black, without any white hairs ; the limbs are mottled with black and pale buffish yellow; and the tail has a large white brush, occupying more than half its length. Yet another race from the Shari River country (Lake Chad region) was named by Mr Oldfield Thomas and Mr Wroughton : (6) *Lycaon pictus sharicus.*

It is almost certain that other races from various parts of Africa will be forthcoming, differing chiefly in the colour markings. All these, including those already distinguished, may be looked upon as merely

local variations of the Cape hunting dog, first identified by Burchell.

The first part of this chapter, which originally appeared as an article in *The Field*, was followed a week or two later by a long letter on the same subject to the editor of that journal from my old friend the late Captain F. C. Selous, D.S.O. This letter is so full of interest that I append the greater part of it here :

> I read with great interest Mr H. A. Bryden's account of the African hunting dog *(Lycaon pictus)* , . . and … I should like to add a few more notes on this not very well-known animal. I do not think that these hunting dogs were ever very plentiful in the interior of South Africa, as at the time when I was elephant-hunting, many years ago, and continually moving about, day after day and year after year, in countries where game was plentiful, I don't think that I ever encountered more than two or three packs in a year's wanderings, and there were several years—not consecutive—during which I did not meet with any at all. So far as my memory serves me, I think that the wild dogs I came across—with the exception of the single animal mentioned by Mr Bryden, which was chasing a sable antelope bull—were in packs of from fifteen to thirty. At times I have come across these animals lying in the shade of scattered trees, on bare ground, from which all the grass had been burned off, and they would then trot away, continually stopping and looking back, but making no sound. But I can remember distinctly two occasions on which I suddenly disturbed a pack of wild dogs in longish grass. On both these occasions they were very near to me, but could not very well make me out, owing to the length of the grass. They retreated very slowly, and kept jumping up, looking at me inquisitively, with their large ears cocked forward. At the same time they gave vent to a kind of bark, the same sound being repeated twice. This double note might be represented by the syllables *hoo-hoo.*
>
> On one of the two occasions which I say I remember so well I was hunting—in 1873—in the country about halfway between Bulawayo and the Victoria Falls, not very far, I fancy, from the present railway line. After a long march I had reached a swampy valley—then known by the name

of Dett—where there was water, and where I intended to camp. Seeing some buffaloes drinking a little way down the valley, and wanting some fresh meat, I at once proceeded to stalk them. The stream at which the buffaloes were drinking ran down the centre of an open valley some three hundred yards broad, in which there was no cover except that afforded by coarse grass, some 2£ feet to 3 feet in length. Being armed with only an old muzzle-loading 4-bore gun, I had to get pretty close to anything I wanted to shoot, and I had crawled half-way to the buffaloes when I saw them all suddenly raise their heads and look down the valley. I immediately looked in the same direction, and at the same time heard a heavy tramping noise, which I knew must be caused by a herd of large animals running. This noise came rapidly nearer, and on raising myself so that I could look over the grass I saw a herd of perhaps forty to fifty buffaloes coming straight towards me at a lumbering gallop. At the same time I heard a noise which sounded like *kak-kak-kak* constantly repeated. The buffaloes came straight on towards me, and had I remained quiet would have run right over me, so when they were within twenty yards I jumped up and shouted. The leaders stopped for a moment, and then, swerving slightly, dashed close past me. I fired into one as they passed me, and immediately afterwards saw some wild dogs—a pack of about twenty—jumping up in the long grass to look at me. They had been hanging on to the rear of the herd of buffaloes, and, had they not been disturbed, would no doubt have succeeded in pulling down a young animal; but had I not seen it with my own eyes I never should have though^it possible that a herd of buffaloes would have allowed themselves to be stampeded by a few wild dogs. These latter gave up the chase as soon as they saw me, and after *hoo-hooing* a little trotted off. The barking *hoo-hoo* and the clacking *kak-kak-kak* are the only sounds that I have ever heard wild dogs make, but I cannot claim to have had much experience with these animals. Wild dogs hunt both by day and by night, and in the latter case must be guided entirely by their acute sense of smell. On the first occasion on which I ever had anything to do with wild dogs they ran into and killed an impala antelope, quite close to my wagon, on a dark night in 1872. We ran up with lights and drove them from the carcass, a good deal of which they had, however, already devoured. About a month later another pack of wild dogs drove a kudu cow into a shed used as a stable

attached to a store near the Blue Jacket gold-mine at Tati, in Matabeleland. I was there at the time, and on this occasion the wild dogs were driven off by some Kaffir boys, who speared the kudu inside the shed.

For some time during the year 1888 my wagon was standing at Lushuma, a water-hole which is situated just ten miles from the junction of the Chobe and Zambezi rivers. One morning I walked down to Kazungula, at the junction of the rivers, and on returning to my wagon the same evening was surprised to see the meat of a freshly killed kudu hanging up in my camp, as game of all kinds was very scarce in the district. On asking my old Griqua servant where he had shot the kudu, he replied, " Master, the good Lord gave it us, for the wild dogs brought it right up to the wagon."

On further inquiry I found that soon after midday a pack of these animals had chased the kudu to within less than a hundred yards of the wagon. When my wagon-driver ran out with his rifle both the wild dogs and the kudu stopped and looked at him, the kudu evidently very much distressed. He at once shot the antelope, and its pursuers then ran off. It has struck me as somewhat remarkable that animals so confident in their powers of offence that they will sometimes attack a herd of buffaloes, and that a single one of them will occasionally try conclusions with so fierce and powerful an animal as a sable antelope bull, should never have turned their attention seriously to man as an article of diet. Yet in all my experience I have never heard of wild dogs attacking human beings, nor have I ever heard either Kaffirs or Bushmen express any fear of them.

This is all the more remarkable because when they are met with they do not show any great fear of man, but retreat very leisurely, constantly halting and looking back curiously before finally trotting off. All African antelopes probably live in deadly fear of wild dogs, for on the occasion mentioned by Mr Bryclen, when with two companions I saw a single wild dog overtake a sable antelope bull, the latter halted and looked round when its pursuer was about fifty yards behind it, and then, instead of showing fight, as I should have expected it to do, threw out its limbs convulsively and ran at its utmost speed ; but the wild dog overhauled it with apparent ease, and twice jumped up and snapped at its flank, each time, I think, making good its bite. Now, this wild dog must have been running very much faster than any South African hunting horse could

do, for although it is easy enough to gallop up to sable and roan antelope cows in August and September, when these animals are heavy with calf, I have never been able to run into a bull of either of these species, though I have often attempted to do so, with very good horses, on the open downs of Mashonaland. Wild dogs, too, can run down kudu cows and impala antelopes, as well as hartebeests and sassabies, none of which animals can be overtaken on horseback, so that it would be a mere truism to say that no African shooting pony could overtake a wild dog.

I will now, however, relate an experience which shows that this is not always the case, and which will probably be read with great surprise, if not with incredulity. Early one morning in November 1885 I was travelling near the source of the Sebakwe River, in Mashonaland, in company with the late Mr H. C. Collison, Mr James Dawson, and Cornells van Rooyen, a well-known Boer hunter. We were all riding together in very open country, just in front of our four bullock wagons, when we saw fifteen or twenty wild dogs emerge from a small watercourse that we had just crossed. When we first saw them they were just abreast of us, and not more than three or four hundred yards to our left. They trotted quietly along, stopping frequently to look at us, as is their wont. We possessed amongst us a large number of dogs, most of them big, rough, powerful mongrels, such as one sees on a Boer farm in the Transvaal. Calling to our dogs, we galloped towards their wild cousins, and twelve or fifteen of the former soon rushed past our horses and took up the chase at a great pace. The wild dogs now broke into a gallop, but, strange to say, instead of leaving their pursuers far behind them they did not seem able to show any great turn of speed. We were soon right amongst them with our horses, and our dogs mobbed and pulled down two, which they held in such a way that they were quite unable to bite. Personally, I picked out a fine, large wild dog, in good coat, and rode at him. When my horse's forefeet were almost touching him he suddenly rolled on his back and my horse jumped over him. I galloped over this wild dog several times, and finally shot him. During this time my companions had occupied themselves in encouraging our dogs to hold on to the two they had seized, and the rest of the wild pack had galloped off. As each of the two wild dogs that had been caught had been worried for some minutes by five or six assailants, all larger and heavier than himself, we thought they were

dead, and beat off our dogs. Their two badly used relatives lay quite still and limp, and we dragged them, together with the one I had shot, to a tree near a small stream, where we intended to skin them. All our dogs then went back to the wagons, which had not halted. We had just commenced to skin the wild dog I had shot when, on looking round, I caught the eye of one of the other two that were lying dead, as we had thought, at the foot of the tree, and instantly saw that it was alive. It must have been shamming dead all the time, in order to recover its strength, as immediately it caught my eye it sprang to its feet and dashed off. Two shots were fired at it as it ran, but it got clean away, apparently none the worse for the worrying it had endured. The other one our dogs had held, which was not quite full-grown, and which, moreover, had been held by the throat by one of our most powerful hounds, was quite dead. I can offer no explanation as to why we were able to overtake this pack of wild dogs so easily, after chasing them for less than a mile, but the facts are as I have stated them. . . .

II

CURIOSITIES CONCERNING ANTELOPES

THE antelopes belong to the great family of hollow-horned ruminants, or *Bovida,* which includes also goats, sheep, and oxen. The dividing line between the different species of these ruminants is often extremely slender, and the various animals blend and are connected with one another in a manner which is truly remarkable. Thus the gnus or wildebeests, although classed among the antelopes and having most of the characteristics of that group, bear a strong family likeness to cattle and buffaloes, especially about the heavy head and horns. The Boers of South Africa, when they first encountered them, promptly named them *wildebeeste,* which means, of course, "wild oxen." The Rocky Mountain goat, again, although nearly allied to the antelopes, is in some of its characteristics strongly reminiscent of the goat, and may be looked upon as a connecting link between the two races.

All antelopes have in one or other of the sexes, often in both, horns void of branches. These horns consist of an under-core of bone covered by a hollow sheath of horn, which, except in one remarkable instance, is never shed. This exception is afforded by the singular and very handsome prongbuck or pronghorn of North America, which is classed as a distinct family, and is remarkable not only as having two tines or points to the horns—borne usually only by the males—but for the curious fact that, like the deer, it sheds these horns

annually, their place being taken by new sheaths which develop beneath the old ones.

The hartebeests are a large group of antelopes comprising many species. They are famous as much for their wonderful staying powers as for their speed, and in a tail-on-end chase they can usually gallop away from the stoutest hunting horse. The shoulders are high, and the hind-quarters droop in a remarkable manner. The eye of the Cape or red hartebeest *(khamd)* has a fiery reddish hue, and the tail-tuft, although apparently black in colour, will be seen, when held against the light, to have the same curious red tinge. Towards the pairing season male hartebeests fight a good deal, though, from the conformation of their horns, they cannot do one another much harm. Hartebeests are pretty wide-awake animals, as I have found to my cost on various occasions. The late Sir Frederick J. Jackson, Governor of Uganda from 1911 to 1917, and a well-known East African sportsman, writes thus of the species known by his name (Jackson's hartebeest):

> I remember once coming suddenly across a good-sized herd lying down, but was seen by the sentinel, and they were up and away before I could do anything. . . . On following them up I found them in a position which under ordinary circumstances would have entailed a stalk of sufficient difficulty to make it pleasurably exciting, had it not been that there were no less than four sentinels all standing on one large ant-heap with their heads towards the four points of the compass.

Needless to say, the attempt to outwit them was vain.

Near allies of the hartebeest are the sassaby or tsesseby, known to the Boers as ' bastard hartebeest/ and its northern cousin the topi or tiang. The sassaby, which is even fleeter and more enduring than the typical hartebeest, and may be characterized as the finest galloper in all Africa, is notable also for the wonderful

satin-like iridescent sheen to be seen on the surface of the rich chocolate-brown coat.

Then follows the curious Hunter's hartebeest or the herola, having horns which somehow suggest a connecting link with the fleet and supremely graceful pallah. This hartebeest has, like some other African antelopes, a singularly restricted habitat, ranging only from the south of Somaliland to the northern bank of the Tana River. The herola has hitherto seldom been shot by European sportsmen.

The bontebok, a species not distantly connected with the sassaby and hartebeest, is an antelope notable as possessing a curiously narrow range, being found only during the last hundred and fifty years in a small tract of country near Swellendam, in the south of the Cape Province. The bontebok, or pied antelope, is handsomely marked with purplish brown and white, the darker colouring having a rich iridescent bloom even more remarkable than the shining coat of the sassaby. This antelope is now, unfortunately, very scarce, and is found only in the protected state on a farm belonging to Mr Albertyn, between Bredasdorp and Cape Agulhas.

Very closely related to the bontebok in shape and coloration is the beautiful blesbok, with which I shall deal in a later chapter.

The gnus or wildebeests are assuredly among the most odd, and even grotesque, of nature's most curious creatures. The white-tailed gnu, or black wildebeest of the Cape Dutch, is the more extraordinary of the two. With the dun or chocolate-coloured body of a pony, it has the slimmest and finest legs, neat hoofs, a long and flowing white tail, the head of an ox covered with much shaggy and bristling hair, and a thick, upstanding mane. The cry is a loud, bellowing, metallic snort, from which the Hottentots obviously took the name

'gnu/ which they bestowed on this quadruped. Possessed of great speed and staying powers, these weird antelopes were in the old days found on the plains of the Cape Province and the Orange Free State in immense numbers, associating much with ostriches and quaggas. They are now found only in the protected state on a few farms in the Orange Free State, and their numbers, all told, cannot much exceed two thousand head. When these singular beasts are disturbed or approached, often even when at rest and unmolested, their antics afford the strangest of spectacles. Prancing, jumping, tearing up the ground with their sharp hoofs and horns, lashing their long flowing tails, darting in all directions, striking fiercely at one another, sometimes dropping on their knees in mimic combats, these weird antelopes displayed and still display the maddest and the most incomprehensible antics. They are savage, treacherous, and vengeful, and many dangerous and even fatal accidents have happened with them. Cecil Rhodes had a narrow escape from one of them in his park at Groote Schoor, near Capetown.

The blue wildebeest, or brindled gnu, has a much wider habitat, and is found over large portions of the African continent. As the black wildebeest loved to associate with the ostrich and quagga, so its blue cousin makes enduring friendship with the BurchelPs zebra, which may be termed the zebra of the plains. These animals have been well styled the Damon and Pythias of the brute creation. In the vicinity of these two species may also frequently be seen, in the wilder parts of Africa, ostriches, which seem during long ages to have cultivated the friendship, or at all events the vicinity, of both species of these strange antelopes. Brindled gnus are nothing like so restless and fiery or so unaccountable as the white-tailed species. None the less, when

disturbed by the hunter they display certain antics, kicking up their heels, lowering their heavy heads, and whisking their long black tails. Then, settling themselves into a longish line, they gallop off at what looks like a lumbering canter, but is in reality a very fast pace, raising a cloud of dust. The great, shaggy, buffalo-like heads, with their Roman profiles, are carried very low, and a big squadron of these large antelopes in motion makes an impressive sight. Blue wildebeests are extraordinarily tenacious of life—even compared with other African antelopes, which are all well endowed in this respect. They will gallop right away from the hunter under wounds that would instantly crumple up a red-deer stag. With a broken leg, or a bullet through lungs or other vitals, they will press on for miles, and easily make good their escape. The hunter ought therefore to be especially careful in aiming at these antelopes. The flesh of neither of the gnus is at all good eating.

The waterbucks, lesser and greater, include a large group of fine and very interesting antelopes all resident in Africa. The true waterbuck, found from South Africa as far north as the Shebeyli River, in Somaliland, is typical of the group. It is a big, strongly built animal, having a long rough coat, and is found in small troops, always in the vicinity of water. The males are fine sturdy beasts; they carry handsome horns, and when wounded will occasionally charge fiercely. The flesh is very poor eating. These animals, which are possessed of a strong and somewhat goat-like scent, are often winded by the hunter at a considerable distance.

Among the lesser waterbucks, or kobs, the lechwe is remarkable for its water-loving characteristics. It is found almost invariably in flooded country, and is

constantly to be seen grazing middle-deep in shallow lagoons and *vkis* (or temporary sheets of water), often in herds numbering several hundred head. When alarmed, these beautiful antelopes run bounding away in huge leaps, driving the water on either side in showers of sunlit spray, and affording a magnificent spectacle. They seek shelter in dense reed-beds, from which they are hard to dislodge. From ages of existence in a watery habitat this species has developed curious hoofs, which are very elongated and well adapted for progression over soft and muddy places ; the under-parts, from the heel to the false hoofs or dew-claws, are quite naked, a characteristic peculiar to these antelopes and the situtunga.

Another member of the lesser waterbucks, Mrs Gray's kob, found in large herds in the swamps and flooded regions of the White Nile and its tributaries, is remarkable for its great beauty and curiously pied appearance. For many years, owing to the closing of the Sudan regions during the tyrannic rule of the Mahdi and Khalifa, this waterbuck, although discovered in 1855, was quite unknown to European sportsmen. After the battle of Omdurman and the overthrow of the Khalifa's power it became more familiar; but its trophies are still looked upon as among the prime rewards of the hunter's skill. The general colour is a rich dark reddish brown, diversified by very singular and spotlessly white markings about the head, neck, and shoulders, and the lower parts of the body. A curious snow-white Y-shaped marking runs from the back of the ears down the nape of the neck, broadening out into a saddle-like patch upon the withers. Grazing in huge herds over the flooded marshes of the desolate regions in which they have their habitat, these lovely waterbucks offer to the eyes of the fortunate sportsmen

season. Speke's gazelle, a Somaliland species, although in other respects a most graceful and well-made animal, is also deformed by the presence of a strange swelling of the nose, formed by loose, flabby, and corrugated skin, which is found in both sexes. This skin has a cavity which can be, and probably is, inflated during life at the will of the owner.

The springbok, a South African species, may be looked upon as a connecting link between the true antelopes and the lighter and more delicately formed gazelles. Its name was, of course, bestowed upon it by the Boers, by reason of its extraordinary leaping powers. Not only is this antelope a magnificent long jumper, clearing a broadish road easily at a bound, as it invariably does in crossing such tracks, but it has the trick or habit when excited or alarmed—often even at play—of leaping straight upward into the air to a height of eight or ten feet, as if propelled by a catapult. The springbok is distinguished from all other antelopes and gazelles by a blaze or crest of long, stiff, snow-white hair, which at ordinary times lies neatly folded beneath a kind of pouch in the cinnamon-coloured coat at the top of the back. When the animal is excited or disturbed it erects this curious fan-like crest of hair, arches its back, and begins that amazing series of high leaps from which it takes its name. The bound is taken off the ground straight up into the air, the slender legs being held very rigid, and the leap is frequently repeated several times. When a whole troop of these antelopes are thus leaping, as they often will do—' pronking/ or "pranking/ as the Boers call it—the display is simply wonderful. The springbok is a most fleet and graceful creature, and furnishes the best venison in Africa. It is still very abundant in the Cape Province and other parts of South Africa; and in the desert region known

as Bushmanland, just south of the Orange River, the *trek-bokken* or migration of these animals still takes place. These migrations seem to be caused by drought and lack of food, and perhaps from the desire of the ewes to drop their fawns within the limits of the rains, where pasturage is rich. On these occasions not merely tens of thousands but literally millions of springbok move eastward, devouring everything before them. The last great *trek-bokken* took place in 1896. It extended far westward into the heart of the north of the Cape Province ; tens of thousands of buck were shot by the farmers, and the space of country occupied by the moving *trek* measured about 138 by 15 miles. Over this area, as I say, literally millions of springbok were in movement ; competent and very careful observers computed that they could see within the purview of their own eyes half a million antelopes at one moment.

Springbok are to be reckoned among those antelopes which can exist for long periods without drinking, yet occasionally they seem to be overtaken by an appalling thirst. In 1892 millions of them moved from Bushmanland westward, and reached the sea. They rushed into the waves, drank the salt water, and died in tens of thousands. " The bodies lay in one continuous pile along the seashore for over thirty miles, and the stench drove the Trek Boers, who were camped near the coast, far inland." This extraordinary incident is vouched for by Mr W. C. Scully, formerly Civil Commissioner for Namaqualand and Special Magistrate, a gentleman whose admirable writings on South Africa are well known.

Gazelles are to be classed as peculiarly slender and delicately shaped cousins of the antelopes, and are found for the most part in the open deserts of North and East Africa and parts of Asia. They are of many

species. Both sexes usually carry horns, and they are, as a rule, wonderfully well adapted by nature to the sun-scorched and sandy habitats in which they live, their usual coloration being fawn or a sandy rufous of varying shades. One African species, the gerenuk, or Waller's gazelle, is so singular in its appearance and habits that it may be briefly referred to. This very aberrant form, found in Somaliland, Abyssinia, and East Africa, stands from 3 feet to 3 feet 6 inches in height at the shoulder; it has on a minor scale, in the extraordinary elongation of the neck and the long, stilty legs, a marked resemblance to the giraffe. Even the head and face, though they are surmounted in the males by shapely horns, are strikingly reminiscent of the giraffe. On the other hand, the general coloration is very different, being a rich rufous fawn. It would seem almost as if this singular gazelle were trying, in the course of long ages, to develop the characteristics of the giraffe, a consummation to which it has as yet only partially attained. The eyes, as with the giraffe, are large, dark, prominent, and melting. Between the eyes, on the middle of the brow, is a singular prominence with a central aperture, from which exudes a black liquid secretion which stains everything it comes into contact with, exactly as does ink. The purpose of this curious secretion is as yet unknown. The gerenuk is, like the giraffe, a browsing creature, and for the purpose of reaching foliage which it cannot ordinarily get at it stands on its hind-legs, supports itself with its forefeet against a branch or trunk, and thus devours food apparently quite out of reach. It is possible that through these high-browsing proclivities this singular gazelle might, in the space of another few thousand years, if it could remain free and unmolested, develop into something like a genuine giraffe. The

gerenuk is believed to be quite independent of water during the dry season.

Two of the handsomest and most remarkable game animals in Africa are the magnificent sable and roan antelopes, big and powerful beasts. The sable attains in stature at the shoulder from 4 feet 6 inches to 4 feet 9 inches. The coat of the adult male sable is a rich, deep rufous brown, becoming glossy black in the older animals. The under-parts are spotless white. The face is handsomely marked in brown and white, while the neck carries a full, upstanding mane. These noble antelopes run in large herds, and a good troop affords one of the most magnificent spectacles of wild life to be found even in that home of natural wonders, the continent of Africa. Sable antelopes are bold and courageous beasts, and defend themselves vigorously against the carnivora, dogs, and hunters. A wounded animal is distinctly to be treated with caution, and its fierce charge and the lightning-like stroke of its strong, scimitar-shaped horns render it very formidable.

The roan antelope, a sort of first cousin of the sable, is an even bigger and more formidable animal, capable of inflicting severe and dangerous wounds when at bay. But of this antelope more in the next chapter.

In the famous gemsbok, or Cape oryx *(Oryx ga%e//a)*> we have again one of the noblest and handsomest of horned animals. Its long, spear-like horns, which attain a length of close on 4 feet, vinous-grey body-colouring, notable head-markings, which much resemble the appearance of a headstall, and the very long sweeping tail and gallant port render this antelope one of the most splendid ornaments of the dry deserts amid which it roams. Like the eland, the hartebeest, the giraffe, and other thirst-resisting animals, the gemsbok is practically independent of water, and is capable of existing for

long periods without drinking. With its long and formidable horns it can offer dangerous resistance to its attackers, and there is a persistent tradition in South Africa that this antelope occasionally slays even the lion. It is certain that the skeleton of a gemsbok and that of a lion, the latter impaled on the horns of the former, have been found rotting in the veldt.

It seems to be more than probable that the unicorn of heraldry was originally derived from the oryx of North Africa or of Arabia, which belong to the same group as the gemsbok. It is certain that the figure of the unicorn found upon Persian and Egyptian monuments closely resembles an oryx with the horn set forward instead of back. It has been supposed that the Crusaders may have introduced the figure of the unicorn into heraldry after their wanderings in the East and in North Africa. And it is a remarkable circumstance that John of Lancaster, Duke of Bedford, used as one of the supporters of his coat of arms the figure of an antelope which could only have been intended for an oryx. Certainly in its own native deserts, where I have watched it closely, the gemsbok of South Africa is one of the most martial and gallant figures to be seen in the veldt, well worthy to be chosen (as it was) as one of the supporters of the coat of arms of the Cape Province—the other being the black wildebeest. Among other remarkable members of the group of oryxes are the leucoryx, or white oryx, and the addax, both denizens of the waterless regions of Nubia and the Sudan regions.

Of the considerable family of the bushbucks, the nyala, a splendid and remarkable antelope, found chiefly in the heavily bushed country fringing the littoral of South-east Africa, is the most remarkable. The males carry long, sweeping coats of coarse greyish-brown

hair, the neck hair being almost black. The bright tan face is marked with a white chevron, and there are other white spots and markings upon the cheeks, chin, and gullet. White stripings appear upon the body, and the lower part of the legs are tan. In the males a white crest appears along the back. The females are bright orange-chestnut in hue, with white markings. The horns, carried only in the males, are stout, spiral, and sharp-pointed, and attain in good specimens a length of 2 feet 7 inches. A good ram nyala stands 3 feet 6 inches, and weighs 300 pounds. These large and elegant bushbucks harbour in the densest covert, and are extremely difficult to obtain, venturing into the open to feed under cover of night only. They have the sonorous bark peculiar to the family, and when followed up with dogs, or wounded, charge with great courage, their horns rendering them very formidable.

Ex Africa semper aliquid novi is a saying that has held good from Pliny's time to the twentieth century. Not long ago two sportsmen, Mr Ivor Buxton and Mr C. Albright, shooting in Gallaland, near the border of Abyssinia, lit upon an entirely new species of antelope, a large animal of the bushbuck type, carrying splendid horns remarkably like those of the nyala. This fine animal, which is intermediate in size between the greater kudu and the nyala, was found inhabiting a tract of mountain country known as Sagatu, to the north-east of Lake Zuay, in North-west Gallaland. Mr Buxton presented a good specimen (head and horns) of one of these remarkable antelopes to the Natural History Museum. The horns are very fine, and measure 37 inches ; in another specimen they attain as much as 44 inches. This grand bushbuck has a dark brown coat, faintly spotted and striped, white marking about the face, throat, and chest, and a crest of longish

white-and-black hair running along the spine. It has been identified as a near congener of the nyala of Zululand, although separated by the not inconsiderable distance of at least 2500 miles, and has been named the mountain nyala *(Tragelaphus buxtoni).* How and when the remote ancestors of these now far-sundered bush-bucks broke away from one another and set up varying types is one of those mysteries of the Dark Continent which no zoologist can now pretend to solve.

Many other antelopes have developed curious traits and habits. These interesting animals, however, are too numerous to be considered in a book of this kind.

III

THE ROAN ANTELOPE AND ITS DISTRIBUTION

THE roan antelope has been known to natural history since the beginning of the nineteenth century. It was first reported by Truter and Somerville, who in the year 1801 met with it near Kuruman, in South Bechuanaland. It was sketched from a distance by that excellent animal artist Daniell, whose beautiful work is still much sought after. Unfortunately Daniell depicted the antelope with a bearded chin, and thus for some years created doubts concerning the species. About this time Desmarest described a specimen of roan antelope which had found its way to the Paris Museum, and gave it the name of equine antelope *(Antilope equina* by which it is still known. The present generally accepted scientific name, *Hippotragus equinus,* was bestowed by Sundevall, the Swedish naturalist, in 1844.

Lichtenstein, the German naturalist, who travelled in South Africa in the years 1803-6, met with this antelope in what is now Griqualand West, just south of the Bechuanaland border, but did not procure a specimen. He writes:

> On our return to camp we met a large flock of antelopes of a species quite new to me, and little known in the colony ; they are only to be found north of the Orange River, and are called by the hunters bastard elands. They approach in size pretty near to the genuine elands, but differ from them in being of a darker colour and in having horns that bend backwards. They are considered as the most

mischievous of all the antelope species, and instances have been known among the savages not only of their turning and running at their pursuers with their pointed horns, but even of their wounding them mortally.

The hunting Boers, already penetrating north of the Orange River, were evidently fairly well acquainted with the roan antelope even at this period, and Lichtenstein gives one of their vernacular names, still used by them, for this antelope. The other Dutch name, also still in existence, is 'bastard gemsbok.' In 1805 Daniell figured this antelope as the *tackhaitse*—his way of spelling the Southern Bechuana name *tahaitsa*. The Northern Bechuanas know the animal as *qualata*.

Sir Andrew Smith, during his famous zoological expedition in the thirties of the last century, came across this antelope, and in his subsequent book was able to tell us much more about it. From this time forward the 'roan antelope/ as it was known to British hunters, became much more familiar to the public. Cornwallis Harris, during his famous expedition in 1836-37, met with and obtained specimens in what is now the Transvaal country, in the hills of the Rustenburg district. He refers to the animal as the 'bastard gemsbok,'and in his detailed description as the' roan antelope.'

Gordon Gumming, shooting in 1844 in Griqualand West, found the roan antelope a little westward of the junction of the Vaal and Modder Rivers, where he was then camped. He found and slew his first specimen during a violent thunderstorm, and those who know what South African tempests are can appreciate his experience, of which he writes :

> We were entering a thicket of thorny bushes when a very large grey-looking antelope stood up under one of them. I could not see his head, but I at once knew that it was thelong-sought-for roan antelope, or bastard gemsbok.

> . . . The noble buck bounded forth, a superb old male, carrying a pair of grand scimitar-shaped horns, and standing nearly five feet high at the shoulder. " The Cow " [Cumming's horse] knew well what he had to do, and set off after him with right good will over a succession of masses of rock and stone and dense thorny bushes. In a few minutes my legs below the knee were a mass of blood and my shirt, my only covering, was flying in streamers from my waist.[1] The old buck at first got a little ahead, but, the ground improving, I gained upon him, and after a sharp burst of about two miles we came to a slight acclivity, when he suddenly faced about and stood at bay, gazing on me with glowing eyes and a look of defiance. This was to me a joyful moment; the buck I had for many years heard of and longed to meet was now within forty yards of me. Dismounting, I sent a bullet through his shoulder, when he endeavoured to charge ; but his strength failed him, and I then gave him a second shot in the neck. This was his *coup de grace*; he rolled over, and, stretching his limbs, closed his eyes upon the storm, which all this time had raged with increasing severity.

The enthusiasm of these early hunters is refreshing : they moved in new and strange scenes, always amid fresh delights, in a country where hitherto the European had scarcely set foot. The sportsman of the present day sees things in Africa with a different eye, and seems unable to reproduce the high spirits and the ecstasy of these pioneers of the wilderness.

Since Gordon Cumming's day the roan antelope has been discovered in many parts of Africa, as far north as Abyssinia, as far west as Senegambia, and as far east as East Africa. On the Settit River, one of the Abyssinian tributaries of the Nile, Sir Samuel Baker discovered in the early sixties an antelope, called by the Hamran Arabs *Ma&rif,* which he believed to be a variety of the sable antelope. This animal, now known to scientists as *Hippotragus equinus bakeri,* has long been recognized as merely a Sudan race of the roan antelope.

[1] Gordon Gumming, more often than not, hunted in a Highland kilt.

Modern naturalists have seen fit to separate the roan antelopes found in different parts of Africa into four races or varieties—namely, the southern roan, *Hippotragus equinus typicus*; Baker's roan, *Hippotragus equinus bakeri;* the eastern roan, *Hippotragus equinus langheldi* (sometimes *rufopallidus]* ; and the western roan, *Hippotragus equinus gambianus.* These races have been founded upon very slight local variations, but it is to be remembered that even among the roan antelopes found in South Africa great variation of colour is often seen. Selous, in remarking upon this point, says :

> Roan antelopes differ considerably from one another in colour, some being of a very light greyish or brownish shade, whilst others are reddish roan or dark grey.

Personally I think that far too much importance has been attached by scientific naturalists to these colour variations in naming the sub-species or races which I have enumerated. I have recently taken the trouble to examine closely the skins and heads of a number of roan antelopes from different parts of Africa, as well as stuffed specimens. Some of these skins and heads are included in the collections of the Natural History Museum, South Kensington, London; they are not accessible to visitors in the ordinary way. In the Natural History Museum galleries Selous's fine roan antelope, shot by him in Mashonaland in 1883, stands side by side with Colonel Delme-Radcliffe's equally fine specimen, shot near Gondokoro, on the White Nile, in 1902. These two examples, although one is named *Hippotragus equinus typicus* and the other *Hippotragus equinus langheldi,* are precisely similar in colour, and might well have come out of the same herd. Both are of a light grey-brown hue; in the Nile specimen the coat is somewhat shorter than in the Mashonaland antelope, the result probably of a hotter climate;

while down the front of the forelegs of the Gondokoro animal the dark marking is more pronounced. The eastern race of roan antelope *(langheldi* or *rufopallidus),* to which the Gondokoro specimen is assigned, is described as differing from the typical race "by the absence of brownish or greyish tints in the colouring, which is pale reddish, lighter in some examples than in others, but never of the dark characteristic of the western race." Yet in face of this pronouncement the Gondokoro roan antelope, as it stands alongside the Mashonaland specimen, is of precisely the same hue as that example—a grey brown or pale roan! The Sudan race *(Hippotragus equinus bakeri),* which obviously is closely allied to both these roans, is said to differ from the eastern race "by the longer ear-tufts." I venture to submit that the length of ear-tufts often varies in members of the same troop, and I do not think that a sub-species or race ought to be set up upon so slight a variation. I think the creation of these sub-species or races, whether in roan antelopes, in giraffes—which also vary greatly even in the same troop—or in other animals, is nowadays pushed to too great an extreme, and is only conducive of unnecessary trouble and confusion.

Upon examining, by the courtesy of the authorities, the skins of roan antelopes from various regions, now in the collection of the Natural History Museum, I found the following differences : The skin of a specimen from Zomba, Nyasaland, is of the typical roan hue; on the front of the head just under the horns is a noticeable patch of rufous colouring. This rufous patch—a continuation of the same colour on the top of the neck—is occasionally seen in roan antelopes from different parts of Africa. I noticed it recently in the head of a bull from East Africa and in another bull

from Nyasaland, both in the collection at Rowland Ward's. The same rufous colouring shows prominently from the dark brown facial hue in a specimen in my possession shot in Angola. I do not remember to have seen this characteristic noticed in descriptions of the roan antelope. It is one which, as I say, occurs occasionally in specimens from widely separated parts of Africa, and, quite conceivably, might be seized upon for the foundation of yet another race or sub-species. Such slight variations, of course, by no means justify the creation of fresh and more confusing races. Another skin at the Natural History Museum, a skin obtained from the Bahr-el-Zaraf, is of a reddish hue in general coloration. One from the Gold Coast bears a similar reddish hue, the coat being somewhat thicker in texture. From the White Nile comes a skin showing the same rufous colouring, while a skin from Northern Nigeria, reddish brown in hue, closely resembles in colouring those of roans found in Central, South Central, South, South-west, and other parts of Africa. The finest skin I saw at the Natural History Museum was a very remarkable specimen from Ankole, Uganda, presented by Colonel Delme-Radcliffe. Whether this skin is attributed to the sub-species *bakeri* or to *langheldi* I know not; to my mind it stands quite apart from those of all other roan antelopes that I have ever seen, and if a sub-species is justified it might well be conceded in this instance. The general hue is a rich reddish roan, the coat is singularly short and glossy, and the face markings are unique. The usual dark brown colouring—the chocolate hue, as it were—with white markings is replaced in this instance by deep shining black, with which the clear silvery-white markings are finely contrasted. This skin would certainly be picked out from a hundred others as a very re-

markable specimen of the roan antelope. In the opinion of the writer the museum authorities would de well to have it set up and contrasted with the other two cased specimens to which I have referred. I should add that showing clearly from the black face-marking in this example is a frontal patch of rufous hue just under the horns. The last skin of which I shall make mention is the very venerable and historic one procured by Sir Andrew Smith during his famous expedition in Southern Africa. In this skin, which no doubt has faded a good deal from much exposure—I believe it was exhibited stuffed for a long period—the colour is a very pale grey, and the texture of the coat is very long and thick—longer, I think, and thicker than any other specimen that I have seen. This specimen was, I believe, procured in Griqualand West.

The conclusion I come to after the examination of all these skins and specimens is that there is but one roan antelope all over Africa. The species varies greatly in hue even in the same localities, and although scientists may choose to create races or sub-species, the differences upon which these are founded are in reality not always sufficiently marked to justify such separation. The specimen from Uganda which I have described is, however, so outstanding and so remarkable that it may well justify further inquiry. I should have liked my old friend Selous, who knew more about roan antelopes than any other man of his day, to see this skin and give his ideas upon it.

It is perhaps worth noting as a curiosity, while upon the question of colour, that the young of the roan and the sable antelope are in the infant state practically indistinguishable. Both are bright rufous in hue, and on the faces of each faint white markings show. Two

small stuffed specimens placed side by side in the roan and sable antelope case at the Natural History Museum illustrate the extraordinary likeness between the young of these antelopes, and how strong in reality is the connexion between the two species.

Lydekker writes of the western race of the roan antelope *{gambianus)* that it is

> distinguished by its deep red colour. *This redness is, however, more marked in young than in old specimens, the latter being pale tawny, without any of the bluish grilling of the typical race.*[1]

This admission, which I have italicized, seems to me very significant, and a strong argument against the creation of sub-species for this antelope.[2]

Selous's typical Mashonaland specimen has no " bluish grizzling " whatever, but is, as I have mentioned, of a grey-brown tint.

The roan antelope is certainly one of the finest and most striking of all the wonderful tribe to be found in Africa. The early naturalists at once noted its somewhat equine appearance, and, in truth, the compact, well-set-up, and well-rounded body, with its thick, muscular neck, has a distinct reminiscence of the shape of a stout pony, or, rather, Galloway. The strong, upstanding mane adds to the suggestion. The limbs, although strong, are shapely and quite antelopean. The parti-coloured face is as remarkable in its way as that of the sable antelope or the gemsbok. The ears are long, tufted, and drooping, the characteristic droop in life somewhat detracting from the otherwise bold and martial carriage. The strong, recurved horns, ridged or annulated for three-fourths of the length, are carried

[1] *Game Animals of Africa,* p. 296.

[2] Naturalists in thus determining races, and even species, do not, it seems to me, make sufficient allowance for the changes that are caused by age.

by both male and female ; those of the males, however, are much superior to the cows', which are comparatively weak and not so heavily ridged. The longest pair of horns yet recorded measure 34¼ inches. These came from the Okavango River, and were formerly in the possession of the late Sir H. J. Goold-Adams. Good average heads measure about 31 inches. The white marking in front of the eye ends in a very singular tuft of thick and long hair, which lies flat upon the face. The bold, fearless pose of this antelope in no way belies its nature, for it defends itself fiercely when wounded and at bay, and will charge with great determination.

The late Mr J. G. Millais instances a case where a horse was killed by one of these antelopes, the rider having a very narrow escape; and Selous knew of a horse which was charged and severely gored by a roan bull.

In height a good roan antelope bull will measure as much as 5 feet at the withers. Major Powell-Cotton, in his *A Sporting Trip through Abyssinia*, gives the height of his best roan as 5 feet z| inches and of the next best as 4 feet n inches. These were shot near the plains of Shimmerler Jowee, to the south-west of Lake Tana. The major says in his notes :

> They seemed to prefer a more bushy country than the tora [hartcbeest] ; I also found them on much higher ground than the latter, having shot two while looking for greater kudu on the hills. A wounded one ripped a man's arm badly while he was trying to cut its throat. Tora are often found in company with them, when they are much harder to approach. The largest herd seen was twenty-five.

In South Africa roan antelope are more usually found in herds of from five to twelve, a troop, even in the good days, seldom exceeding twenty or twenty-five all told. The stature measurements given above exceed any

mentioned by Selous, who gives the height of a good South African bull as about 4 feet 9 inches.

Roan antelope are, next to elands, the heaviest antelopes in Africa, a good bull scaling as much as 620 pounds —more than 44 stone, or fully twice the weight of a good Highland stag. Notwithstanding their bulk, they run exceedingly well, and can only be overtaken by an exceptionally good horse, and that after a long and severe chase. When fat and in good condition the flesh of the roan is excellent; in the dry season, when succulent food is scarce, it is tough and tasteless. These antelopes are found in very diversified country. In some localities they are fond of bush and forest, in others they affect bushy hills. In the old days Selous found them on the high, open plains of Mashonaland, where they consorted with sassaby, ostrich, and blue wildebeest. In South Africa, at all events, they are seldom found in a terrain less than 3000 feet in altitude. In East Africa Sir Frederick Jackson, in 1897, when crossing the Mau Plateau, saw a herd of eleven at a height of 8000 feet.

Few antelopes of Africa have a wider distribution than the roan. Sir Andrew Smith in the early part of the last century had a belief that it was once found south of the Orange River. I can find no evidence to support this theory. It is true that the blaauwbok, a not distant cousin of the roan, was found in small numbers in the Swelletldam district of Cape Colony down to about the year 1799, when it became extinct. Long ages before the roan and the blaauwbok possessed probably the same ancestry, until for some reason the progenitors of the latter animal pushed farther south, and in an isolated habitat developed somewhat different characteristics. I find no evidence at all that the roan antelope has existed south of the Orange River for two hundred and fifty

years past, and doubt whether it has ever done so. In Griqualand West, where it was first found by the early hunters, it existed, according to Selous, down to the year 1886—probably a little later. It is not now found in Southern Bechuanaland, though, as I have said, it existed there formerly. A few are still found in the Eastern Transvaal, which at the present time is the most southerly habitat of this species. At one time these antelopes extended in this direction as far south as Swaziland.

Roan antelope are found but sparingly in Portuguese East Africa. They are still fairly plentiful in Mashonaland and Matabelelancl, and farther west they are found over most of the country extending between there and South-west Africa. In this part of South Africa their present range is certainly as far south as the Nata River, if not a little lower. Some years ago, when I was hunting in the Lake Ngami country, a few of these antelopes wandered over the salt-pans at the lower extremity of the Botletli River; some, I believe, still frequent the great Makari-Kari salt-pan, rather more to the north. They are found in fair numbers along the old hunters' road from Sebanene, Nata River, to the Zambezi, and quite recently were met with in fair numbers about Pandamatenka and Gazuma Vlei. In the waste stretches of the North Kalahari, between Nata River and the Chobe, where Selous endured such sufferings during his expedition in 1879, roan antelope are still to be found in fair numbers. Lord Selborne, then High Commissioner for South Africa, piloted by Lieutenant Arnold Hodson (as Sir Arnold then was), shot several with his party in this region in 1909, between the Mababe Flat and the Chobe River. They are still found along the Okavango River and in the northern portion of South-west Africa. In Portuguese

West Africa they are to be met with, in suitable country, in fair abundance. Roan antelope are found also in various portions of Northern Rhodesia and in Nyasaland. A correspondent informs me that he has found them in the southern portion of the Congo Free State, but I am not aware that they are to be met with in any other portion of that great territory. Farther north, in Nigeria and Senegambia, this antelope is again met with. It is, as I have shown, found in the Sudan regions, in Abyssinia, and in Kenya and Tanganyika. Few African antelopes, indeed, have so wide a range.

Not many sportsmen bring home the complete skins of the roan antelopes they shoot, contenting themselves for the most part with the head and horns. It would aid very much to the better understanding of this fine species if the authorities at the museums possessed a much greater number of specimens than they have at present. And it would add still further to our knowledge if the skins brought home were shown to be of young, mature, or very old animals.

Some time after the first part of this chapter appeared as an article in *The Field* Mr W. L. Sclater forwarded me a letter which he had received from Boujak, in the Sudan. It was from his friend Captain Stephenson, of the Egyptian Army. This letter contains interesting information about the roan antelope in that region :

> I have only seen those [roan antelopes] of the Sudan, or, rather, those in the Bahr-el-Ghazal, where they live in the same bushy country as does the eland, and also in the plains near the rivers, and those which inhabit this part of the Sudan, along the Abyssinian frontier more or less, where they live in the open plains near the rivers and where there is no high ground anywhere. So low is the country that the three chief rivers about here, the Pibor, Agwei, and Akobo, bank up from their mouths, getting

the water from the Sobat, etc. The soil is all black cotton, and is practically a swamp in the rains, and full of large fissures and like iron in the dry weather. I have shot several roan at all seasons, within a circle of twenty-five miles of this place, and have seen them of all ages and of both sexes. Those of the Bahr-el-Ghazal appear to me to average smaller horns than those of this part, although the largest pair I saw in the Bahr-el-Ghazal measured over 33 inches. I shot, I think, four or five in these parts, and the largest of them, 27½inches, is now set up at home. Here 28 inches is a fair to krge average, and I've seen two over 30 inches (30-32 inches). The colour particularly interested me, as I've one skin which I shot here one day which is very rufous and like those of the Bahr-el-Ghazal; but as a rule those of these parts seem to be far more slaty in colour, especially during the dry season, and I am inclined to think that protective mimicry plays a great part in the colour of their coat. Now—*i.e.*,in the rains —when the grass is long and green and yellow and red in places, they become more rufous, and one shot here yesterday was more red than any IVe seen for some time. The red one I refer to as having been shot I shot at a water-pan in the driest season, and next day shot another close to the same place, very slaty grey. I have examined those shot and cannot find any difference, except in colour. IVe seen quite young ones shot, and by mistake shot one at dusk one day myself, while looking for meat. I mistook it for a tiang ; I forget now the colour, but think it was slaty grey.

I have never seen more than four or five together myself, but a herd of about twenty were seen close by here in the dry season, having come down to drink. As Bryden says, their meat is excellent in the rains, but beastly in the dry weather. Only want of food could induce me to try it then—even as soup or mince. I've heard a lot of their ferocity when at bay, and one faced me once. ... I had fired my last round and did not care to tackle him with my knife, and had to wait till my boy came up. I can't see why they should be of a different species, inhabiting the same district, just because their coats vary. Look at the white-eared kob, how they vary; some much more white than others, and some are very dark, almost black, and some light brown. I don't refer to the red ones running in the same herd, said to be of a different race—though I can't see why. Some I've seen with far lighter legs than backs

and some almost skewbald, brown and black and red and, of course, white—as if they were changing their coats, I've been among herds of many hundreds, and have watched them for an hour at a time, and they vary in colour wonderfully.

With reference to Sir Samuel Baker's roan, called *maarif* by the Arabs, the name was probably *abu mdrafa* (the *a* being a letter we have not in English), or ' the father of a mane.' If an Arab replied *maarif* to a question he would mean " I don't know." The roan is known to all Arabic-speaking natives as *abu 'urf('* the father of a mane'). Those of Kordofan are larger than those of these parts, and the 33-inch head of the Bahr-el-Ghazal I refer to came from North-west Bahr-el-Ghazal, near where Kordofan joins it.

The females vary in shape of horns very much, and they are often long and thin and ugly. I've never shot a female myself, but I've seen a number of heads and horns.

I quite agree with Bryden that there is but one roan all over Africa, although I can only speak from those I've seen shot in various parts of the Sudan. . . .

IV

A HARTEBEEST HUNT

IT is a typical South African picture. Dotted about the plain there must be at the very least two or three separate troops of hartebeest, all attracted hither by the new grass just now springing rapidly under the influence of rain and sun. In all some sixty hartebeest are scattered about the flat, some alone, some in pairs or threes, others in larger groups. Most of them are feeding steadily, with their heads to the gentle breeze, just now blowing in the direction of the hunters. A few of the beasts are lying down, chewing the cud. Here two young bulls, down upon their knees, are butting at one another playfully, for all the world like a pair of frisky lambs.

For several minutes the two white hunters continue to gaze earnestly on the scene before them. How best can they circumvent these big reddish-brown antelopes and bag a head or two of game ? A whispered conversation with the Bushmen, conducted with the coloured after-rider as interpreter, results quickly in a plan of action.

The Bushmen are to skirt the woodlands, unseen by the hartebeest, work their way round, and, appearing at the far end of the flat, drive the game as quietly as possible in the direction of the mounted men, who, in their turn, are to remain concealed at certain points. The Masarwas depart on their errand, a pleased, eager smile upon their bronzed faces. They scent fresh meat, of all things in this wide world the most dear to them.

Traversing the screen of bush at a steady, silent trot—a pace these untiring children of the desert can sustain during a long day—they move away rapidly, and in less than an hour have fulfilled their mission and reached the farther extremity of the plain.

Meanwhile the two white men, retiring into the forest, separate, and, each of them working round to the flanks of the oblong flat, post themselves presently in situations where, with reasonable luck, they may expect to get a fair shot or two at the game before them. Piet, the coloured boy, remains behind with his nag. He is to act as a kind of stop. Antelopes seldom take down-wind when alarmed. They prefer to have their keen and delicate nostrils always pointing to the breeze, the quarter of danger. Their noses are, in fact, far greater safeguards to them than either their eyes or their ears, although these, in truth, are sharp and vigilant enough. Thus, from his position, right to leeward of the harte-beest, Piet is not nearly so likely to get a shot as his two masters, now posted on either side of the big grass flat.

In fifty minutes, or a little more, the anxious watchers begin to notice slight signs of movement among the big red antelopes. The Bushmen have appeared at the other end of the plain, and are, apparently quite casually, walking straight down the centre. It is not long before the group of hartebeest nearest to them have got their wind and perceived them. But the antelopes are, in these solitudes, seldom indeed disturbed by firearms ; they have no great fear of the Bushmen, at the comparatively safe distance at which they now are; and all they do for the present is to move a little farther into the plain. Their action is communicated, as it were automatically, to those of the antelopes nearest to them, and a gentle movement is to be noticed among them

also. The animals are not alarmed enough to take up-wind and break into a gallop ; all they do is to sidle away gently from the proximity of certain suspicious characters, of whom; however, at present they are not greatly afraid.

But in this movement, which, as the Masarwas approach, is to be noticed now all over the flat, some of the antelopes are approaching that right-hand flank of the plain where, hiding behind a screen of bush, one of the white men is, with superhuman patience and a thrilling anxiety, awaiting them. His good horse is fastened to a tree well in the shelter of the woodland a hundred yards away, and he himself is watching, in that deep, half-pleasurable, half-painful suspense so well known to stalkers of big game, the approach of a group of four hartebeest towards the spot where he lies in wait. The movement is succeeding beautifully. The four hartebeest are now three hundred yards distant ; sometimes they stand with heads up sniffing the breeze, and gazing in the direction of the Bushmen; anon their long faces go down and they feed again. Steadily they approach. Now at last they are within a hundred and fifty yards. Will they come nearer ? No ! Yes ! They still come on! But they are becoming manifestly more anxious, and the movement on the flat is becoming more universal. The beasts are getting uneasy. Now they are within a hundred and ten yards —a hundred—ninety.

A good bull hartebeest, with a fine thick rugged pair of horns, stands nearest to the expectant gunner, lying there stretched prone in the grass. The animal's eye and the dark face-marking are plainly apparent. The trigger is pressed, and suddenly a sharp report breaks upon the wonderful stillness of the grass plain. Down goes the good hartebeest, stricken in exactly the right

place, through heart and lung. He staggers to his feet again, but just as he is attempting to set *off* after his fellows, now scouring away across the flat, beating up obliquely in the direction of the wind, another missile from the same weapon shatters his shoulder and he goes to the red earth again. The impact of two crashing, rending .450 bullets is too much even for the extraordinary vitality of a hartebeest, proverbially the very toughest of all African game animals, and the antelope, with a brief flurry of kicks, stretches itself, shudders, and delivers up its life.

Leaving the Bushmen and his after-rider to look after the dead game, the hunter runs back for his horse, flings himself into the saddle, and in three minutes is spurring after the hartebeest, which from all parts of the plain are now gathering in their various bands and making off up-wind.

It is interesting to note how quickly the various units collect in the small troops in which they are accustomed to range. One band takes off to the right, bearing round into the wind with the breeze on its left front. Another troop, apparently more panic-stricken and more desperate, heads nearly directly up into the wind's eye, and, chancing the Bushmen, passes within less than two hundred paces of the nearest of them. A third troop, quickly getting itself into the wedge or phalanx-shaped formation in which these antelopes love to run, is making to the left across the flat, bearing away obliquely so as to pass on the farther side of the advancing Bushmen. This troop is most carefully watched by the other white man, secreted on the farther side of the plain. It is apparent to him that the hartebeest will scarcely come within hail of him in his present situation, and he therefore runs into the bush behind him for his nag, mounts, and rides out to

cut them *off*. Once on the open grass he pushes at his hardest pace, and his gallant chestnut, knowing exactly what is required of him, and seeing with his own sharp eyes a troop of running game swinging across the veldt away there to the right front, cocks his ears, gives a whisk or two of his long tail, and lays himself out to his task. Horsemen and hartebeest near one another rapidly.

The antelopes, which a minute or so since were swinging along in what looked like a somewhat heavy and uncouth canter, are now stretching themselves out to their work, and are moving with that free, smooth, machine-like action—an action which the South African hunter, who is familiar with these animals, knows to be perfectly untiring—at a speed which will soon carry them far beyond the reach of all pursuers. The hunter arrives at the point he made for, and the hartebeest, sticking to their line, sweep past him at a distance of a trifle over a hundred and twenty yards. Even at this short distance it is by no means an easy shot, at the pace the antelopes flash by, big as are the moving targets. The hunter has jumped off his horse, raised his rifle, and, drawing a long breath, pulls the trigger,

The loud clap of the bullet tells him instantly that he has hit something. In the same instant one of the hartebeest—running about the middle of the troop—turns a complete somersault, and, as its comrades pelt on, lies struggling on the veldt, frantically endeavouring to rise again. The hunter runs up and, somewhat puzzled, puts an end to the pain of the stricken beast; she is a fat cow with nice horns. Then he sees what has happened. He has made a bad but an extraordinarily lucky shot, his bullet having broken both of the hartebeest's forelegs, just below the knees. With one leg broken the antelope would easily have made good her

retreat; with both broken she is helpless. On three legs these antelopes will go for ever; on two they are, of course, crippled completely.

The hunter now knee-halters his horse, takes off its saddle and bridle, and allows it to graze; while he himself, having admired his prize thus fortunately secured, lights a welcome pipe, takes out his Green River hunting knife, and proceeds methodically to skin his quarry. He has done as much as he cared about in the way of sport.

Not so his companion, who is now flying after the troop running nearest to him, that on the extreme right of the plain. A mile or so farther and the chase sweeps into another and smaller plain. Suddenly, about the middle of this flat, just as the sportsman anticipated, the troop swings round, as if at the word of command, and, with heads up, red eyes staring—hartebeests' eyes are curiously red of hue—and nostrils distended, stands and gazes. It is fatal curiosity. In another half-minute their pursuer, swinging steadily along, has got within three hundred yards of them. Suddenly he too reins up, slips from his saddle, and, taking aim at one of a *klompje* of the antelopes in the very heart of the troop, fires.

Dire is the confusion of the bay-brown antelopes at the shot. One of them staggers at the loud clap of the bullet, and the whole of the troop—a score or more in number—now flies at top speed from this so dangerous proximity. The wounded buck lags a little, but not much. He is not well hit, struck as he is too far back in the barrel, and—so tenacious of life are these antelopes—he may travel half a day yet. The horseman remounts and gallops in pursuit, hoping against hope that the beast will fail and be ultimately secured. The hartebeest, it is true, turns out of the troop, as nearly all

wounded animals do, but he runs apparently as strongly as ever, and after another hour's galloping the hunter gives up the pursuit, and, hot and a little angry, returns slowly to his first buck.

On reaching the flat where the game was first encountered the sportsman finds the skinning and cutting-up operations nearly complete. The skins, horns, and the best part of the meat are fastened securely on the three ponies; the Bushmen stagger under loads of those delicate *morceaux,* chiefly from the entrails of the slain beasts, which only such children of the desert can appreciate; and presently the party sets off in high contentment for the desert pool, a few miles distant, at which their wagons are outspanned.

V

MOUNTAIN ZEBRAS

FOR many years it was believed that only one mountain zebra existed in Africa. This was the true zebra *(Equus zebra* or *Equus montanus),* found among the wilder and more inaccessible ranges of Southern Africa. This handsome species is well known and has been often described. It has been exhibited occasionally in the gardens of the Zoological Society, London, and examples are at the time of writing to be seen there.

The mountain zebra of South Africa is now, from the constant persecution to which it has been subject during more than two centuries, growing extremely scarce, and its habitat is restricted to certain ranges in Cape Colony, notably in the Cradock and Cathcart divisions, on the Zwarteberg between Prince Albert and Oudtshoorn, the Sneeuwberg, near Graaff Reinet, the Winterhoek and their offshoot the Witteberg, in the Uitenhage division, one or two ranges in Western Cape Colony, and the Roggeveld, near Sutherland. Here and there along the Drakensberg it is occasionally found, its range extending a few years ago as far as the Lebombo Mountains—a continuation of the great Drakensberg chain—in Swaziland. I had the pleasure once of observing this splendid species in the Witteberg Mountains.

In the year 1882 a new zebra was discovered which, although bearing certain resemblances to the mountain zebra of South Africa, showed in various particulars,

especially in its narrower and more numerous stripings and its much greater size, that it was of an entirely different species. This was the *Equus grevyi*, found in the hills and uplands of Shoa, on the borders of Abyssinia, and in the Galla country, abutting on Somaliland. In the year of its discovery a specimen was presented by Menelik, King of Shoa (afterwards Negus of Abyssinia), to M. Grevy, then President of the French Republic. This zebra has since been identified by sportsmen in various parts of Kenya. Grevy's zebra, which is nearly allied to the mountain zebra, is in many respects the finest representative of the whole hippotigrine group. It stands as much as from 14! to 15 hands at the withers, as compared with the I2½ to 13 hands of Burchell's and the 12 hands of the mountain zebra, and is altogether a very magnificent and remarkable representative of the race. A fine female, presented to Queen Victoria by Menelik, was for years to be seen at the Regent's Park Gardens, and a male was afterwards sent over by the same potentate to King Edward. Other specimens of Grevy's zebra have been received in England, and at the time I write these words the animal is still to be seen in the Regent's Park Gardens.

Until quite recent years it was believed that the zebras known to exist in the mountain ranges of South-west Africa were identical with the mountain zebra of Cape Colony. In 1836-37 Sir James Alexander, on a journey of discovery through Great Namaqualand and Damaraland, found troops of these animals among the heights of the Namaqua country. It never seems to have occurred to him, or to subsequent travellers and hunters, that these animals differed at all from the Cape Colony zebra. It is possible that the Great Namaqua-land zebras did not in fact differ from that race. I

doubt whether any of these zebras are now to be found at all in the ranges in which Alexander found them. The Namaqua Hottentots are great hunters and excellent shots, and it is more than probable that they have completely exterminated the race.

Some years ago Herr Matschie described what he believed to be a new form of mountain zebra from Kaokoland, a wild district, abounding in game, in the northern part of the Damara country. He named this new species *Equus bartmannce.* He based his claim to the absolute distinction of this so-called new species on the following characteristics : (i) The Kaokoland zebra has fifteen longitudinal stripes on the forehead as against twenty in the true zebra. (2) The second pale band across the thigh is as wide as its two adjoining dark bands in the Kaokoland form, while much narrower in the true zebra. (3) In the Kaokoland zebra the dark stripes are dark chocolate, not black, and the light stripes are ochre-yellow, not white.

Mr W. L. Sclater, in the first volume of *The Fauna of South Africa,* contested these distinctions and denied that the species was distinct. He pointed out that an examination of the mounted specimens of true zebras from Cradock, Cape Colony, in the South African Museum showed that the number of longitudinal stripes on the forehead was thirteen in the male, fifteen in the female individual; that the pale band on the thigh was certainly a little narrower than the neighbouring dark bands, and that the pale ground colour was by no means white; that it was quite ochre-tinted along the sides, becoming nearly dead white on the belly; and the dark stripes could hardly be described as black, being a very dark chocolate-brown. " Thus," concluded Mr Sclater, "two out of the three differences between the Kaokoland and the mountain zebra break

down, while the third is barely worth consideration." The distinction pointed out by Herr Matschie can scarcely be said to warrant the elevation of this Kaoko-land mountain zebra to the dignity of a distinct species. More recent researches show that both this zebra (Hartmann's) and Penrice's zebra, next described, are local variations or sub-species of the true mountain zebra of Cape Colony.

It is curious that towards 1900, in country not very far north of the Kaoko Veldt, Mr G. W. Penrice discovered a zebra which, I think, is undoubtedly to be looked upon as a new sub-species. This was in the country a little behind the port of Mossamedes, in Angola.

The province of Mossamedes lies, singularly enough, immediately north of Kaokoland, the Cunene River forming a boundary between Angola and South-west Africa. Mr Penrice for some years shot in Angola, and afterwards informed me that he believed mountain zebras to exist there. I urged him to make the matter certain on his return to Africa. In May 1900, while shooting in Southern Angola (province of Mossamedes), he secured a specimen of a zebra at Providencia, near the Moninho River, about fifty miles north-east of the port of Mossamedes. This specimen was skinned and the pelt sent home. Mr Oldfield Thomas carefully compared this skin with specimens of the true zebra. He found differences which enabled him to declare the Mossamedes zebra a new species, or sub-species, which accordingly was named, in honour of its discoverer, *Equus penricei.* Mr Penrice had already known the gratification of having his name coupled with a species new to science, the very handsome waterbuck, *Colons penriceiy* first brought to light by him in Angola. Mr Oldfield Thomas, in a paper contributed to *The Annals*

and Magazine of Natural History, November 1900, based the distinctiveness of the new mountain zebra, which is manifestly very closely allied to the true zebra of Cape Colony, chiefly upon the following grounds. The light ground colour is not white as in *Equus zebra,* but buff or creamy dun as in *Equus grevyi,* while the dark bands are glossy brownish black. These distinctions are, it seems to me, refuted by Mr W. L. Sclater's observations, after close examination of the Cape Colony zebras from Cradock. But in other material differences in the striping Mr Thomas appears to me to have made good his point of distinction. He wrote :

> Striping throughout modified from that of *Equus zebra* by the broadening of the light and the narrowing of the dark bands, the light bands being everywhere (with the exception of those on the sides of the back) as broad as or broader than the dark ones, the latter being far the broader on all parts of the allied species. This difference is most noticeable along the back, where, instead of dark stripes about *ii* inches wide, alternating with white ones of $ inch, both light and dark are equally about i inch wide. Similarly on the face all the fine white stripes are broader than the dark ones, which ktter are, as usual, reddish instead of black.

In this matter of striping there are distinct differences between Penrice's and the true zebra: the closeness and evenness of the markings give, as Mr Thomas pointed out, a superficial resemblance to Gravy's zebra, and I think there can be no doubt that the Mossamedes specimen is to be looked upon as at all events a distinctly new sub-species or species of the mountain zebra. That the animal possesses " the deeper and more essential characters of *Equus zebra,* such as the forward slope of the median dorsal hairs, the presence of a' gridiron ' pattern on the rump, etc.," Mr Oldfield Thomas was himself the first to admit. Penrice's zebra is, then, to be regarded as a very interesting local

species or sub-species of the true or mountain zebra, having characteristic distinctions in the closeness and narrowness of its markings.

Mr Penrice has given me some interesting details of the country in which this zebra has its habitat. First are found barren, sandy plains by the sea. Next comes broken, grassy country, littered with *kopjes* and disintegrating boulders, and behind that again mountainous country, fairly bushed. This country rises from sea-level to an altitude of 2325 feet. The maritime plains afford herbage and pasture only during the rainy season. At this time some of the new zebras are found grazing, with springboks and other game, close to the littoral, and a specimen was shot between Mossamedes and Port Alexander (a harbour lying a little south of Mossamedes) within two miles of the sea. The eastern limit of these animals seems to be about a hundred and fifty miles inland, and they are not found beyond the long range of the Chella Mountains, running north and south. The usual habitat of Penrice's zebra seems, curiously enough, not to be on the rugged heights of the Chella, but in the broken kopje-strewn, grassy country between that range and the sea. In this respect their habits are widely different from those of the zebras of Cape Colony, which, during the last hundred years at all events, have been found only on the wildest, most rugged and inaccessible mountains. It is possible that persecution may, however, account for this fact, and that the Mossamedes zebras will hereafter, when they have been more shot at, betake themselves to safer retreats among the higher mountain ranges.

Mr Penrice first saw these zebras on the Coroca River, a little to the east of Port Alexander. In all he shot six specimens, but saved only one skin, now at South Kensington. He found them in the same veldt

with springbok, there seen in thousands, gemsbok, and BurchelPs zebras, now often referred to as bonte-quaggas. They never mingled with the Burcheirs, which were seen in large numbers, but ran apart in small troops of from eight to ten individuals; they drank a little before sundown, the water there being very brackish, undrinkable by human beings. It is a singular fact that in this country the springboks were often found ranging the hills. In South Africa these animals are never seen away from the plains. In the nature of their habitat thus observed by Mr Penrice the new zebras seem nearer to the Grevy zebra of East Africa than to the true mountain-abiding zebra of Cape Colony.

Crawshay's zebra *(Equus crawshayi),* now called the northern mountain zebra, a fine sturdy, short-legged beast, striped right down to the hoofs, with black and white markings and black pasterns, has been recorded from the north of Northern Rhodesia, the region west of Lake Nyasa, from the Beira country, Portuguese East Africa, near the Kafue River, and in the country between Lakes Mweru and Bangweolo. It seems to be a good species or sub-species. It is found in hilly country, and keeps apart from the BurchelPs zebra, frequenting the neighbouring plains.

My friend Captain Gilbert Blaine, M.C., a distinguished naturalist who has pursued big game in many parts of Africa, explored Angola with the late Mr P. Vanderbyl in 1918, and devoted much attention to the mountain zebras there. His evidences are to be found in a paper contributed to *The Proceedings of the Zoological Society* in June 1922, from which I quote the following extracts. He comes to the conclusion that Hartmann's and Penrice's zebras are sub-species of the true mountain zebra.

MOUNTAIN ZEBRAS

EQUUS HARTMANNÆ AND EQUUS PENRICEI

Most characteristic of this land of stones is this big mountain zebra, a fair cousin of the true zebra of the Cape, now almost extinct. Originally described by Matschie from Huanib and Uniab on the coast north of Walfisch Bay, and later by Thomas from a specimen presented by Mr G. W. Penrice from the Moninho River north-east of Mossamedes, there can be little doubt that the two are one and the same animal. My specimens were collected near the coast at Elephant Bay, a hundred miles north of Mossamedes, and correspond accurately with Matschie's original description.

Habitat.—Trie home of this zebra appears to be in the coastal belt of South-west Africa where the country is rocky and precipitous. I have seen the spoor on the wet sand of the seashore at low tide, and have often watched the animals grazing on the low flats and on the plateau-like tops of the adjacent cliffs, within a mile of the sea. According to Mr Tyler Thompson's observations, with which my own coincide, they do not penetrate farther than thirty miles inland, and are strictly confined to the waterless desert region.

Description.—This zebra is a massively built animal, considerably larger than the bonte-quagga (BurchelFs zebra) and approximating to a Grevy zebra in size. One old stallion I shot resembled a cart-horse, with deep pits above the eyes, Roman nose, and pendulous lip. The ears are large. There is in both sexes a dewlap three inches deep and commencing at about the same distance from the throttle.[1] The loose skin of the dewlap is much thickened towards its apex, the whole of the skin of the neck increasing in thickness from above downwards. The end of the dewlap contains an indurated ball of flesh, about the size of a large walnut, lodged in fatty tissue which is adhesive to the skin. The neck is short and deep, the withers low, and the back level and rather long. The limbs are massive, with big bony knees and hocks and big cannon-bones.

In action this zebra moves more freely than the bonte-quagga, whose paces are short and lumbering. When suddenly startled he gallops off with head carried high and nearly horizontal and neck arched backwards, but soon settles down to a slinging trot. At this pace the knees and hocks are well flexed. A herd in retreat always makes

[1] This dewlap is a characteristic of the mountain zebras.

for the hills, up which they clamber with marvellous ease and surety over the roughest, stoniest ground.

The hills of this country are traced all over by their paths, so worn as to resemble native foot-tracks. It is only possible to get over some parts of the country by using the zebra paths, and the main footpath along the coast between Dombe Grande and Mossamedes is composed of their joined-up tracks. These zebras do not run in large herds, eight being an average number in a herd. They graze in the mornings and afternoons on the tufted grass that grows on the plains and on the lower slopes of the hills, sheltering from the sun during the heat of the day under thorn-bushes, where they doze away the midday hours. They are not very watchful, nor does there appear to be a sentry in a herd; but when alarmed they make *off* at once, and, unlike the bonte-quagga, do not stop to look back until they have gone a long distance. They then retire up one of their numerous paths in single file, and then disappear over the sky-line into another part of the country. During the night they make their way towards the coast to drink at one of the rock-pools of brackish water in the lower reaches of some *Jamba*.[1]

Mr Tyler Thompson has described to me how, when first he went to Elephant Bay, the zebras used nightly to drink at the freshwater pool under the cliff. Lea by an old stallion, the herd would come down at a gallop and halt just short of the water on the plain, while he would continue his career up the side of the cliff to take his stand upon some point of vantage overlooking the water. Having satisfied himself that no danger was present, he would signal ' all clear' with a low neigh, when the herd would go down to the water. While they were drinking the leader would remain at his post, and descend to drink himself when they had all retired. No doubt this precaution was necessary, as lions had often been known to visit the bay at night. It is curious that most of the fresh water in this country is found at or near sea-level, and water in the *dambas*, where it approaches the surface, may be fresh on one side and brackish on the other.

During the season of light rains, when I was hunting in these parts, herds of the local race of bonte-quagga *(Equus quagga antiquorutri)* (Burchell's zebra) came down from the interior for the fine grass, and were often seen on the same plain with herds of *Equus zebra hartmanna*, but

[1] *Laagte*, or valley.

never associating together. The latter do not go about in large herds, from six to twelve being the usual number, though as many as twenty have been seen together. . , . Old stallions are often solitary.

Even at a distance the two species appear quite different; for whereas the bonte-quagga is a conspicuous and by no means harmonious object, looking black or smoky grey against the prevailing tone of the country, this zebra never appears dark in any position in relation to the light, but always either white, pale grey, or reddish-sand colour. When standing against a background of rocks, of which the prevailing tones are various shades of warm grey, the outline melts away and the whole animal looks transparent, the stripes dissolving into pale shadows.

The call of this zebra is a low, snuffling neigh or whinny, quite unlike the oft-repeated hysterical *bweha-bmha* of bonte-quagga. It also makes a loud squeal.

The flesh is fine-grained, with white fat and sinews, and by no means bad eating, with a slightly sweet taste. That of the bonte-quagga is coarse, rank, and unpalatable, in colour dark red, with yellow fat and sinews.

Captain Elaine gives the height at shoulder, measured in two adult stallions, as from 52 to 54^ inches. This is not up to the standard of Grevy's zebra.

It is more than possible that mountain zebras may yet be found in other parts of Africa. Livingstone, on his first great journey, saw a mountain zebra in flat country near Manenko, on the east bank of the Leeba River, between the 13th and i4th parallels of south latitude and 23rd and 24th degrees longitude, almost due east of Benguella. (Livingstone was an accurate observer of natural history, and is scarcely likely to have been mistaken in this instance.) I have never seen any reference by naturalists to this fact, which is noted in the great explorer's *Missionary Travels in South Africa?'*

In 1928, at the galleries of Messrs A. Ackermann and Son, art dealers, of New Bond Street, London, I came across an oil painting of the true or mountain

[1] Pp. 270,271.

zebra, by the famous animal artist George Stubbs, R.A. (i72z-i8o6). Having personal knowledge of this splendid zebra, which, as I have said, I found years ago in the mountain regions of Cape Colony, I was at once struck not only by the beauty of the picture but by its remarkable truth. Further research brought to light the fact that the zebra portrayed was once the property of Frederick, Prince of Wales, father of George III; that it had been procured from Cape Colony ; and that George Stubbs painted the animal at Kew in or about 1755. This unique picture gives the finest impression of the true mountain zebra that I have ever seen.

VI

LEOPARDS AND CHEETAHS

THE LEOPARD

THE leopard, in good coat, which it generally is, makes, beyond doubt, one of the handsomest beasts to be found in all Africa. The fur is yellowish in hue, white underneath, with dark brown or black ' rosettes.' Compared with the long-legged cheetah, the leopard is short on the leg, with extraordinary muscular development. Good specimens will measure 7 feet in length; the record at the hour of writing is shared by one from East Africa and one from Kenya. They reached 8 feet n inches—both before skinning. The maximum recorded weight is 140 pounds. Mr F. Vaughan Kirby, whose experience is very complete, has written of this animal as follows :

> Leopards are distributed throughout the greater part of Africa wherever the country is suitable to their habits; rough hill country, intersected by deep *kloofs*, grassy plains, thin forest, or thickly matted jungle, or river banks ; in all such places, if there is sufficient smallgame to provide them with food, leopards may be found. They are perhaps more strictly nocturnal in their habits than lions, seldom leaving their lairs before it is quite dark, and returning before dawn.* Occasionally, however, they may be seen sunning themselves high up on a rocky *kopje* or on some mountain spur. Their lairs are often made at a considerable distance from water; and, as they do not seem to evince partiality for any particular surroundings, they turn up at times and in places where least expected. When disturbed, they creep away so stealthily that it is difficult to get a shot at them; and they are far more silent than lions. Occasionally they utter low, moaning grunts, but their ordinary note, repeated

three or four times in the same key, is extremely harsh. Although leopards, like lions, are quite content to eat carrion sometimes, tney have undoubtedly a greater craving for warm blood. In hill country bushbuck, duikers, monkeys, hyraxes [rock rabbits], etc., form their principal food ; but in the low country larger animals are overpowered. . . . 'After killing, leopards drag their prey, if possible, to the nearest thicket, where, opening it at the flank, they disembowel it as neatly as would a lion. Leopards never carry a carcass, but seize it by the neck and drag it, exactly as does a lion.

Colonel H. G. C. Swayne, who has shot a great deal in Somaliland and other regions of North-east Africa, writes thus of the leopard of those countries :

The skins are of exquisite softness of coat, the height of the Somali plateaux, often from 5000 to 6000 feet, accounting perhaps for their great beauty. The best of all, in which the spots are so large and so closely planted as to give the centre of the back almost a black appearance, are obtained from the highlands of Abyssinia, the main system from which spring the plateaux of Somaliland. These very handsome dark leopard skins are used in thousands by the Abyssinian soldiers as cloaks.[1]

Probably Mussolini and his Italian soldiery have made further acquaintance with these Abyssinian leopard skins.

Personally I prefer the rich yellow skins of other parts of Africa, well ornamented with spots or ' rosettes,' to these very dark skins of the leopards of Abyssinia.

'The leopard is an extraordinarily daring beast, and is probably fiercer, in fact, than his big cousin the lion.' If you wound a lion he will, as often as not, try and make his escape. Not so the leopard ; if you wound him he will certainly try and kill you. [y]Mr Cherry Kearton, who has had a very wide experience of leopards, as well as lions, writes thus of these formidable carnivora :

I regard him [the leopard] as one of the most dangerous creatures in Central Africa. He is above all things a killer.

[1] *Seventeen Trips through Somaliland.*

> Not only will he hunt for his dinner and attack his enemies, bijt at times he will kill for the mere lust of killing.
>
> If I had to choose between facing a lion and facing a leopard I should unhesitatingly choose the lion .Ifor while of two hundred lions one might be a man-eater, there is a far larger proportion of leopards that are likely to kill a human being, and no one can say that a leopard will not kill on sight anything that attracts his attention as a possible prey, whether it be dog, pig, a guinea-fowl, a woman, a child. . . . The leopardis bold and cunning, and he will go long distances hunting for his prey. I know of one instance where a leopard (as his footprints showed) visited three estates night after night, taking from each a dog, a turkey, or a fowl, although to do so he had to cover twenty miles between the first estate and the last.

Mr Kearton speaks also of a leopard which killed twenty-two children from a native village before being himself slain by a friend of the writer. In the final encounter this leopard killed no fewer than ten dogs out of a pack of twelve. Truly a formidable beast!

Many years ago, in my early experiences, I was staying with friends who were living on a mountain farm of fifteen thousand acres in the Witteberg, an offshoot, as I have said, of the great Winterhoek mountains. Here, running up to the Cockscombe (8000 feet), and watered by the Gamtoos and Sunday Rivers, lies some of the rudest and most spectacular scenery to be found in the Old Colony, as the Cape is often called. Tall mountains shut in the deep and gloomy *kloofs* and valleys, through which flow the affluents of the Gamtoos and Sunday Rivers. The wild flowers here, as elsewhere in Cape Colony, are amazing in their beauty. Wild pelargoniums, reaching to one's breast and shoulders, are everywhere abundant, and irids of many species clothe the soil. Gladioli, now so favourite a flower in English gardens, are extraordinarily abundant. In other situations wild and most beautiful heaths shine in all their beauty, and legions of

other lovely flowers flourish in this picturesque if wild and desolate region.

The friends with whom I was staying had bought the place from a Dutch farmer not long before. This farmer bred horses and reared goats, among which many of the beautiful Angoras were conspicuous by their spotless and flowing coats. So harassed had he been by the attacks of leopards, which were pretty numerous in that region, and extraordinarily daring, that he had gladly sold his holding to my friends. During his last season he had been robbed by leopards of eight young foals, as well as various goats, a dog or two, and other stock.

My friends little imagined that leopards could prove such formidable opponents. They believed that, with the aid of their rifles and of the neighbouring farmers, who attacked leopards chiefly with poisoned meat, they would ere long free themselves from these ferocious enemies. They soon found out their mistake. Just before I reached Naroekas Poort, the name of their farm, a small *commando* of themselves and some neighbouring Dutch farmers attacked some leopards which had their haunt in a deep *kloof* a mile away from the farmstead. By evil or good luck they found a pair of the leopards at home, and one of them, the male, was severely wounded by the youngest Boer of the party, a youth of seventeen. This youth was instantly attacked by the leopard, which sprang at his throat, threw him to the ground, and severely wounded him^ Not only was the poor fellow's throat badly mauled, but the leopard, with its muscular hind-legs, had kicked out part of his stomach. The beast was finally killed by one of the party, but the young Boer was mortally wounded, and died of his injuries within twenty-four hours.

After this sad disaster the Boers of that region

finished for a time the task of attacking leopards in the open, but bethought them of the Cape Dutchman's habit of poisoning dangerous carnivora with strychnine pills, inserted in a good-sized piece of flesh, which was generally laid near the beast's usual habitat. Even to-day leopards are fairly abundant in many of the wilder parts of the Cape country, and poisoning with strychnine is still the favourite method of destroying these and other animals. There are clubs, formed in various parts of the country, for thus getting rid of dangerous carnivora, the Loots Kloof Poisoning Club, in the Eastern and Midland parts of the Old Colony, being an instance. This method is not a very glorious one, but leopards are shy and suspicious beasts, and are very difficult of approach in these wilder parts of the country. Their weird night cry is one that hangs often in the memory when early days at the Cape are recalled.

Sometimes the leopard, after it has killed its victim—a buck, for instance, or a goat—has the trick of dragging the carcass to a tree where its habitat is situated, and of securing it in a fork among the branches, until such time as the flesh is in the animal's opinion fit to eat. These "leopards' larders," as they are often called, may frequently be detected by the neighbouring farmer, from the scent of decaying meat, which may also be winded at some distance away by the hunter in search of a leopard. There was one such larder and sleeping-place (usually a cave in the rocks) about a mile away from the farmstead where we lived, and on several occasions I have, with one of my friends, taken my rifle up to it. I well remember my first cautious approach to that lair, in company with one of my two friends, and how we climbed up to the larder tree. We approached the place, one from each side, as quietly as possible, but the leopard was on the look-out, and,

giving vent to a throaty growl, descended from the tree in which it had been lying, more like an avalanche of yellow, spotted fur than anything else I can compare it with, and it was away down in the bush-clad valley before either of us could get in a fair shot. On examining the larder, an unpleasant task by reason of the decaying flesh, we found the remains of a duiker, a small antelope, which had been laid up in a cleft in the tree. We had the good fortune to kill this leopard with our rifles at a later date.

Leopards are, in addition to their bloodthirsty ways, of a curious and inquiring habit of mind. When my friends first settled in Naroekas Poort they built themselves a fairly comfortable timber house. One morning, as he was upstairs at his labours, the builder's workman happened to look down into the hall, and was amazed and alarmed to see a fine leopard gazing about it, examining the still empty building. Not a soul, apparently, was about. The man crept softly to an empty window and yelled at the top of his voice. Fortunately for him the leopard at once took alarm and galloped off as fast as its muscular limbs could carry it. The builder's foreman got a nasty shock, and made a bargain with my friends that for the future, until his work was over, he should always be accompanied by a man armed with a loaded rifle.

Nairobi too in its early days was by no means a perfectly safe place, except in the very heart of the town. A female relative of my own, who was staying there with friends, went upstairs to her bedroom one afternoon and espied under her bed a full-grown leopard. She was a plucky girl, and, slipping quietly out of the room and shutting the door carefully, ran downstairs and gave the alarm. The native police were called in, and, after a tense struggle, the leopard was killed with rifle shots.

More than forty years ago, when in Bechuanaland, I

came across a man known as Namaqua Brown, who had for a long period led a most adventurous career in many parts of South Africa. Some years before, during a vast flood of the Orange River, this man, with a native servant, managed, after a dangerous struggle, to get a foothold on the trunk of a large tree, and the two were being carried with a mass of *debris* towards the mouth of the mighty river. Before they had fairly settled themselves on the tree Namaqua Brown's servant pointed out to his master that a leopard had also gained a foothold—on the other end of the tree-trunk. The beast lay there in perfect quietude, and manifested no anxiety to shift its sanctuary and attack the two human beings, who, on their part, had no intention of using their rifles, except as a last resort. The leopard was evidently tamed by the situation, and all day lay at its post, watching intently for any sign of hostility on the part of its two fellow-passengers.

As Namaqua Brown remarked to me, in describing this perilous state of affairs, " I had seen more than one bad ' mop-up' after a row with leopards, and so I and my man just kept our dangerous stations and watched the brute intently during a long day. Towards late afternoon our tree was swept into a piece of shallow water and grounded. Our friend the leopard leaped quickly overboard, scampered through the shallow water, and galloped straight away in the direction of a chain of mountains bordering the river." Namaqua Brown and his man thereupon went ashore in their turn, and made for the mouth of the river in a westerly direction. They had only food for a couple of days, and had some trouble in finding a Boer outspan, and so, emerging into comparative safety, were thankful enough to escape a dangerous struggle with their fellow-passenger on the tree-trunk.

Leopards, by the way, are excellent swimmers, and before finding sanctuary the beast had probably had some ado to escape the flood.

THE CHEETAH

The cheetah, or, as it is sometimes styled, the hunting leopard *(Acinonyx jubatus), lenau* of the Bechuanas, *ingululi* of the Zulus, *ol-dulugo* of the Masai, is a very interesting cousin of the true leopard. The Dutch in South Africa have always been rather curious miscallers of the various animals of their country. The giraffe, for instance, is always known to them as *kameel* (' camel') and the true leopard as *tijger* (' tiger'). The cheetah they miscall *luipaard (' leopard '). ' Cheetah'* is an Indian name, and it is worthy of note that this animal is found in Hindustan, Ceylon, and South-west Asia, as well as in many parts of Africa. In India, where cheetahs have been employed for ages by native potentates to run down blackbuck and other antelopes and gazelles, these animals seem to be scarcer than they used to be. Young cheetahs are at the present time being captured in Africa and exported to India for use by native sportsmen. It may be hoped that this traffic will not be overdone, as the African carnivora cannot afford to be ' over-drawn' in this way. The great distinction between the leopard and the cheetah lies in this : that while the claws of the leopard are retractile, the claws of the cheetah are only partially so, and the tips of the claws are always exposed. Their armature is, in fact, much less dangerous to its prey than are the knife-like claws of the true leopard. ^

The cheetah, which measures about 7 feet in good specimens—7 feet 9 inches is the record—stands from 30 to 36 inches at the shoulder. Its long and rather

slim legs, dog-like feet, and general slendemess of body mark it out at once as a much less formidable beast than the strong and extraordinarily muscular leopard. The general colour is ochreous, thickly marked with black spots. The upper parts of the body are more inclined to be rufous of hue, and the fur grows thickly on the nape and shoulders, forming a kind of mane. The head is-round and blunt, the ears are short and rounded. The tail is long—2i feet—and thick of fur. The paces of this animal are extraordinarily swift, and it will run down the smaller antelopes with wonderful ease. Sir Arnold Hodson, who has had great experience of African fauna, wrote to *The Field m* May 1909 as follows :

> Last year in October, at a place not far from Sebanene (Bechuanaland), I and some natives ran down a cheetah on foot within three miles. We had only a couple of dogs with us, one a half-bred greyhound and the other a small terrier. After about two and a half miles we came up to the cheetah, which was lying down, and the dogs were barking around him. He showed no fight and offered no resistance. Of course, if it had not been for the dogs we should never have caught him; but, still, one would suppose that an animal of this kind would not allow itself to the caught by a half-bred greyhound and a small terrier within three miles. I sent the skin to the Transvaal Museum, Pretoria, and the Director replied that it was a very fine specimen.

The Editor of *The Field*, commenting on this letter, wrote as follows : " Most writers who have had personal experience of the habits of the cheetah agree in stating that it is possessed of great speed for a short distance, but does not last long." Mr Vaughan Kirby saw a couple of cheetahs give a kudu seventy yards' start, which was soon increased to 120 yards; and although the antelope was going at his best pace he was eventually overtaken and pulled down. These are, surely, very singular records 1

My own experience of the pace of the cheetah and its lack of staying power is exactly the same. When hunting with the Bechuanas and their dogs, and some dogs of my own, I have seen cheetahs run down their prey in wonderfully short time, provided that not too long a start was given. Hartebeest and wildebeest are extraordinarily fleet, as well as possessed of immense staying power, and will, unless handicapped too greatly by the short start given, get away from a cheetah pretty easily. The kudu is not so good a runner as these antelopes, though he may outstay even a brace of cheetahs. Against the cheetah a rifle is usually required, but smaller game, such even as the handsome African lynx, or *rooi-kat,* the Bechuanas killed with blows of their heavy clubs or knobkerries, assisted occasionally by spears.

What I like most about the handsome cheetah is its general friendliness to man. Mr Alwin Haagner, formerly Director of the National Zoological Gardens of South Africa, has written of it as follows :

> The Zoo has now a lovely example, captured in the Waterberg district of the Transvaal and presented by Mr and Mrs Bateman. " Billy," as he was, named by his former mistress, is—like most cheetahs—of a friendly and amiable disposition, and answers fairly readily to his name,' purring loudly when called upon and spoken to, and usually coming up to the bars of his cage for a caress. He is so tame that he can be handled while he is at his meal, which is a very unfeline trait.

I have had experience of young cheetahs, and can add my testimony to Mr Haagner's that these animals are quite extraordinarily friendly to mankind. I would never shoot another, except to procure a museum specimen; such is my admiration for the kindly spirit towards man of the good-tempered and friendly cheetah.

This animal is to be found in the wild state widely

in Africa. Its food consists largely of the smaller antelopes, baboons, monkeys, and game birds, including guinea-fowl. They hunt usually in pairs, and can run down even so magnificent a mover as the springbok. Cheetahs are frequenters of wide, open country, and the spreading, well-wooded plains of Bechuanaland suit them admirably.

I conclude this chapter with a short account of leopard-hunting in Africa by a pack of English hounds. I base my account on a description given in *Horse and Hound.* The hounds in question are the Delta fox-hounds, which carry on operations in Southern Rhodesia, and have a very gallant reputation. On August 6, 1934, a sporting neighbour rang up the Master of the pack to say that a herd boy of his had witnessed a big leopard killing a calf. Very early on the following morning hounds were taken out in three lorries. They were at the kill by 6 A.M., and it was manifest that the leopard had visited the place during the night and devoured more of the kill. Hounds soon picked up a line and hunted it up to a big rocky hill, known as the " Leopard Kopje." Hunting steadily through a longish range of rocky hills, the pack covered some five miles, with occasional bursts of music; they came presently up with the leopard at some caves, where it was viewed for the first time. Here the quarry made a bolt for it, but the Master, making a successful cast, hit off the line again. The ground was so precipitous hereabouts that it was impossible to follow the hunt on horseback; the Master, whips, and some of the field, therefore, were to be seen following on foot. The hounds, hunting with wonderful persistence and beautiful music along the range of *kopjes,* came finally up with their leopard, baying it fiercely, while the leopard, in return, roared lustily at its

pursuers. A native boy, posted in a tree, presently viewed the quarry, which plunged into thick grass cover, as much as ten feet high in places. The huntsman, on foot, and a native whipper-in walked right on to the enraged quarry, which jumped up with a roar, two paces ahead of them, and again bolted for fresh cover.

The small field out included four ladies, a very plucky contingent, who never miss a chance of being out with this pack. Hounds now plunged into cover again, drove the leopard briskly before them, hunted it out of its stronghold, and chased it in full cry back to the rocks, where it took refuge on the top of the highest boulder, and was secured by a man with a rifle. This finish may not seem quite *en regie* when describing the actual kill; but in the hunting of so dangerous a beast as the African leopard the final scene would otherwise inevitably result in a very wasteful slaughter of hounds, and a rifle has therefore to be brought into use.

This leopard, an old male, measured 7 feet 8 inches and had a splendid coat. It had been responsible for the death of many calves during the previous few months. The beast had stood before the pack during this hunt for more than three hours, during which time they had covered not less than ten miles. This very sporting hunt brings the total of leopard and cheetah killed with the aid of these hounds to fifty-five, which is probably a world record for a pack of foxhounds. The English foxhound is certainly a marvellously courageous beast to tackle such a formidable and fierce brute as a leopard. French hunting men are well aware of the high courage of these hounds; and the leading sportsmen who maintain packs for hunting wild boar in the woodlands of France—*vautraits'* as they are called—make great use of the English foxhound in a chase which needs unflinching pluck and great determination.

The Delta hounds, hunting in Southern Rhodesia, continue to show exceptional sport. On August n, 1935, they ran into and killed a big warthog, after a fast hunt of four miles. In this and the four previous hunts they killed also the leopard above-mentioned, two boars, and a jackal; while another jackal was run to ground.

VII

THE BLESBOK

ONCE to be ranked among the commonest antelopes in South Africa, the blesbok has now become one of the scarcest; indeed, if we except the bontebok and the white-tailed gnu, no other animal in the countries south of the Limpopo River was so rapidly approaching extinction. Englishmen have, unfortunately, in many cases almost as much to answer for in this matter of the destruction of big game as Boers and natives. Their extreme love of the chase and adventure has led them far afield, and innumerable wild animals have undoubtedly fallen to British sportsmen; but the English in South Africa have never been, like the Boers, mere skin-hunters, slaughtering thousands of wild game for the paltry value of the hides. In the case of the blesbok, whose geographical range has always been restricted within certain well-defined limits, principally occupied by the Dutch colonists, it is indisputable that the Boers, and no others, have been mainly responsible for the disappearance of this, one of the most singular, handsome, and interesting of the many forms of South African antelopean life.

Things have, however, in post-War years taken a turn for the better; the Boers are ensuring the protection of blesbok on their farms, and it has been recently stated, on good authority, that these fine antelopes have wonderfully recovered their ground, and now number on farms in the Orange Free State as many as fifty thousand head. This is wonderfully good news, which a generation ago

could never have been reckoned as within the bounds of possibility.

The blesbok *(Damaliscus albifrons\ ndni* of the Bechuana and Basuto races, *ilinga* of the Kaffirs, stands when adult about 3 feet 6 inches at the withers—slightly less than its near congener, the bontebok—and measures about 6 feet, or a trifle over, in extreme length. The body is strongly formed; the withers, as in the bontebok and hartebeest, are elevated and somewhat humped; the head is long and narrow, surmounted by strong horns, which are divergent, slightly lyrate, strongly annulated, and about 18 inches in extreme length. The largest pair of horns noted in Mr Rowland Ward's *Records of Big Game* measure i8f inches over the curve, and only 10 inches between the tips. These are in the possession of Mr H. G. Supple.

The general colouring of the antelope is, in living specimens, very remarkable, but the coat fades a great deal after death. The sides of the head and neck are deep purplish brown, the body colouring is brown, painted upon the upper parts with a beautiful bloom or glaze of violet or purple, which is one of the most remarkable things about this animal, distinguishing it at once from almost all other antelopes. (The bontebok and the sassaby are distinguished by much the same peculiarity of colour bloom, if we may call it by such a name.) The croup and chest are rufous-coloured, the belly and inner parts of the legs pure white. The tail is longish—16 or 17 inches—reaching just below the hocks, and is composed of brown and white hairs.

The blesbok derives its name, of course, from its snow-white ' blaze ' face. Our word ' blaze' comes to us from the Saxon *blase,* which is almost exactly the same in pronunciation and meaning as the Dutch word *bles,*from which the Cape colonists first christened this elegant and striking antelope. The casual observer

would notice very little difference between the bontebok and the blesbok. Both have the same notable blaze faces, and they are, as I have suggested, very similar in body colouring. A careful comparison, however, establishes perfectly clear distinctions between these nearly allied species. The bontebok has a clean blaze face, white from the base of the horns to the muzzle. In the blesbok the chocolate-brown hair of the neck and back of the head unites, or all but unites, above the eyes, leaving a white star just between the base of the horns ; the remainder of the face downward is pure white, as in the bontebok. Again, the bontebok has white patches upon the rump, which the blesbok lacks, and is darker upon the sides and flanks.

Until some time past the beginning of this century the species of these two antelopes were confused; blesboks were often called bonteboks, and *vice versa.* Sparrman, the Swedish naturalist, when travelling at the Cape in 1775, made mention of the bonteboks of Swellendam, and stated that a farmer who had travelled to the north of the colony had encountered bonteboks, which he described as " somewhat different" from those of Swellendam. These were no doubt blesboks. Even Barrow, a very careful observer, seems to have classed them both as bonteboks. He had seen bonteboks in Swellendam—where they still exist—in 1796. Passing a little later into the country north of the then limits of the colony, he came to what are still known as the Bontebok Flats, just south of the Orange River, near the Sea-cow River, in what is now known as the Colesberg division of Cape Colony. He describes the bonteboks there encountered in large troops as considerably smaller than those of Swellendam. There can be no doubt that he saw in reality blesboks, which he mistook for bonteboks. The earlier Boers seem

to have called both these animals indiscriminately blesboks and bonteboks. Even that good naturalist Burchell appears to have confused the species, and, although he actually christened the blesbok by its present scientific name, *albifrons,* he seems to have included in that description the bontebok also. Burchell, who travelled from the Cape to South Bechuanaland, named the blesbok *Antilope albifrons,* which has been altered or improved by succeeding scientists to *Gazella albifrons, Alcelaphus albifronSy Damalis albifrons,* and *Eubalis albifrons.*

The true country of the blesbok lay, as I have stated, within very clearly defined limits. The antelope never seems to have ranged beyond the Southern and Western Transvaal, the Orange Free State, the easterly portion of Bechuanaland (south of the Molopo River), part of Griqualand West, and a portion of the northern plains of Cape Colony. Its range to the south never seems, since South Africa became known to Europeans, to have extended to the Great Karroo, nor does the antelope appear to have been met with in Cape Colony much to the west of the present division of Colesberg. The habitat is curiously restricted, but the capricious geographical distribution of animals, especially of South African animals, is so well known that this fact does not, and need not, appear very surprising. Undoubtedly the favourite home of the blesbok was in the good days to be found upon the rolling plains of the Orange Free State. Here, when Cornwallis Harris passed through the country in 1837, and for many years later, these antelopes roamed and pastured in immense herds. Harris seems to have first encountered them in vast numbers near the stream then called Nama Hari, afterwards well known as the Valsch River, a tributary of the Vaal. Gordon Gumming, who followed Cornwallis Harris a few years later, thus writes of them :

> Throughout the greater portion of the year they are very wary and difficult of approach, but more especially when the does have young ones; at that season, when a herd is disturbed and takes away up the wind, every other herd in view follows it, and the akrm extending for miles and miles down the wind, to endless herds beyond the vision of the hunter, a continued stream of blesboks may often be seen scouring up-wind for upwards of an hour, and covering the landscape as far as the eye can see.

Blesbok were invariably to be found, like the springbok, whose legions their own numbers rivalled, upon flat and open country, where their watchful eyes could observe and scan attentively every movement of their enemies. Upon the same ground were usually to be found, besides springbok, black wildebeest (white-tailed gnu), bontebok, quagga, BurcheH's zebra, ostriches, and sometimes hartebeest. Near the Vet River, another tributary of the Vaal, about the centre of the Orange Free State, Cornwallis Harris encountered most of these kinds of game in extraordinary plenty. He writes as follows :

> We passed over a low tract about eight miles in extent, strongly impregnated with salt, and abounding (it was then the wet season) in lakes and pools. The number of wild animals congregated on this swampy flat almost realized fable, the roads made by their incessant tramp resembling so many well-travelled highways. At every step incredible herds of bonteboks,[1] blesboks, and springboks, with troops of gnus and squadrons of the common or stripeless quagga, were performing their complicated evolutions ; and not unfrequently a Knot of ostriches, decked in their white plumes, played the part of general officer and staff with such strict propriety as still further to remind the spectator of a cavalry review.

Such was the glorious abundance of animal life in those days.

Blesboks always run right in the teeth of the wind,

[1] Cornwallis Harris, like so many others, confused the species, and had within his vision only blesboks.

carrying the head very low—so low that they have been compared to a pack of harriers in full cry. They are, without doubt, among the fleetest and most enduring of all the antelope family. Selous gave the palm in this respect to the sassaby; but, from the accounts of all hunters who have had to do with blesboks, it would seem that, for speed and staying power, the latter would run even the peerless sassaby very hard. Springboks are extremely fleet and active gazelles, and it takes a very first-rate greyhound to run into one, yet it seems to be well ascertained that the greyhound has no chance whatever with the blesbok. The blesbok's gait is, in the slower paces of the animal, like that of the hartebeest, heavy and somewhat laboured. When really excited and well extended, however, the blesbok, like the hartebeest, stretches itself out in a wonderful manner, and reels off mile after mile with swift, machine-like action. When alarmed these antelopes stand in a curiously stiff and constrained attitude, with the head well aloft, the neck erect, the forelegs and hind-legs held rigidly and spread wide apart. Mr J. G. Millais, who spent some little time on a blesbok and black wildebeest farm in the Orange Free State many years ago, has some excellent sketches of these animals in his delightful book *A Breath from the Veldt.* He describes them rightly as among the hardest of all South African game to get near. Until more recently there was no good representative specimen of these antelopes in the Natural History Museum, South Kensington. Selous, however, brought home before his death two first-rate examples shot by himself, which were acquired by the museum authorities. These have been capitally set up, and the student of natural history visiting the galleries has now nothing to complain of in this respect.

The flesh of the blesbok, by the way, is very good eating, although, perhaps, hardly equalling the delicious venison of a well-fed springbok.

Like most of the other plain-frequenting game of South Africa, the blesbok is a very hardy beast. The country in which its range occurs stands usually nearer 4000 feet than 3000 feet in altitude, and during the months of the South African winter season very sharp frosts occur, the thermometer sometimes sinking to ten degrees below freezing-point. After one of these sharp nights the game rise from their frosty couch quite stiff with cold. By nine o'clock the sun's influence is felt, and the air is warm and pleasant once more for man and beast. Whether amid the freezing nights of winter or exposed, always upon open, shadeless plains, to the fierce rays of the African summer sun, the blesbok, like the springbok, the wildebeest, the ostrich, and other tenants of the plains, appears to be perfectly at home.

In the old days, when nature seems to have provided a check upon the too great increase of the innumerable legions of game, the blesbok, in common with other animals frequenting the open country, perished in thousands by the periodical ravages of the contagious pestilence known to the Boers as *brand-sickte*—literally ' burning sickness.' The skins of animals found dead of this disease had somewhat the appearance of having been scorched with fire.

Yet, despite this plague and the occasional assaults of lions and other carnivora, the blesbok, generation after generation, for countless ages, must have wandered and fed and flourished upon the high plains of South Africa. The arrows and spears and pitfalls of Bushmen and Hottentots, Kaffirs and Bechuanas, took some slight tribute from the teeming herds of game, but only slight. In fact, until the emigrant Boers crossed the

Orange Rivet towards 1836, and trekked slowly into the regions now known as the Orange Free State and the Transvaal, the numbers of the blesbok and their fellow-tenants of the plains had suffered no diminution. They flourished in this bracing and magnificent climate in innumerable myriads ; in no other part of the world since it has been known to the human race was there ever to be found so unexampled a display of feral life.

But with the advent of the Boers began the downfall of these vast herds of game. So soon as their pioneers had driven Moselikatse and his Matabele tribesmen north of the Limpopo they settled down upon the land, built themselves dwelling-places and kraals, and proceeded to destroy gradually the game around them. In those days, between 1840 and 1860, few Dutchmen thought of slaughtering their flocks and herds for food. If they wanted meat they rode out into the veldt and killed a buck or two. Meanwhile Englishmen, hunters, traders, and others, pushed their way into the interior, and helped to reduce the redundant plenty of animal life. Cornwallis Harris pioneered the way in 1836; Gordon Gumming, Oswell, Vardon, Baldwin, and many another followed eagerly in his wake. Guns began to appear among the natives, and between Dutch, British, and coloured hunters the work of destruction once started went steadily on. The rate of extermination proceeded comparatively slowly, however, until 1860 or even 1865. It took time to make an impression upon those immense quantities of game. Moreover, the Dutch farmers, in the early days beyond the Orange, had not become the mere butchering skin-hunters of a later period. They shot then merely for food and sport. In 1848, when the Orange Free State country had been partially settled for some eight years, Gordon Gumming found the game still in extraordinary

abundance. He came in March of that year to the Vet River. In his own words :

> I beheld with astonishment and delight one of the most wonderful displays which I had witnessed during my varied sporting career in Southern Africa. On my right and left the plain exhibited one purple mass of graceful blesboks, which extended without a break as far as my eyes could strain ; the depth of their vast legions covered a breadth of about six hundred yards.

This is no exaggeration. I have repeatedly heard similar descriptions of game in the Orange Free State, and that at a much later period, from English and Dutch farmers.

Blesboks continued to be found in diminishing numbers on the Bontebok Flats, in Cape Colony, until about 1855. In the Orange Free State and the Transvaal they lasted much longer. But soon after 1860 the Boers began to find a ready market for all the skins they shot. They set to work steadily at this miserable business, with such results that game on the Transvaal and Free State plains became scarcer in many places than in Cape Colony. Blesbok and bontebok naturally suffered heavily, together with quagga, zebra, wildebeest, springbok, and other game. It is extraordinary, if one considers the businesslike way in which the Dutch went about this fatuous work of slaughter, that the game lasted as long as it did. I well remember, in 1876, in Cape Colony, seeing the wagons from up-country coming down to the coast loaded with the skins of blesbok, wildebeest, and springbok. The traffic through Natal also was immense. London hide brokers will remember, too, how great was the trade in wild skins from South Africa so recently as the late eighties. That trade has now almost ceased, and the bulk of African game hides come from Eastern ports.

The blesbok, then, from constant persecution un-

happily dwindled to a very small remnant—a few herds preserved here and there on farms in the Orange Free State and Transvaal. Thanks, however, to the wonderful revival of which I have written, the tide has completely turned, and in a few years blesbok have been saved, and will probably continue for many years to come to increase yet further.

In South Bechuanaland these antelopes disappeared shortly after the expedition of Sir Charles Warren in 1884-85. Only a few years before they still remained in fair numbers on the great grass plains where Vryburg now stands. In 1882, when the Stellaland freebooters were encamped on that site, and had already christened their collection of tents and wagons Vrijburg, blesboks occasionally galloped at night right through the encampment. I was glad to hear in 1935 that blesboks had once more appeared again in British Bechuanaland, in their old haunts near Vryburg. These animals had undoubtedly filtered through some preserved Transvaal farms adjacent. At the end of 1890 I saw a fair herd of blesbok on one of these farms in the Western Transvaal, and it seemed that the policy of protection was, in this instance at all events, bearing good fruit. It is sincerely to be hoped that these returned exiles—the Bechuanaland blesboks—may be carefully protected and allowed to increase.

In Europe these striking antelopes are not very well known. There are few good stuffed specimens to be seen except in the Rothschild Museum at Tring and at the Natural History Museum, South Kensington. They have been still less known in the living state. At the Regent's Park Gardens, London, some six or eight examples were seen between 1861 and 1880. In 1876 a pair of blesboks were brought to Europe from the Cape on the ship in which I travelled home. They

were on the deck, and I had the greatest pleasure in making the acquaintance of these beautiful antelopes, and established quite a little friendship with them. They were in first-rate condition, and, fed chiefly on hay or clover, throve excellently during the three weeks' voyage. Their wonderfully smooth and glossy coats shone brilliantly; their snow-white blaze faces, legs, and stomachs were always astonishingly clear, and it was remarkable to notice how perfectly clean and sweet the dainty creatures managed to maintain themselves in their padded stalls during the whole of the passage. They appeared to be most mild and good-tempered beasts; probably they had been captured quite young.

If the Dutch farmers now preserving game in the Orange Free State and Transvaal (the scant remnant of these once innumerable hordes) succeed in their attempts, and are even able to increase the numbers of their herds, there may be yet some hope for others of the vanishing fauna of the country. The experiment is one full of interest. Within the next few years we shall know whether this most fleet, fecund, handsome, and characteristic antelope is, under modern South African conditions, to be rescued from the fate of utter extinction, or is doomed, as many predict, to vanish miserably from the face of the earth. I for one believe that we have seen the last of the bad old days in South Africa, and that blesbok, springbok, and other game will be preserved, as they deserve to be, for moderate and occasional sport. Happily the average Dutch farm in South Africa measures, roughly, three or four thousand acres, which is looked upon as a small farm only. There is, it will be seen, plenty of land in South Africa for a considerable scheme of game-preservation.

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VIII

CUCKOOS IN SOUTH AFRICA

WE in Britain are well content with our one cuckoo, whose longed-for and familiar note is the true harbinger of spring. In South Africa our English cuckoo is occasionally to be seen here and there; but this scarcity is well compensated by the various other cuckoos, all of them interesting, some of them among the most beautiful feathered creatures in the world, which appear there during the season of the rains, the advent of which may be usually expected in October or November.

Africa and India are richer in the cuckoo family than any other part of the world. We at home can boast of only one species as a regular visitant. The great spotted cuckoo *(Coccystes glandarius* a bird which is found in various parts of Asia and Africa and reaches Europe, has, it is true, been three or four times reported in Britain, and is therefore admitted to the British list; but it is scarcely to be regarded as a truly British bird.

The common cuckoo *(Cuculus canorus)* has a very wide range, extending as it does to many parts of Europe, Asia, Australia, and Africa. In Africa, south of the Zambezi, it is by no means well known. It has, however, been found in Damaraland, where it was first identified in 1858 by that great naturalist and hunter C. J. Andersson. It has been reported also from Natal, Pondoland (Kaffraria), British Bechuanaland, where I saw it in 1890-91 during the rainy season, and Southern Rhodesia. I do not know that it has ever been noted in Cape Colony. That acute observer the late

Mr E. L. Layard, author of *The Birds of South Africa,* has no record of it; but the fact that it has been identified in Pondoland, a native territory lying between Cape Colony and Natal, inclines one to the belief that this bird must occasionally wander into the Cape regions. It was for long doubted whether the European cuckoo ever utters its familiar note in South Africa, though this fact seems to have been established by Professor Hartman in Nubia. Mr E. B. Howe, of Salisbury, Southern Rhodesia, however, writing in *The Field* on August 10, 1910, reporting the male European cuckoo as occasionally present in that colony, said, " I have heard and seen them two years consecutively east of Darwin, but not south of the Mazoe River." This sentence seems distinctly to imply that the note of this cuckoo is heard occasionally in South Africa. Mr Howe gives the native name also as *kuku,* which further strengthens the impression that the familiar note is known and recognized. We want, however, yet more evidence from South Africa upon this point.

A cuckoo much resembling our common European species is the lineated cuckoo *(Cuculus gularis),* which although not well known in the more southern regions of South Africa has been often identified in the interior. I once shot a specimen in Bechuanaland, mistaking the bird for the English cuckoo, of which I was desirous to identify a specimen. The likeness between the two birds is remarkable; the difference is best established by noting the yellowish marking found on the base of the upper mandible. In length this cuckoo is slightly inferior to the European species.

The solitary cuckoo *(Cuculus solitarius),* much more familiarly known in Cape Colony by its Dutch name, *piet-mijn-vrow>* taken from the bird's well-known call, is found all over the Old Colony during the rainy

season, arriving in November. This species is of about the same size as our European cuckoo, extending in length to izi inches, with a wing measurement of 73-inches and a tail of 6i inches. The upper colouring is greyish black, lighter on the forehead ; the chin is ashy, the breast rufous; the under-parts are tawny white, barred black. The tail feathers are white-spotted and mottled ; the under-tail coverts immaculate. The legs are bright yellow.

The noisy cuckoo *(Cuculus clamosus)* is not familiar in the southern parts of the Cape ; in fact, Layard has no record of one from Cape Colony. Farther up-country, however, it was reported sparingly by C. J. Andersson, from the Okavango River, north-west of Lake Ngami, from Lake Ngami itself, and from Otjimbinque, in Damaraland. I never saw this cuckoo when hunting in Ngamiland, but as I was there during the dry season of South African winter this is not surprising. All the South African cuckoos are lured south by the promise of the rains, which ensures for them a plentiful supply of caterpillars, of which all or nearly all, including the European cuckoo, are inordinately fond. The general colour of the noisy cuckoo is black, glossed with blue ; the feathers of the wings and tail are irregularly barred and spotted with white ; the tail feathers are also tipped with white. This bird measures about a foot in length.

Although, I believe, still unreported in Cape Colony, the noisy cuckoo has been found in Natal, where, however, the conditions are less dry, and therefore more favourable for its existence. Andersson remarks of this species that they are excessively wild and wary, and that he had much trouble in obtaining a specimen. They were invariably perched in high trees, whence they uttered loud cries, disappearing swiftly as the observer approached them. He once saw a collection

of a dozen of them " creating a desperate hubbub." This was at Otjimbinque on December 21, 1858.

I come now to three of the most beautiful cuckoos in the world, the Didric cuckoo, Klaas's cuckoo, and the lovely golden cuckoo. These are all small cuckoos of the most perfect plumage and colouring, and are all found in Cape Colony, as well as in other parts of South Africa.

The Didric cuckoo, also occasionally known as the golden cuckoo *(Chalcites auratus),* derives its name obviously from its wailing and oft-repeated cry, D,'V,"-*didric,* which is often heard during the season of the rains in the vast flat stretches of the Great Karroo, especially among the thorn-groves and other vegetation in the neighbourhood of dry watercourses and river-beds. The upper plumage of this most charming little cuckoo, which measures only 7 to 8 inches in length, is a shining, cupreous green, mottled with white. White stripes are seen down the centre of the head and over each eye. The under-parts are white, curiously barred on the flanks and sides with copperish green. This copperish-green plumage yields wonderful metallic reflections, and in certain lights almost a golden hue, from which this gem-like bird derives its classical name. Found not only on the Karroo, where it is most abundant, the Didric has been identified in other parts of Cape Colony: at Colesberg; in the wooded Knysna district, and farther to the eastward. It has been found also in Little Namaqualand, and the Okavango River and Ngamiland country. I first saw it many years ago on the Karroo, when I was at once attracted by its singularly mournful note and its glorious plumage. The males are very active and pugnacious among themselves and in chase of the females. Nevertheless they keep a very sharp look-out for human intruders, and

are, luckily for themselves, not easily obtained by those in search of their lovely plumage.

Klaas's cuckoo *(Chalcites klaasi* so named by Le Vaillant, the French naturalist, after his favourite Hottentot servant, is another very beautiful bird. This charming little creature is even smaller than the preceding species, usually measuring about 6 inches in length. The hue of the upper plumage is, when held in a certain light, a wonderful shining green, with a faint coppery reflection. The under-parts are pure white, faintly barred on the flanks. There is a white streak over each eye, and the snow-white breast is remarkable for a patch of green upon either side. A spot of the same green colouring is found upon either thigh. The two centre tail feathers are entirely green, the rest white with green bars and a patch of the same colour near the white tips. This delightful bird is still found during the rains in moderate numbers in the wooded portions of Cape Colony, especially in the Knysna and other forest regions in the south of the Colony. It is found occasionally even as far west as the Cape. This lovely species is known to the Cape Dutch as *mietje* and to many people as the emerald cuckoo.

I come now to the golden cuckoo of South Africa *(Cbalcites smaragdineus),* than which it is difficult to imagine or to name a more beautiful instance of bird colouring. The plumage of this perfect little cuckoo, which measures about 8 inches, is perhaps best described in the words of E. L. Layard :

> General colour above, with the neck and breast, shining emerald green, if held between the spectator and the light; if held from the light, a beautiful golden and copper gloss pervades the green; the belly and vent vary in some specimens from white to bright yellow. This colour fades in death; but I have had on the same stick, after a morning's

shooting, specimens exhibiting all the shades from white to yellow; outer tail feathers broadly barred with white ; tail coverts white, barred with green.

This exquisite cuckoo is probably most abundant in the Knysna and Zitzikamma Forest regions, in the south of Cape Colony, and thence to the eastward along the wooded tracts of that colony and the country formerly called Kaffraria. It was identified also by C. J. Andersson in Damaraland during the rainy season. In Cape Colony these perfect cuckoos, especially the males, have suffered a good deal from the assaults of the collectors of plumage birds. The males are very pugnacious, and, perching on the highest branches of trees, deliver their loud whistling call to all and sundry. This note is easily imitated, and the bird, being meanwhile stealthily approached by the gunner, falls a ready victim to its passion of love and defiance. For many years the males of this very beautiful species have thus paid heavy toll for their foolish daring—of course, to the further detriment of their race. Nevertheless they are still to be found in Cape Colony, in the regions I have indicated, during the rainy season.

The great spotted or great crested cuckoo *(Coccystes glandarius* to which I have referred as a very rare English visitant, is scarce in South Africa, but has been reported from Kaffraria and elsewhere. It has been more frequently found in the Damaraland and Lake Ngami regions, where it was frequently identified by Andersson and Chapman. This is a large cuckoo, like our own, and measures 14 inches in length.

Another big cuckoo is the Edolio cuckoo *(Qxylophus edolius),* familiar to Cape Colonists as the *nieujaarsvogel* (New Year's bird), from the date of its appearance. This fine cuckoo, which measures 13 inches, is a metallic greenish black in hue, with a crested head and a broad

white bar across the wings. It is the commonest cuckoo of the **Old** Colony, and is familiar everywhere.

The black-and-white cuckoo *(Oxylophus melanohucus* somewhat less in size than the preceding species, is greenish black above, with white under-parts. It has a white wing bar and white-tipped tail feathers. Le Vaillant mistook this bird for the female of the Edolio cuckoo. It is not so common as that cuckoo in Cape Colony, but is abundant in the Lake Ngami and Damaraland regions, where Andersson believed that it bred, from having seen quite young birds, scarcely able to fly, in the latter region. Andersson further remarked of this bird that it had " the true cuckoo's note."

Le Vaillant's cuckoo *(Oxylophus afer)* is decidedly a scarce bird in South Africa. It has been found near Swellendam, in Cape Colony, on the Limpopo by Wahlberg, and was sparsely reported by Andersson from Damaraland and Ngamiland. Although this cuckoo bears Le Vaillant's name, that enterprising but very unreliable naturalist really procured his specimen from the equatorial regions, leaving his successors to identify the bird in South Africa. This species measures a foot in length. Its coloration is greenish black, the head crested; the under-parts are dirty white. The wing feathers are brownish; the throat and neck have faint dark stripings, and the outer tail feathers are tipped with white.

These details will, I believe, be of interest to the many people visiting South Africa who are interested in bird-life. The subject of cuckoos in South Africa is by no means yet exhausted. Lack of space prevents me from dealing here with, for instance, the great Senegal spur-heeled cuckoo, which I found in 1890 frequenting the vast reed-beds into which the Botletli River discharges itself. I hope to deal with this and other birds on some future occasion.

IX

SOUTH AFRICAN SALT-PANS

THE wanderer in South Africa, especially in those vast spaces of the interior where the great game still roam, deserts seldom footed by man, is occasionally confronted by immense salt-pans, the mystery of whose origin even scientists are not able readily to solve. Some of these, such as the great Ntwetwe salt-pan in the northern portion of the Kalahari Desert, stretch for a hundred miles east and west, and extend for many miles from north to south. Here, upon the vast, glittering white expanse, as flat and as smooth as a billiard-table, you may take the latitude as well as if you were upon the sea. During the rainy season several inches of water cover these huge pans for a few days at a time. Then the African sun asserts its power, the water vanishes, and the pans stand bare again, their whiteness rendered yet more dazzling to the eye by the effects of the cleansing and by the renewal of the saline efflorescence. Not all the pans show pure salt, but on some, such as Chuantsa, in the North Kalahari, a covering of salt and lime an inch and a half thick is to be found. On the great salt-pan near Uitenhage, in the Cape Province, a thick deposit of pure salt is found, from which the settlers and natives have procured supplies from very early days, and which has been a source of profit to the Cape for more than a hundred years.

Many of the great northern salt-pans in Khama's Country, the Lake Ngami region, and the North Kala-

hari exhibit a smooth and glittering efflorescence of pure salt or of lime or nitrates. Some few are thickly covered with shells. These shells, as Livingstone long since remarked in his early explorations, are identical with those of the mollusca of Lake Ngami and the Botletli River.

Upon these marvellously smooth expanses the mirages created by the effects of sun-heat are truly wonderful. Shining lakes of water, clumps of trees, islands, and other phenomena are shown with such lifelike fidelity that one could almost swear that they are real. Antelopes are distorted to the size of elephants, and other extraordinary illusions meet the eye of the traveller.

The heat upon these immense smooth expanses is terrific. I shall never forget my first experience when cantering over the pan of Nchukutsa in the North Kalahari, on the way to the Botletli River ; the mirages were marvellously clear and natural, and the sun-heat cast up from the smooth and dazzling surface was intense. Ten or twelve miles of such a crossing, in suffocating heat, with tired horses, towards the end of a waterless sixty-five-mile ride, were a sufficiently trying ordeal. It was upon this very salt-pan of Nchukutsa that Livingstone, Oswell, and Murray, on their way to the discovery of Lake Ngami in 1849, had a curious experience. As they emerged from the low forest of Mopani, which borders the pan, Oswell saw stretched before him what, under the mirage and the setting sun, he took to be the great sheet of water of which they were in search. He threw up his cap and raised a loud cry, which brought Livingstone and Murray hurrying to his side. It was, in sooth, no lake, and the water of Ngami still lay two hundred and fifty miles ahead of them!

If during the fierce heat of African day these salt-

pans are hot and trying, at early morning, when the sun is nearing the edge of the plains, their beauty is very wonderful. The air is clear and cool; the sky is suffused with tender colour; the smooth, silvery vastness of the great expanse is laid bare before the eyes for many a long mile.

The game of the country much affect these solitudes for the salt or the salt ' brack,' which they love to lick. If pure salt is lacking they find on the edge of the pan a white limestone formation, from which they extract the saline flavour of which they are so fond. At brack-pans in the South Kalahari I have seen the limestone at the edges of the pan worn smooth and hollow by the tongues of myriads of antelopes which have resorted thither during untold ages of the past. On the smooth, soft, silvery efflorescence which covers the surface to the depth of an inch or two you may note in perfection the spoor of the various beasts that wander over these desolate places of nature. Here are the soft pads of the lion; there the neat footprint of the splendid gemsbok, the ace-of-hearts-like ' slot ' of the kudu, the somewhat bovine spoor of the great eland, the fairy-like prints of the graceful springbok, the yet tinier traces of the steinbok and the duiker. In another direction you may note where a troop of giraffe have trekked across the smooth expanse, their great spoor-marks, some of them a full twelve inches in length, suggesting somehow what may best be described as the imprints of a huge, elongated cow's foot—if such a thing can be imagined. Blue wildebeest, Burchell's zebra, ostriches, roan antelope, hartebeest, sassaby, and other large game show by their tell-tale footprints that they too have crossed the pan during the night. At this witching hour of sunrise I have, from behind a screen of bushes, many times watched a troop of

springbok at play. Their sham combats, freaks, and gambols are most engaging, as are the wondrous leaps, often half a dozen in succession, which they take—apparently from sheer delight of living and light-heartedness—bounding eight or ten feet into the air, with rigid limbs and arched necks, displaying at the same time the dazzling, fan-like crest of long snow-white hair, which normally lies concealed by a fold of skin upon the backs of the antelopes. These pranks and graces of the springbok are never so perfectly displayed as upon such an occasion. From the marks thus imprinted upon these smooth and dazzling surfaces you may easily learn, especially if you have a Masarwa Bushman at your side, the characteristics and the peculiarities of the spoor of most of the fauna of the desert. You could not find a more perfect object-lesson. If your own knowledge is lacking here and there the Bushman can correct you in the minutest detail. He can tell you not only to within an hour when the animal whose footprints you see passed that way, but whither it was going and what its movements were likely to be.

I once saw, upon one of these great pans in the Lake Ngami country, a very singular and interesting piece of desert life. A Masarwa Bushman, whom we came across on the middle of the pan, had wounded a giraffe with a poisoned arrow, and was at that moment relentlessly jogging upon its spoor. A big animal like this does not succumb to poison for some hours, perhaps even for a long day or more. But once the Bushman has driven his feeble shaft home—a reed arrow, tipped with bone and smeared with yellow poison—he knows that the quarry—even so gigantic a beast as an eighteen-foot bull giraffe—is his, and with untiring footsteps he slogs steadily in its wake. Later in our ride we met

the Bushman's wife, carrying a baby, her family goods, a skin or two, some roots, and a few ostrich eggshells filled with water. She was travelling contentedly on the spoor of her husband and the wounded giraffe. Though the pan was smarting to the eyes and suffocatingly hot, her demeanour was fairly cheerful, for she knew that at the end of a day or so's hard trek a mighty feast—a feast prolonged for a week or more—awaited her and her man.

Not only do the wild game of the desert haunt these pans chiefly at night, or trek across them from time to time, but even that great fowl of the wilderness the pelican has a considerable affection for them—why I have never been able to discover. The long skeins of these birds which flocked every evening to " the lake river" (Botletli), when my hunting companion and I were outspanned there, spent their days and nights much in the following manner. Every morning at sunrise they rose from the water where they had rested and fished, and after executing marvellous and most beautiful evolutions high in the air sailed slowly off to a salt-pan some miles away. Here they rested all day, apparently digesting their food, and absorbed in solemn contemplation. Towards evening, just as the wondrous sunset fired the western sky with a blaze of glorious colour, they flew slowly back, executed anew their intricate aerial evolutions, and sank presently again in leisurely fashion towards the river, where they fished, fed, and rested themselves till daybreak.

It is a curious fact that at the side of every salt-pan in this desert country of the North Kalahari and Ngamiland is to be found a running spring of water. Such springs are always brackish and often very salt. I can well remember that in passing the great pan of Nchukutsa, of which I have spoken, near the southern

extremity of the Botletli River, the water was so impregnated with nitrate of soda or other nitrates as to be undrinkable.

There are many salt-pans in South Africa, between the southern shores of the Cape and the Zambezi, and it would be manifestly impossible in a chapter of this kind to do more than refer to the most important of them. In the Cape Province the great pan at Uitenhage, the richest and most profitable in South Africa, lies a little to the north of Port Elizabeth. Thunberg, a famous Swedish botanist, who travelled at the Cape between 1770 and 1775, was, I think, the first to make this famous deposit known to Europeans. He visited it in 1773. He also describes a lesser pan in the district of Malmesbury, north of Capetown ; he writes of it:

> The crystallization is the most powerful in the months of November and December (the (Jape summer), and in the middle of the day between the nours of ten and three. During that time one may plainly see the salt, somewhat like the cream of milk, just crystallize on the surface, till, in consequence of its own weight, it sinks to the bottom. This saline encrustation is very fine, and yields a good salt, which must be collected as fast as it crystallizes, and is driven by the south-east winds towards the north-western side. Unless this be done the encrustation will fall to the bottom, in several different strata, forming a thick bed of a coarse-grained salt, which is frequently of a grey colour from the admixture of dirt, and is used for salting fish and meat. On the other hand, the fine salt, being cleaner and whiter, is used for the table only, and for salting fresh butter.

Dr Andreas Sparrman, another famous Swedish naturalist, who travelled at the Cape between 1772 and 1775, and Sir John Barrow (1797-98), both of whom wrote excellent books, describe the wonders of the great Uitenhage salt-pan. Barrow thus writes of it:

> It is situated on a plain of considerable elevation above the level of the sea. The greatest part of the bottom of the lake was covered with one continual body of salt like a sheet

of ice, the crystals of which were so .united that it formed a solid mass as hard as rock. The salt that is taken out for use is generally broken up with picks, where it is about four or five inches thick, which is at no great distance from the margin of the lake. The thickness in the middle is not known, a quantity of water generally remaining on that part. The dry south-easterly winds of summer agitating the water of tne lake produce on the margin a fine, light, powdery salt, like flakes of snow. This is as beautiful as the refined salt of Engknd, and is much sought after by the women, who always commission their husbands to bring home a quantity of snowy salt for the table.

Other well-known salt-pans in the Cape Province, besides those of Uitenhage and Malmesbury, are to be found at Cradock, Port Elizabeth, Herbert, and in Calvinia and Namaqualand. In these last-named divisions, part of the old Bushmanland region, some of the pans are very large, especially the one known as Commissioner's Salt-pan, in the arid Calvinia country, discovered by George Thompson in 1823. This vast pan, some thirty miles in circumference, is described by the explorer as covered, when he first set eyes on it, with fine dry salt of a brilliant whiteness. Commissioner's Salt-pan still lies amid its parched deserts almost as little known—save by the few back-country Boers who resort to it for supplies—as in Thompson's time, more than a century ago.

The estimated annual value of the salt-pans regularly worked in the Cape Province is over twenty thousand pounds. At the present time, in some few places, the salt is raised and evaporated in artificially heated pans, thus ensuring a regular and enhanced supply. From the great Uitenhage salt-pan as much as a hundred thousand bushels of salt have been taken out during the year, and the supply is still apparently inexhaustible. It cannot be doubted that if other salt-pans in South Africa were properly and scientifically worked a good

and paying industry would be secured. At the present time the total output of the Cape Province alone is some three hundred and fifty thousand bushels.

In the Orange Free State and the Transvaal some extensive salt-pans exist. The famous Zoutpansberg deposit, in the north-western region of the Transvaal, is one of the best-known pans in that province. In British Bechuanaland also some very large pans are to be found. One of the most important of these is the vast pan of Groot Chooaing, whence many Dutch colonists and Bechuana natives obtain their supplies of salt. This lies between Vryburg and Setlagoli. The name ' Chooaing ' is derived from the Bechuana word *lechooai* (' salt'), and the Boers have added the prefix ' Groot' (' Great') to distinguish this pan from a smaller deposit in the same region. Numerous other salt-pans are to be found in various parts of South Africa, the enumeration of which would be far beyond the scope of this chapter. Many of the pans lie to this day almost utterly unknown, except to the few natives who make use of them. Mr G. A. Farini, in his book *Through the Kalahari Desert,* speaks, for example, of a salt-pan three days to the east of Rautenbach's Pan, near Mier, in Verlander's Country, in the Southern Kalahari, which is described as about a mile and a half long by a mile wide, and having an average depth of salt of six feet. This depth may have been exaggerated, but there can be little doubt of the richness of the deposit, as Mr Farini saw a wagon loaded with salt from this pan. The lower Kalahari, in fact, as well as the northern portion of that vast desert, contains many pans which have hitherto escaped the notice of the few white travellers and hunters who have penetrated to that region. Near Morokweng, in the Southern Kalahari, I have lain at night by one of these little-known pans, where gemsbok,

hartebeest, springbok, ostrich, cheetah, jackals, hyenas, porcupines, and other game came at night to lick the salt ' brack′ for which all animals, wild and domesticated, seem to crave.

On some of these pans, as I have pointed out, the salt produced by sun-heat and evaporation is wonderfully pure and white. Others are much less pure; while in others again the efflorescence is so much mingled with sand and mineral deposits as to leave merely a smooth, soft covering of silvery-grey hue clothing the hard surface. In yet other cases the ' brack ' consists of a hard limestone formation, in which so much chloride of sodium (salt) is contained as to attract the wild animals which resort thither. These brack-pans or l'licks′ are very common in the Southern Kalahari. It is to be noted that even in the wonderful salt-deposits of Cheshire the brine is not a pure solution of chloride of sodium, but is mingled with carbonate of lime and sulphate of lime, which, not being soluble, subside to the bottom of the evaporating pans. This deposit forms an encrustation known to the workmen as ' pan scratch ' or ' scale,'

The origin of these wonderful South African salt-pans has been much debated by travellers and scientists, and even at the present day a solution of the mystery has not been arrived at.

As to the vast and numerous salt-pans of the Northern Kalahari and the Lake Ngami region, Livingstone, who first won his reputation in that country, is still probably the best authority. Livingstone's theory was that before the Zambezi forced a passage through the basalt and made its way east to the Indian Ocean it flowed southward and formed a mighty lake, of which Lake Ngami was the last relic. All this region has for ages been going through a steady process of desiccation, and

although in 1849, when Livingstone discovered Lake Ngami, there was a moderate depth of water there, the lake has during the last few years become yet further reduced, and is now practically a swamp. Livingstone says in his *Missionary Travels :*

> In every salt-pan in the country there is a spring of water on one side. I can remember no exception to this rule. The water of these springs is brackish, and contains the nitrate of soda. In one instance there are two springs, and one more saltish than the other. If this supply came from beds of rock-salt the water would not be drinkable, as it generally is ; and in some instances, where the salt contained in the pan has been removed by human agency, no fresh deposit occurs. It is, therefore, probable that these deposits of salt are the remains of the very slightly brackish lakes of antiquity, large portions of which must have died out in the general desiccation. We see one instance in Lake Ngami, which, when low, becomes brackish, and this view seems supported by the fact that the largest quantities of salt have been found in the deepest hollows or lowest valleys which have no outlet.

This extinct-lake theory of Livingstone's is supported by a fact of which I have had frequent ocular demonstration when hunting in this strange and still little-known region of Ngamiland, and that is the frequent finding of freshwater shells in so many parts of the country. Even on the plains of the lower Botletli, two hundred miles from the lake—which may well be described as the last puddle of a once mighty lacustrine system of fresh water—I have found these shells thrown out by the excavations of the ant-bear, the jackal, and other animals. Livingstone's theory seems to me to account very well for the immense salt-pans of Makari-Kari and Ntwetwe, of the Ngamiland and Kalahari Desert tract, and of the lesser ones of Nchukutsa, Machanning, and others about Lake Komadau, the reed swamp in which the Botletli River now loses itself; but it scarcely seems to explain the many other salt-pans

found in different parts of South Africa much farther south—unless, that is, one is to believe that Livingstone's vast freshwater lake system once extended all over Southern Africa!

Be this as it may, the great salt-pans of that country, scattered here and there between the Indian Ocean and the Zambezi, are an extraordinary and very interesting feature of this portion of the African continent. The sense of space and solitude and mystery about the more remote of these smooth and dazzling desert pans has for the beholder a singular fascination. They lie there, these vast glittering tracts, unaccountable, unknown, dedicated, as it were, to the wandering game and the wild Bushmen. So barren, so useless, is the country in which they occur that they seem likely to remain in their primitive desolation for generations yet to come.

It is not to be supposed that industry has not attempted to meddle with the crude efforts of nature and establish a real backbone of production and sale of salt in a good many parts of South Africa.

The Board of Trade and Industry at the Cape produced in 1930 a report (109) on the state of this industry. The report is well worth close perusal. Under war conditions the industry in South Africa rapidly expanded, and production was more than doubled. During the period of deflation which succeeded the industry was found to be lacking in the cohesion necessary to enable it to contend successfully against the increasing difficulties which arose.

This period of deflation, unfortunately, still exists, and although various attempts to put the industry on its legs again have been made since 1921 success has been thus far lacking. It seems that this fine and picturesque old industry is still in low water. A good many companies are, however, still at work, and it may

be hoped that success will in the end crown the efforts which are being made to re-establish the industry.

It is worth noting that in 1890 three companies were producing salt, in 1904 seven, in 1909 fourteen, in 1914 twenty-five, in 1916 thirty-eight, in i9zo forty-five, and in 1921 the total was forty-seven. Thereafter the number of companies decreased, and a period of depression made its appearance. I believe that in time the industry will be placed once more upon a paying basis, though, from all appearances, progress will be of slow growth. The industry is nevertheless showing increased signs of life, and will probably astonish those who have predicted its failure.

X

SEA-BIRDS AT THE CAPE OF GOOD HOPE

No one who has watched the birds of the Cape seas and littoral can have failed to be impressed by the enormous numbers of certain species, especially among the cormorants, which are to be reckoned, not by thousands, but literally by tens of thousands. It is one of the marvels of nature how such uncountable legions of these voracious birds can obtain a living; and it is a wonderful tribute to the inexhaustible supply of fish yielded by the Cape seas that all these vast armies of cormorants maintain an easy existence without perceptibly reducing the head of sea fish.

It was long supposed that the common European cormorant *(Phalacrocorax carbo)* was a denizen of the Cape seas, but close investigation by recent observers such as Dr Stark and Mr W. L. Sclater proves that this is not the case. There is undoubtedly a strong resemblance between the British cormorant and one of the Cape species *(Phalacrocorax lucidus),* the white-breasted duiker; but it is now apparently well established that the supposed European cormorant is nothing else than the white-breasted duiker in full breeding plumage.

' Duiker' is, of course, a Cape Dutch name, signifying ' diver ' or' ducker,' which has long been bestowed not only on the well-known small antelopes found all over South Africa, but on the various cormorants of that country. Of these birds the Cape cormorant, or trek duiker *(Phalacrocorax capensis),* is by far the most numerous. Its Dutch name is obviously bestowed upon

it by reason of the vast flights, or treks, of these birds, as they pass and return to and from their feeding grounds. I have watched these wonderful flights in which tens of thousands of cormorants were certainly within view during a couple of hours, in long lines, slowly flapping their way home at evening, after a day of fishing. These marvellous treks often extend over two or three miles in length by a quarter of a mile in width. C. J. Andersson, a very close observer, computed their numbers in such a passage at millions, and Dr Stark and Mr W. L. Sclater, in *The Fauna of South Africa*, confirm this estimate, which I have no hesitation in saying is by no means excessive. The numbers of these cormorants enable them to employ, in suitable places, many of the same manoeuvres as are often displayed by their cousins the pelicans. Forming a half-circle, they enclose and drive before them a shoal of fish, and, pushing them into the shallows, devour them in large numbers and with ease. The trek duiker, by reason of the enormous amount of guano which it deposits on the various islands scattered along the coastline of South-west Africa, is a source of considerable profit to the Cape Government. The nesting season is from December to June or July, and after the latter month from five to seven thousand tons of very valuable guano are collected on the various islands. Part of this is contributed by gannets and penguins, but the Cape cormorant is responsible for the greater portion. For this reason these birds are protected by the Cape Government. If we consider that each cormorant devours daily anything between 5 and 7 pounds of fish, at a reasonable estimate, it may be understood what an incredible wealth of piscine life is yielded by the Cape seas, to be utilized thereafter in the form of guano by colonial and other agriculturists.

The Cape cormorant ranges between the Congo River and Durban, Natal, but is much the most abundant along the littoral of South-west Africa. It is considerably less in size than the white-breasted duiker, measuring no more than 25 inches against 35 inches in the other species. The general coloration is black, glossed with faint purplish reflections, the chest and front of the neck being somewhat paler. The sides of the back and wing coverts show tints of greenish bronze. The naked skin of the throat and at the gape is orange yellow, the iris sea-green; the legs are black. This is a most expert diver and swimmer, whose fishing habits are familiar to most observers who have voyaged to the Cape.

The white-breasted cormorant or duiker *(Phalacrocorax lucidus)* although never seen in the astonishing numbers of the trek duiker, is quite a common species, whose range extends from the Cape, all round the coast of Africa, to the Cape Verde Islands on the one side and to Abyssinia and Socotra on the other. As I have said, it bears so strong a resemblance to the European species as to have been mistaken for it for many years. Unlike the trek duiker, which is purely a marine bird, and so far, I believe, has never been found inland in South Africa, the white-breasted species is occasionally, though not often, seen near waters of the interior, Major Sparrow having found a pair nesting on the shore of a lake in the Orange Free State.

This cormorant breeds from the Knysna Heads, on most of the Cape islands, westward and northward. According to Mr Sclater, the breeding season is by no means uniform; he himself found these birds nesting on Dassen Island in July; while Dr Stark saw young birds as well as eggs off the Knysna in February. As the Cape cormorant admittedly nests from December to June, and occasionally even July, I do not see that

there is much difference in breeding habit between the two species. The white-breasted duiker resembles our European bird very much in its habits, and, sitting on a rock or piece of old wreck, resting and sunning itself after feeding, may easily be mistaken for that bird. The general colour is black, glossed with green; bronze-brown reflections are to be noted on the scapulars and wing coverts, while the quills and tail are touched with silvery bronze. The throat, forepart, and the sides of the neck, the upper chest, and a patch on either flank are white; the head is slightly crested, the iris bright green ; the pouch is mottled in green and yellow; the bare patch below the eyes is yellow ; the legs are black.

Wahlberg's cormorant *(Phalacrocorax mglectus)* called by colonists the [c] bank duiker,' from its habit of feeding about the various banks known to Cape sea-fishers, is a considerably scarcer species than either of the two cormorants above-mentioned. The weed-covered rock banks which it frequents harbour plenty of *kreef*—craw-fish—and ' Hottentots '—a small dark brown rock-fish, known to scientists as *Sargus capensis*—and upon these two fish this cormorant depends largely for a food-supply. This fine cormorant measures, in a full-sized male, 30 inches ; in the female some 3 inches less. The body colour is black, touched with greenish reflections, the wing coverts and sides of the back showing bronze-brown, edged with black. The neck is sparsely speckled with small white feathers, and the rump is more con-spicuously marked with white. The feathers of the forehead are brittle, and can be raised into a crest. The iris is light brown, sometimes brown and green; the naked skin of the gape and eyelid is black, the legs being of the same hue. Mr W. L. Sclater has noted that the white rump feathers " vary in development, and are probably a sign of an adult breeding bird."

This cormorant was first described by the Swedish naturalist Wahlberg, who met with it on various islands off Great Namaqualand. It is not well known at the Cape, though it has been identified as far south as Simon's Bay; and in E. L. Layard's *The Birds of South Africa*, published in 1867, no reference is made to it. In the *Ibis* for 1868, however, Layard writes of a cormorant with twelve rectrices, two specimens of which had been obtained near Capetown. These birds were undoubtedly either the bank duiker (Wahlberg's cormorant) or the long-tailed cormorant *(Phalacrocorax africanus)* sometimes known as the ' reed duiker,' both of which birds possess twelve tail feathers. The trek duiker and the white-breasted duiker each have fourteen. Mr W. L. Sclater notes that this species breeds as far south as Dassen Island and Jutten Island, Saldanha Bay. He speaks of it as extraordinarily tame when nesting, often allowing itself to be caught by the hand. These birds are only moderately plentiful, and are met with usually in small parties of three or four.

The long-tailed cormorant, or reed duiker, to which I have just referred, differs from the other South African cormorants in being as familiar all over the interior of the country as it is on the coast. I have met with it on the Botletli River, Ngamiland, and the various lagoons of that region; it is common on the Zambezi, above the falls, and it has been identified in such widely sundered localities as Kuruman, Colesberg, Grahamstown, Port St John (Kaffraria), Natal, Zululand, the Transvaal, various Mashonaland rivers, and many places along the south-west coastline of Cape Colony and Great Namaqualand, as well as in Madagascar. It is found in many other parts of Africa—as far north as the Gambia and Upper Egypt and also in Portuguese East Africa.

The smallest and the most elegant of South African cormorants, this species measures some 25 inches, the female less. The general colour is dark brown; the back and wing feathers are light grey; the throat is whitish. The iris is pale ashy brown, in the young birds blue. C. J. Andersson's description of this cormorant, with which from personal observation I quite agree, is as follows :

> It feeds on fish, and is a most expert diver. Its flight is strong and rapid, and it perches on trees both during the day and night. It feeds chiefly at night. As the sun declines it is seen in flocks, flying from its roosting places to its fishing grounds. During the day it remains in great measure stationary, either lazily sunning on some branch overhanging the water or on a fcunch of reed, or it may be seen standing erect on a sand-bank, with outstretched wings. When in the water it has the habit of submerging its body to such an extent as to leave little more than the neck exposed.

This habit is very noticeable, and serves to distinguish this species from tjie other cormorants of South Africa, the effect of the head and neck actively protruding from the water being very snake-like. This cormorant, called by Professor Wahlberg the " crown duiker," and by South African colonists the *riet duiker* ('reed duiker'), nests freely on many of the small islets and islands along the coast of South-west Africa, as well as in places inland. E. L. Layard found it breeding on the Berg River, Cape Colony, in September in large numbers, and it has been seen nesting in June on St Lucia Lake, Zululand. Mr Sclater met with it nesting on Dassen Island in July, and on Schaap Island, Saldanha Bay, in September. The eggs, which are similar to those of other South African cormorants—which follow the normal cormorant type—are, however, considerably less in size.

The South African gannet *(Sula capensis)* always

known at the Cape by its Dutch name, *malagash*^ is found throughout the seas from the Cape to Damaraland in plenty. The best season for watching these birds is in April and May, when they are to be seen in Table Bay in great numbers, pursuing the shoals of surface-swimming fish which then abound. The diving feats of these powerful birds are wonderful, and the fearless way in which they fall headlong upon their prey from a great height, striking the water with immense force, is a revelation indeed. When emerging they come to the surface as if discharged from a catapult. Although most plentiful along the coast of South-west Africa, these gannets are found as far north as French Equatorial Africa on the west coast, and Zanzibar on the eastern side of the continent. The flight of the *malagash* is like that of the European gannet, or solan goose—magnificent. In wild weather at sea the bird is a picture of ease, self-reliance, and strength when on the wing, while, if resting on the waves, it rides the stormiest seas with perfect grace and management.

In size the South African gannet is slightly superior to the British species, measuring from 35 to 36 inches. The coloration is very similar, but the Cape gannet may be always distinguished from the solan goose by the fact that its tail feathers are brownish black. The full white plumage is not assumed till the second year. In September and October these birds resort in immense numbers to various islands along the Cape and Great Namaqualand coasts. Here they may be seen packed closely in dense legions, each bird sitting on its single egg in close proximity to its neighbour. Photographs which have been taken of these nesting grounds convey an extraordinary impression of bird-life. This gannet nests, as a rule, on islands not frequented by the trek duiker or Cape cormorant. Ichaboe, Mercury, and

Possession Islands, off Great Namaqualand, Malagash Island, Saldanha Bay, and Bird Island, Algoa Bay, are the most favoured resorts of these birds. It has been calculated that a single gannet produces about 4 inches in depth of guano, or 16 to 17 pounds to the square foot. Years ago the lessees of Ichaboe Island thought it worth while to enclose the middle of the island for the exclusive convenience of these birds. This was done to prevent the penguins from mingling their inferior deposits with those of the gannets, which have a greater mercantile value. The *malagash* shares with the trek duiker the merit of producing the most important and valuable deposits of guano in South Africa. These deposits are sold to the Cape farmers at cost price.

Another familiar sea-bird of South Africa is the well-known jackass penguin *(Spheniscus demersus),* which is found along the coastline from Natal to Great Fish Bay, Angola, on the west coast. This is a very numerous species, whose eggs have always been in great request at the Cape, and are still to be procured abundantly at Capetown during the nesting season in June and July. They are by no means bad eating, though the British settler has a natural preference for the egg of the domestic hen.

The jackass penguin is a bird of moderate size, measuring about from 24 to 26 inches. It is handsomely marked in black and white, the former colour showing on the back, the outer surface of the flippers, and the forepart of the face and throat. A black band passes over the top of the head and meets the dark body colour on the back. A black horseshoe band, running from the flanks, crosses the white chest. The inner parts of the flippers are white, as are the lower parts of the body from the black horseshoe downward.

These penguins are most expert swimmers and divers, and consume, like the cormorants and gannets, immense quantities of fish. They put on fat amazingly, and can endure long periods of starvation when necessary. Their waddling gait on land is well known. If alarmed or cornered they throw themselves to the ground, and, with the aid of their flippers, progress at a remarkable pace. They are extremely fearless when incubating, and some care has to be taken when approaching them, as a snap from their bills inflicts quite a nasty wound. Sailors landing with bare legs and feet are punished most severely, unless they arm themselves with stout sticks, as do the egg-collectors. I once, upon visiting Dassen Island, saw a man the back of whose hand had been laid open by one of these birds. He bled profusely, and the haemorrhage was stopped with some difficulty. This bird utters a loud, harsh, braying note, from which it takes its name of jackass penguin. The number of eggs collected during the season by the Colonial Government is very large. In the year 1901, for example, no fewer than 638,000, valued at £1969, were taken from various islands, the majority of them from Dassen Island. After July collecting ceases, and the birds are allowed to hatch out. Where they are persistently robbed they have been known to go on laying for seven months on end.

This penguin also makes large deposits of guano, but the value is greatly diminished by its habit of scratching the soil, by which the guano becomes considerably adulterated. From March to the end of May these birds quit the islands and go off to sea, where they may be observed as much as fifty miles from land.

Another penguin, the rock hopper *(Catarrhactes chrysocom)* is claimed as a Cape species, chiefly on the ground that dead bodies of these birds have been

occasionally found washed ashore at the Cape. This species is in reality a denizen of Kerguelen, the Falklands, and other islands of the Southern Ocean.

Many other sea-birds, such as albatrosses, petrels, shearwaters, gulls, and terns, are also found in the Cape seas, but to describe these is beyond the purpose of this chapter.

XI

GIRAFFES AND THEIR DISTRIBUTION

THE most northerly occurrence of the giraffe in modern times would appear to be in a tract of country discovered and opened up by Captain Vallier, of the French Service, in 1904-5. This territory, known as Ferlo, lies in the hinterland of Senegal, some six hundred miles due east from St Louis, the port and capital of that province. Captain Vallier's discoveries were published in the *Bulletin du comite de I'Ajrique franfaise (Renseignements coloniaux)* No. 9. I give a translation of the Captain's remarks on these animals in that part of Africa :

> The giraffe, which abounds everywhere in Ferlo, Central and Eastern, is common in the Valley of Ferlo, towards Samba-Doghel, particularly in the low valley of Mboum, towards Doubi, where we have seen it in great numbers; also in the *massif,* little penetrated, which is found to the west of Matam. Habits bizarre. During hot hours found most often in the shade of baobabs, of wnich they eat the young leafage. For the rest of the time they wander among verdant trees, browsing quietly. Flesh good ; hide used for sandals.

This country of Ferlo lies between St Louis and Timbuktu, slightly south of the latter town. It is thus a little north of Khartoum and Kassala. With the Ferlo exception giraffes are not to be found at the present day north of either of these places, although in recent years these animals have been shot within a day or so's journey south of Kassala. It is possible, however, that further exploration may show giraffes to

exist in Eastern Sudan regions as far north, or nearly as far, as Ferlo, where the latest discovery of these animals has been made. Ferlo, it may be added, lies, according to the placing of modern geographers, distinctly in the region of the Western Sudan, in that part of the great continent where the Sahara and the Sudan meet or melt into one another. It may be noted that some years ago a young giraffe, purchased by the Zoological Society, was said to have been captured at Dakka, in Senegal.

In the Gambia country, Sierra Leone, Liberia, and Guinea giraffes are unknown, but within the last few years it has been proved conclusively that they exist in Nigeria. In 1897 a skull and limb bones were brought to England from Nigeria, and were laid before Mr Oldfield Thomas. These were the remnants of a giraffe shot by the late Lieutenant Hume-McQuorquodale at the junction of the Benue and Niger Rivers. Other researches have shown that a peculiarly pale race of giraffes exists in the northern regions of Nigeria. During the Alexander-Gosling expedition, from the Niger to the Nile, a bull giraffe was shot by the late Captain Gosling in Northern Nigeria, on the journey towards Lake Chad. This pale and somewhat ghost-like species, named *Giraffa cawelopardalis peralta,* is closely allied to the Nubian race, *Giraffa cawelopardalis typica.*

In Central Africa the Nubian form of giraffe is still found more or less abundantly in Darfur, Kordofan, and other parts of the Eastern Sudan. Farther east, in Abyssinia, the giraffe was also reported to be plentiful in Wolkait. Wolkait is on the upper course of the Settit River, a tributary of the Atbara. It was in this country that Sir Samuel Baker shot and hunted with the Hamran Arabs with such great success in the early sixties of last century. In other parts of Abyssinia it may be doubted

whether many of these animals now remain. Major Powell-Cotton, who traversed the middle regions of that country in 1898, says, in his *A Sporting Trip through Abyssinia*, " I saw no traces of them in any of the country where I was."

In Somaliland, the most easterly portion of Africa, was first discovered the very interesting and distinct species known as the Somali giraffe, distinguished from all other races by the rich chestnut-red body colouring, varied by a fine network of light-coloured markings. The body colouring is much more complete and much less broken up in this remarkable race than in any other species of giraffe, and the general effect of the coat is therefore much less dappled or blotchy. The old bulls would, however, from the report of Major Wood and Captain Ffinch, who discovered and brought home the first example of this splendid animal, appear to be considerably darker, as is usual in all herds of giraffe. Captain Ffinch speaks of one bull which he saw as " a splendid, dark chocolate fellow." These giraffes were found in the Aulihan country, south of the Webbe Shebeyli. In other parts of Somaliland these animals are apparently not now to be found.

In Kenya and about the headwaters of the Nile and the great lakes various races or species of giraffes are found, often in fair abundance. Within recent years much has been discovered about the varying characteristics of these towering quadrupeds in different parts of Africa, as unknown and unexplored regions have been opened up. These researches and discoveries indicate, as has been well pointed out by Lydekker, who devoted much attention to the subject, that, with the exception of the Somali giraffe, which from its markings and other peculiarities stands alone, all the various sub-species, from the Nigerian to the South African giraffe, are

" local races of a single specific type known as *Giraffa camelopardalis"* Some have five horns, some three, some only two, as in the well-known South African race ; but all are connected by links of gradation, which may be clearly traced as one descends from the northern to the southern habitats of these animals. Why the Somali giraffe should be of so peculiar and distinct a type, standing, as it were, in a class alone, is one of those zoological problems which have so often and so long puzzled scientists. The habitat of this giraffe is, or was, apparently a small one. The presence of such a strange type in a comparatively confined area may well be compared with the case of the now extinct blaauwbok, found more than a hundred and thirty years ago in a corner of Western Cape Colony. The limited and sharply defined habitats of the blesbok, quagga, black wildebeest (white-tailed gnu), and other species of African mammalia may also be recalled in this connexion.

Among these Central East African races are to be mentioned the Baringo giraffe *(Giraffa camelopardatis rotkscbildi),* found in the Lake Baringo region and thence to Mount Elgon, the South Lado giraffe *(Giraffa camelopardalis cottonf),* and the Kilimanjaro giraffe *(Giraffa camelopardalis tippelskirchi).* Giraffes are found in portions of the Congo Free State, and a new sub-species *(Giraffa camelopardalis congoensis),* procured from Katanga, has been established. These animals are also found in parts of Tanganyika and Portuguese East Africa, though in the last-named country they are now and apparently have always been scarce animals. They are found in North-east and North-west Rhodesia, but not in Nyasaland.

In the Portuguese province of Angola, south of the Congo State, giraffes are fairly abundant in places suitable to their habits. A few troops remain in

South-west Africa, chiefly in the Kaoko Veldt, Angola, and in the north-east portion of that colony.

Southern Africa was, in the good days, one of the finest parts of the whole continent for giraffes, and giraffe-hunting, undertaken always on horseback, was looked upon as one of the most attractive and exhilarating forms of sport. At the beginning of the last century these animals were found as soon as the Orange River was crossed, and many hunters, travellers, and naturalists have testified to their extraordinary abundance. Sir Andrew Smith, during his zoological expedition in 1835, saw as many as a hundred in a morning's trek in Southern Bechuanaland, and Moffat, Burchell, Oswell, Gordon Gumming, and other travellers all bear witness to the abundance of these beautiful giants between the Orange River and North Bechuanaland during the first half of the nineteenth century. They were found then abundantly also in Great Namaqualand, Damaraland, and the Transvaal, as well, of course, as in the Kalahari Desert, always a great stronghold of these animals. Zululand and Natal seem never to have been favourite localities for giraffes, the nature and vegetation of these territories being probably not suited to their habits. Baldwin, who shot much in Zululand and Amatongaland in the early fifties, makes no single mention of giraffe until he penetrated into Bechuanaland and the Lake Ngami country, where he encountered plenty of them. And Drummond, in his excellent book *The Large Game and Natural History of South-east Africa*, has not a single mention of them, although he too ransacked Zululand and Amatongaland for sport. It is very curious, also, that within the last two hundred and fifty years—since the Dutch settled at the Cape of Good Hope—no giraffes have ever been heard of south of the Orange, although they were known to exist on the northern bank, in Namaqualand,

the South Kalahari, and Griqualand, so soon as the stream was crossed. The river itself, which in dry seasons was easily fordable in places by these animals, must have presented no real barrier. It is, then, as I say, very curious that within historical times giraffes have been unknown south of the Orange. It is possible that the absence of large tracts of the giraffe acacia, whence these animals obtain their chief subsistence, may have been the real reason of their non-existence south of the river. Formerly, however, there was an old and persistent Hottentot tradition that the giraffe was anciently found in the Amsebi thorn country, in the present Queenstown district of Cape Colony. The Bushman pictures of giraffes found in the caves near Graaff Reinet and in other regions of the eastern province of the Old Colony—all south of the Orange River—can scarcely be looked upon as evidence that giraffes once roamed this part of the Cape countries. Rude sketches such as these may very well have referred merely to animals seen during the northern wanderings of these primitive savages.

At the present time giraffes are to be found in Southern Africa most plentifully in the vast acacia forest of the Northern Kalahari, in terrain which is devoid of surface water during seven months of the year. Here, despite the assaults of native hunters from Bamangwato, Lake Ngami, and Namaqualand, although steadily decreasing, considerable numbers of these animals manage to maintain existence. They are found sparsely in the little explored country lying between the Upper Zambezi and Okavango Rivers. I have already noted their presence in Angola and the northern parts of South-west Africa.

Giraffes still exist sparsely in Western Matabeleland and the adjacent country, where it merges into the

Northern Kalahari. They were once numerous in many parts of the Transvaal, but only a small remnant now remains to that colony; the survivors are preserved in protected areas in the north and east. They are described by Sir Alfred Pease, in a paper contributed to *The Journal of the Society for the Preservation of the Fauna of the Empire,* as " extinct outside the reserve."

The Transvaal is the most southerly habitat (if habitat it may be called) of these animals at the present day. I remember that in 1890 some of the southern Bechuana tribes were hunting these animals in the Kalahari only a little way north of the western course of the Molopo River.

Until comparatively recently it was always supposed that only one race of giraffe, the well-known *Giraffa camelopardalis capensis,* was to be found in South Africa. A specimen obtained in the North Transvaal some time ago has, however, been separated from that species and designated *Giraffa camelopardalis ivardi,* chiefly by reason of the shape of its skull, its dark chocolate-brown colouring, and the stellate character of the markings. The skull is remarkable for the great development of the posterior or occipital horns, which, according to Lydekker, are " much larger than in the Baringo giraffe." One presumes that there is no doubt as to the actual habitat of this remarkable specimen, which is certainly unique in South Africa up to the present time.

Going back to Lydekker's definition of no fewer than ten varieties or sub-species of the ordinary or blotched giraffe—namely, the Nubian, Kordofan, South Lado, Baringo, Kilimanjaro, Congo, Angola, North Transvaal, Cape, and Nigerian—one may be permitted to doubt whether he was right in distinguishing so many forms on somewhat trifling variations. From the average observer's point of view it would seem that Lydekker

relied too much upon the mere differences in colouring —as in his separation of the South Lado and Baringo races. Yet in a single large troop of South African giraffes I have observed extraordinary variations in colouring, ranging from pale fawn in some of the younger animals to orange-tawny in the older individuals ; while the markings of the old male and one or two females were of a very dark golden chestnut, almost black upon the upper portions of the body. Again, even in the South African giraffes, wide differences in marking are frequently to be observed ; in some individuals the blotches are loose and far apart, while in others the dark colouring is much wider and closer, and the separating lines are much thinner. I believe, in fact, that Lydekker's definition of two principal races of giraffes—the Somali, or ' netted,' and the blotched—is a right and well-founded one ; but it is by no means yet proved that the various sub-species, which he defines as belonging to the blotched species, are well established. A piebald, a roan, and a chestnut horse, although offering extraordinary variations in hue, are of one and the same species *(Ilquus caballus),* and I think that the sub-division of other animals into races and sub-species, solely on account of difference in colouring, may be carried much too far. Among some of the new giraffes, it is true, great and striking differences do exist; yet I believe that much more research is necessary before those sub-species which I have indicated can be considered as well and accurately settled. The fact is, the giraffe varies immensely in colouring, even, as already remarked, in the same herd, and a close examination of a very large number of specimens will have to be made before anything like certainty can be arrived at.

Still, it will be clearly apparent, after a visit to the

Natural History Museum, that within the last score or two of years we have gained much new knowledge of giraffes. Great and striking discoveries have been made. It would be of much advantage to science if all hunters and explorers shooting in Africa would in future preserve carefully the head and neck skins of any giraffes that may be killed, together with a brief description of the body and leg colouring and marking. If such records could be obtained in some numbers it would much simplify the difficult task of working out the various races of these animals. One thing is at all events certain. The giraffe still exists in considerable numbers in many parts of Africa. And, thanks to the increased measure of protection assured by modern game laws, it may now be predicted that it will be many a year before this animal, which a great naturalist—Rtitimeyer—once well defined as a "most fantastic form of deer," the tallest and in many respects the most wonderful of all the varied fauna of the world, finally disappears from the Dark Continent.

As regards the ancient northern range of giraffes, it is probable that at the period of the great Egyptian dynasties these animals were found considerably nearer to Lower Egypt than they now are. In modern times, as I have shown, they have been unknown north of Kordofan, Khartoum, and Kassala. The Egyptians were, however, well acquainted with them, and these tall quadrupeds are to be found occasionally figured on their monuments. One of these portraits shows a giraffe, held captive by ropes, being led between two Africans. This would seem to indicate that the captive animal was being sent as a rare curiosity by some distant tributary tribe to the Pharaoh of the time. But there is no direct evidence that giraffes even then had their habitat north of the Nubian Desert.

XII

A FORGOTTEN SOUTH AFRICAN HUNTER

AMONG those brilliant and adventurous sportsmen who have made themselves famous in South Africa Charles John Andersson will, in the estimation of those conversant with the subject, always occupy one of the foremost places. Bold and fearless, possessed of that extraordinary patience which counts for so much in African travel, one of the keenest of explorers, a great hunter, and a great naturalist, Charles John Andersson has, for various reasons, never yet been known and appreciated by the British public as he ought to be. He was born at Wermeland, Sweden, in 1827, the son of an English father and a Swedish mother, and from his early youth he was well versed in sport and natural history.

In company with Sir Francis Galton, who long survived him, and became one of England's most famous scientists, Andersson in 1851 explored much of Damaraland and penetrated to Ovampoland, then an utterly unknown country. After Galton's departure for England in 1852 Andersson pursued his work alone. He was the first white man to reach Lake Ngami from the west coast (in 1853); he discovered the Okavango River, in that region, and made many laborious and most adventurous journeys in other parts of South-west Africa, still, even in our time, very little known and travelled by Europeans. During these explorations he had the good fortune to encounter vast quantities of great game in veldt which had hitherto remained

undisturbed by the white man and his firearms. A first-rate ornithologist, he made a splendid collection of birds, and has enriched the South African avifauna by observations on no fewer than 428 species.[1]

Andersson died at an early age—in his forty-first year—worn out by fevers, hardships, and anxieties, in the wilderness towards the far and still little known Cunene River. It may be owing to the fact that his explorations and adventures took place in regions of South-west Africa, which were then less known and appreciated than other parts of the Dark Continent, that his name has been far less well remembered, even by those interested in the subject, than, as I say, it deserves to be. Livingstone, Speke, Grant, and other explorers were more in the public eye, but Andersson himself, dying and being buried in the wilderness at a comparatively early age, passed out of human ken and human sympathy. Yet Charles John Andersson's name deserves to be treasured by all good Englishmen ; he did much for our country in the fifties and sixties of last century, and no more heroic or more unselfish soul ever yielded up his last breath in Africa. His bones lie in the distant desert, if, indeed, they have not long since become dust, yet his name and fame should be assured of lasting remembrance in Great Britain's temple of explorers, even if the niche he occupies be an inconspicuous and humble one.

By his twenty-second year Andersson had become already a keen naturalist and sportsman, and was devoured by the ambition to travel in Africa. Coming to England towards the end of 1849, he met with Mr (afterwards Sir Francis) Galton, then preparing

[1] He left behind him materials for a book on this subject, and in 1872 Mr J. H. Gurney edited and published the work, which is entitled *Birds of South-west Africa.*

an important expedition, and, sailing with him for South Africa, reached Walfisch Bay, South-west Africa, in June 1850. Adventures are to the adventurous. Andersson was always ready to accept the highest risks in search of sport and natural history, and it was not long before he had to record his first engagement with a lion. After many fruitless attempts to dislodge the brute from some dense tamarisk brake, in which the timidity of the Damara and Namaqua natives lent him little assistance, Andersson determined to make one more effort. He re-entered the thicket, and suddenly put up, at a few paces distance, a huge black-maned lion. He fired a shot at the retreating beast, when the lion at once turned and, with a terrific roar, charged in his direction. Drawing his hunting knife and dropping on one knee, Andersson coolly awaited the attack. Within a few paces the lion halted, and, crouching as if to spring, raised clouds of dust by lashing the sand with its tail. Just as the hunter was about to fire a second shot the savage brute made its leap ; but, miscalculating the distance, passed clean over Andersson's head and alighted a few paces beyond. Without rising from his crouching attitude Andersson swung round his rifle and gave the beast a good shot in the shoulder, which the bullet completely smashed. Again the lion turned and made its rush ; owing, however, to its disabled shoulder, Andersson was able to evade this charge by a hair's breadth, and the sorely wounded beast retreated into the thickets, and was picked up dead a day or two later.

Having reached Ondonga, the capital of the Ovampo tribe, in May 1852, and made the acquaintance of this somewhat remarkable people and their chief Nangoro, Galton and Andersson trekked on a shooting expedition in the direction of Lake Ngami. Arriving at Tunobis, a permanent fountain in the Kalahari region, they found

so enormous a quantity of game that their party shot no fewer than thirty rhinoceroses, black and white, in the course of a few days. This prodigious holocaust was achieved mainly by night shooting, the watchers being sheltered in a *scherm* of loose stones, " a small circular enclosure, six or eight feet in diameter, with walls about two feet in height." One night at this place Andersson himself slew eight rhinoceroses in the space of five hours; he remarks that if he had persevered he might have destroyed probably double the number. At that time the quantities of game seen in South Africa must have produced the impression that the supply was inexhaustible. But the fact was overlooked that these animals, especially rhinoceroses and elephants, were collected during the dry season near the few permanent desert waters from an immense area of country. No wild animal life in the world, however plentiful, could resist such slaughter, and rhinoceroses became extinct in all these regions before the War. The wonder is, indeed, that they held out so long. At the same time, as he himself points out, Andersson never, even at this period, shot wastefully; the game were supplying a large number of natives with food, and, even at Tunobis, no portion of the flesh remained undevoured.

Some of the big-game hunters profess to regard with disfavour night shooting. Yet Gordon Gumming, one of the first and boldest sportsmen of his time, was exceedingly fond of it, and practised it constantly during his five years of life in savage Africa. Andersson was enthusiastically in its favour. He says:

> A moonlight ambush by a pool well frequented by wild animals is worth all the other modes of enjoying a gun put together. In the first place there is something mysterious and thrilling in finding oneself the secret and unsuspected spectator ofthe wild movements, habits, and propensities of

> the denizens of nature's varied and wonderful menagerie. . . . And then the intense excitement between each expected arrival! The distant footstep, now heard distinctly rattling over a rugged surface, now gently vibrating on the strained ear as it treads on softer ground ; it may be that of a small antelope or an elephant, of a wild boar or rhinoceros, of a gnu or a giraffe, of a jackal or a lion. . . . What opportunies present themselves of observing the habits and peculiarities of each species, and even of individuals, to say nothing of the terrible battles that take place and can so rarely be witnessed in the daytime. I have certainly learned more of the untamed life of savage beasts in a single night's *tableau vivant* than during months of toilsome wanderings in the broad light of the sun.

It is not to be imagined that night shooting is an easy way of slaying wild creatures. It is a method bristling with risk, and every hunter that has pursued it has had his fill of hazards and escapes. Gordon Gumming had round him one night five or six lions, and, being himself attacked by a lioness of the party, only saved his own skin by shooting her dead. Andersson, during his career, had many hairbreadth escapes. At Tunobis a wounded rhinoceros charged his *scherm* and battered it down, and the hunter only escaped the monster's horn by throwing himself backward and breaking down the other side ojf his shelter,

One night at Abeghen, south of Lake Ngami, while ambushed in a very exposed position, he was approached by three mighty bull elephants, which were well within ten yards of him before he knew of their presence. He saluted one of them with two barrels of his rifle. They turned and fled, and a brace of fine tusks afterwards rewarded him for his temporary scare. Once, after he had wounded her, a huge white rhinoceros charged for the flash of the gun, and actually stood over the prostrate hunter, who had thrown himself on his back, without being aware of his proximity. The saliva from the great brute's square-tipped mouth actually dripped upon

Andersson's upturned face. He lay motionless in an agony of suspense, and the rhinoceros presently, swinging round, went off at speed.

Andersson was a very successful elephant-hunter, and had many adventures with these animals. While watching one night the pool at Kobis, another fountain of the Northern Kalahari, he heard a sound which he likens to the passage of a train of artillery, and, looking up, saw a troop of nineteen of these immense mammals. They were all males. He describes the experience :

> It was a splendid sight to behold so many huge creatures approaching with free, sweeping, unsuspecting, and stately step. The somewhat elevated ground whence they emerged, together with the misty night air, gave an increased appearance of might and bulkiness to their naturally giant structures. Crouching down as low as possible in me *scberm,* I waited with beating heart and ready rifle the approach of the leading male, who, unconscious of peril, was making straight for my hiding-place. The position of his body was, however, unfavourable for a shot; and knowing from experience that I had little chance of obtaining more than a single good one, I waited for an opportunity to fire at his shoulder. . . . This chance unfortunately was not afforded until his enormous bulk towered above my head. The consequence was that while in the act of raising the muzzle of my rifle over the *scberm* my body caught his eye, and before I could place the piece to my shoulder he swung himself round and, with trunk elevated and ears spread, desperately charged me. My own life was in imminent jeopardy; and seeing that if I remained partially erect he would inevitably seize me with his proboscis, I threw myself on my back with some violence, in which position, and without shouldering the rifle, I fired upwards at random towards his chest, uttering at the same time the most piercing shouts and cries. The change of position in all human probability saved my life, for at the same instant the trunk of the enraged animal descended precisely on the spot where I had been previously encouched, sweeping away the stones (many of a krge size) that formed the fore-part of my *scherm,* like so many pebbles. In another moment his broad forefeet passed directly over my face.

The troop swerved off, and Andersson's gun, which he had meanwhile snatched up again, missing fire, they passed away into the night. The escape had been a sufficiently thrilling one, but it was by no means the conclusion of the night's adventures. Presently there approached the water a bulky white rhinoceros—next to the elephant the biggest of all land mammals. This Andersson fired at and hit within a dozen yards, the mighty beast bolting off into the veldt to die.

Scarcely had the hunter reloaded his piece when a black rhinoceros was perceived drinking at the pool. She was not in a favourable position for a vital shot; but Andersson fired and broke her leg. She rushed wildly away into the dim night, and Andersson determined to wait till daylight before finishing her. After a long pause, as no more game appeared, the hunter made up his mind to go in search of the white rhinoceros. There is no more perilous business than wandering about in the veldt at night, especially in a wild country where lions and other dangerous beasts abound. Andersson, however, was tired of inaction, and, quitting his hiding-place, presently found the white rhinoceros lying, as he had anticipated, stone dead. " Stone dead," as the ancient saying has it, " hath no fellow," and it would have been well for the hunter if the black rhinoceros had been equally surely disposed of. On his way back to the *scherm* he blundered by accident right into the wounded beast, and, as she stood in a position in which he could not deal her a fatal shot, he took up a stone and hurled it at her.

> Snorting horribly, elevating her tail, keeping her head close to the ground, and raising clouds of dust with her feet, she rushed at me with fearful fury. I had only just time to level my rifle and fire before she was upon me ; and the next instant, whilst instinctively turning round for the

purpose of retreating, she laid me prostrate. The shock was so violent as to send my rifle, powder flask, and ball pouch, as also my cap, spinning in the air; the gun, indeed, as afterwards ascertained, to a distance of fully ten feet. . . . Having tumbled me over (in doing which her head and the forepart of her body, owing to the violence of the charge, were naif buried in the sand), and trampled on me with great violence, her fore-quarter passed over my body. Struggling for life, I sei2ed my opportunity; and as she was recovering herself for a renewal of the charge, I scrambled out from between her hind-legs.

But the enraged beast had not yet done with me ! Scarcely had I regained my feet before she struck me down a second time, and with her horn ripped up my right thigh from near the knee to the hip; with her forefeet, moreover, she hit me a terrific blow on the left shoulder near the back of the neck. My ribs bent under the enormous weight and pressure, and for a moment I must, as I believe, have lost consciousness. . . . All I remember is that when I raised my head I heard a furious snorting and plunging amongst the neighbouring bushes. . . . Either in the *melie,* or owing to the confusion caused by her wounds, she had lost sight of me, or she felt satisfied with the revenge she had taken. Be that as it may, I escaped with life, though sadly wounded and severely bruised, in which disabled state I had great difficulty in getting back to my *scherm.*

Later in the morning Andersson renewed his assault, saved the life of a native boy whom he had dispatched to finish off the rhinoceros, and finally killed her.

He adds :

I have since killed many rhinoceroses, as well for sport as food ; but several weeks elapsed before I could again attack those animals with any coolness.

Andersson seems to have had great success with rhinoceroses—both the *wit-rhinoster* and *syvart-rhinoster'* as the Boers call them—as, indeed, he had with all other kinds of South African game. In one season he shot no less than sixty of these gigantic beasts. This seems

[1] Burchell's or the white rhinoceros, and the common or black rhinoceros.

a terrible slaughter, but Andersson was not alone in his enormous bags. Oswell and Vardon, who hunted purely for sport and pleasure in middle Bechuanaland during the forties, shot no fewer than eighty-nine of these animals in a single trip. Moreover, Andersson, who was a poor man, shot to some extent for profit, to enable him to bear the cost of his expeditions. Ivory was valuable to him, and for the horns and hides of his rhinoceroses he could always obtain hard cash.

Soon after this rhinoceros adventure Andersson, having known great toil and privation, reached Lake Ngami, and thereafter explored the lower regions of the Teoughe River[1] for eleven days, from its junction with the lake, until, being prevented by the jealousy of the chief Lechulatebe from obtaining any further assistance in boats, native paddlers, or a guide, he was compelled to turn southward again.

Quitting the lake, he undertook a most fatiguing journey of a thousand miles to Namaqualand and back to procure a wagon with which to transport his ivory and natural history collection to the coast. He had reached Lake Ngami from Walfisch Bay, it is to be remembered, with pack and riding oxen. During this journey, undertaken for the most part through burning and inhospitable deserts, the traveller had many adventures. One night, while watching at a pool of water, having slain a white rhinoceros, he fell asleep. Like most great land travellers and nearly all sailors, however, he slept very lightly, and retained a certain consciousness of what was going on around him.

Suddenly it seemed to him that he was in danger. He woke to find the breathing of some animal close to his face, " accompanied by a purr like that of a cat."

[1] Now better known as the Okavango.

I knew that only one animal existed in these parts capable of producing such a sound, and at once came to the conclusion that a lion was actually stooping over me.

It was a sufficiently desperate situation. Andersson, however, always had his wits about him in such emergencies. He stealthily picked up his rifle, eliciting a warning growl from the fierce beast above him. Then, getting the loom of his adversary's body, he quickly levelled his rifle and pulled the trigger. The rocks rang out with the report of his weapon, mingled with the enraged roarings of the wounded lion, which was now tearing up the ground in its death agonies.

During this desert journey to Great Namaqualand Andersson constantly endured the cravings of hunger and the agonies of thirst. He travelled with only a horse and a native guide; they had scanty supplies, and the expedition was made with almost every circumstance of discomfort and hardship. Once his horse and himself went down together on a scorching plain, under the burning sun, and lay for hours in a state of semi-consciousness and exhaustion. Well might the traveller in the forbidding deserts of South-west Africa exclaim that to overcome them it required " the endurance of a camel and the courage of a lion."

Andersson set eyes on Ngami in 1853. In 1854 he visited Europe and published his first work, *Lake Ngaffti,* which met with much appreciation. In 1856 he assumed for a time the managership of some tentative copper-mining works in Great Namaqualand. These proving a failure, he set about the exploration of the unknown interior, and, after a long and harassing expedition, during which he traversed the then unknown Kaoko' Veldt, shot large quantities of game, and collected much ivory, he finally reached, in 1859, the upper waters of the Okavango River, his greatest and most important

discovery. Before reaching this great river he and his followers passed through a country which fairly swarmed with elephants. The whole veldt, in the neighbourhood of a large *vlei*, was literally one immense network of their footprints. At night their shrill trumpetings constantly startled the travellers from their sleep. If, instead of pushing on with his exploration, Andersson had devoted himself exclusively to ivory-hunting he could at this period have ensured a most remunerative journey. Like Livingstone, however, he was bitten with the passion for discovery, and, leaving elephants, pressed on. A noble stream, 1200 feet in breadth, presently rewarded his enthusiasm. But he and his men were now too reduced by fever to follow up the discovery of the Okavango, and after a brief sojourn on its banks they were compelled to beat a retreat. It was a bitter moment indeed for the discoverer.

During this memorable expedition Andersson enjoyed some wonderful sport and had his fill of adventures. He was at times very successful with elephants. Once he had before him the strikingly majestic spectacle of nearly a hundred and fifty of these great beasts drinking by night at the water by which he lay concealed. He had already shot two of the mighty pachyderms from another troop.

> The moon was just then nearly at its zenith, and shed a glorious and dazzling light on the huge creatures below. I felt no inclination to disturb so striking a picture; and indeed, if I had been disposed, it would little have availed me, as the *vlei*, in the direction occupied by the elephants, was totally destitute of cover. So all I could do, and did, was to look on, sigh, and admire.

However, as the troop, having quenched their thirst, moved away, Andersson followed them, and after a sharp encounter brought down yet another, which made his bag three for the night. Against this same troop

he had an exceedingly narrow escape from death a few days later. Elephant-hunting on foot is, beyond all doubt, one of the most ha2ardous of sports, and Anderssorl agrees with Selous in characterizing it as the most exhausting occupation in the world.

At Omanbonde, a large *v,'ei*, four and a half miles in extent, prodigious numbers of game were seen, including elephants, rhinoceroses, elands, kudus, gemsbok, zebras, pallahs, and lions. Near here occurred a fatal encounter with a black rhinoceros in which one of Andersson's Damara servants, Kozengo, lost his life. Andersson had wounded the animal while watching the water the night previously. As they approached it next morning the beast rose and came straight at them. All scattered, and after a brief flurry Andersson, creeping cautiously up to the monster, which now stood again, dropped him dead in his tracks. Returning for his men, he discovered them vehemently discussing some exciting event, some lamenting, some holding their sides as if in pain. He asked for Kozengo. " Dead, sir ! " was the reply. Kozengo had, indeed, by some extraordinary mischance, been slain, as he lay crouching under the shelter of a bush, by a single stroke of the rhinoceros's fore-horn. " His forehead was split in two . . . and part of the brains were mingling with the dust."

This same rhinoceros had, before being killed, been attacked when wounded by a pair of lions, which, after a desperate scuffle, had been beaten off. No doubt these carnivora had been emboldened beyond their wont by the smell of blood, as in the ordinary way the lion never dreams of interfering with a full-grown' rhinoster.' Andersson mentions this as the only attack of its kind he had ever heard of.

Here, too, Andersson encountered a troop of lions during one of his night watches, and, severely wounding

one, bagged it next morning, after an exciting scene in which a number of his dogs and about a hundred Damaras were involved.

It is impossible within the limits of this chapter to linger much longer over the innumerable adventures of this daring and stout-hearted explorer. On his retreat from the Okavango he encountered incredible hardships and many dangers. At one time he was held fast in the wilderness by an appalling drought in front of him, and there seemed every likelihood that he and his people would be attacked and overwhelmed by the Ovampo, who had a short time previously come to blows with a European party. Happily he was rescued in the nick of time by his friend and comrade Frank Green, another famous hunter and traveller, during the fifties, in South-west Africa.

Andersson once more returned for a brief spell to civilization, reached the Cape in 1861, published his second book, *The Okavango Rtver*, and married in the same year. Thereafter he established himself as a trader in the Damara country. Unfortunately the people of these parts were almost always at war with the quarrelsome and raiding Namaqua Hottentots, and as the latter were almost invariably well equipped with firearms and were mounted, the spear-using Damaras, who boasted only a few guns, got the worst of the encounters. Andersson sided with the Damaras, and in defending his trading station at Otjimbinque received a musket-ball which shattered his knee and crippled him for the remainder of his life. The Namaqua raids practically destroyed his business in Southern Damaraland, and after another visit to the Cape Andersson determined once more to take the field and make a journey of exploration towards the Cunene River, with the idea of establishing a new trading station in that country, far

removed from the assaults of the plundering Hottentots. He was now in but poor health, his constitution, shattered by fevers, hardships, wounds, and hard work; and, although no more than forty years of age, he was but the shadow of the strong and tireless hunter and explorer of the early fifties. He reached the Cunene River, but his health had by this time become steadily worse. During his return journey he died, on July 6, 1867, in the Ovampo country, in the arms of his devoted friend and fellow-traveller, a young Swede named Axel Ericsson, to whom fell the sad and pitiful task of burying his dead comrade in that lonely wilderness. Ericsson himself afterwards became distinguished as a keen hunter and explorer, and succeeded in establishing the most lucrative and famous trading business in this part of Africa, where he survived till comparatively recent times.

Charles John Andersson, with the slenderest personal resources and no aid from rich patrons or societies, accomplished much during his career in South-west Africa. Energetic, prudent, unwearying, ever full of courage and of hope, a bold hunter and a great naturalist, he deserves to be far better known than he is. His work was done for England, his books were published in English ; and though, through the folly of our statesmen, Germany was suffered in the year 1884 to lay hands upon the vast country which he did so much to open up, Andersson's explorations, his labours, and his sacrifices ought never to be forgotten by men of British blood.

XIII

THE CARACAL

THE desert lynx, or caracal *(Caracal caracal],* is known generally throughout South Africa by its Boer Dutch name *rooi-kat,* or ' red cat,' obviously bestowed upon it because of its rufous colour. It is also the *tuane* of the Bechuanas, and the *nkawa* of the Amakosa Kaffirs. Although partaking strongly of the nature of the true lynxes of colder climates, the caracal is regarded by scientists as an intermediate form between those animals and the typical cats. It stands from 16 to 18 inches at the shoulder, has been known to measure as much as 4 feet 3 inches in length, and is beautifully shaped for strength and activity. It has long, muscular limbs, large, open paws, a tail reaching well down to the hocks —much longer than in the Northern lynxes—and long ears, ending in black tufted points. It has no ruff, unlike the Northern form. The general colour is rufous fawn; the fur is thick and soft; the under-parts are paler, with rufous spotting. In quite young kittens the whole of the body is spotted. The lower part of the cheeks, the chin, and the upper part of the throat are white, the outer parts of the ears are black, and a line down either side of the nose and two spots on the forehead are of the same hue.

The caracal is fierce and daring in its search for food ; it is, moreover, extraordinarily active, and, as its long limbs indicate, can gallop at a great pace. I have more than once seen one get away from a pack of miscellaneous dogs in a run of half a mile over fairly open country.

In a long chase, however, the dogs, if they are pretty good ones, have the better of it; and the Bechuanas, who collect a large number of the pelts of these animals, habitually run them down, and club them with their knobkerries or stab them with spears. These natives also snare them very cleverly and fairly often—a considerable feat, if one remembers the shy and suspicious nature of these lynxes. The skins are always in great demand, and the Bechuanas make very beautiful karosses or rugs of them, usually consisting of sixteen pelts, which are most dexterously and neatly sewn together with fine sinew. These karosses are very light, yet beautifully warm, and seem to have the peculiar faculty of attracting or developing electricity. I remember travelling down-country by post-cart with one of them on a clear, cold winter's night; when the hand was passed lightly over the kaross sheets of sparks were emitted from the soft fur, and the crackling noise was quite remarkable. The Boers swear by these skins as a remedy against rheumatism, and I have known a good many colonists who used them as blankets, and always spoke well of the effect of thus employing them. A good *rooi-kat* kaross was, years ago, always worth five pounds, even up-country ; the value at the present time must, I fancy, be considerably more than that figure.

The caracal is found all over Africa, from north to south, in country suited to its habits. It is found also through Arabia and Persia to Western India. It used to be plentiful in Cape Colony, but, owing to its assaults on the sheep and goats of the farmers, it has for many years been persistently shot and poisoned, and is now a scarce beast in the more settled districts. Bechuanaland and the Kalahari Desert have always been great strongholds of this lynx, the dry and elevated nature of the country seeming to be peculiarly favourable to

its existence. The *rooi-kat* appears to be practically independent of water for long periods, and Bechuanas and Bushmen have told me that it seldom needs to drink. This statement is borne out by the experience of a lady, Mrs Butler, who, in the *Year-book of the Amateur Menagerie Club* (1913), gives some very interesting notes on a tame lynx of this species which she had in captivity.

> Caracals do not seem to require anything to drink, and though mine was fond of milk as a kitten, he probably looked on it more as food than drink, for he never touches water, and did not drink during the dry, hot summer of 1911.

In fact, although it seems to be a generally accepted axiom that the carnivora require water at least once a day, this is by no means really the case.

The cheetah in South Africa inhabits much the same kind of country as the caracal, and I am persuaded that, like the caracal, it often goes for comparatively long periods without drinking. Some of the wild cats and *Viverridce* which inhabit the dry Bechuana and Kalahari country—among them the now very rare black-footed cat *(Felis nigripes)*—must frequently be compelled to go for long periods without drinking. These African lynxes are very hardy beasts, as, indeed, they need to be to stand the severe winter climate of the Karroo, Transvaal, and Bechuanaland plateaux, where night frosts exceeding 10 degrees are often registered. These plateaux are, for the most part, of the respectable altitude of 4000 feet or a little less.

The caracal is essentially nocturnal in its habits, and preys, as I have said, on sheep and goats, taking preferably the smaller and more defenceless animals. When sharp set it will not, however, hesitate to attack a full-grown sheep or goat. It preys also, in the wilder parts of the country, on small antelopes, such as steinbok and duiker, and the fawns of springbok and other species.

These lynxes undoubtedly catch and kill also a considerable number of game birds, the francolins, bustards, and guinea-fowl all contributing to their maintenance. When put to it they do not disdain to avail themselves of less palatable food; the late Mr W. Cloete, of Albany, Cape Colony, once found an entire mongoose *(Herpestes pulverukntus)* in the stomach of a caracal which he had shot.

The number of young produced at birth is usually from two to three, but an instance is recorded where as many as five kittens were brought forth.

Caracals are fierce and intractable animals, using their teeth and claws with great effect. They are not, however, to be compared with the leopard in boldness, and I have never heard in South Africa of a man being attacked by an unwounded one. The fact that the Bechuanas, when hunting them with dogs, occasionally put an end to them with their knobkerries is pretty convincing proof of this fact, for these natives would never dare to tackle a leopard except with rifle or assagai. Nevertheless, except in extreme youth, the caracal is by no means a friendly animal, or one to be trusted in captivity. Mrs Butler, whom I have quoted, states that her caracal, which came from the Sudan, was, when a very small kitten, " of most endearing ways and a very sweet temper. He clung with his paws round one's neck, and offered and returned caresses with licks of his tongue—and a very rough tongue it was ! " When a little over a year, however, he became savage and quite unmanageable, and had to be placed in a cage. After this he was never to be trusted, and, although occasionally allowing his mistress to stroke him through the bars, he would suddenly lose his temper and turn on her in fury, with outstretched claws, ears laid back, and teeth gleaming. I have seen one of these

creatures, when bayed by dogs, present just such a picture and inflict severe injuries on his assailants until put an end to.

Notwithstanding the apparent intractability of their nature, these lynxes, when taken young, are successfully trained by natives of India and Persia for catching birds, and even small antelope, deer, and hares. Jerdon, writing in the seventies of last century, states that the then Gaikwar of Baroda kept a pack of caracals. As illustrating the lightning-like swiftness and dexterity of these carnivora, a caracal, slipped at a flock of pigeons feeding on the ground, has been known to strike down as many as four or five of the birds before they could get out of its reach. It is evident from this trait that these animals in the wild state can have small difficulty in capturing the game and other birds on which they often prey.

Some naturalists have proposed to separate this African lynx into races or sub-species, chiefly by reason of some slight variation in colour. Others, with whom I entirely agree, hold that there is only one race of caracal to be found in the whole continent. The skins of these animals vary somewhat in hue, probably owing to differences in age and in the nature of the habitat. The Bechuana natives are at great pains to match the hues of their pelts as nearly as possible when making karosses. Some skins are of a wonderfully rich, bright rufous ; others show a darker, some a greyer tint. These latter, I think—and I have examined very many of them (some before the animals were skinned)—belong to the older and more mature specimens. A kaross of sixteen *rooi-kat* skins which I have had in my possession for many years, and which I bought for five pounds from a Bamangwato native, is still in excellent condition. It is the lightest and the warmest fur rug I have ever

handled. The bright rufous hues have faded but little, and the skins still show that the caracal of Southern Africa is as bright in colour as most of its relatives in more northern parts of that continent.

This very beautiful lynx is certainly one of the most interesting and attractive of all the African carnivora. The name by which it is most commonly known in Europe—' caracal'—is of Asiatic origin, from *karakal*, of the Turki dialect, and should be pronounced with the 'c ' hard. *Karakal* means ' black-eared '; *styah-gush*, another name for this animal in India and Persia, has exactly the same meaning. The Arabs of North Africa know this lynx as *urn rishat*—' mother of tassels'—obviously from the tufted ears.

XIV

OTTERS IN SOUTH AFRICA

IT is perhaps hardly surprising that very little is known of the otters of South Africa, a country where the geographical area is immense and the population very scanty. One may, in fact, search fifty well-known books of African sport, travel, and nature without finding more than half a dozen brief references to otters. These may be discovered in the works of Lichtenstein, Sir Andrew Smith, Mr F. Vaughan Kirby, and Mr W. L. Sclater. Mr Sclater, in *The Fauna of South Africa,* admits that " little has been recorded about the habits of this otter " ; while of the other species mentioned in his book there merely follow the description, dimensions, and distribution.

In South Africa two species of otters have for a long time been recognized, although much remains to be discovered about their distribution and habits. These are the Cape otter *(Lutra capensis),* sometimes called the clawless otter, and the spotted-necked otter *(Lutra maculicollis).* To these have been added recently the Rhodesian clawless otter *(Lutra capensis hindei)* a variety or sub-species of the Cape otter. Concerning this Rhodesian sub-species some interesting details contributed to the Swedish journal *Arkiv for Zoologi* by Professor Eimar Lonnberg, of Upsala, appeared in *The Field* a few years ago.

The Cape otter, *intini* of the Zulus, Swazis, and Amakosa Kaffirs, *itini* of the Basutos and Bechuanas, is, next to the Brazilian species, the largest of the genus.

A specimen in the Capetown Museum measures 50 inches in length, of which the head and body occupy 32 inches and the tail 18 inches. The general colour is dark brown, not unlike that of the British otter; the tip of the nose, the whiskers, upper lip, cheeks, chin, and throat are white. This animal has been well called the clawless otter, the forefeet having no traces of nails, while on the hind-feet only the third and fourth toes carry small, flat, rounded nails. The forefeet are only slightly webbed at the base ; the webbing of the hind-feet extends as far as the distal joint. The Cape otter has a wide distribution in Africa, being found northward as far as the Gold Coast on the west and Zanzibar on the east. In South Africa it is well known, and haunts most of the river systems between Cape Colony and Natal and the Zambezi. Up-country, almost wherever one goes, the natives bring for barter the skins of this and, somewhat more rarely, of the spotted-necked otter; and there is no doubt that both species exist side by side and are fairly plentiful wherever rivers, lakes, and *vleis* are to be found. This otter is reported from Lake Ngami, and I have found both this species and the spotted-necked otter on the Botletli River, which is connected with the lake. It is found in many parts of Cape Colony, and is familiar even in the vicinity of Capetown. Among the Bechuana natives, who live in the neighbourhood of the Limpopo and Botletli Rivers, right away to Lake Ngami, the fur of this otter is much sought after for making into karosses or rugs, in the securing of which these people are peculiarly expert. A good kaross of this or the spotted-necked otter is worth, even up-country, five or six guineas, and, as these shy and nocturnal beasts are not easily snared and are seldom shot in daylight, skins are hard to come by. The value of these extremely handsome rugs is, of

course, likely to increase rather than decline as civilization advances in South Africa.

The Cape otter subsists undoubtedly on many kinds of food, including fish, frogs, crabs, mussels, occasional small mammals, and the young of various waterfowl. From its structure one may say that it probably does not rely so much for its food on its swimming powers as does our British otter ; but that it does eat fish I have no doubt at all. On the muddy shores of the Botletli River I have found fish partially devoured, with the well-marked spoor of this otter alongside. During the dry season, before the annual inundation of the lower reaches of this river sets in, immense quantities of fish are huddled together in chains of shallow pools. From these the Cape otter has no trouble whatever in obtaining his supplies ; I have seen him at work. The spotted-necked otter, pelicans, and fishing eagles all took their fish supplies from these same pools, and the Bakurutse natives were occasionally to be seen wading in line, middle- or breast-deep in the water, spearing fish, often of large size, in their steady progress. The pelicans pouched their prey, and flew off each morning to a neighbouring salt-pan to swallow and digest them. The remains of the banquets of the grand African fishing eagle *(kiatiaetus vocifer)* were often to be seen on the shores of the Botletli River, but these were easily to be differentiated from the remains of those fish which had fallen victims to the otter. In these last only a piece or two out of the shoulder had usually been devoured. The English otter has much the same prodigal habit where fish is plentiful.

Skins of both species—the Cape and the spotted-necked otter—were brought to us by natives in this part of Ngamiland, and occasionally, as I say, the animals themselves were seen in the living state. They are shy,

nocturnal creatures, however, as in most other parts of the world, and do much of their hunting by night. Our wagon dogs sometimes drove them from their hovers. Walking down to the Botletli one morning at early dawn, to shoot wildfowl, I had a fine view of a bitch otter of the Cape species swimming with three-quarter-grown young ones along the banks of the river. All swam with complete grace and ease, and were manifestly as perfectly at home in the water as the British species. I have seen both this and the spotted-necked species at other times on the Botletli, as well as on the Limpopo, Gamtoos (Cape Colony)—here only the Cape otter for certain—and other rivers in South Africa. Dr Lonnberg suggests that the Cape otter subsists mainly on molluscs, this view being apparently derived from its dentition and from the habits reported of its near ally, the Rhodesian clawless otter. In some situations and under certain conditions I believe that this otter, with its powerful jaws and teeth, can and does subsist on a diet of this kind. But my own observation and the reports of natives convince me that in suitable haunts it partakes of a much more varied dietary. It is a curious fact, by the way, bearing out the view that this otter can adapt itself largely to a diet of crabs, as well as crawfish, mussels, and other shellfish, that on many parts of the coastline of Cape Colony, sometimes where there are no rivers near at hand, the Cape species is to be found supporting itself apparently with perfect ease.

The spotted-necked otter is somewhat darker in colour than the clawless, and measures and weighs considerably less. A fair specimen will measure about from 34 to 36 inches, of which the tail extends to some 14 or 15 inches. The upper and lower lips are white, and the throat and chest are curiously spotted with light red,

whence the animal derives its name. Both forefeet and hind-feet carry claws upon each toe, and all are strongly webbed. This otter, in fact, seems even more perfectly adapted for existence in the water than its larger and heavier cousin the Cape otter. In Cape Colony the spotted-necked species is not well known, though I believe it has been found in some few rivers. Lichtenstein, who procured the first specimens during his travels in South Africa (1803-6), is believed to have obtained them from the Bambusbergen, in the north-east region of the Old Colony. It has been found in the Transvaal on the Limpopo, in Ngamiland, Natal, Mozambique, Rhodesia, Nyasaland, and on the west coast, from Angola and the Cameroons northward as far even as Liberia.

As a rule hunters in South Africa are busied in the pursuit of other and to them more important game, and hitherto little attention has been paid to shy creatures such as the otter. In the future I am convinced that the spotted-necked species will be observed and reported from many more localities than at present. I believe that many years ago I saw one or more of these otters on the Gamtoos River, and I have little doubt that this otter will be identified from various rivers in Kaffraria, and even in the Old Colony, as well as from many other localities farther north. The habits of this otter are very much like those of the British species. It is an expert fisher, and devours at times other kinds of food, such as small mammals, the young and eggs of wildfowl, crabs, freshwater mussels, and other odds and ends. Coarse fish of various kinds are extremely plentiful in most South African rivers, and this otter has small difficulty in satisfying the major portion of its wants from this source.

Another clawless otter, the Rhodesian, has, as I have pointed out, been recently noticed in South Africa.

This and the two already described are at present the only otters yet discovered in that country. No otter-hunting has hitherto been attempted there; but I am convinced that an excellent opening for this sport exists in many parts of South Africa ; and I have little doubt that within the next few years otter-hunting will not only be inaugurated, but will become a favourite pastime there. It is essentially a warm-weather sport, and many South African streams lend themselves admirably to its pursuit.

Some years ago I came across an Englishman who had made the discovery that otters existed in the Lake Bangweolo country in enormous numbers. He had set native hunters at work to trap and snare them, was then collecting a large number of skins, for which he got good prices, and expected to make a considerable sum of money by his enterprise. The skins he described as splendid specimens. Whether he has yet exhausted the lake and river regions of the Bangweolo country I have never heard.

XV

WILDFOWLING ON A SOUTH AFRICAN LAGOON

I HAVE seen many fine displays of wildfowl in various parts of South Africa, but never have I witnessed so great a wealth of duck, geese, widgeon, and teal as on the vast lagoons created by the overflow of the Botletli River, Ngamiland, during the middle of the dry season. We were hunting big game in that region, and although we were pretty fully engaged in that engrossing pursuit, we occasionally had an off-day, which we devoted to the wildfowl thronging the waters near us. The peculiarity of the Botletli River is that on its lower course, which runs through a series of flat, parched plains, it overflows its banks, and, spreading over the surrounding country, creates a vast series of lagoons and rivulets, which attract immense flocks of wildfowl. This happens, curiously enough, in the very middle of the winter season, when the whole of the neighbouring country is parched and dried up. The reason for this singular and most striking inundation seems to be this. The Botletli, although connected with Lake Ngami, is chiefly fed by the Tamalakan River, which carries into it the surplus waters of the immense marsh systems of the Lower Okavango, Tso, Mababi, and other rivers, recruited during the season of the rains. Owing to the extremely flat terrain of Ngamiland, this overflow proceeds very slowly, and the lower Botletli and its lagoons are not filled to overflowing until July and August, some three months after the rains have ceased.

One morning in July, after several days spent in hunting giraffe, blue wildebeest, lechwe, zebra, springbok, and other game, my shooting companion and I betook ourselves for a day's sport to the lagoons lying not far from our camp. After a long course of the flesh of heavy game we sighed for a change of diet; while the majestic inundations spreading between us and the main river, the vast sheets of water, thronged with wildfowl of innumerable kinds, had, after the dry plains we had been hunting in and the parched acacia forests of the North Kalahari, irresistible attraction. Taking our shotguns and a boy apiece, and leaving our ponies at the wagons, we strolled in the direction of the water. On our way along the rivulet which fed a fair-sized lagoon near our outspan we saw a good many interesting birds, among them the squacco, purple and Goliath herons, a few of the beautiful lesser egrets, and several pairs of the charming little black-and-white kingfishers *(Ceryle rudis)* which were always to be found fishing about the waters near our outspan.

Before reaching the lagoons, where we expected to secure the greater portion of our bag, we shot a couple of Egyptian geese, both resplendent in that handsome colouring which makes them so remarkable. These geese, which are far better to look at than they are to eat, were often seen about our encampment at early morning, and were occasionally noticed sitting in the tall motjeerie-trees quite close to our wagons. A leash of crested coots also fell to our guns. These birds are by no means bad eating, and were relished by some of our natives. They are dark grey-blue in body colouring, with black heads and necks and green legs. This coot *(Fulica cristata)* is readily distinguished by its white frontal shield and the two curious double knobs, rufous in hue, which compose its crest. It is widespread

throughout South Africa, and may occasionally be seen even at sea, where it faces the rough water extremely well. Crested coots are often found in very large companies ; they fly extremely well, and, like our own coots on the Norfolk Broads, offer, when hustled, very sporting shots.

Another gallinule, of which we secured a specimen or two this day, was the very beautiful green-backed porphyrio, sometimes called the blue gallinule *(Porphyrio smaragnotus),* whose curious deep guttural note can never be mistaken. These birds we put up, after some trouble, from a patch of reeds ; they are heavy flyers, and, once forced on the wing, are easily secured. The colouring of this elegant bird is very lovely. The head, the back of the neck, and the wings are a shining violet, the back and rump dull, glassy green ; the tail is dull green, with a patch of pure white about the vent. The throat, cheeks, front of the neck, and under-portions of the body are a beautiful violet-blue, while the legs, the bill, and the frontal shield are crimson. This and the charming little *Gallinula angulata* are certainly the two handsomest waterhens I have ever set eyes on. It is, by the way, curious to find our common British moorhen widely distributed all over South Africa.

Presently we emerged upon quite open ground, and now saw stretched before us a fine waterscape. To the left, between us and the main river, lay, shining like mirrors under the strong sunlight, strings of lakes and lagoons, with here and there small islets crowned with palms rising from among them. The course of the Botletli was indicated by a few palm-trees growing here and there along its course. To the right, where the inundation had not yet so fully extended, were more lagoons, connected with the main river by deepish streams, which continually added to the slowly increasing expanse of water. Along these streams were borne

various kinds of fish. Sometimes as we walked or swam our horses across them, to get from one shooting ground to another, shoals of lively mullets were to be seen leaping briskly about us. Nearly all these waters were patched and dotted—in some places black—with water-fowl, and to the lover of nature the whole picture was a magnificent one.

Each taking a lagoon, my shooting friend and I now made towards the serious business of the day. Sending my native boy to the far end of my piece of water, I waded into its cool depths and began my sport. Just as I wetted my boots a huge knob-billed goose, one of a couple which rose from the water not far away, circled round me, and within twenty-five yards I had no difficulty in bringing it down with a charge of No. z shot. As I approached the *vki* I could hear, long before the birds were disturbed, the wonderful noise and clangour of the wildfowl gathered on the surface of the water. It was a glorious sound, which to an English sportsman, to whom duck, geese, widgeon, and teal are not often revealed in very large numbers, was astonishingly welcome.

Seleti, my boy, now approached the main body of the fowl, which were collected for the most part at the other end of the lagoon, and put them up. With what a hubbub they rose ! One never can forget the multitude of their voices, the rattle of their wings, and the wild confusion that invariably reigned on these occasions as the fowl rose in the air. The sound was entrancing, the spectacle magnificent. Here were yellow-billed duck, one of the finest of all South African ducks. Then there were red-billed teal, Cape widgeon, dark brown South African pochards, with nearly black necks and breasts, and rich chestnut colouring about the cheeks and upper portion of the necks. Here, too, were com-

panics of the curious widow-tree duck, with half-white faces, ruddy breasts, and dark brown body colouring, as well as a few Hottentot teal and one or two other species. Conspicuous by their size were to be seen the grand spur-winged geese *(Plectropterus gambensis),* huge birds nearly twice as big as the knob-billed geese, and more than half as big again as Egyptian geese. From the shallows and shores of the lagoon rose, in sympathy with their fellow-denizens of the water, numbers of three kinds of ibis—the sacred, the bald, and the Hagedash species—as well as avocets, a few pairs of stilt-plovers, greenshanks, and a sanderling or two. Of the various sandpipers which visit South Africa in such large numbers the main army were by this time away north for their breeding season somewhere within the far Arctic Circle. Adding their clamour to the babel of bird voices were also spur-winged plovers, in their neat yet conspicuous plumage of black, white, and grey, whose sharp, metallic voices, as they came scolding in my direction, were easily recognizable.

Although but a moderate performer with the shotgun I had no difficulty in obtaining very many easy shots, as the various wildfowl came circling round my end of the water. Standing middle-deep in the lagoon, and picking my shots, I made pretty good practice, though occasionally I added some very bad misses. For the better part of two hours my native boy and I managed to keep the game going, until finally, having made many fruitless excursions up, down, around, and away from the water, the fowl began to recognize the fact that here, for the time being, there was no resting-place for them, and so betook themselves to other *vleis* and lagoons. By this time I had quite a respectable bag lying on the water about me, or on the shores of the lagoon. It took us some time to retrieve the birds,

and this business was not concluded until I had waded in up to my armpits, while Seleti, who had taken off his scant clothiiig, was occasionally to be seen up to his neck in the deeper portions of the lagoon. At present there was not much fear of crocodiles hereabouts, as the inundation had not reached its fullest height; but that these dangerous saurians do visit these outlying waters I have more than once proved by finding the skulls of dead monsters beneath the water, resting on the soil. A few days previously, while shooting lechwe waterbuck close to this place, my hunting companion had mortally wounded a good ram, which betook itself to the main river, and stood up to its belly in water. As some native Bakurutse ran in to spear it a crocodile, hidden in the depths, seized the wounded buck from beneath their very noses and dragged it under. We never saw the ram again. The *sauve qui pent* which followed was ludicrous, and this taught us some caution on a river system where these reptiles swarm. An upset in the frail, narrow dugouts in which the natives cross the Botletli would almost certainly end fatally, for in deep water the strongest man has no sort of chance with these hungry and carnivorous monsters.

My bag, presently laid out on the dry ground, was to me a thoroughly satisfactory one. It comprised three spur-wing and two knob-billed geese, four couple of yellow-billed ducks, and five couple of the various ducks, widgeon, and teal of which I have made mention. Sending back Seleti to camp to hurry up the ponies which were being walked down for the game, I went over to a neighbouring water and picked up another head or two of fowl. My comrade, whom I encountered a little later, being a first-rate shot, had amassed an even better bag than myself; and by the time the ponies came down to the water we had quite a respectable load

for them both. For the next two days we and our camp servants enjoyed plentiful repasts of wildfowl, of which by far the best were the excellent yellow-billed ducks, which, baked in a three-legged pot and well basted, were equal to the best European mallard I have ever tasted. Of the wild geese the most palatable is the big spur-winged goose, which affords excellent eating, and is quite a good table bird. The red-billed teal and Cape widgeon are also very good eating, and others of the South African ducks are by no means despicable to the wanderer in the veldt.

XVI

THE SASSABY OR TSESSEBY

FOR some reason or other the sassaby or tsesseby *(Damaliscus lunatus)* has never been a popular beast of chase among South African hunters. It is a fine big antelope, measuring upward of 4 feet at the withers, carrying plenty of flesh and fairly good horns, and is, moreover, distinguished by one of the loveliest coats to be found among African antelopes. Mr F. Vaughan Kirby, in his excellent article on this animal in *Great and Small Game of Africa,* offers two reasons for the lack of enthusiasm displayed by British and Dutch hunters in the pursuit of this antelope—namely, partly because it carries a very poor head, and partly because it takes too much out of one's horse to chase it. I doubt whether the first reason is sufficient. It is true that the horns of the sassaby, like those of the hartebeests, bontebok, and blesbok, are not so magnificent or so eagerly sought after as the splendid trophies of the kudu, gemsbok, and sable antelope. Yet they are by no means despicable, and, with their elegant sweep and curiously lunate shape, form a notable contrast in a collection of South African heads. The second reason assigned is much sounder. The sassaby is the fleetest antelope in Africa, and possesses greater stamina than any other, surpassing in these respects even the Cape (or red) hartebeest and the blesbok. To run these animals down on horseback is a hopeless task, and they are not always to be found in suitable ground for stalking. " Even the Boers and others, when ' hide-hunting,' "

says Mr Kirby, " recognize the fact that the pelts are scarcely worth the price they have to pay in horseflesh to secure them," and so they usually leave them alone, unless some especially favourable opportunity for a shot occurs. But, whatever the reason for its neglect, it seems that, compared with other antelopes, very little has been written about the sassaby.

To people in England who know the head of a kudu, sable antelope, or gemsbok, or even a harte-beest or waterbuck, when they see it, the sassaby appears to be almost unknown, or quite unfamiliar. So far as I can learn, these animals have never been shown in captivity at the Regent's Park Zoological Gardens, or in any other zoological collection in the British Isles. Nor are they more familiar in Continental gardens. Like many other South African antelopes, the sassaby is being steadily driven from its ancient haunts and gradually reduced in numbers. No doubt young animals might be captured in parts of South-east Africa, where the species is still abundant, and thence brought to Europe. It seems a great pity that this fine antelope should not, like so many other species, be exhibited in the flesh and made familiar before it is too late. On the other hand, of all antelopes the calves of the sassaby are perhaps most difficult to run down. You may surprise them possibly and thus effect a capture, but even in their extremest infancy they are hopeless little beasts to gallop down, even with a good horse. Years ago Selous made the attempt and failed. In his *A Hunter's Wanderings* he says :

> I had ridden at a walk through the bush for about an hour, when I sighted a small herd of tsessebe antelope feeding quietly down an opening in the forest. With them were two young fawns, which, from their diminutive size, I judged to be but a few days old. Being anxious to catch a few young antelopes, and having several cows in milk at

the wagons, I thought that this would be a good opportunity, and, anticipating but little difficulty in running down such tender-looking creatures, at once rode out into the open and gave chase. Never was erring mortal more deceived. The two little tsessebes, young though they were, ran every bit as fast as the old ones ; indeed, sometimes, when I made a spurt in the hope of cutting them off, they passed their dam at greyhound speed and appeared in the van of the herd. At last, disgusted and disappointed, I pulled up in mercy to my horse, which, I felt, had had enough of it.[1]

However, in the semi-afforested and well-bushed regions of South-east Africa, where these antelopes are still fairly abundant, there is no reason why the young should not be surprised and captured. Some of the hunting Boers of the Northern and Eastern Transvaal have become, in more recent years, experts in the capture of young game animals, which are afterwards sold and exported to Europe; and I still hope that we may through these sources receive consignments of these animals and see the sassaby in the life at the gardens of the Zoological Society in Regent's Park.

The sassaby is known to the Boers generally as the ' bastard hartebeest,' and to some of the old Dutch hunters of the Transvaal and Natal as the ' Zulu hartebeest.' It belongs to that group of antelopes known as *DamaliscuS)* latterly dignified by Lydekker as ' bastard hartebeests.' This group or genus includes Hunter's antelope, sometimes called Hunter's hartebeest, found in East Africa, the korrigum, or Senegal hartebeest of West Africa, the tiang of Sennaar, Kordofan, and the Bahr-el-Ghazal, the topi of East Africa, and the bontebok and blesbok of Southern Africa. In height, as I have said, the sassaby attains about 4 feet at the withers. Cornwallis Harris gives 4 feet 6 inches as

[1] Pp. 237-238.

the height, and it is quite possible that in his time (1837), when game was extraordinarily plentiful, animals of this stature might have been shot. In shape this antelope stands like its near congener the hartebeest, high at the withers, which are somewhat humpy, and slope considerably towards the rump. This slope gives an angular, slack appearance to both species. The eyes are placed high in the head ; the ears are long and pointed; the horns, strongly annulated for three-fourths of their length, are robust, and sweep boldly upward, outward, and at the tips slightly inward in a fine crescent-like curve. They are not very long; at the time of writing the best recorded pair measure iyi inches over the curve, 8i inches in circumference, and 9! inches from tip to tip.[1] These were obtained in Southern Rhodesia, and are in the possession of Mr H. M. Llewelyn. A good pair, shot by Selous at Daka, a little south of the Victoria Falls, measure 15^ inches. Some horns, usually those of old bulls, are much thicker than others. A pair in my possession, shot in the Pungwe River country, South-east Africa, measure 9 inches in circumference at the base, although in length they are no more than 14 inches over the curve. As with all members of the hartebeest family, the head of the sassaby is long and the face narrow, but these characteristics are not so absurdly marked as in the Cape hartebeest.

Certainly one of the most remarkable things about this antelope is its coat, which is not only singularly beautiful in colour, but is notable for a wonderful sheeny, satin-like smoothness not possessed by any other antelope in the world. The colouring is very curious, and may be described as a deep chocolate brown with iridescent, purplish, and occasionally orange

[1] *Records of Big Game* (Rowland Ward).

reflections. The under-parts are fulvous. The front of the face is dark, almost black, while dark slate-coloured patches are found from the middle of the shoulder to the knee, and from about the centre of the flank to the hock. Markings of the same colour are also to be found crossing the inner portions of both forelegs and hind-legs. The rump, as in the case of most of the hartebeests, is considerably paler than the rest of the upper colouring, and is fawn in hue. The lower parts of the legs are dark fulvous. The outer portions of the ears are brown, very dark at the tips, the inner parts whitish. The tail, about 22 inches in length, is black-tufted like that of the hartebeest. The neck is short, the body somewhat clumsy; the legs are clean and beautifully slender. The females are somewhat smaller than the males and carry more slender horns. The young calves are a bright yellowish-red colour. It is perhaps worthy of note that the females are provided with two *mamma*', as with sheep. In this respect the hartebeests and their allies differ from many of the large antelopes. The eland, kudu, and blue wildebeest (brindled gnu), for example, have udders with four teats, like the buffaloes and domestic cows. In this matter of *mammce* there is, by the way, some conflict of authority. Cornwallis Harris, in his appendix to *Wild Sports of Southern Africa,* states that the females of the gemsbok, roan antelope, waterbuck, and springbok are each provided with two teats. Mr W. L. Sclater, in *The Fauna of South Africa,* gives to each of these species four *mamma.* Mr Sclater is the latest authority, and is no doubt correct. The average hunter and sportsman seldom makes a note of these characteristics, which I confess to having myself in many instances, in the hurry of sport, failed to record. It seems a small matter, and in the operation of skinning and cutting up the carcasses of game it is usually

neglected. Yet, as indicating tendencies in mammals towards particular types, this is a point that should certainly be taken careful note of by all intelligent hunters and field naturalists. There seems to be nothing in the nature of a general rule to go by in this particular of the udders of antelopes. The cow of the blue wildebeest, for example, has, as I have remarked, four teats, while a nearly allied species, the black wildebeest, has two only.

The sassaby goes by many different vernacular names in various parts of Africa. Its best-known designation there, *tsessebe,* is that bestowed upon it by the Bechuanas. The Matabele call it *incolomo* or *incomazan*; the Makalakas *inyundo*; the Swazis and Amatongas *mzanci*; the Transvaal Basutos *inkalowane*; the Makubas *unchuru*; the Masubias *inkweko.* To the Masarwa Bushmen of the North Kalahari Desert it is known as *luchu.*

This antelope seems to have been first seen by Europeans during the expedition of Truter and Somerville, who travelled north of the Orange River, to Latakoo, in 1801-2. The animal was, at all events, figured in a collection of sketches made by S. Daniell (an artist, brother of the well-known William Daniell), who accompanied that expedition. Burchell met with it in 1812, and describes it as *Antilope lunata* in his book of travels. This excellent naturalist may be looked upon as practically the introducer of this animal to the notice of the world. Sir Andrew Smith, to whose celebrated expedition of zoological research we have already referred, called it *Damalis lunata,* afterwards altering its scientific name to *Bubalus lunatus.* With the advent of the hunters—Cornwallis Harris (1837), Gordon Gumming (1843-50), and others—the antelope became presently familiar to sportsmen interested in the splendid fauna of South Africa.

The sassaby was never found south of the Orange River. Its most usual southern limit seems to have been the borders of Southern Bechuanaland. Yet Gordon Gumming appears to have met with it on his first journey into Griqualand West in 1843, only one day after crossing the Orange. He says :

> We passed several troops of hartebeests and springboks, and saw for the first time a sassaby, a large antelope allied to the hartebeest, and of a purple colour.

I do not think that Gumming, who was a careful observer, can have been mistaken; but it is pretty certain that in those days sassaby seldom found their way so far south as this region. Burchell seems first to have noted this species on the Makwarin River, between Kuruman and Litakoo (now Takoon). Cornwallis Harris first met with it towards the Maritsani River, which runs between Vryburg and Mafeking, in what is now known as British Bechuanaland. The sassaby has, however, been driven from many of its former grazing grounds, and its range in Southern Africa is much more restricted than in the great days of Harris, Oswell, and Gordon Gumming. In Bechuanaland, once so favourite a habitat, this antelope is now first met with, in anything like abundance, in Khama's Country, towards Lake Ngami and the Zambezi. There it is still frequently to be encountered from the north bank of the Botletli towards the Zambezi River, and about the Mababi and Chobe Rivers. Sassaby are found in the little-known sand belts between the Chobe and the Okavango, but apparently are not found ranging westward of Debabe's on those rivers. Along the southern bank of the Botletli I never saw these antelopes or their spoor, although hartebeest, blue wildebeest, kudu, giraffe, Burchell's zebra, occasional roan antelope, springbok, and other game were to be met with. I believe a few

sassabies yet linger south of Khama's Country in Sebele's (the Bakwena) Country, Bechuanaland Protectorate, and here and there in the Northern Transvaal near the Crocodile River ; but if they find a precarious foothold there it must be in very limited numbers. In the Eastern Transvaal they were till recently, according to Mr Kirby, fairly plentiful. In parts of Matabeleland and Mashonaland they are abundant, while in the Pungwe River country, Portuguese East Africa, they are in places to be found in large numbers. North of the Zambezi this antelope is found in Barotseland. I have not heard of it from Angola, where Mr G. W. Penrice has shot specimens of most of the game of the country ; nor do I find any record of it in Damaraland, Ovampoland, or the country westward of Lake Ngami. In recent years European hunters appear to have met with sassaby in regions much farther north than they were ever supposed to range. Thus Mr Smitheman records the existence of this species on the Bangweolo Flats, in Nyasaland; while M. Edouard Foa, the well-known French hunter, whose premature death occurred some years ago, makes mention of the animal in the Congo country even yet farther north. In his book *After Big Game in Central Africa* he says :

> The antelopes which I have shot in the Congo, both in the forest and in the Manyema, are a smaller variety of hartebeest than the Lichtenstein, and with horns wide apart, on account of which it has been given the name of *lunatus* (it is also called [c] tsessebe '). . . -[1]

I do not know that the presence of sassaby in the Congo Free State has, however, yet been reported by any traveller other than M. Foa. The sassaby is apparently unknown in Kenya, and it may be doubted whether its range extends much, if at all, north of the equator.

[1] P. 234.

Sassabies in their habits a good deal resemble hartebeests. They are fond of flattish, open country, or of thin, park-like forest, diversified by glades and clearings. They are not apparently such resisters of thirst as hartebeest, and drink, where water is available, every day. In fact, some hunters will go so far as to say that where you find sassaby water cannot be far distant. Against this has to be set the fact that Bechuanaland, their ancient headquarters, is a waterless country, and that sassaby have been shot in the heart of the Thirst-lands of the North Kalahari, between Kanne and Inkouani. As a rule these antelopes run in troops of from eight to a dozen, but at times they are to be met with, in Mashonaland and the Pungwe River country, in hundreds. At such seasons they are probably so collected from the fact that water has failed in outlying districts, and they have been thus driven to resort to a river or some permanent supply. Selous noticed such an instance in 1879 on the Mababi River, Ngamiland, and wrote :

> On the' Mababi Flat, at the end of the dry season, large herds of these animals congregate together, and I have often seen, I am sure, several hundreds of them at once.

The calves are born from September to November, the time varying in different districts. " In 1879," says Selous,

> all the tsesseby and blue wildebeest cows calved on the northern bank of the Chobe during the first week in September, whilst on the Mababi Flat, only about one degree farther south, the same animals did not calve before the first week in November.

All hunters who have had experience of them are agreed that sassaby are the fleetest and most enduring antelopes in Africa, excelling in these respects even the hartebeest, the blesbok, and the blue wildebeest. Like the hartebeest, the sassaby moves in its slower paces in

a heavy and apparently ungainly fashion. This impression is, in the case of both animals, imparted no doubt by the humpy withers and drooping, three-cornered shape. But directly sassaby are thoroughly alarmed they stretch themselves out in marvellous fashion, and at a tremendous pace, and with smooth, free, untiring stride soon leave even the best mounted hunter hopelessly behind. It is useless to attempt to ride them down in a tail-on-end gallop. If the horseman canters quietly after them the troop may, as hartebeests so often do, swing round and stand for a minute or so to take stock of their pursuers. If within anything like range the hunter, jumping off, may obtain a reasonably good shot. As with hartebeest, blue wildebeest, and other game, a bullet aimed so as to strike up the dust in front of the fleeing troop will often turn them in the opposite direction and enable the sportsman to obtain the shot he desires. And, as in the case of hartebeests, whose habits those of the sassaby so much resemble, if the leader of the troop can be killed, or wounded and turned out, the rest of the antelopes become flurried and bewildered and offer easy shooting. The less sassaby are pressed the better chance has the sportsman of getting a head of game. In open bush or forest country, such as they often affect, sassaby can be very well stalked on foot—that is to say, if the sportsman knows his business. In Mashonaland, Matabeleland, and Portuguese East Africa many a head of this game has been secured by the foot hunter at distances ranging from 150 to 200 yards. This antelope offers a fairly good target, far better than the slim, pale-coloured, long-legged springbok, which nowadays can seldom be approached by the stalker nearer than from 250 to 300 yards. Occasionally sassaby are extraordinarily confiding. Mr Vaughan Kirby tells how, stalking it on foot,

he dropped a bull at 160 yards. The rest of the troop scarcely moved, and the sportsman was enabled to bag as well two cows, all three antelope lying within a few yards of one another. Apparently the remaining four sassaby could have been easily shot, as they made no attempt to run until the hunter showed himself. On the whole, however, the sassaby is a very vigilant and suspicious animal, quite able to take care of itself.

African antelopes have long been notorious for their extraordinary tenacity of life. Among hartebeest and blue wildebeest especially I have seen the animals get clean away, although bearing injuries that should have sufficed to ensure collapse to almost anything living. No antelope in the world can give points to the sassaby in this respect. Mr Kirby, in *Great and Small Game of Africa*, writes :

> I remember a friend (the late Mr J. W. Glynn) and myself firing at a bull and putting six bullets behind the shoulder within an area which we covered with the brim of a terai hat, yet he ran three miles afterwards before we recovered him.

This is a marvellous instance of the tenacity of life of these antelopes.

The flesh of the sassaby is fairly good eating. Towards the season of the rains, as the young grass springs again, they put on flesh and fat very quickly and reach excellent condition. Like the fat of some other South African antelopes, however, waterbuck's especially, the fat of the sassaby has, unless very hot, a tendency to harden and clog on the palate and teeth. The same thing may be noticed, in a lesser degree, about English venison as the warmth goes off.

Upon the whole, it may be said that sassaby are less difficult antelopes to bring to bag than hartebeest. On looking through the list of game shot by W. C. Baldwin

on his last expedition to the Zambezi Falls in 1860, in veldt tenanted alike by hartebeest and by sassaby, I note that that famous sportsman and his party bagged twelve sassaby as against one hartebeest. From Selous's list of game shot between January 1877 and December 1880 I find that forty-two sassaby were shot as against three Cape and three Lichtenstein's hartebeest. Everything considered, I am inclined to think that fewer hartebeest are bagged in South Africa than almost any other kind of antelope. Few sportsmen trouble to bring home with them skins of the larger antelopes shot by them in Africa. Yet many of the pelts are very handsome—well fitted, when dressed, to adorn a hall or a smoking-room. The hide of the sassaby, with its lovely purplish-brown hue and extraordinary iridescence, rivals even the wonderful coat of its cousin the blesbok, and is well worth preserving.

XVII

TWO SOUTH AFRICAN PICTURES

THE rains in South Africa bring many beautiful and very interesting phenomena which are not to be noticed at any other season. Among these one of the most wonderful is the swarming of the white ants, which is to be seen usually towards evening. Not only are these amazing congregations of insect-life wonderful in themselves ; they have the merit of attracting instantly legions of raptorial birds, which, for a brief space, are to be seen hawking at the myriads of ants as they whirl, like tiny flakes of rice, in the clear atmosphere. I have some notes and a most vivid recollection of one of these spectacles.

We were living in huts on the banks of the Maritsani River, in British. Bechuanaland. It was the month of February, and we had had good rains, which had refreshed the vegetation, cooled the earth, and, for a short time, filled the sandy bed of our normally three-quarter-dry river, which ran about a hundred yards below our huts. It was a charming bit of country, the watercourse passing from west to east through a terrain rolling and diversified, the banks of the river clad here and there with a good deal of bush and timber. Much of the same timber, the slow-growing, hard-wooded giraffe acacia, beloved of the tall camelopard, was scattered about the country in our neighbourhood, giving to it that park-like aspect which is always so welcome a sight to eyes that tire of the huge open grassy plains to be found over so much of Bechuanaland

and the Transvaal. The air was marvellously clear, the sun, now sinking to the western hori2on, was flooding the landscape with a rich, warm, roseate glow. Far to the eastward, banked faintly on that horizon, lay white masses of clouds, which at this season of the year bring up the rains always from that quarter.

After a long day on the veldt, shooting francolins and bustards—' partridges ' and ′ koorhaan,' as they are called in South Africa—I was in my hut, writing a letter or two. Suddenly one of my comrades called from outside, " Come and look at the white ants ! " I jumped up from my work and went into the open. Never shall I forget the scene which presented itself. Little more than sixty yards away to my right was one of the most remarkable spectacles that the eye of the nature lover can hope to behold. The whole air was filled with white ants, which, issuing from adjacent holes in a thick, continuous stream, were now swarming in the clear, warm ether for that brief winged existence in which they indulge themselves. Some, having finished their flight, were already on the ground, and, having, after their custom, bent up their tails and snapped off their wings, were already entering upon their terrestrial career in the busy, purposeful way which these insects invariably exhibit. It was marvellously interesting to note how deftly these creatures unhooked, as it were, their flying apparatus and proceeded to their allotted work. But by far the most wonderful spectacle was that to be witnessed in the air for the space of some few hundred yards above and beyond us. Countless swarms of the big yellowish white ants were thronging space, their shining rice-like bodies—the Boers well call them ' rice ants '—sparkling in the brilliant sunlight like a fine shower of frozen snow on a clear March day in England. Among these myriads of great ants were

darting in every conceivable direction hundreds of hawks and falcons, while occasional kites plied their devastating career ceaselessly amid the insect throng. It was a sight which held one spellbound with amazement and delight.

Half an hour before, when I had gone into my hut, there was not a white ant to be seen in the clear air, nor was a single raptorial bird within ken. Yet now, as I say, the white ants were abroad in uncountable myriads, while hawks and falcons thronged the sky by hundreds and kites by scores. Among the smaller raptorial birds were to be recognized several forms familiar in South Africa during the season of the rains, such as the western red-footed hobby *(Erythropus vespertinus)* the common European hobby *(Hypotriorchis subbuteo),* and the lesser South African kestrel *(Tinnunculus rupicolus).* Occasionally another kestrel, the western grey-winged kestrel *(Tinnunculus cenchris)* would appear among the throng, while the kites observed were that bold migrator the black kite *(Milvus migrans)* and the yellow-billed kite *(Milvus parasiticus).* I suppose that of the lesser hawks and falcons there must have been at least from one to two thousand within our purview, of which the kestrels and hobbies I have mentioned formed the vast majority. We shot three or four specimens of the hobby, the western red-footed hobby, and the lesser South African kestrel, and might have slain some score or two had we been so minded. So engrossed were all these birds in the pleasant task of gorging themselves with the white ants, of which they are inordinately fond, that they often came within easy gunshot of us. All these falcons, as well as other hawks, prey madly upon the white ant swarms when they appear. During this season, as, in common with many other creatures, they do when locusts appear,

they put on flesh amazingly. How these birds collect so swiftly and in such enormous numbers is one of those mysteries of nature which no man can explain. After the rains, which provide them with such an abundance of food, have vanished—that is, towards April—many of these raptorial birds quit South Africa, and pass to other parts of the world. Some, however, such as the lesser South African kestrel, the chanting falcon, and the many-banded sparrowhawk, remain throughout the dry season, and manage to sustain life even in an arid and sun-scorched wilderness.

For the better part of an hour we watched this matchless display of bird and insect life. At length the ants had finished the brief act of swarming ; the falcons and kites turned away and presently disappeared, and by the time the sun had sunk redly in the west, and the brief African twilight was upon us, the whole marvellous scene had vanished like a dream. Lest this account may seem overdrawn, let me explain to the uninitiated reader that such displays are well known to naturalists and observers of nature. C. J. Andersson, a most accurate observer, once had before his gaze an extraordinary spectacle of this kind. He and his fellow-watcher attempted to achieve a rough estimate of the numbers of raptorial birds seen. He says :

> Taking a small section of the sky, we came to the conclusion, by counting and estimating, that there were at least 10,000 individuals, and as the heavens above and all around us appeared to be darkened by a living mass of kites and hawks, we set down the aggregate number immediately within our view at 50,000, feeling at the same time that we were probably below the mark.

Let me carry the reader for my second scene to a locality much farther up-country, to a part of that trackless and waterless region known as the Kalahari Desert,

lying between Khama's Country of Bamangwatb and Lake Ngami. We were hunting giraffe in a grassy and well-timbered waste, utterly waterless save for the vanishing rain pool of Maqua, which, fouled by game and festering beneath the blazing sun of a South African June, stank abominably. Yet at this pool we had to fill our barrels and water our oxen and horses. Accompanied by three Masarwa Bushmen to spoor for us and with a Bechuana hunter as after-rider, we had been on the look-out for giraffe since sun-up. At about eleven our Masarwas halted for a brief space to rest our nags and pick up information from another desert Bushman, who, with his wife and child, was living alone in the very heart of this desolate wilderness. Their sole attempt at a dwelling consisted of a few branches of the bush behind them interlaced into a kind of low screen to keep the wind off them at night; while the family's earthly possessions were of the scantiest. They had nothing more than a skin or two, some small bulbs, the legs of an eagle, and a couple of calabashes. This Bushman lady was extremely voluble, and informed us that some giraffe had been feeding that morning close by. Her information was quite reliable, and within twenty minutes from leaving her we had found and were running the game we sought.

While we had been cross-questioning this good lady of the desert her husband, who just at that moment was away, had been attending to some business of his own. It is the custom among these people, who subsist for the most part on the game they kill, to burn off the winter grass, and so hasten the growth of the fresh crop, to which the wild game are naturally attracted. The Bushman, a quarter of a mile away up-wind, had just fired the edge of a long and wide open glade, which here was to be found among the surrounding forest.

While we talked to the woman the flames ran merrily before the breeze, licking up the dry, pale yellow, hay-like grass, and rapidly approaching us. As the flames spread they dislodged numberless butterflies and moths, which, mounting into the air, flickered bewildered hither and thither above the red fire and the dun smoke. As if from space had come, attendant upon those teeming delicacies, scores of brilliant rollers, birds of about the size of and having something of the aspect of a jay, resplendent in the most gorgeous plumage of blues, greens, lilacs, violets, and browns, in many exquisite shades. These birds seemed to appear the instant that the fire had begun; their numbers grew rapidly, and they were now feasting greedily on the insects thus provided for them. It was a charming spectacle in its way, and, upon a minor scale, quite as beautiful and quite as wonderful as the hawking of the white ants. The rollers, which at this dry season were mostly of one species *(Coradas caudata)*^ the lilac-breasted roller (the others having gone north with the rains), had been summoned from over a space of some miles of the neighbouring forest by some agency swifter even than the telegraph. How was it managed ? How did the tidings spread ? Possibly in much the same fashion in which vultures, soaring far apart in the sky, learn from the downward flight of their nearest neighbour that the flesh banquet awaits them below. Anyhow, in three or four minutes from the starting of the Bushman's fire these forest rollers, which are by no means plentiful over a given space, were on the spot and hard at work.

The fire swept on; it drove the Bushman's wife and her babe pell-mell from their *scherm*; and still the devouring birds accompanied the fire, hawking fiercely at every butterfly and insect that they could lay their

bills to. In twenty minutes the flames had swept the grass glade clean, the birds had vanished, the show was over. While it lasted the interlude had been full of fascination; it left upon the memory one of those sharp natural daguerreotypes that never subsequently fade. We bade farewell to our Bushman friends, rode away, and were soon busied with the giraffe chase.

XVIII

THE PAAUW OR KORI BUSTARD

THE great bustard of South Africa, known to naturalists as *Eupodotis kori,* and to the Boers always as the *gom paauw,* is doubtless the largest and heaviest bustard in the world. Its weight, in exceptionally fine specimens, has reached as much as 40 pounds. So far as I have been able to ascertain, the great bustard of Europe *(Otis tardd),* found also in North Africa and Asia, seldom exceeds 30 pounds. So many sportsmen in South Africa who shoot the paauw have no means of weighing the bird soon after it is bagged, or are too careless to think of it, and actual records of weight are therefore very scanty. Personally I have never seen a paauw that scaled more than 32 pounds. Mr H. T. Glynn, formerly of Lydenberg, East Transvaal, a well-known South African sportsman, shot one which weighed 40 pounds ; the head and neck of this specimen were sent to the British Museum. In *A Hunter's Wanderings* Selous mentions that he shot

> an enormous bustard, which was excessively fat and heavy. Unfortunately, I had no scales with which to weigh it; tut I do not think it could have been less than 40 pounds before it was cleaned. The fat on its back was nearly an inch thick.

This paauw was shot with a Martini carbine on the Botletli River, Ngamiland. W. C. Baldwin, already mentioned, one of the most famous of the bygone school of South African hunters, records in his book *African Hunting from Natal to the Zambezi* that he shot,

in the Western Transvaal, a huge paauw, " the fattest and largest I have ever seen; not being able to weigh him, we can only guess, but the lowest estimate is 50 pounds Dutch, 54 pounds English." This seems an enormous weight for any bustard in the world, but Baldwin was a very experienced sportsman, and I do not think it absolutely impossible that a South African bustard might touch even this estimate. The Hon. W. H. Drummond, author of *The Large Game and Natural History of South-east Africa*, a most experienced all-round gunner, credited this bustard with an occasional weight of 50 pounds. These are authorities whose testimony it is difficult to dispute. It is to be remembered that when the sweet gum is running from the thorny acacia-bushes, chiefly the *Acacia horrida*—mimosas, as many people erroneously call them—the paauw feeds greedily on this dainty, and puts on weight to an inordinate degree. From this well-known characteristic the bustard has obtained its Boer name *gom paauw*, which may be translated as ' gum peacock.'

An old friend of mine, the late Mr J. B. Evans, of Riet Fontein, Cape Colony, gave me an extraordinary instance of the proportions thus attained by the paauw during the gum season. He and a friend were stalking one of these birds in the neighbourhood of a rocky hill. It rose seventy yards away, and both sportsmen fired their rifles. One of the bullets told, and the great bird, towering above the *kopje*, fell headlong. So fat was the bustard that when it struck the rocks it burst literally into pieces, and, to the chagrin of the gunners, they found, on reaching the spot, nothing worth carrying away.

As to the name *paauw*, which, as I have implied, is the Cape Dutch word for ' peacock,' a line of explanation may be given. The early Boers, who first en-

countered this bird, undoubtedly bestowed upon it the designation ' peacock' after observing the behaviour of the males during the courting season. At this time these bustards behave very much as does the great bustard of Europe. The cocks are then most pugnacious, and occasionally engage in severe contests with one another. They strut before the hens, swelling out their plumage in absurd fashion, displaying and erecting the tail, trailing the wings, and throwing the head back. Strutting round the admiring hens, occasionally jumping into the air, and thus displaying themselves, the male paauws utter at the same time various crooning or scolding notes, some of which rise to a sort of boom; others are a mere cluck. From these performances, then, the Boers labelled the kori bustard *paauw*^ or [c] peacock,' a name which has stuck to it for something like two hundred years in South Africa. The prefix *gom* serves to distinguish this species from the Stanley bustard *(ILupodotis Stanley?),* which is also often called *paauw*—sometimes *veldt paamv* or *vlakte paauw* by Dutch colonists. ' Kori bustard,' a name for the paauw often found in books on natural history, and occasionally used by Europeans, is derived, of course, from the Bechuana name for the species, *kori,* which was adopted by Burchell, Andrew Smith, and other early travellers.

The paauw is undoubtedly the finest sporting bird in Africa, or, indeed, in the whole world. In weight, as I have shown, it exceeds all others of this gtoup. A good specimen will measure 4 feet 8 inches in length, with a wing spread of 8 feet 4 inches. Hen birds measure rather more than a foot less than the males, and are considerably inferior in weight. No game bird in the world yields better eating than a paauw in good condition. The flesh of the breast is of two colours: the upper stratum dark, like that of a grouse, the

under-part white as a pullet's. Both are tender, delicate, and remarkably well tasting, with a true game-like savour. The plumage may be described as an ashen grey, strongly mottled with brown. The wings are lighter —in some instances almost white—with dark uneven patches ; the wing feathers are black; the head and neck grey barred with black ; the top of the head is black—a black crest, full and long, is very noticeable. The breast and under-parts are white.

This bare description nowise does justice to the handsome colouring and splendid proportions of this noble bird. On the veldt, assembled, as I have seen these splendid bustards, in a party of as many as a dozen, the cocks marching hither and thither in search of food with what seems like a consciously majestic carriage, no game bird could possibly look finer. Very often you may see these bustards in pairs, or even singly; at other times in small bands of as many as a score. Such large assemblages are, however, rare, and are probably the result of a heavier migration than usual to a particular district, after good rains have fallen, or where locusts, which paauws love and devour greedily, are abundant. But occasionally, even in the dry season of African winter, and in the absence of locusts, bands of these birds, numbering from a dozen to as many as a score, may be encountered. They were to be seen thus in British Bechuanaland in the winter of 1891, but that was after a season of very heavy rains.

Whether these bustards are or are not polygamous birds is not yet proved to the satisfaction of scientists, or even of field naturalists. Their behaviour in the courting season might suggest that they are polygamous ; on the other hand, the majority of these birds seen in South Africa are found in pairs. It is to be remembered that this is a migratory species, moving

from one district to another, as drought or rain happens to prevail.

These birds are omnivorous feeders, devouring not only gum, in season, but locusts and other insects, berries, seeds, grain, and other things. They will kill and eat snakes, frogs, and lizards. E. L. Layard, in his excellent *The Birds of South Africa*, wrote :

> A female, shot by my friend, Mr A. V. Jackson, and myself, disgorged the largest chameleon we have ever seen; besides this, its crop contained a mass of locusts, small snakes, etc.

Kori bustards are found in preference in partially open country interspersed with thorn jungle; they favour especially the fringe of acacia and other bush lining the course of periodical rivers. Their presence is not by any means an unfailing symptom of water, however, and they seem to be able to exist for considerable periods without much moisture; this is, by the way, a characteristic of most of the South African bustards. Open spaces, where at one time or another there have been native crops, are favourite feeding grounds, as are large stretches of grass veldt recently burned off. At early morning or in the evening, when the coast seems to be clear, they often resort to patches of mealies and other crops.

Paauw are killed more often with the rifle than with the shotgun. They are extremely wary birds—none more so in South Africa—and unless surprised in bush country, or while resting in the heat of the day, or by concealment in crops of mealies, they do not often offer much chance of sport with the shotgun. But they are extraordinarily tough birds, and will carry off a charge of buckshot even when fired at fairly close quarters. These birds will often squat in the long veldt grass, trusting to escape observation in this way. I remember once

in Bechuanaland marking down a cock in bush and grass country. Three of us rode in upon it, converging from different points. We never hit it off. Either the bustard sneaked away, as they sometimes will do, and made its escape, or it lay so close that we were never able to locate it and make it rise. The latter seemed an impossibility, so closely did we quarter the ground. While travelling by post-cart or private Cape cart along the road I have seen the easiest chances offered by these magnificent game birds. Paauw understand mankind almost as well as rooks do, and seem able to judge pretty well what is a sporting outfit and what a mere party of harmless travellers. The easiest shot I ever got at a paauw was when travelling by cart between Mafeking and the Maritsani River. The bird was feeding seventy yards from the road. I had a little Marlin rifle with me, and, getting out on the side of the cart farthest from the bird, crept round, took a kneeling shot, and got the bustard without difficulty. One convulsive flutter of the wings, and it sank to the ground without further struggle. Paauw will, however, on occasion carry on astonishingly, not only when heavily peppered with buckshot, but even when pierced by a rifle bullet. I have known them escape although hard hit with a full charge of S.S.G., and I have seen one pierced through and through by a Martini bullet fly fully two hundred yards before it fell.

There is nothing more delightful or more interesting than stalking these splendid birds at early morning, when they have been located in fairly open ground. It is as excellent as springbok-stalking on the plains, and fully as exciting ; the paauw, indeed, is more capable of protecting itself even than the frolicsome and light-hearted but very wide-awake springbok, which is saying not a little. If you can get a careful native to mark down a

pair or a little party of these bustards when they have retired for their midday siesta under the shade of some friendly bush or acacia-tree, you may, if you approach with great caution, get a fair chance at them with the shotgun; still, as I have said, the rifle is the safer weapon for these great birds, and unless you hit your paauw in the head or neck, or break a wing, he may carry off the contents of your cartridge and escape you. The paauw is a first-rate performer on foot, and, unless you have a dog, even with a broken wing he may get away into cover and baulk you of your dinner. You may occasionally secure the paauw (and also the other large South African bustards, Stanley's and Ludwig's) by driving round them with a cart, or ringing them on your horse, or even on foot, lessening the distance gradually while circling towards them. The cart is really the best method, the birds seeming more unsuspecting when approached in this way than when stalked by the mounted or unmounted gunner. The great art, when thus ringing bustards, is to mark down your bird or birds very carefully, so as to be accurate in the approach and ready at an instant of warning. A Boer or a half-breed driver is usually excellent at this game.

The flight of the paauw is apparently rather heavy, and when flushed from the grass they do not rise with anything like the quickness of a partridge, or even a grouse. Nevertheless, when extended, they progress very rapidly, and, soaring to a good height, pass quickly from one piece of veldt to another. When on migration, or when moving from one feeding ground to another, these splendid game-birds mount to a great altitude, and, aided by their powerful flight, undoubtedly pass over large portions of the African continent. These bustards are found in reasonably open veldt, from Cape Colony as far north as Kenya, where a good many English sportsmen

have identified them. The late Mr A. H. Neumann, in his *Elephant-hunting in East Africa*, mentions that paauw were common about the north-east extremity of Bassu, Lake Rudolph. He saw there the curious spectacle of the rosy bee-eater *(Merops rubious)* frequently riding on the backs of these great bustards. The bee-eater, he says,

> sits far back on the rump of its mount, as a boy rides a donkey. The paauw does not seem to resent the liberty, but stalks majestically along, while its brilliantly clad little jockey keeps a look-out, sitting sideways, and now and again flies up after an insect it has espied. … I have seen two bee-eaters riding on one paauw.

I have never seen this singular friendship between bee-eater and bustard mentioned in any other book on Africa. Neumann was, however, far too careful an observer and too reliable an authority to have made any mistake in the matter. After all, many birds in Africa, as well as in Europe, are well-known attendants on other species—more usually mammals—and a tall bird like the kori bustard would make a quite satisfactory mount for a small bird. Paauw, owing to their migratory habits and their general wariness, are still fairly plentiful in many parts of Africa, and seem likely to remain so for many a long year.

XIX

SOUTH AFRICAN WILDFOWL

FEW Englishmen who have not visited the Cape can have any conception of the wealth of South Africa in the matter of wildfowl. From Cape Agulhas to the far Zambezi the whole country is abundantly supplied with game-birds of many species. During the hot season, when the pans and *vleis* are dry, and the vast Karroo country is little better than a parched desert, wildfowl, of course, may no longer be seen. But with the rains every *vki* is the abode of duck, widgeon, teal, sometimes geese, and many of the wading birds. Even in dry Bechuanaland and the open plains of the Orange Free State this is the fact, and the traveller passing up-country when the pools and pans hold water may be able to add to the evening meal a couple or two of some sort. For its wildfowl-shooting alone South Africa is well worth visiting. Of course the sportsman would have to choose his seasons. If he wanted to shoot fowl in Cape Colony, the Orange Free State, the Transvaal, and Bechuanaland he would naturally go there in the rainy season, which—except in the western portion of Cape Colony, where the rains fall during the winter—coincides with South African summer—,'., the months of December, January, February, and part of March. At this period, and for some time longer if the rains have been good and the *vleis* hold water, the gunner may be assured of excellent sport. The Zambezi and its affluents serve, of course, as one of these great winter resorts, The Lake Ngami region, with its network

of rivers, lakes, marshes, and lagoons, including the Okavango, Chobe, Tamalakan, and Botletli rivers, is another.

I have already described how in July and August, for instance, on the Botletli River, Ngamiland, during the driest period of South African winter, when, within fifty miles of the river, a man might, in the neighbouring deserts and forests, easily lose his life from thirst, I have found the lagoons and waters black with fowl. At this season my comrade and I had the river entirely to ourselves ; there was not another shotgun near ; and if we had not been principally occupied in shooting heavy game we could have made enormous bags of wildfowl. As it was, we had at hand, whenever we could spare an hour or two for bird-shooting, an unbounded supply of delicious food—especially among the duck and widgeon. All other travellers in these regions—Andersson, Baldwin, Livingstone, Selous, Chapman, Nicolls, among them—bear testimony to the extraordinary wealth of aquatic life to be found on these vast water systems of the Lake Ngami and Zambezi regions. Personally I never can forget that first wonderful revelation I had of the immense abundance of waterfowl on the lagoons and waterways caused by the inundation of the Botletli River during this dry period of South African winter. The waters were darkened with fowl; the clamour of these vast gatherings of duck, geese, widgeon, and teal was perfectly astonishing; and when at length one approached a lagoon, and the swarm of fowl rose up from the water, the roar of their uprising and the whistle of pinions as they flew off were things to remember always. Sometimes our camp was pitched near a big hollow, which from a half-dry swamp had been transformed by the inundation in a day or two into a fine lake. This lake became quickly stocked with fowl, and we had only to

walk a hundred yards or two to procure the few couple of duck that we required.

From this same lagoon magnificent Egyptian geese came to visit us occasionally at early morning, perching, as I have said, in some large trees close to our wagons, and affording us once or twice an easy shot in our pyjamas and veldt shoon.

In Cape Colony, although the country may be classed as extremely dry, wildfowl are abundant during the rainy season, and for some time longer, while the pans and *vleis* hold out. On the Orange River, of course, where water is always flowing, geese, duck, widgeon, and teal may be found in places throughout the year. Some of the larger *vleis* contain immense numbers of fowl. Vogel Vlei Vloer, some twelve thousand acres in extent, lying in the dry Calvinia district, in the north-west of Cape Colony, is an example. Here during part of the year wildfowl, and with them flamingos, pelicans, and many interesting rails and waders, are to be found in great numbers. The name of this place, Vogel (or Bird) Vlei—Vloer refers to the flat, floor-like bottom—is a sufficient indication of the wealth of aquatic life periodically collected here—a wealth which induced the early Boers who discovered the *vlei* to bestow on it the name which it still bears. Another Vogel Vlei, nearer to Capetown, Verloren Vlei, Zoetendals Vlei, the Bot River Mouth, and many other places are favourite resorts in Cape Colony for large assemblages of waterfowl during the rainy season and for some time thereafter. Vogel Vlei Vloer and Verloren Vlei, a large shallow lake in the district of Piquetberg, and about a hundred miles north-west of Capetown, are perhaps the most important of these haunts of the wildfowl within Cape Colony.

Among wild geese, the fine, spur-winged goose

(Plectropterus gambensis) of which I have already made mention, carries off the palm for size, and, in my humble opinion, for eating also. The Egyptian goose, handsome although its plumage is, is not very palatable as a table bird. Its flesh is dark, tough, and ill-tasting. I have tried it on many occasions, and, I am bound to say, I consider it greatly inferior. The spur-winged goose is rare in Cape Colony, and seldom penetrates much farther south than the Orange River. I first met with it in British Bechuanaland, where, during the rains, a number of these birds were to be found near the Marksani River and Mesemi Spruit. On the Botletli River we found them in large numbers. In length this fine bird extends to 3 feet 6 inches, or a trifle more, in the male ; the female is a few inches less. The upper parts are black with a bronze tint, the under-parts white ; the wings are dark green, the under-parts white, mottled with black. The front of the head is bare. The bill and the bare skin of the head are red, the legs pink.

This great goose, which attains a weight of from 12 to 15 pounds, is easily distinguished by the strong, sharp spur with which each point of the wing is furnished. It is exceedingly tenacious of life, has thick plumage and skin, and will carry no end of shot. It is useless to fire at the breast of these birds as they come over. I have fired thus at spur-winged geese at pretty close range, and heard the shots rattle on their bodies, and yet seen them continue their flight apparently quite unscathed.

The knob-billed goose *(Sarkidiornis melanotus)* is another fine wildfowl, albeit considerably smaller in size than the spur-wing. It averages about 2 feet in length—a little larger in the males, and less in the females—and in general colouring is not at all unlike its bigger relation. The upper plumage is, however, of a

more brownish hue, tinted with coppery bronze. The metallic sheen of the green wing feathers is extremely beautiful. The head and neck are white; the top of the head and the back of the neck flecked with black markings. The under-parts are white. The black knob upon the upper mandible, from which this goose takes its name, is assumed by the male only during the breeding season. This goose is not known in Cape Colony, and seldom ranges farther south than the Molopo River. It is very plentiful in Ngamiland, where, on the lagoons of the Botletli River, I found little difficulty in approaching and shooting it. It is remarkable that this and the other two large South African wild geese are all at times accustomed to perch in trees near the water.

The well-known Egyptian *goost (Chenalopex agyptiacus)* is common all over South Africa, from the Knysna to the Zambezi. The Boers call it invariably *berg gans,* or 'mountain goose,' It is an extremely handsome bird, but, except for its fine plumage and the pleasure of seeing and shooting it in the wild state, it is worth little to the up-country gunner. Its hoarse *honk, bonk, bonk* once heard will never be forgotten.

Another South African goose, which I have never personally come across, is the ruddy sheldrake, the *berg-eendt* of the Cape Dutch, of which Layard makes mention in his *The Birds of South Africa.*

The only other goose to be found in South Africa is the curious little dwarf goose *(Nettapus auritus)* one of the most charming of wildfowl. It is a true goose, and yet in extreme length seldom, if ever, exceeds 14 inches. Its colouring is wonderfully brilliant: dark shining green upon the head and back, a bright pale green patch on either side of the neck ; the under-parts, the front of the head, and a portion of the cheek are white. The pea-green cheek patches at once serve to distinguish it.

The bill is yellow in the male, olive in the female, while the legs and feet are black, with a yellowish tinge on the outer parts. The dwarf goose—sometimes called the Madagascar goose—is not found in Cape Colony, but specimens have been shot in Natal. Upon the Ngamiland river and lake systems, and on the Okavango River and the Zambezi, it is a familiar waterfowl.

There are at least a dozen species of wild duck, widgeon, and teal to be found in South Africa, some of which are common all over the country, others more local in their distribution, others, again, of rare occurrence anywhere. Of these none is commoner than the yellow-billed duck *(Anas flavirostris)* the well-known *geelbek* (' yellow bill') of the Dutch Afrikanders. I have found this fine wild duck from the Cape Colony to the Botletli River, and, wherever obtained, it is always a most welcome bird to the gunner, affording as it does excellent eating.

On reaching the Botletli River in July, after a hard and distressing trek across the Kalahari, my shooting friend and I, having ridden on two days in front of the wagons, were, for the time, dependent mainly on our shotguns for food-supplies. We found the yellow-billed duck on the river in large numbers, and were enabled from their ranks easily to provide our meals till the wagons came up and we began to hunt heavy game. The general colour of this duck, which measures as much as 22 inches in length, is light brown, a good deal mottled with white about the head and neck. This is to my mind the most English-looking of the African wildfowl, and can be at once ' spotted' by its bright gamboge-yellow bill. Across the wing is a broad green bar, edged with white. Layard, who did so much to collate and extend our knowledge of the South African avifauna, has an interesting note concerning the wholesale shooting of

this duck by farmers in Cape Colony. The birds, he says,

> breed in considerable numbers at Vogel Vlei, among the rushes and rocks scattered over that lake. I am told that at one season of the year farmers in that neighbourhood assemble for a grand hunt after these birds and *Anas erythrorhyncha* (' red-billed teal').

The red-billed teal—*smee eendtje* of the Boers—is as common and as widely distributed in South Africa as the yellow-billed duck. Wherever a pan of water is to be found after the rains you may be almost certain to find this useful bird, even on a *vlei* or pan lying close to a roadside store or public outspan. It flies in flocks of from six to ten, and is not difficult to get within shot of. In size it is somewhat smaller than the yellow-billed duck, averaging about 18 inches. The general colour is brown, faintly variegated, on a close inspection, with pink, green, and white. The head and neck are of a darker brown, the latter being mottled with white ; while the chin and cheeks are pure white. The wing-bar, or speculum, which is pink, with a thin green streak across the upper portion, is very noticeable. The bill is pink.

A near relative of the red-billed teal—for which, by the way, it is sometimes mistaken—is the Cape widgeon *(Mareca capensis).* It may be readily distinguished, however, by the colour of the wing-bar, which in this widgeon is bright green, edged with white and black, while that of the teal is, as I have said, pink. The head and neck, too, have no white markings, while the legs and feet of the widgeon are reddish brown, instead of purplish black, as in the teal. In size the two birds are much alike, the teal being slightly larger. Although fairly common in Cape Colony, and occasionally met with in Damaraland and Namaqualand—especially in

the vicinity of Walfisch Bay—the Cape widgeon is seldom, if ever, heard of in Bechuanaland and the Transvaal, and is only occasionally found in the lake and river regions of the far interior.

A very abundant duck on Lake Ngami and in the adjacent regions of the interior is the curious widow-tree duck *(Dendrocygna viduatd).* C. J. Andersson describes this bird as congregating in immense flocks in the lake regions, and especially on the Okavango during the period of inundation. It is common also on the Zambezi. I have not had the privilege of seeing these vast congregations, but I found the bird common on the Botletli, and shot some numbers. The general body colour is dark brown, rufous upon the chest, the front of the neck, and the centre of the back. The chin and forepart of the head are white, giving this duck a most singular appearance. There is a white spot also upon the throat. The widow-tree duck gets its name from its curious habit of perching on trees. It is an excellent table bird, in size slightly less than the red-billed teal. It is found in Natal, and, I believe, also in Zululand and up the coastal regions of South-east Africa. Mr J. H. Gurney, in a note to Andersson's *Birds of Damaraland,* states that this species occurs in South America as well as in Africa and Madagascar.

The ' black duck' of the colonists *(Anas sparsa)* is somewhat rare, and seems to be better known in Cape Colony than in the interior. It is found, however, occasionally in Great Namaqualand, Griqualand West, the Orange Free State, Natal, and parts of the Transvaal. Very little, if anything, seems to be known of it on the lake and river systems of the interior. It is a big, heavy duck, about equal in size to the yellow-billed duck, and in general colouring is of an intensely dark brown. The head and neck are mottled with pale drab markings,

and large white spots splash the wings and tail. The wing-bar is green, edged with black and white. This duck is found more often on rivers than on *vkis*, and is probably more plentiful in the west and north-west of Cape Colony than in any other locality.

The Hottentot teal *(Querquedula hottentotta),* a not very common wildfowl, is met with more frequently perhaps in Ngamiland than in other parts of South Africa. It occurs sparingly in Cape Colony, Namaqualand, Damaraland, Natal, the Orange Free State, and Transvaal. In colour it is of a dark brown, the stomach barred with black, the cheeks, chin, throat, and rump being paler. The wing speculum is green, edged with black and white. This teal may be easily recognized by its diminutive size. It measures less than 14 inches, and is the smallest of all the South African ducks.

The South African pochard *(Fuligula capensis)* is a fine dark brown duck, tinged upon the upper parts with grey, upon the lower parts with rufous. The cheeks and sides of the neck are dark chestnut. The wing-bar and a small patch on the chin are white. The duck is paler in colour than the drake, and somewhat less in size, the drake averaging about 19 inches in length. This pochard is fairly well known in Cape Colony, especially in the western portion, and is met with in other parts of South Africa.

The South African shoveller *(Spatula capensis)* is found sparingly in most parts of South Africa, from the Cape to the Okavango River. This is a large duck, coming in size next to the yellow-billed duck. The general colour is brown, the head grey, sprinkled with minute dark brown markings. The shoulder colouring is very handsome, blue, white, and green in successive bars. The legs and feet are ochreous yellow. This wildfowl is easily recognized by its spatulate, ' shovel' bill, the

colour of which is dark reddish brown. It is usually to be found at Verloren Vlei and Vogel Vlei Vloer, as well as sparingly on other *vleis* and waters of Cape Colony and elsewhere.

Two diving ducks, the yellow-throated and the Maccoa, complete my list. The yellow-throated diving duck *(Thalassornis leuconotd)* has a wide distribution, and is to be found from the neighbourhood of Capetown, where it is occasionally met with, to the Zambe2i and beyond. This duck may easily be singled out, as soon as the wings are opened, by its white back. The general colour is fulvous brown. The head and back of the neck are strongly mottled with dark, circular markings. The front and greater part of the neck is yellow, and the plumage, from the base of the neck to the vent, is very grebe-like. The rounded tail, which is very singular, is composed of narrow spiny shafts, almost devoid of feather. These ducks are extraordinarily expert divers, and, trusting to their powers of remaining under water, can very seldom be put to flight and driven off a *vlei.* I remember securing one or two on a small pan near the wagon road not far from Sofala, in Khama's Country. We practised at these wonderful divers with a Marlin carbine; but, although constantly shot at, the birds preferred to stick to the *vlei* and take their chance of escape by diving than to seek shelter in flight. They are found on innumerable *vleis* throughout the interior, but often escape notice by taking shelter among reeds and rushes. They are extremely numerous in the Ngami country.

The Maccoa duck *(Erismatura maccod)* is another very skilful diver, and, like its yellow-throated congener, trusts far more to concealment than to flight. The general upper colouring is rufous brown, the head is black, the under-parts are brownish, without the rufous

tint. The tail is wedge-shaped, and the shafts are singularly rigid and bare-looking. It is a much scarcer duck than the last-named, but appears occasionally in migrations in large numbers. Layard mentions that in the winter of 1858 great flights of these birds appeared in the neighbourhood of Capetown, and were shot in numbers. As a rule, however, it is a scarce duck in Cape Colony.

In this chapter on South African waterfowl I do not claim to have mentioned every species. Those which I have described are all familiar to people who know the country south of the Zambezi.

XX

THE AFRICAN JACANAS

OF all the wonderful array of l*imicola* to be found in Africa few species are more remarkable than the jacanas, typical denizens of the river, lake, and marsh. In the course of long ages these birds have become perfectly developed for the very curious life they lead. The greater African jacana *(Parra africand)* is not well known to the sportsmen of Southern Africa, for the reason that the rivers of the south—for the most part dry or a mere chain of pools during a great portion of the year—are ill adapted to its existence. It is therefore, although familiar in Natal and Zululand, a scarce bird in Cape Colony, and is not seen plentifully until the larger river systems of the far interior are reached. Beyond the Northern Kalahari, however, about the river systems round Lake Ngami, these beautiful birds, as well as the lesser jacana, are found abundantly enough. Here, on the rivers Botletli, Tamalakan, Teoughe, Chobe, and Okavango, as well as on the remains of Lake Ngami itself, they are to be observed in what to them must be a real and natural home. The first time I set eyes on the greater jacana, on first striking the Botletli, after a long and weary trek across the desert, I was at once struck by the very curious habits of these birds. The river was low, although it was just being recruited by the periodical inundation which spreads in vast lagoons over the surrounding country, and large expanses of a thin film or coating of weed covered parts of it in many places. Wherever this occurred small flocks of jacanas

were to be seen busily running hither and thither in search of food, or playing with and chasing one another in frolicsome fashion. It was a most charming spectacle. At a short distance the graceful creatures looked exactly as if they were walking upon the water, and the interest of the scene was heightened by the elegance and the sprightliness of these beautiful waders. A nearer approach added yet more to the effect, for the plumage of this jacana is very striking.

Not until I had secured a pair of the birds, and seen with my own eyes the extraordinary length and slenderness of their spidery feet, was the seeming mystery of their walking on the water explained. This jacana is lightly built, and stands upon long slender legs about 6 or 7 inches in length. The toes, three in front and one behind, are very long and extraordinarily slender, the longest of them measuring fully 3 inches. These spreading, slender toes are, of course, exactly adapted for supporting this light-framed bird easily upon the thinnest film of weed and vegetation covering the surface of a river or lagoon. The general plumage of this lovely bird is a bright shining chestnut, which shows brilliantly under a tropical sun. The top of the head and the back of the neck are black, with a slight greenish tint. The bare front of the head (shield) and the base of the bill are blue, the rest of the bill, which is about i½ inches long, horn-colour. The chin, the side of the head, and the front of the neck are pure white. Between the front of the neck and the chestnut under-colouring is a gleaming gorget of pale golden yellow, which, contrasted as it is with the rest of the plumage, gives a wonderful effect. The legs are dark green in hue, the claws horn-colour. In length these birds attain to nearly a foot, the longest measurements I know of being a shade over i ii inches ; and, so far as I have been

able to judge, the females are rather larger than the males.

Different species of jacana are found in various parts of the world, their habits and life-history being very similar. Wherever they are met with they prove incontestably their extraordinary fitness for the aquatic life they lead ; and, running and fluttering lightly about the surface of lakes and sluggish rivers, they find, thanks to their spidery feet, a firm and easy foothold upon trembling films of weed and the broad, spreading leaves of the lotus and other water-loving plants. From the habits of the greater African jacana I gathered that they were lively, cheerful birds of very active temperament. They were by no means difficult of approach, and I obtained such specimens as I wanted without much trouble. The only unpleasant part of the business was that I had generally to wade pretty deep into a river which was infested with crocodiles. Crocodiles, by the way, which by no means despise birds, if they can get nothing better, must be nearly the only enemies which jacanas have to fear, the curious position of these birds, between sky and water, rendering them safe from almost everything else.

When really alarmed the jacanas took wing and hustled *off* with trailing legs, reminding one very much of a moorhen; they are reluctant, apparently, to use their wings, but these are fairly developed, and the birds can fly if they choose. On land, on their occasional visits, while crossing from one place to another, they progress quite comfortably, though they are in reality only perfectly at home on the water. I never found the nests or eggs of these jacanas, but the former were described to me as composed of aquatic herbage, placed among reed-beds or among lotus-plants and floating vegetation.

The range of the greater African jacana is a wide one, extending from South Africa over a great portion of the Ethiopian region, wherever lakes, lagoons, and river systems offer them foothold, shelter, food, and vegetation suitable to their habits.

The lesser African jacana *(Parra capensis)* has nothing like so wide a distribution as its larger congener, being met with only in South and South-east Africa. It is rare in Cape Colony, but is found in Natal, Zululand, and the adjacent countries, and is plentiful in the Lake Ngami region in exactly the same haunts as *Parra africana.* I saw this bird on the Botletli River, but found it usually keeping at a respectful distance from the larger species, which appeared to be rather intolerant of its near presence. The larger birds, in fact, bullied the smaller.

The lesser jacana, although having habits very similar to those of the larger species, is quite different in colouring. The general hue of the plumage is greyish brown, the crown of the head, the sides of the body, the rump, and the tail being orange. The forehead is yellow, the eyebrow white; while the nape and upper mantle are purplish black. The sides of the neck and breast are a shining pale greenish yellow; the chin, throat, breast, stomach, and under tail-coverts white. The wings are blackish, with a white alar bar. The bill is bright brown; the legs and feet are a pale greenish brown. Unlike the other species, the bird has no bare frontal shield.

In size the lesser jacana is conspicuously smaller than its big cousin, measuring in length, in fair specimens, from 7 to 73- inches. One curious habit of this jacana was, I think, first noticed by Mr Thomas Ayres, who observed numbers of these birds at Seacow Lake, near Durban. This is the frequent dipping of the head up

and down, after the manner of some of the smaller plovers. I have noticed much the same trick in some of the coursers, which, although birds loving a dry and desert habitat, may be looked upon as far-distant cousins of the water-loving jacanas.

I once had a pair of greater African jacanas set up in a case with other birds of the Ngamiland region. They reminded me irresistibly, when I looked at them, of the Botletli River and its marvellous collection of aquatic bird-life. Somehow the jacanas run always in my mind with the picture of a sluggish river system, inundating a wide desert country, a- river where hippos, crocodiles, legions of wildfowl, vast flocks of pelicans, cranes, and storks, and thousands of wading birds played always a conspicuous part. Such scenes are yet to be found in many parts of the African interior, and those who have once set eyes on them can never completely dismiss them from the mind's eye.

XXI

MASARWA BUSHMEN AND THE KALAHARI DESERT

THE Masarwa Bushmen are a race of wild hunters inhabiting the country known as the Kalahari, that vast, waterless tract covering the southern part of the Bechuanaland Protectorate and extending in the west into South-west Africa. The Kalahari is by no means desert-like in its general characteristics, although here and there are fatiguing stretches of rolling sand-dunes and parched open *salinas,* which are hateful and distressing to the thirsting traveller. But over large portions of the desert are to be seen great grass plains, where a good deal of game is to be found, chiefly eland, gemsbok, hartebeest, blue wildebeest, springbok, steinbok, duiker, and ostrich. Elsewhere may be found plenty of bush and forest, the latter mainly consisting of giraffe acacia and other thorn-trees, amid which roam tall giraffes and occasionally kudu. Over other parched tracts the forest comprises the singular *mopani,* with its curious bifid foliage, presenting always the edges of its leaves to the overpowering sun. *Mopani* forest nearly always indicates brackish soil and heavy sand. All this forest and bush country, which is interspersed with open glades, is very attractive to the eye, much of it resembling in its general aspect an English deer park.

The great drawback to the whole region is that there is no surface water, except during the brief and inconstant period of the summer rains, between November and

March. After the rains cease the temporary *vkis* and pans rapidly dry up, and have vanished by the end of May. During the long months of the dry season, April to October, not a drop of rain falls, and the desert assumes its grimmest aspect. At this time the only water to be found is in a few limestone pits, from 30 to 50 feet deep, hollowed out by natives during long ages of the past. These pits are usually from 50 to 70 miles apart, and the passage of the desert is in other parts impossible during the time of drought. In the Northern Kalahari, known to the Boers as *Dorst-land (*' Thirst-land'), trekking with wagons and oxen is very trying and often dangerous. Some years ago, on my return with a hunting friend from a shooting expedition to the Lake Ngami region, our treks across that stretch of desert lying between the Botletli River and Khama's Country were as follows : first trek, two days and nights without water; second trek, two days and three night without water; third trek—from Nkowani to Kanne —three days and four nights without water. When I say without water I mean without a drop of water for the oxen. We carried in two barrels a little muddy water for ourselves and our native servants, which had to be used most sparingly. Our horses were usually sent forward, and got a little water at the three pits at which we halted. Horses cannot stand thirst like the oxen bred on the edge of the desert.

Our oxen got no water between these pits and a very little when they reached them, as there were thirty-six of them to be watered. Let it be remembered that they had to draw our heavy wagons through deep sand, travelling night and day to save their lives, with occasional necessary halts, when they fed a little on the now parched desert grass. They suffered intensely, and we were fortunate in being able to reach our goal with

the loss of only one of our cattle, which rushed headlong into a water-pit, died there, and had to be cut out piecemeal with hatchets and knives. There was very little water at Kanne, and the two spans had to be driven, without the wagons, to Serowe, a long way off, before they could drink, poor beasts 1 Towards the end of the trek our native drivers had become voiceless from constant shouting at their oxen. If an ox lay down and refused to move, the native custom was first to try tail-twisting ; if that failed the drivers blew sand into the poor brute's eyes ; and if the beast still refused to get up he had to be left to die, or come on, as often happened, during the cool of night. These methods were cruel, but they were resorted to only when the lives of the cattle and human beings were alike at stake.

During the season of drought we found, in the Thirstland we passed through, eland, giraffe, gemsbok, hartebeest, blue wildebeest, also duiker, steinbok, and ostrich, in quite good condition, notwithstanding the fact that they had no possible supply of water, the deep limestone pits being quite inaccessible to them. Nor were there any traces of *tsama*^ the wild water-melon, occasionally found in some parts of the desert, on which the game are, here and there, able to quench their thirst. It is beyond question that these wild animals have acquired, during thousands of years of a desert life, the faculty of being able to exist for months together without drinking.

All this portion of the Northern Kalahari carries plenty of good grass, upon which the game animals feed. As the drought increases, the grass, which then looks like a vast parched and sun-scorched hayfield, becomes useless. The Bushmen, as I have said, then burn off large open tracts, with the object of inducing a fresh growth as soon as the rains fall, and so attracting the game.

The Masarwa Bushmen, the sole inhabitants of the Northern Kalahari Desert, are a race of hunters pure and simple, having no homes or habitations of their own, but living entirely in the open, sheltered by bush when occasion offers, and sleeping as close as possible to the fire of wood and brush, which they are able to set alight by crude but effectual methods of their own, handed down to them through long generations of savage ancestors. Men and women are alike provided with a short skin cloak, made usually from the hide, *brayed* soft and pliable, of the hartebeest or sassaby. The men have, in addition, a clout of skin fastened round their loins, while the women wear a brief frontal petticoat of soft skin. Household gear they have none ; their only water-vessels are ostrich eggshells, with a hole at the top, closed by a tuft of grass. I have elsewhere referred to the scanty resources of these people. Often their only possessions other than arms are the aforesaid ostrich eggshells and a few roots or bulbs, the latter, which are the favourite food of the wild guinea-fowl, usually skewered up in the dried crops taken from those birds. The men are armed with small bows and arrows, as well as assagais, the metal heads of which I do not think they themselves manufacture. These are probably obtained by barter from the Bechuanas. Their footgear consists of sandals made from the thick hide of the giraffe.

These Masarwa Bushmen are not at all like the ancient race of Bushmen, a dwarfish, fierce people, formerly found at the Cape, and long since almost exterminated by the Boers, who waged war upon them unmercifully, chiefly owing to their thievish, savage, and intractable habits. I have seen, many years ago, specimens of the true Cape Bushman, who differed widely from the Bushman of the Kalahari. The diminutive

troglodytic Bushman of the Cape stood less than 5 feet in height, often little more than 4 feet 6 or 8 inches, and was yellowish of complexion, with a tinge of colour upon the cheek-bones; he had oblique eyes, like a Chinaman, and was distinguished further by the scanty, peppercorn-like locks of wool upon the head, showing clear spaces of skin between each kink. These Cape Bushmen must, I think, originally have had somewhere a cross of Mongolian blood, or their remote ancestors may even have sprung from that region of Asia. And it is a curious fact that the seventeenth- and eighteenth-century Boers, when they first encountered them, always referred to them as [c] Cinese' (Chinese) Hottentots, to distinguish them from the ordinary Hottentots. Yet, widely different as are the Masarwa from the old Cape Bushmen, there are affinities between them. They use the same weapons —those same tiny bows, strung with dried sinew, and short arrows, made of strong light reeds, tipped with bone, which is smeared with a deadly poison, composed of the juice of a toxic bulb, snake poison, and the entrails of a noxious caterpillar known as the *n'gva.* This deadly preparation is of a deep yellowish colour, and is kept by the Masarwas in small lumps in the bark quivers in which they carry their arrows. It is handled by them with the greatest care and circumspection.

Their language is something like the rude and primitive tongue of the Cape Bushman, a series of clicks, grunts, and strange guttural, and occasionally high heady, sounds. The Cape Bushmen are distantly connected with the Hottentots of the Cape Province and Great Namaqualand, as also with the Korannas, a tribe of wild and wandering people living along the Orange River. Selous, when hunting with the Masarwa Bushmen of the Kalahari, found that they could understand

the Koranna language; and there must be, therefore, some kind of connexion between all these people.

The Cape Bushmen were possibly a wild and degraded branch of the Hottentots who migrated from the North of Africa many ages ago. The Masarwas seem never to have penetrated so far south, but remained in the deserts of the Kalahari. During past centuries they must have mingled their blood with people of a darker race, probably Bakalahari folk—a poor, downtrodden sept of the Bechuanas—and have, therefore, lost most of the characteristics of the Cape Bushmen, Hottentots, and Korannas. They are now a taller race than any of those tribes, and average about 5 feet 4 or 5 inches in height. They are less fierce and vindictive, and certainly less cruel, than the savage Bushmen of the Cape, and are altogether a much milder-mannered people.

They are hardy and athletic, and possessed of wonderful powers of endurance. Their womenfolk lead terribly hard lives, and, as a rule, appear much inferior in physique to the men. A young woman of twenty-five or thirty is usually haggard and lined, and looks as withered and aged as a Bechuana woman of fifty or more. The children appear emaciated, with protruding stomachs, the natural consequence of the hard and indigestible fare on which they live, poor things.

When the rains fall and the vegetation is renewed and game is plentiful the Masarwas can secure a good feed now and again. They are marvellous trackers, probably the best in the world; and, having lodged their poisoned arrows in the quarry, they follow the wounded beast until it drops. In the case of a small antelope, such as the steinbok or the duiker, this happens pretty quickly; but where a giraffe or a big antelope, such as an eland or a gemsbok, is concerned

the chase is often a prolonged one, and the animal may not succumb for a day, or even two. The arrow-head and the wounded part are hacked out with the point of an assagai, and the banquet then begins. Meanwhile the wife, on being warned, takes up her scant water-supply, contained in ostrich eggshells, and, bundling her infant on her back in the same skin cloak, trudges along with her other child or two in the wake of her lord and master. Her journey, poor thing, is a long and bitter one; hour after hour she moves on in the blinding heat, and but for the wonderful courage and endurance of her race the desert would surely defeat her. At last she sees, circling high up in the heavens, vultures—the speaking evidences of a kill—and knows that salvation and a glorious feast are nigh. I have met one of these brave Masarwa women, with her child and ostrich eggshells slung over her back, in her skin cloak, trudging wearily across one of the great salt-pans—seven or eight miles across—of the Northern Kalahari. Even on horseback the intense heat and the blinding glare of the silvery pan was bad enough; but the woman seemed to make light of her task, and, after a drink of cold tea from my water-bottle and a piece of meat and bread which I gave her, went on her way cheerfully enough. Her man had wounded a giraffe, and she was following on the spoor of both. Their feast would last them for a week or more—it is amazing how these people can continue to devour a festering carcass—and a supply of dried flesh from the remains would maintain them some time longer.

Among other methods of hunting the Masarwas practise one formerly used by the Cape Bushmen. They disguise themselves in the feathers of a slain ostrich, and, with the head and neck skin mounted on a stick, deftly simulate the desert-bird, and are thus

able to approach and slay living ostriches and other game. In this business they copy the movements and demeanour of their feathered victims with marvellous skill.

When the long desert drought prevails and game is scarce the lot of the Masarwa becomes much harder. They must, perforce, camp by some permanent water-pit, where their sphere of operations is limited. In these times they subsist upon almost anything they can pick up—snakes, lizards, tortoises, bulbs, roots, caterpillars, and so forth. In addition to their use of bows and poisoned arrows these people are skilled snarers, and by the aid of a bent sapling or branch and a running noose of sinew, cunningly placed, achieve their purpose; they have a marvellous knowledge of the run and habits of their victims, and manage in good times, when game is fairly plentiful, to snare various kinds of the smaller antelopes. Their lives are often in peril, especially during the season of the rains, when lions wander into the Kalahari after the game. Bushmen have small defence from a hungry lion, and many a one has been slain and devoured by these carnivora.

The best times the Masarwas ever have are when some wandering white hunter comes along. They then joyfully act as his guides and spoorers, show him plenty of game, and enjoy many a glorious banquet of flesh from the game he shoots, especially when a tall giraffe or a goodly eland is brought down. On these occasions the Masarwas always make it a point of honour to carry the white man's rifle, and not until the game is sighted do they return his weapon to him. Their genius for spooring, or tracking, is wonderful. They can tell to a nicety whether the game has passed within an hour or a day or two. Their endurance and the pace at which, hour after hour, they follow the footprints of

the animals they are in search of are equally wonderful. Occasionally, after several hours of spooring under a burning sun, they will halt for a brief spell, and, squatting on their hams, will take snuff until the tears stream down their cheeks. This interlude, they assert, clears their heads and sharpens their eyesight, and enables them to follow the spoor again with refreshed energy. Their pungent snuff, which they greatly prize, is made from coarse tobacco, some dry desert herb, and a little wood ash. They carry their supply for daily use in a brass cartridge-case, slung round the neck. The long, sharp-pointed, eyeless bodkin which, like the Bechuanas and other tribes, they ply for sewing their skin cloaks, using a fine sinew as thread, and piercing each hole and drawing the sinew by hand, is sheathed in a slender wooden case and also hung round the neck.

So soon as the game is sighted the spoorers hand the rifles they carry to the mounted hunters, the chase begins, and the Masarwas follow eagerly at a slinging trot, until the end comes and their services are required for skinning and cutting up the game. Their faces are then beaming with delight at the feast in front of them, and, with their assagais as knives, they fall eagerly upon the appointed task. When I first hunted in the Kalahari we found three of these Bushmen squatting with their families at the pool of Maqua, between Palachwe and the Botletli River. Khama, the well-known chief of Bamangwato, had sent word that the Masarwas under his sway—his country included a vast tract of the Northern Kalahari—were to show us game and spoor for us; and these wanderers gladly embraced the delightful task of finding quarry for white men armed with good rifles, at whose evening camp-fires they would surely feast to their hearts' content. They were excellent fellows, quiet and reserved, and always well behaved

and polite in their own fashion. These three Bushmen put on flesh rapidly during the time they were hunting with us, and when we left them they were nearly as well-fleshed and prosperous-looking as the Bechuanas who were with our wagons. I noticed that these, and other Masarwas whom I met with, always showed grey scars on their legs and stomachs. I learned that these are the results of their lying at night too close to their fires, hugging the warmth, and so getting burned during their sleep.

Under the wise and enlightened rule of that great African Khama, chief of the Bamangwato, who died at the age of over ninety in 1923, some few of the Masarwas, living near the Bamangwato villages, were induced to take charge of small flocks of goats and to become, as a first step to civilization, herdsmen on a minor scale. The sight of tiny Masarwa children, only just able to stagger, milking a she-goat—a feat they very early learn to accomplish—was one of the oddest and most ludicrous possible. Yet it is something in the march of progress. The majority of these primitive people, however, still prefer to wander and lead their own wild lives, far from other human beings, in the heart of their own deserts.

It will be probably many a long year before the Kalahari is reclaimed (by the sinking of artesian wells, as in many parts of the Karroo) and brought to the uses of civilized beings, and developed into a stock-raising country. There are vast stretches of undeveloped land still remaining in Rhodesia and parts of Bechuanaland, and the day of the Kalahari is yet far distant. For another generation or two, therefore, the Masarwas will continue to pursue their present methods of existence, living, as their forbears have done during long ages, the lives of wandering hunters.

XXII

THE SECRETARY BIRD

No bird is a more characteristic or a more familiar figure of the parched plains of Africa than the secretary bird; none, in my estimation, is a greater adornment to those vast and desolate tracts in which it delights to make its home. Although ' the secretary ' has been known to Europeans since 1769, when a specimen was sent to the Prince of Orange by ^Mynheer Hemmy, of the Board of Justice of the Cape of Good Hope, its habits and characteristics are even now not so well known as they ought to be. And this notwithstanding the fact that for much more than a century the Cape Boers have been in the habit of occasionally maintaining these birds in captivity, as protectors of their poultry yards, where they maintain order, kill *off* rats, snakes, and other vermin, and add consciously—for the *slang-vreeter* (' snake-eater') is quite aware of its own importance—to the dignity of the establishment.

During this century the secretary bird has been much less in favour in South Africa than was formerly the case, the reason being that game-bird shooting has become a popular sport, in consequence of the decrease of antelopes, and that a considerable number of gunners now accuse this bird of being a destroyer of the young of francolins, bustards, quails, hares, and other game. There is, one must admit, some truth in this allegation. The secretary, in his wonderful perambulations about the veldt—for he is an indefatigable walker—does occasionally devour young game-birds and hares; but,

on the other hand, these are only incidental misdeeds, the bird deriving the greater part of its sustenance from lizards, tortoises, snakes, mice, frogs, locusts—of which it devours large quantities—various insects, and other food. Of lizards, mice, and locusts especially the secretary bird makes a very large portion of its dietary. I once examined the stomach of a secretary bird, which had been accidentally killed by our dogs while we were shooting over a plain in Bechuanaland. I found it to contain the following items : a small tortoise, not yet dead, but with the shell already partially eaten away by the digestive process, one mouse, four lizards, and a quantity of locusts. The stomach of another specimen, shot near Capetown, contained one tortoise, eight chameleons, twelve lizards, three frogs, an adder *(Bitis inornata)* two locusts, two quails, and the remains of other animals. The fact is, this bird has a great appetite and a very capacious gullet. It can swallow small mammals whole without difficulty, and in Mrs Martin's delightful book *Home Life on an Ostrich Farm* there is an amusing instance of this capacity. " Jacob," Mrs Martin's tame secretary bird, once swallowed a small kitten whole, and was considerably puzzled by the loud and piteous mewings which for a time were to be heard from its own interior.

Upon the whole, after a long and close study of the habits of these birds, I am convinced that they do far more good than harm, and if they do occasionally take toll of the young of game-birds, hares, and other creatures, their achievements among locusts, snakes, lizards, rats, mice, frogs, insects, the young of *muishonds,* and other weasel-like and destructive creatures far outbalance any injury that their omnivorous appetites may inflict on South African sportsmen.

The secretary bird *(Serpentarius secretariat)* was first

described by Vosmaer, a Dutch scientist, in 1769, as *De Sagittarius,* from a fancied resemblance in the gait and attitude of this bird to those of an archer. For a long time this name was retained, and one or two distinguished British naturalists, even down to recent years, described the species as *Sagittarius secretarius.* Sparrman, the Swedish naturalist, who travelled at the Cape between 1770 and 1780, in the opinion of many gave the bird its most fitting title when he named it *Falco serpentarius.* The bird has long been definitely ranked among the birds of prey, and was placed by Huxley in the order *Accipitriformes*^ but has very properly been dignified by a genus of its own, that of *Serpentarius.* The order *Accipitriformes,* be it noted, includes, besides this bird, the vultures, hawks, and ospreys. Some naturalists, among them Lydekker, have noted certain characteristics in the cariama, of South America, which indicate some affinity with the secretary bird.

This bird is a tall creature, measuring in extreme length as much as 4 feet 6 inches to 4 feet 8 inches. The wing measures 27 inches and the tail 24 to 26 inches—that is, to the end of the prolonged central feathers. The general colouring of the upper plumage is ash-grey, the wing feathers and primaries being black, in strong contrast. The lower back is black, thinly barred with white. The upper tail coverts are white. The tail feathers are a clear silvery grey, with the extremities boldly marked in black and white. The thighs and the sides of the stomach are black. The centre of the stomach and the under tail coverts are white. The plumage of the rest of the under-parts is distinctly white. The rest of the under-parts is of a paler grey than the upper colouring. The throat is whitish. The head, which is strongly accipitrine, is decorated at the back with a crest of long black and black and grey feathers,

usually ten in number. The strong and powerful beak is bluish white as to the upper mandible, the lower mandible being yellowish, with a white tip. The iris, shaded by very marked black eyelashes, is a brilliant hazel, and the vivid orange of the naked skin round the eyes adds not a little to the striking and handsome aspect of this martial-looking bird. The cere is greenish yellow. The long legs and the feet are pale pink, the claws black. These latter are rather blunt, but the whole foot is strong and formidable—well adapted for delivering the heavy blows which the bird metes out to snakes, rats, and other prey.

The Boers have always known this bird as the *slang-vreeter,* sometimes as the secretary. The first of these names they took from the Hottentots, who, with the Bushmen, were the first denizens of South-west Africa. The Bechuanas, curiously enough, also call the species *bulai-nogha* or ' serpent-killer,' which goes to prove that this habit is a well-recognized one among the native tribes which inhabit the great tract of country known as Bechuanaland. The Amakosa Kaffir name is *inxanxosi,* while the Zulu designation is *intungunono.*

I have a pair of the eggs of the secretary bird in my possession. One is dull white, marked with brownish blotches, which are much more numerous at the larger end. This egg measures 7'25 inches in circumference at its widest part, and 2-75 inches in length from top to bottom. The other egg, from the same nest, is much less mottled, more like a very large duck's egg. The secretary bird usually lays two eggs, but occasionally three. The nest, which is used year after year, is a very large one, measuring often as much as 4 or 5 feet across and 3 feet in depth. It is composed of sticks and sods, and is lined with twigs or long dry grass, wool, and feathers. It is more often than not found in one of the

numerous acacia thorn-trees which are so plentiful in South Africa, or in a bush. Where taller trees are available, as in Natal, the female secretary does not hesitate to plant her nest at a considerable altitude. Dr Stark found nests of this species built in yellowwood trees at a height of 60 to 120 feet from the ground. The young birds remain in the nest for several months, till they are fully feathered. Their long legs are extraordinarily weak and brittle, and will often snap with very slight exertion. For this reason these birds are difficult to rear. They have a curious guttural, rattling cry, which has been likened to the call of the Stanley crane.

The secretary bird is still found in the vicinity of Capetown, and thence, as far north as Thebes, in Upper Egypt, its range extends all over Africa where high open plains suitable to its habits are to be met with. It is known in the Gambia country, in the west, and in Abyssinia and Somaliland, in the east of Africa. Sir Samuel Baker found it many years ago in the Sudan region, between the Atbara River and Kassala, and gives the Arab name for it as " the Devil's Horse." One would like to know if the Sudan Arabs still use that designation. Wherever I have been in South Africa, in Cape Colony, the Orange Free State, the Transvaal, Griqualand West, Bechuanaland, Southern Rhodesia, the Kalahari, and Ngamiland, I have met with this bird. The nesting period in South Africa is in June, July, and August. The bird is at present protected all over South Africa, and although sportsmen, as I have said, view the bird with suspicion, it may be hoped that this protection will not be relaxed.

Considering that it is well provided with powers of flight, it is a curious circumstance that the secretary bird trusts so implicitly to its legs, not only in its everyday

life, but when danger threatens it. Its running powers, when it chooses to put them forth, are wonderful, and when pursued it seems literally to skim over the ground. In my experience it seldom takes to the wing, and the old-time pictures of the bird soaring into the air with a big snake in its bill are not, in my judgment, always founded upon fact Nevertheless, I think it only fair to quote from a letter which I received from a South African gentleman, who wrote to me after I had first expressed my scepticism:

> I should like to assure you that during my eighteen years' sojourn in South Africa I have personally seen this bird on several occasions in flight, ana also flying with a snake in its bill, then dropping the snake and again picking it up and flying again. I have actually seen this in the Caledon district, Cape Colony, and again in the Helpmaakar district of Natal.

Its habit of trusting to its long legs as a means of escape results occasionally in the bird's undoing, as I have witnessed. While we were francolin- and bustard-shooting in British Bechuanaland one day our dogs, a rather mixed lot, got away in chase of a secretary bird, which began, as usual, to run. We were unable to call them off, and the hunt settled down in real earnest. For some distance the bird trusted to its speed of foot. Then, as the dogs presently gained, it took a low flight of a couple of hundred yards or so, came to ground, and again ran on. This process was constantly repeated during a tail-on-end chase of more than two miles—viewed by us on horseback—at the end of which the tall bird was too exhausted either to run or to fly, and fell a victim to the leading dog, a mongrel pointer.

Interested sportsmen in South Africa, who believe, with some show of reason, that this bird occasionally devours young game birds, have during recent years sought to destroy the reputation of the secretary bird

as a snake-killer, with the object, of course, that the protection so long accorded to it should be annulled. The bird may not destroy so many snakes as naturalists used to imagine—its dietary, as I have shown, is a very omnivorous one—but it certainly is a snake-killer, as its ancient Hottentot name, probably thousands of years old, and its Bechuana designation well testify. When attacking a serpent, poisonous or otherwise, this bird partially spreads its wings and holds them forward as shields with which to defend its body and thighs. The snake is usually stunned or disabled by a lightning stroke from the powerful foot, and the strong, accipitrine beak is then used to finish the business. The secretary may not always choose to attack a poisonous snake when he can get other food ; but he is not afraid of it, and will gallantly do battle with it when he is so inclined or needs a meal. The title *slang-vmter* was assuredly not bestowed upon this bird by the old-time Boers without reason. Mr Atmore, a well-known South African naturalist, has recorded an incident in which one of these birds succumbed to the bite of a poisonous snake, which had pierced with its fang and drawn blood from the point of the bird's pinion. Such a mishap is undoubtedly rare, and the bird emerges safely from these encounters probably in ninety-nine cases out of a hundred. According to Mr Atmore, a very careful observer, the bird in these encounters plucks out instantly any feather that the snake's fangs have reached. In the fatal instance quoted the bird either omitted this precaution or was unable to draw the pinion feather.

XXIII

THE PALLAH OR IMPALA

THE pallah or impala *(JEpyceros melampus)* is one of the most interesting, as it is among the most beautiful, of all the African antelopes. Though its southern range of late years has become a good deal affected by the persecution of hunters and the progress of civilization, in other parts of the African continent its habitat has been found to be considerably more extended than was at one time imagined.

The pallah was discovered by two Cape Colonists, Truter and Somerville, who met with it in the neighbourhood of Kuruman, in what is now known as British Bechuanaland. This may be put down as the most southerly range of the pallah in modern times. South of the Orange River this animal, like the waterbuck and sable and roan antelopes, has never been identified. *Pallah* is the Bechuana name by which for many years the animal was known to English people, and was long accepted by scientific naturalists. I am glad to see that, in his well-known work *The Fauna of South Africa,* Mr W. L. Sclater adheres to this name, made familiar to us by the works of Burchell, Andrew Smith, Cornwallis Harris, Gordon Gumming, Livingstone, and others, instead of calling it ' impala,' The term ' impala' is, of course, closely allied with the Bechuana name, and is used by the Zulus, Matabele, Swazis, Matonga, and Barotse. The Basutos have the same name for it as the Bechuanas, and call it *pallah* or *pala.* while the Makalakas know it as *ee-pala.* The Masarwa

Bushmen call it *kug-ar*, with a click on the first syllable. The Masubias and Macubas call it respectively *inhere* and *umpara*, while farther north, in South Central Africa, it is known as *nswala*. The Swahilis of East Africa know it as *swalah* or *nswala*. The Boers since they first became acquainted with this antelope have known it as *rooibok* (red buck), which very well describes its appearance.

It is of light and graceful build, a well-grown male standing from 3 feet to 3 feet 3 inches at the withers. The general colouring is bright reddish brown, darker on the back and sides, and paler on the lower parts and on the head and neck. Down each buttock runs a dark brown streak. The stomach and insides of the limbs are spotless white. There is a white patch above and in front of the eye, and the chin and throat are also white. The long, pointed, delicate ears are white inside and black-tipped, and occasionally dark patches are to be found on the top of the head and in front of the eye. The coat is wonderfully fine and smooth. At the lower part of the cannon-bones on the hind-legs are curious tufts of dark hair, covering a gland which exudes a greasy secretion. The tail is long, reaching nearly to the hocks, and is white at the extremity, with a dark line down the centre, a continuation of the median stripe noticeable on the lower part of the back. The male pallah carries long, graceful horns, strongly annulated, and quite unlike those of any other antelope. They are lyrate in shape, with a characteristic curve rather beyond the middle, thereafter pointing upward. The females, which very largely exceed the males in number, are hornless, but in other respects resemble the males.

Seldom found more than a mile or two away from the banks of a river, pallah are, in fact, essentially

denizens of the sylvan wilderness. In parts of South-east Africa they are still abundant, but even here their numbers, as elsewhere, are being sadly reduced. Pallah have, however, by no means yet been exterminated, even within the Transvaal. In 1894 Mr J. G. Millais found these antelopes only a few days' trek from Johannesburg, some way south of the Oliphants River. On that river they were fairly plentiful, and they are yet to be found in suitable country in various portions of the Northern and Eastern Transvaal.

Pallah are grass feeders, and where water is plentiful they drink more often than any other African antelopes. Mr F. Vaughan Kirby, who knew their habits intimately, states that " they drink regularly three times a day—morning, midday, and evening, and even oftener in the very hot weather." This is, of course, in country where water is easily obtainable. I am inclined to think that in the more westerly and drier regions of South Africa, where water is much scarcer, their habits are more adapted to the nature of their surroundings. In Khama's Country, near Palachwe, for example, where some years ago I found considerable numbers of these antelopes wandering in a wooded terrain not too well supplied with water, I doubt whether they drank more than once a day; and in the Kaoko Veldt, in South-west Africa, and behind Mossamedes, in Portuguese West Africa, where pallah are also found, water is none too plentiful in the dry winter season.

Pallah range in troops varying from fifteen to two hundred, in which the females always predominate. The troop is usually led by some alert, knowing doe, who understands her business, and not seldom an old buck may be seen bringing up the rear. Sometimes herds of females and young may be seen with a few half-grown males, but not a single old one. Pallah are

not difficult animals to shoot where they have not been too much persecuted, and even after one or more shots have been fired they will stand again and again, thus affording the hunter the chances he requires. From their bush- and forest-loving habits they fall frequent victims to the attacks of lions, leopards, and wild hunting dogs. They are extraordinarily active creatures, bounding over high bushes when in motion or alarmed, and clearing enormous distances in their stride. Mr Kirby mentions *(Great and Small Game of Africa)* that he was informed on good authority that a buck had been known to clear 35 feet. This sounds to the uninitiated almost incredible, yet, on reflection, I believe it to be quite possible. A heavy animal like a horse, carrying a man on its back, has been known to clear in winter-time, when going is usually heavy, 9 yards of water (27 feet). Why, then, should not one of the most fleet and agile antelopes in the world, exactly designed by nature for amazing feats of activity, clear at a bound in dry country 35 feet? "I only once," says Mr Kirby, " obtained a record of the distance covered by these antelopes. I measured it carefully: 70 feet in three leaps of 26 feet, 16 feet, and 28 feet."

For a short distance pallah are extraordinarily fleet, scarcely to be excelled by any antelope or gazelle in Africa. In a long chase they could, however, scarcely be expected to vie with such extraordinary stayers as sassaby, hartebeest, and blesbok. When suddenly alarmed these animals have, like springboks, a trick of leaping up into the air, affording on some occasions, when a number of them are thus engaged, a curious and very beautiful spectacle. Like most other antelopes, they are extremely tenacious of life, and unless well hit may escape even the untiring vigilance of a keen native spoorer. The flesh of these animals is very

good eating, coming next to that of the springbok, eland, klipspringer, and blesbok, which furnish the finest of African venison.

Like other antelopes of Africa, the pallah adapts its habits to the varying conditions of its existence. In British East Africa Mr Sidney Hinde, a careful observer, has noticed distinct changes in this respect in recent years. Speaking of this animal, he says :

> In neighbourhoods where the impala has frequently been hunted it has entirely changed its habits. As formerly known, it was an animal difficult to drive into the open, and when finally dislodged would gallop to the nearest bush, or circle round and return to the same patch of covert from which it had been driven. It seems, however, to have discovered that its natural habitat is dangerous, and several big herds with which I am acquainted now live entirely in the open, and, if disturbed when in covert, rush out a mile or two into the plain. Though the impala formerly only required steady and careful stalking to be brought to bag, in districts where it has been hunted it is now one of the most difficult animals to approach. In crossing a plain impala are frequently seen leaving covert half a mile away, when other herds of game, much nearer, have not been alarmed.[1]

This change of habit is not confined to pallah alone. I have noticed it myself among blue wildebeest, hartebeest, and eland, which, conversely, are now found forsaking the open plains and taking shelter in bush and forest country.

Mr F. J. Jackson has given the weight of the pallah in East AJErica at from 134 to 162 pounds. It is worthy of note that the farther north one goes in Africa the finer are the heads of these antelopes. In Kenya, where the most notable specimens are to be obtained, the horns are longer, bigger, and more spreading than in the pallah of South Africa. A pair of horns obtained by Lord Delamere in East Central Africa measure 30 inches over

[1] *The Last of the Masai.*

the curve, 24 inches straight, and from tip to tip have a spread of 17½ inches. But heads attaining to as much as 33 inches have been since secured.

A pair of horns of the South African pallah procured by Dr Burchell on his expedition beyond the Orange in 1811 measure 27½ inches over the curve, 21 inches straight, and 14½ inches from tip to tip. The Limpopo River, which has afforded magnificent examples of many kinds of game, seems to have furnished the finest pallahs in South Africa.

In the rutting season the bucks fight a great deal, and with their sharp horns formidable wounds are occasionally inflicted. During this season their hoarse, guttural grunts, which have been compared by hunters to the sound of a herd of pigs, are to be heard at long distances. Similarly, when suddenly excited or alarmed, a troop of these animals will, with outstretched necks and stamping feet, " make a perfect din, with their loud snorts." The does drop their young in South Africa towards November, and in that month and December, in different districts, most of the fawns are born.

In South-east Africa, where he had the opportunity of closely observing these antelopes when extremely plentiful, Mr A. H. Neumann found them associating frequently with blue wildebeest. In Eastern Equatorial Africa, on the contrary, he never saw them with these animals, although they were occasionally noticed with BurchelFs zebra and with giraffe.

The pallah of South Africa is identical with the form found through Central and East Africa as far as the southern limits of the Sudan region. In recent years, however, a second species has been established by naturalists. This is the Angolan pallah *(Æpyceros petersi)* found in Angola and in the Kaoko Veldt. The

only difference discoverable in this new species seems to be that of colour. Down the front of the face of the Angolan pallah runs a noticeable streak of dark brown, and patches of the same dark coloration are to be seen above and below the eyes. In all other respects this western form seems to be identical with the pallah of other parts of Africa.

Though formerly the pallah was to be found throughout many parts of South Africa, north, east, and west from the neighbourhood of Kuruman, this graceful antelope has now been exterminated in all Southern Bechuanaland, and is first to be encountered near the Oliphants River, in the Transvaal, no great way from Pietersburg. A few herds are still to be found, I believe, in Zululand, Swaziland, and the Amatonga country. In parts of Rhodesia pallah are still very plentiful, as they are throughout Portuguese Northern Zambezia. They are also to be found in various parts of Portuguese East Africa, but Mr Kirby doubts whether they are to be met with in the Mozambique Province east of the thirty-eighth degree of longitude. In Nyasaland and East Africa these antelopes are to be found often in considerable numbers. The herds of pallah in these regions never, however, seem to equal the wonderful troops found in the low country of the Eastern and Northern Transvaal and the adjacent region towards the end of the last century. Along the Limpopo River, forming the northern boundary of the Transvaal, they are still found, as well as in parts of the adjacent country of Bamangwato (Khama's Country). In the Zambezi Valley and on the Chobe and Okavango Rivers they are plentiful. In Kaokoland and Angola Peter's pallah is fairly common. I am unable to ascertain whether this antelope is found in West Africa north of Benguella. I think not. The pallah appears to be unknown in

Somaliland. Its most northerly limit in Equatorial Africa seems to be Scherk-el-Akaba, on the White Nile, where it has been identified by Heuglin. M. Fo£, although he met with pallah under the name of[c] nswala' in parts of Central Africa, seems never to have encountered them in his journey through the Congo country. Nor are they to be found, apparently, in any part of Nigeria, or the other western regions of Africa north of the equator. In East Africa, although found as far north as the Matthews Range, south-east of Lake Rudolph, these antelopes were not found by Neumann round the lake itself.

These, briefly, are the limits, as at present known, of this interesting species. Only two living specimens have been brought to Europe; These died young, and frequenters of the various zoological gardens are consequently unfamiliar with the species.

XXIV

GAME-BIRD SHOOTING IN THE VELDT

IT is a morning in early March, the rains are nearly over, and already one feels something of that indescribably sparkling and exhilarating atmosphere which characterizes South African winter. But even in summer, upon the high plateaux of British Bechuanaland—at an elevation of some 4000 feet above sea-level—the heat of midday is seldom too much for the white man. The Englishman in this country—a country possessing upon the whole the finest climate in the world—can during African summer-time ride, shoot, and carry on his farming and other operations without hindrance all through the day. The nights are seldom very hot—in winter ten degrees of frost are sometimes registered—and in the open-air life of this bracing climate, though the region is close upon the tropic of Capricorn, the mere effort of living is a perennial pleasure.

We quit our huts, then—mud-walled, grass-thatched, circular Bechuana huts, dwellings which cost about two pounds apiece to put up—soon after sunrise on this clear morning, after refreshing sleep, and breathe the clean, lively atmosphere with a feeling of relish that never palls. In this part of the country, where the great rolling grass plains are pleasantly masked by forests of giraffe acacia, bird-life is pretty abundant. Already within our huts we have heard the sharp call of Orange River francolins—one of the numerous partridges of the country—near the pool of water in the half-dry river-course. As we emerge from our dwellings we set eyes

upon half a dozen of the most charming wild doves in Africa, busily running hither and thither over the red sandy soil, gathering crumbs, grain, and grass seeds just outside the huts. These friendly little creatures—'Namaqua doves' they are called by colonists—are, as I think, the most charming doves in the world. Their deep, tender cooing note is a sound that one never tires of listening to.

But we are in need of food for the evening stewpot, and are not inclined this morning to linger over the lovely Namaqua doves. We pass the two tame baboons, Jack and Jenny, just now sitting upon their poles, surveying the country. They greet us, at the mention of their names, with chattering grunts. We now bear to the right, down towards the two river-courses which meet hard by. These river-courses contain no running water, except perhaps for a day or two at a time during exceptionally heavy rains. Then they foam along breast-high. During March and April a few pools stand here and there. From May till December, when the rains fall again, they are nearly dry. You may find a little water in one or two places by digging in the sandy bed, but it is tedious work, and the cattle and goats have to be moved elsewhere.

The question this morning is, shall we try for a big spur-winged goose or a duck or widgeon in a piece of marshy ground a mile or so up the river to the left, or shall we pick up a brace or two of francolin and bustard in the open grassy valley to the right? The marsh, just now brilliant with wild pink and white lilies, is rather tempting; but the ground is open and the spur-wings are hard to get without an elaborate drive, and so we decide this morning for 'partridge' and 'koorhaan,' A steady old pointer ranges ahead. Already in the long, dew-laden, greenish-yellow grass one is wet through to

the hips ; but the sun soon licks up all this moisture, and by ten o'clock the veldt will be as dry as you please. In three hundred yards the dog is feathering about busily. Manifestly she is on the line of the partridges we heard calling so shrilly half an hour since. Another sixty yards and she stands stiffly at the point. It is my comrade's shot, and he moves forward. These francolins lie desperately close. Still the staunch dog stands motionless. At last! With a whirr a single bird rises from the grass not ten yards from my friend's feet. A little law, the trigger is pressed, and the plump francolin hits the earth. At the report of the gun another bird springs from the long grass a little to the right. That too is secured without difficulty. The old pointer is well pleased so far ; my friend gathers his birds and the dog resumes her business. It is very clear that she has not finished with the covey yet. Feathering eagerly, but very quietly, she comes my way now and presently stands again. I walk up, and at length the close-lying francolin is driven in sheer desperation to quit his concealment. I get an easy shot, and bring down the game without difficulty. These Orange River francolins are superior in size to their near cousin the English partridge, and are handsomer birds. They are very closely allied to the ' red-wing ' francolins of Cape Colony; and, indeed, by the settlers of Bechuanaland are themselves usually called ' red-wings,' They are very fair eating, but have the fault common to nearly all African game-birds of being drier and less succulent food than the game-birds of northern latitudes.

There are no more francolins to be discovered here—the rest of the covey have made good their escape somehow—and we walk on. We move now very quietly towards a long patch of bush fringing the open grassland, and we hope to get a shot at a steinbok. We

are not smart enough, however, this morning. A flash of bright rufous brown flies from the grass a hundred yards ahead, and a dainty steinbok bounds lightly across the open and speedily finds shelter in the thick covert. We have No. 2 cartridges in our left barrels, but the shot is too far, and we desist.

Almost immediately a black-and-white koorhaan mounts clumsily upon the air, and, with that harsh cackling for which these birds are notorious, circles across our front. It is a longish shot—fifty yards—but, trusting to the No. z shot and the choke-bore, I let drive. This bustard offers a big target and is no very swift flyer, and so, hard hit, he crumples up limply, turns over and over in his descent, and hits the red earth with a resounding thud. Meanwhile the pointer is quartering hither and thither, hunting busily for the hen bird. She stands at last, and my comrade goes quietly to the point. The hen koorhaan, unlike her noisy mate, rises from the veldt without a sound. Thirty yards and a fair target, and the bustard is ours.

The next head of game is of a different nature. Something not unlike a hare—there are hares in South Africa —moves in the long grass. I fire, and a monitor lies at its last kick as I approach. This huge lizard, more than three feet long, which looks at first glance like a young crocodile, is the white-throated monitor, a near kinsman of the monitor of the Nile. It is an uncanny-looking beast, with its smooth, snake-like head ; but its strong, tough coat is worth having, so we mark the spot and move on.

Now we enter the forest. As we approach, brilliant rollers—' blue jays,' as the colonists *will* call them—are flying hither and thither on their morning business. The flashing plumage of these wonderful birds, which we occasionally secure as specimens, with its mingling of

greens, lilacs, violets, browns, and light and dark blues, is quite one of the most beautiful things in South African bird-life. There are several of this family near the tropic of Capricorn; these in lower Bechuanaland belong to the species known as the lilac-breasted roller —' Moselikatse's bird' it is sometimes called, from the fact that Lobengula's redoubted father monopolized the long tail feathers for his own special ornamentation.

Queer bizarre hornbills, with monstrous yellow bills, are also to be seen frequently as we traverse this piece of woodland. One more head of game we secure before reaching the huts again, after an hour and a half's tramp. This is a bush koorhaan, a strange, silent bustard, with a ghost-like rise from the grass veldt, and a wavering, dodging flight among the thorn-trees, not unlike that of a woodcock. A handsome bird this, with its deep black under-colouring, speckled back, and salmon-pink crest, from which, by the way, it gets its scientific name, *Otis ruficrista.* This is an excellent table bird, and is added to the modest bag with some pleasure.

We reach the huts again, with a fairish supper secured. A wash, breakfast, and a pipe of good Transvaal tobacco well fit us for the perusal of the English mail, which a native lad has just brought in from the store and post-office eighteen miles away.

Wagon life in the South African interior has, of course, its drawbacks, yet in a climate where for seven months on end absolutely settled weather may be relied upon its pleasures outnumber them by fifty to one. To mount one's pony on a clear bright morning; to ride forth into the veldt with a friend and a brace of pointers, with the blessed feeling that you have not a care in the world beyond the march of your wagon to the next water ; to be absolutely certain of some pretty shooting in a wild country innocent of farms and fences ;

to return to camp towards evening with perhaps ten or twelve brace of birds and a small buck : these things, to the average healthy male, seem as near perfection as may be found in this vale of tears!

Let me try and sketch the movements of a wagon party in another part of this pleasant region. It is eight o'clock on a bright April morning in Bechuana-land. The air is full of light, brisk, and wonderfully exhilarating. Four gunners have just breakfasted under the lee of their wagon. Now, having mounted their ponies—the average South African horse is seldom more than 14 hands—they ride quietly down the hither side of a shallow valley *(laagte* it is called in these parts), wherein they were outspanned, and climb the farther rise.

It is a picturesque scene. The slopes are clothed with a long growth of waving grass, now greenish yellow after the rains, amid which great boulders of dark-red rock crop up. Here and there small patches of blue-green bush start out from the grassy veldt. Beyond, crowning the valley, begins a thickish wood-land of short trees—' bastard yellowwood' the Boers call them—which extends for some miles in front, till the great open plains are again reached. As the gunners ride up the farther slope their wagon is already in motion behind them, starting upon its day's trek—seventeen miles to the next water. Through the clear, nimble air come the crack of the driver's great whip and his shrill cries, hurled at the oxen; and the unwieldy home on wheels crushes slowly through the yielding sand. But now the gunners have spread out in line, and the pointers are already busy. Near some boulders one of the dogs feathers a little, then stands, rigid as a figure of bronze. The two nearest gunners dismount. They already

carry their guns and bandoliers, and ride, as men do in the veldt, in their flannel shirts with the sleeves well rolled up the arms. There is little to encumber their movements. Breeches, gaiters, socks, and stout boots, a shirt and a shady hat, are all that a man needs for this kind of life in South Africa.

The reins are thrown over the ponies' necks and hang in front of them, and the nags will stand quietly for an hour. Now the gunners are close upon the pointer, still standing with rigid tail and outstretched neck. These francolins lie close in the long grass. " Where the deuce——? " On a sudden up spring three brown birds within five feet of the sportsmen. Twenty yards of law, the guns are up, two light reports from smokeless cartridges, and a brace of the birds hit the earth. Almost instantly a third shot follows, and the near gunner has secured his right and left—not a difficult matter with these francolin. But the pointer is not yet content. Another brace of birds is found and brought to bag within thirty yards. The partridges are now gathered. They prove to be the small Coqui francolin—*rfsivimpi* the natives call them—perhaps the most beautiful game-birds in the world. As one of them lies in the gunner's palm for a few moments, the bright nankeen-yellow and orange of the head, the clear hawk-like markings of the breast, and the beautiful shape and feathering mark this small francolin of Africa as a gem among its fellows, The birds are bestowed in a saddle-bag, and two of the gunners mount and ride into the forest on the right-hand side of the wagon road. Meanwhile theii comrades have entered the woodland more to the lefl hand, and their guns can be heard already going.

For two hours the sportsmen quietly walk theii horses through the forest, moving due west. Onc< their pointer gets into a small troop of guinea-fowl

delving for bulbs, and after a smart chase drives three of them into a tree, whence, as they fly off, the gunners secure them easily enough.

This proceeding may sound heretical to the English sportsman. But in Africa pointers have to encounter many varieties of game, and must perforce adapt themselves to their habits. Guinea-fowl are terrible runners, most difficult to put up, and in forest country very often the only plan is to tree them. It is true that many a good pointer is half spoiled in the process. Besides the guinea-fowl, a brace of Bush koorhaan are secured in the forest, as well as a handsome steinbok, which is slung behind one of the saddles. The so-called Bush koorhaan is in reality a forest bustard. Besides being good for the pot, these are notable birds of plumage. At length, after picking up a few butterflies in the forest clearings, for they carry nets, our gunners emerge upon broad, rolling, sun-drenched plains, covered with long pale yellow grass. Through these they ride steadily hour after hour, picking up every now and again a head or two of game. Now it is a brace of big red-wing partridge (Orange River francolin) ; now one of those annoying yet handsome game-birds the black-and-white bustard—*ywart koorbaan* the Colonists call him—whose noisy voice and chiding ways are familiar everywhere in open veldt in South Africa. Now, after keenest search, a leash of tiny bush-quail are flushed and secured, one after the other having literally to be kicked up. A hare and a solitary *dikkop*—thick-knee plover—are added to the growing bag.

About noon all four sportsmen unite, and, under a solitary camel-thorn tree, compare the scores, eat a biscuit, take a pull at the cold coffee from the water-bottles, and smoke a well-earned pipe. Afternoon sees the party, again separated in pairs, steadily marching

through the grass veldt on either side of the wagon track. You may see, now and again, a man dismount and put up his gun; a tiny puff of smoke—perhaps two—follows, and the figure, wading knee-deep in grass, mounts and rides on again. All around is the blinding glare of the yellow, shadeless plain; above, the pale turquoise of the sky. Far behind, slowly lumbering across the veldt, follows the wagon, with its gleaming tilt of white.

At evening, outspanned by a limestone water-pit, the bag is turned out and supper is got under way. An hour or two later, four men, as they sit smoking by the cheery camp-fire, beneath the loom of the vast star-sprinkled heaven, feel that they indeed have not toiled in vain.

XXV

KLIPSPRINGER-STALKING

AMONG the thirty odd species of antelope to be found between the Cape Peninsula and the Zambezi none excels in grace, beauty, or activity that handsome and hardy little mountaineer the klipspringer.[1] The klipspringer, or klipbok, as it is often called by the Colonists, seems, like the chamois of Europe, to be created for no other purpose than to complete and adorn a mountain landscape. Although smaller than its distant cousin of the snowy Alps, the klipspringer yields neither to it nor to any other mountain dweller in the world in the ease with which it can get about the most difficult and dangerous rocks and precipices. To watch a pair of these little antelopes bounding with the elasticity of a piece of india-rubber up and down the precipitous face of some yawning cliff or sheer mountain wall, or on to pinnacles and ledges that might startle even a Rocky Mountain goat, displaying the while a coolness and lack of fear born of countless generations of a climbing ancestry, is to watch the very perfection of wild life upon the mountains. In all South Africa there is no more charming sight than the klipspringer amid its own wild hills, *kloofs,* and *krant^es.*

About two feet in height at the shoulder — sometimes a trifle more — the klipspringer is a sturdily built little buck. The ram carries short, sharp, poniard-like horns about four inches in length ; the ewe is hornless. One great peculiarity of the klipspringer lies in its

[1] The ' rock- jumper ' *(Oreotragus saltatrix).*

olive-brown coat, which is thick and very brittle to the touch. Each hair is hollow, and the whole coat is singularly light and elastic. Among the Colonists, and especially the Boers, the hair of the klipspringer is, in consequence, in great demand for stuffing saddles. I believe that the thick, elastic, hollow coat of this buck is purely an effort of nature to save the antelope from the pain and danger of bad falls. The legs are robust, as they need to be; the pasterns extremely stiff and rigid; while the tiny hoofs are hollow, somewhat jagged at the edges, and exactly adapted for obtaining foothold on the most difficult mountain-sides.

In South Africa you may find this dainty little antelope all over the country wherever there are hills and rocks. Even within a short distance of Capetown it is not yet extirpated. It has a wide distribution, and is found from the Cape province to Nyasaland, East Central Africa, and Nigeria, and thence as far north as Abyssinia and Somaliland.

I have had the opportunity of seeing these animals in the wild state in various parts of South Africa, and it seems to me that the finest specimens are to be found in the wild mountains of the south-eastern parts of Cape Colony. An inspection of many heads, brought from all parts of the African continent, goes to confirm that view. The Cape Colony klipspringer seems to me to be stronger, sturdier, and more robust than its congeners farther north. A light-hearted little creature, the klipbok, if taken quite young, often thrives for some time in captivity. I have seen a pair, captured young and reared at an up-country store, which sought perpetually, upon high shelves, biscuit boxes and other unnatural eminences to emulate the feats of their wild relations in their mountain abiding places and satisfy the craving for activity which stirred within them.

And it is a tribute to their natural grace and beauty to be able to state that these [c] klipbokkies,' notwithstanding the poverty and unfitness of their surroundings, lost little by the comparison. At the time I saw them this pair of klipspringers were thriving well; as a rule these and most other small antelopes in South Africa when kept in confinement become subject to an affection of the eyes, and sooner or later go blind. There is a singular superstition prevalent among the Bechuanas that the cries of the klipspringer are excellent' medicine' for rain in time of drought. When the land lies parched the tribes-people of the Bechuanaland Protectorate, where hills and klipspringers abound, scour the mountains for the young of this antelope. The poor little beasts are carried about and pinched vigorously. This cruel proceeding produces from the tortured innocents an abundance of squealing cries, and the weather authorities are then, to the high satisfaction of the natives, supposed to be propitiated.

The klipspringer, from its shy and suspicious habits, its marvellous activity, and the wild and difficult nature of its habitat, affords by far the best mountain stalking to be found in South Africa. The vaal, or grey rhebok, another mountain antelope, offers, too, excellent sport in places; but the klipspringer, upon the whole, provides far more fascinating shooting—shooting which, in its way, is not to be surpassed in any part of the world. Among the hills and *kopjes* of Bechuanaland, the Transvaal, and Rhodesia any man who takes the trouble to look for these shy little antelopes, and understands something of their habits, may be certain of enjoying first-rate sport. But in a hot climate it is not every man who cares to climb to rocky heights and scramble amid the titanic litter of rough and crumbling *kopjes* for the chance of a shot at this difficult game.

In Khama's Country I have noticed that klipspringers will at times venture down to the lower foothills, and may even be seen occasionally in the valleys. The same trait is to be noticed in Rhodesia and farther north. In Cape Colony, on the contrary, the klipspringer is seldom seen away from the higher and more difficult portions of the cliffs and *krant^es,* although it may move to other ranges and seek water under cover of night.

In the Old Colony, in certain of the mountain ranges towards the coast, the chase of the klipspringer lies amid some of the wildest and grandest scenery imaginable. Bewildering mountain interiors, sometimes grim and forbidding, sometimes wildly and sublimely beautiful, lying far remote from the thinly scattered farmsteads, add greatly to the natural delights of the chase. Sometimes—in June, July, or August, after the rains have come—the lone hillsides, the deep *kloofs,* the shallower valleys, are carpeted for a brief space with wild flowers, and the sportsman moves amid scenes of rarest beauty. The wild flowers of the Cape are among the richest in the world, and the gunner, as he quits his night's resting-place and wanders among the hills, may see around him a marvellous array. Oxalis, lilies, brilliant orchids, strelitzias, mesembryanthemums, the wonderful blue agapanthus, the wild arum—so common as to be called by the Boers the ' pig lily'—splendid heaths in a bewildering plenty, lovely proteas, many flowering shrubs, gladioli, ixias, Watsonias, noble amaryllids—these and a hundred other flowers contribute for a season to the hunter's supreme enjoyment. He must be worse than a Kaffir, indeed, if he cannot take delight in them. Masses of pelargoniums flourish among the secret *kloofs* and valleys. Here a mountain-side is to be seen fairly blushing with pink heath—one of the three hundred and odd heaths of which the Cape can

boast. And so, if he is lucky and the rains have been propitious, the gunner may follow the klipspringer through *kloofs* and up hillsides thus gladdened for a brief space with brilliant flowers. The innumerable wild doves coo softly from the thorny acacia groves. As he passes the clear rill of water, gushing from yonder deep *kloof,* a little crested kingfisher, with mazarine-blue back, coral-red bill, and blue-and-black crest, darts like some living gem up-stream. Climbing the lower foot-hills, he may note, busy among the sweet protea flowers, gorgeous sunbirds (' honey-birds ' the Colonists call them—the *nectarinice* of the naturalists), clad in brilliant greens, bronzes, violets, orange, yellows, and reds, extracting with their long brush-tipped tongues the honeyed dainties of which they are so inordinately fond.

But the climb becomes steeper and the ground rougher and rockier. Sometimes the gunner flounders distressfully over slipping shales, losing a foot for every two he makes. Mountain shooting in Africa is no child's play; the sweat drips from the hunter's face, his flannel shirt is wringing wet. He climbs for an hour or so, sighting a pair or two of klipspringers, which, however, are off like rockets, far away out of shot, up yonder frowning *krant*^ But the fates are propitious. His Kaffir, who knows this wild ground and its denizens as the hunter knows his own dining-room, at length guides him to a likely spot. The wind is right. Creeping forward noiselessly, and peering very carefully through a screen of bush, he sees before him on a broad ledge of rock eighty yards away two little yellowish-brown bucks, male and female. He can tell the ram by the glint of his black horns. Cautiously he raises his rifle and takes aim. But see ! Something has roused the suspicions of the little ewe, which stands with broad ears pricked, watching, listening intently,

searching the breeze with her smooth black muzzle. She stamps her foot and starts to fly. Too late ! The ram, which has been resting, springs to his feet, and stands for one brief instant with his shoulder well exposed. The rifle cracks, the bullet flies true to its mark, and the sturdy little buck, falling to the shot, rolls *off* the ledge. The ewe meanwhile has bounded away uphill. She is hornless, and her venison is not needed. She may go unscathed. The klipspringer drops from the rock ledge to the mountain-side, rolls thirty feet, then rests against a bush, stone-dead. Ere the echoes of the rifle-shot have finished rattling round the mountain, with deafening reverberation, the Kaffir has leaped across the hillside, laid hold of the dead buck, and with ready knife is already performing the gralloch.

XXVI

HONEY-GUIDES

FOR how many ages the small birds which are known in Africa as ' honey-guides ' have been in the habit of leading human beings to the nests of bees it is impossible to say. But there can be no reasonable doubt that the habit is a very ancient one, developed during far-away spaces of time, in the days when Africa lay utterly unknown to the outer world. It is possible that these birds may have first noticed the comb-eating propensities of creatures such as the ratel, or honey-badger, and, having first tried their powers of persuasion upon these animals, subsequently turned their attention to human beings. It has never yet, however, been made perfectly clear that the ratel is deliberately guided to the nests of bees by the honey-birds. Many natives assert that this is the fact, and as the ratel is an extremely acute animal, dearly loving the combs of bees, it is more than possible that this is so. The two chief witnesses on the point being mute, as far as human beings are concerned, we shall probably never reach a satisfactory conclusion on this head.

The fact that the honey-guides do actually and with intent conduct human beings to the nests of bees has long been placed beyond question. The first notice of the kind of which I have knowledge is in *Lobe's Travels in Abyssinia*, written in the seventeenth century :

> The moroc or honey-bird is endued with a peculiar instinct or faculty of discovering honey. . . . When the moroc has discovered any honey he repairs immediately

to the roadside, and when he sees a traveller, sings and claps his wings, making many motions to invite him to follow him ; and when he perceives his coming, flies before him from tree to tree, till he comes to the place where the bees have stored their treasure, and then begins to sing melodiously. The Abyssinian takes the honey, without failing to leave part of it for the bird, to reward him for his information.

On the whole, although it was written so long ago, and was taken probably from hearsay, Father Lobo's description of the honey-guide and its methods is by no means a bad one. Sparrman, who travelled at the Cape in 1775-76, gives also a very good description of the bird as observed in the southern part of the continent. And few travellers and hunters who have spent much time in the wilds of Africa have not had occasion to notice at some time or other the very curious and interesting performance of these birds. No writer that I know of has added very much to the information given by Lobo, Sparrman, and other early observers ; but it has come to be known that the honey-guides do lead human beings to the nests of wild bees, not so much for the honey as for the grubs or larvas found within the comb. The natives are for the most part well aware of this fact, and if they reward the honey-guide, which they usually do to some grudging extent, break off for it a piece of the comb in which the grubs are hatching. Sparrman has a curious note upon this detail. He says :

I was informed by my Boshies-men [Bushmen], as well as by the Colonists, that a man who makes it his constant business to go after the bees should not at first be too grateful and generous to this officious bird, but leave for it only just as much as will serve to stimulate its appetite, by which means it will be induced, in hopes of obtaining a more liberal reward, to discover another swarm of bees.

The honey-guide's habit—the name, by the way, is manifestly adapted from the *honing-nyzer* of the South

African Dutch—is briefly this: When it desires to feed upon some comb which it has discovered it makes its way to a human being, flutters about restlessly, and hops from branch to branch, or from bush to bush, or from one anthill to another, until it succeeds in attracting the man's attention. During this time it utters a shrill cry of " Cherr, cherr ! " frequently repeated. If the man is a native who understands its habits and is willing to follow it he oftens gives a soft, soothing whistle, and, taking with him a hatchet, accepts the restless little creature's guidance. The honey-guide now goes ahead, never keeping very far away, and always jealously regardful that the man is really following. At length the honey nest is reached and the bird's object accomplished. While the native or natives attack the nest and rifle the comb the bird still flutters about chirping. When the business is concluded and the men depart the honey-guide descends from its perch and helps itself to as much of the larvae and honey as it can find.

Natives will sometimes tell you that the honey-guide is a wicked and deceitful bird, luring its human follower to the resting-place of some lurking snake, or a leopard, or even a lion. I am convinced that such encounters are purely chance ones, which any traveller in the African forest may have the ill-fortune to meet with. Livingstone's evidence on this point is very clear. He once inquired from 114 natives who were with him as carriers whether any of them had ever been led by these birds to anything but a bee's nest. Out of this number only one man could say that he had been led to an elephant instead of to a hive. Livingstone adds : " I am quite convinced that the majority of people who commit themselves to its guidance are led to honey and to it alone."

When thus following a honey-guide the native goes,

as a rule, very quietly, taking care not to frighten his small adviser. If the man, by reason of bush or other obstacles, travels, in the bird's opinion, too slowly, it will repeatedly come back to him, fly closely and angrily about him, and, with restless twitters and evident impatience, urge upon him the necessity of hurrying up, The performance, in fact, common as it is in savage Africa, is one of the most wonderful and most interesting among all the various phenomena to be witnessed in the whole of that continent. Sometimes it may happen that, arrived at the locality of the nest, the man conducted is unable readily to find the desired treasure. " I have known this bird," says the late Sir John Kirk, " if the man, after taking up the direction a little, then turns away, come back and offer to point out another nest in a different part." It is, of course, to be remembered that in some parts of Africa the natives, for the sake of obtaining honey and wax, place hives of bark in various spots, and treat the bees very much as we treat our domesticated swarms at home. Where this is known to be the practice the attentions of the honey-guide, which will lead as readily to a tame hive as a wild one, may be very properly disregarded.

In Africa there are some nine species of honey-guides, most of them belonging to the genus *Indicator.* Of the allied race, *Prodotiscus,* one, *Prodotiscus regulus* is found only in Natal. Of the *Indicators* four are found in South Africa, and three of these are looked upon as more or less trustworthy guides to honey. Speaking generally, the honey-guides are smallish birds, little bigger than a lark, brownish in colour, with touches of yellow, and in places a little white about the plumage. In the *Indicators* the bill is strong and finch-like; the species belonging to the genus *Prodotiscus* have a more slender and somewhat sharper bill.

Formerly the honey-guides were included among the cuckoos, chiefly for the reason that some of them have the parasitic habits of these birds, and have been known to deposit their eggs in the nests of barbets and woodpeckers. This has certainly been proved against the lesser honey-guide *(Indicator minor)* by the evidence of Mr W. Atmore, a very careful observer of bird-life in Cape Colony. This bird, which is one of the most famous of the honey-guides, averages about 6 inches in length. The general colouring is yellowish brown, the yellow being brightest on the wing feathers. The head is ashy brown, the cheeks, chin, throat, breast, and stomach are ash-coloured. The vent is white, and the outer pairs of tail feathers are also white, with the base and tips brown ; the moustache is blackish. This small honey-guide devours not only the grubs of bees, but the bees themselves, and it is stated by C. J, Andersson that in its attacks on their nests it sometimes falls a victim to the wild bees, which fasten about the little creature's eyes and inflict injuries to which it succumbs. It is worth noting that the lesser honey-guide has been identified by Mr C. V. A. Peel in Somaliland, where he found it on the Wagga Mountain.

Sparrman's honey-guide *(Indicator sparrmant)* is slightly larger than the preceding species, and exceeds 7 inches in length. The general colour is dull olive-green, yellow on the wings, with the under-parts a yellowish drab white; the throat is black in the male, whitish in the female.

The greater, or Le Vaillant's, honey-guide is in size about on a par with Sparrman's. Its upper plumage is brown, tinged with yellow upon the forehead; the throat is black in the males, yellow in the females ; the under-parts are whitish.

These are the three principal honey-guides found

in South Africa. They are met with also in tropical Africa. Another species, the white-billed honey-guide *(Indicator albirostris)*, is scarce, and not very often recognized in Southern Africa.

It is worthy of note that one species of honey-guide *(Indicator xanthonotus)*, is found in the Himalayas, while another *(Indicator archipelagicus)* occurs in the mountains of Malacca and Borneo. I know of no evidence attributing to these species the honey-guiding characteristic common to some of their congeners in Africa.

XXVII

WILD PIGEONS

No one who has travelled much in South Africa can have failed to notice the extraordinary abundance of wild doves and pigeons. There are so many kinds of game-birds to be found between the Cape and the Zambezi, often in great plenty, that few sportsmen care to waste powder and shot on other and humbler quarry. The Boers seldom trouble themselves with the 'scatter-gun' at all, and as a rule, therefore, except among young colonists learning to handle a gun and pot-hunters hard up for a meal, doves and pigeons enjoy a tolerable immunity. Many of them, however, are excellent eating, and, whether roasted, stewed, or made into a pie, afford a by no means unwelcome addition to the table when game-birds or wildfowl happen to be scarce. Wherever rocks, sea cliffs, and mountains are to be found, wherever forest country appears—whether the tall and venerable timber of the southern part of Cape Colony or the spreading tracts of camel-thorn of the interior—these doves and pigeons, of various species and of the most beautiful shape and colouring, are pretty constantly to be met with—that is, if water is anywhere in the vicinity. The pleasant groves of thorny acacia timber *(Acacia horrida)*—camel-thorn—lining the courses of streams and the well-bushed bottoms of *kloofs* and valleys are favourite abiding places of these birds, and one of the pleasantest recollections of the sojourner in South Africa will, to my mind, always be the gentle cooing of hundreds of doves,

gathered, as they love to gather, in some quiet valley clothed with low thorn-trees and bush, where during the heat of the day they rest, calling softly to one another or crooning their contentment. Who that has heard the soft laughing note of the Senegal dove can ever forget it? Or who can recall without pleasure the sweet, plaintive cooing of the tiny Namaqua dove—truly a gem among its fellows—or the strangely deceptive call of the tambourette dove *(Peristera tympanistria)*? They are sounds that cling always to the memory. Wild, remote, and rugged though the scene may be, the tender cooing of the wild dove always seems to me to create a feeling of repose and contentment, even in the wilderness of Southern Africa.

One of the commonest birds in all South Africa, found from the Okavango to the Indian Ocean, is the handsome Senegal dove *(Turtur senegalensis),* the well-known 'laughing dove' of the Cape Colonists. It is about 10 inches in length ; the general colouring of the head, neck, and breast is vinaceous, the chin whitish. The wings and upper parts of the body are ash-coloured, darker upon the tail, the shoulders ruddy brown. The breast is curiously marked with black, giving that mailed appearance which the French naturalist Le Vaillant very well expressed in the name bestowed by him on this dove : *la tourterelk mailUe.* The stomach is pallid, the vent white. This bird is common even near Capetown. In *Birds of South Africa* E. L. Layard speaks of having no less than sixteen at one time in his garden at the Cape, and a pair nested there. I have seen these fine doves in very large numbers among thorn-groves in various parts of the Old Colony. Far up-country they are to be met with at times in enormous numbers. Outspanning one evening at the temporary desert pool of Maqua, in the Northern Kalahari, between Palachwe

and the Botletli River, we saw many hundreds of these doves come down to drink about sunset. Our native boys wanted a change of food, and one of them was allowed to take a shotgun and fire a couple of cartridges. With these two shots he secured sixteen birds, and we could have bagged a hundred if we had so wished without the least difficulty. It is curious that next morning, when enormous flights of sand-grouse (the common 'Namaqua partridge' and the big yellow-throated sand-grouse) came down to the water, not a single dove appeared. It would seem that even in this desert region they were content to take their drink once during the day.

Another well-known dove, familiar all over Cape Colony, is the *Turtur semitorquatus,* the *tortel-duif ('* turtle-do ve') of the Boers. The general upper colouring is a brownish drab; the top of the head and under-parts are wine-coloured; the chin is paler, and the stomach is creamy white; the bill is black; the feet are pale red. At the back of the neck is a semicircular black collar.

A very near relative of this turtle-dove is the red-eyed dove *(Turtur vinaceus,* sometimes known as *Streptopelia semtorquata)* which, at a short distance, may be easily mistaken for the preceding species. The red-eyed dove is, however, to be distinguished in two or three ways. It is larger, a well-grown specimen measuring somewhat more than the average 10 inches of the turtle-dove ; the top of the head is French grey in colour, the upper colouring is greyish brown, the upper neck a rich, vinaceous tint, with the black half-collar, as in the other species. The breast is wine-tinted ; the stomach and the other under-parts are ash-coloured. The bill is black, the feet are blackish, while the naked skin round the eye is bright red. The tail is black at the base, ashy towards the extremity; while in the foregoing

species the end of the tail is white, which shows distinctly in flight, and especially when the bird is alighting.

Both birds are called *tortel-duifby* the Dutch colonists. The red-eyed dove is, like its near ally, well known in the Old Colony, although not, perhaps, quite so numerous there as *Turtur semitorquatus.* It occurs pretty frequently beyond the Orange River; Andersson met with it at Lake Ngami and on the Cunene River. I myself have shot specimens on the Botletli River. From the Cunene River this beautiful dove would appear to range as far as West Africa; probably, like so many other birds of Africa, this and other species are partly migratory, moving with the rains or from other causes. The rains especially have a very great deal to do with the changes of bird-life in Africa.

One of the most exquisite of all South African birds is the tiny little Namaqua dove *(Ena capensis)* sometimes called the ' black-throated dove,' The upper colouring of the male bird is ashy grey, the wing feathers are deep red, edged with dark brown, while on the secondaries is a bluish tinge, with a notable purplish spot. The chest, throat, cheeks, chin, and under-parts of the tail feathers are shining black. Bars of white and black extend across the rump, and the ends of the tail coverts are again black. The legs and feet are purplish pink, while the bill is coral, tipped with rich orange. Altogether this is one of the most lovely little feathered creatures imaginable. The beauty of this tiny dove—for, although only 9 or 10 inches in length, more than j inches are reckoned in the tail, and the bird's proportions are very slender—is fully equalled by its charming and confiding habits. It seems to have little fear of mankind, and will come readily about farmhouses for grain, seed, or whatever else it can pick up. Some years ago, while living in huts in British Bechuanaland,

I never failed to be greeted at daybreak, as I issued from my sleeping-place into the *kotla,* or enclosure, with the sight of several pairs of these little creatures, running about in the sand just beyond the doorway of the hut. They live much upon the ground, where they pick up most of their food. They roost and make their nests in acacia-bush and low trees, whence their soft, tender cooing is often heard. Layard remarks, aptly enough, that " the males are very salacious, cooing to any female they chance to fall in with." That eminent naturalist kept one in confinement for many months, and at his first entrance into the room each morning was always welcomed with " a deep, plaintive *coo-coo-co"* This charming dove has a wide distribution, and is found from the Cape throughout the whole of South Africa.

The Roussard pigeon or guinea-pigeon *(Columba guinea)* is known to the Cape Colonists as the 'bush dove" *(bosch duif)* or 'wild dove' *(wilde duif}.* These birds are in many places and at certain seasons extraordinarily plentiful, appearing in such mighty flocks that shooting has no effect whatever upon their enormous legions. They are a rock-loving species, and on various parts of the coastline of Cape Colony inhabit the sea cliffs, especially towards Cape Point, in huge numbers. Their nests are, as Layard has remarked, despite the fact that they are so common, usually placed in extremely inaccessible places.

The first time I ever shot this splendid pigeon, which measures 12 inches in length and is a big, heavy bird, was in some wild mountain country in the little-known Witteberg, between Swanepoel's Poort and Witte Poort, in the eastern part of Cape Colony. Here these birds afforded very pretty shooting about the cliffs and mountain walls. I have shot them while standing

middle-deep in wild pelargoniums, where I had often some trouble to retrieve my birds. They have a strong flight, like most of the rock pigeons, and afford good practice. The plumage is very handsome. Much of the colouring is a bluish or leaden grey; the back, shoulders, and wing coverts are tinted with wine colour, the wings daintily marked with triangular white spots. The same rich vinaceous colouring appears on the neck and breast, which are, in addition, glossed with green. The legs and cere are crimson, the bill is lead colour. Of the various pigeons and doves of South Africa this is, I think, by far the best eating, having a pleasant, game-like flavour. At certain seasons, usually after the nesting period, these pigeons collect in enormous flights, and, wherever they may happen to be in the neighbourhood of crops, wreak, like our own wood-pigeons, no small amount of damage.

The rare Delagorgue's pigeon *(Columba delagorgmi)* is apparently found only in Natal, and even there is little known. Dark slate-grey in general colouring, shading into purplish brown, with blackish tail and wing feathers, this beautiful pigeon is distinguished by a very lovely iridescent colouring—emerald, amethyst, and purple—about the neck and breast. Splashes of white are also to be noticed upon the base of the neck. The feet are yellow, the basal portion of the bill is black, the tip yellow. In the female the head is rufous, touched with amethyst, and the white neck-splashes are absent.

The cinnamon dove, sometimes called the lemon dove' *(Peristera larvata)* is another fairly well-known Cape pigeon, more familiar to inhabitants of the wooded districts, such as the Knysna and George, than to inhabitants of other parts of the colony. It is somewhat smaller than the Roussard pigeon, measuring about i of inches in length, with a marvellously beautiful

colouring. Its upper plumage is brownish—from which it gets its name of ' cinnamon'—the back of the neck and head are wine-tinted, with a peculiar cupreous green iridescence. The forehead, the top of the head, and the throat are white. The under-parts are vinaceous, becoming more rufous on the stomach and vent. The breast plumage is beautifully iridescent, with a wonderful coppery sheen. The tail is grey-brown, the thighs are brown. This is a berry-loving species, which finds most of its sustenance about the forests of the maritime regions of Southern Cape Colony. I do not remember ever to have heard of its being met with north of the Orange River. Le Vaillant named this fine pigeon *la tourterelle a masque blanc,* manifestly with reference to the white head-marking which distinguishes it.

Peristera tympanistria, an ally of the cinnamon dove, is also found frequenting the forest districts. Le Vaillant christened it, presumably from its musical but deceptive voice, *la tourterelle tambourette.* The general colouring of this bird is again brown ; the forehead, an eye stripe on either side, and the under-parts being spotless white. On the centre of the wings are dark green metallic spots. This striking-looking pigeon, easily to be identified from among all others in South Africa, is found in most of the wooded districts of Cape Colony, from the Knysna to Kaffraria. It seems to be unknown in the interior.

The small emerald spotted dove *(Peristera afro)* is yet another of this group of brownish-coloured pigeons. It is rare in South Africa, having only been identified in a few places in Cape Colony, those shot being probably mere stragglers from the far interior. Andersson places its usual southern limit at Omanbonde, in Middle Damaraland, whence to the Okavango River it seems to be plentiful. This naturalist and others appear to think —apparently with good reason—that there is practically

no difference between this pigeon and a species *(Chalcopelia chalcospila)* inhabiting Western and Northern Africa. It is more than possible that the southern pigeons may be merely migrants from other parts of Africa. This emerald spotted dove is a beautiful creature, ashy brown above, marked on the lower part of the back with three stripes, black, white, and black. It may be identified by the lovely green spots (usually two or three in number), with bronze or purplish reflections, found on the centre of the wings. The underplumage is wine-tinted, the lower surface of the tail and tail coverts being black. White appears also upon parts of the tail feathering. The bill of this exquisite species is black, the legs are a bluish flesh colour.

The olive dove of the colonists, often called the ' bush dove' *(Columba arquatrix)* is a species much better known than the three last-mentioned pigeons. It is dark ash-coloured as to its upper colouring, somewhat rufous upon the back and shoulders, with a greenish tint upon the dark tail; the forehead is vinaceous, the back of the head pale cinereous. The chin, neck, and breast exhibit in a lesser degree the vinaceous colouring, mottled with black. The wings, about the shoulders, are white-spotted, while upon the stomach and underparts the grey and wine-tinged feathering has crescent-shaped markings. This bird may be readily singled out by the bright yellow of its legs and bill. It is one of the largest of all the South African pigeons, measuring as much as 13 inches. The olive dove builds very frequently high up on mountain-sides. Mr Atmore, then living at Blanco, in the district of George, close to the sea, found these birds nesting on the tops of tree-ferns in that region. These handsome pigeons feed largely on berries, assembling in immense flocks along the southern littoral of the Old Colony. They derive

their colonial name from their habit of feeding on the wild olive fruit, to which they are extremely partial. They seem to be unknown, or at all events unobserved, north of the Orange River. Like the Roussard pigeon, they are very good eating.

Among the tree pigeons *(Treronina)* two only are found in South Africa. Of these the bald-fronted pigeon *(Treron australis)* is seldom, if ever, met with south of the Limpopo River, or a line drawn from that river to the west coast. Andersson obtained specimens at Ondonga, in Damaraland, but few other observers seem to have noted this species. The back, wings, flank, and tail feathers are ash-coloured, the back and wings being somewhat darker than the other parts, and having a greenish tint. The head, neck, throat, breast, and stomach are pale yellowish green, with a faint collar appearing at the back of the neck. The shoulders are faintly wine-tinted, while the edges of the lesser quills and wing coverts are pale yellow. The thighs are yellow ; the vent is white, with ashy markings ; the tail coverts are white and deep red. A great part of the tail is dark in colouring, the tip whitish. This pigeon measures n inches in length.

The beautiful green tree pigeon, usually known as Delaland's pigeon *(Treron delalandi)* closes my review of these birds. This pigeon, about equal in size to the bald-fronted pigeon, is found in Kaffraria and other parts of South and South-east Africa, and is by no means the least remarkable of the doves and pigeons of South Africa in the colouring of its plumage. The forehead, crown, and back are green; the chin, throat, chest, a broad neck collar, and thighs bright yellow; the back of the head is ash-colour; upon the shoulders faint wine-coloured tinting is to be observed. The under-parts are also chiefly ash-colour. The same grey colouring

forms a second collar over the back below the bright yellow neck ring. The vent is white, with ashen markings. The upper part of the tail is chiefly greenish yellow, ending in dark ash-colour towards the tip. The under-parts are dark, paling to whitish towards the tip. These pigeons are by no means common. I am not aware that they have ever been found north of the Orange River, and few specimens seem to have found their way into museums. Personally I never set eyes on one that I remember, although I have had at one time or another a pretty intimate acquaintance with most doves and pigeons of South Africa.

It is a pity that more gunners in South Africa do not take pains to identify the game they shoot. Many a rare bird goes unnoticed or unobserved, and is thrown into the bag, or thrust into the pocket as food, without a remark as to its plumage or its species. I have seen many scores of pigeons and sand-grouse shot from flocks at pools, *vleiSy* and other watering-places—all classed roughly as ' doves ' or ' Namaqua partridges '—thrown carelessly to the native servants as a food-supply for themselves and their masters, without an inquiring glance at their plumage, although, to my knowledge, several different and extremely interesting species were included among them. Even francolins and bustards, when shot, are too often casually dismissed as. partridges' or ' koorhaans ' in the same way, whatever their species—and there are many among the various game-birds of South Africa. I do not say that this is always the case. Fortunately, among colonists are men who take a keen interest in the birds they shoot.

The wild pigeons of South Africa are, as I have attempted to show, a beautiful and very attractive group, deserving of more attention than they have hitherto received in the countries south of the Zambezi.

XXVIII

AFRICAN CRANES AND STORKS

No one who has travelled much in South Africa, and who is fond of nature and wild life, can have failed to notice the various species of cranes and storks to be found at different seasons scattered about the country. These birds are especially noticeable during the season of the rains, when rivers, lagoons, *v,'eis,* and pans are recruited anew for a brief period before the long drought of African winter once more settles upon the land. Cranes and storks are, in fact, in their different ways extremely interesting birds. Their wonderful evolutions in mid-air, when, after the breeding season, they have gathered in great flocks and sail about the clear sky in countless mysterious gyrations, are things of admirable and never-failing beauty. The curious dances in which at times the cranes and some of the storks indulge are performances which, often ludicrous and bizarre, yet occasionally graceful as they are, one never tires of watching. And the birds individually are often of great elegance and even beauty. The wanderer who has once heard the plaintively sonorous call of the handsome crowned cranes, when during a stormy but magnificent sunset in the rainy season they lift up their voices one to another, can never quite forget that wild and truly African sound.

In most parts of Southern Africa the Stanley crane *(Grus paradised),* known to colonists as the [c] blue crane,' is the most familiar of this group of birds. Even in the dry season and in such parched haunts as the Great

Karroo of Cape Colony the tall grey-blue figures of these birds are often to be noticed by the farmer's dam, or by the last string of pools in some failing river-bed. And across the still, hot plains the harsh, guttural cry of this elegant crane may be heard for quite extraordinary distances. Large numbers of the Stanley crane migrate with the rains, but some few of them, usually in pairs, seem to frequent the same localities year after year, even although water is not to be found for long distances. This crane, although so familiar an object in the South African landscape, is by no means easily approached, and is more often secured with the rifle than with the shot-gun. Its food consists chiefly of fish, lizards, small snakes, locusts, and other insects, and occasionally small mammals. The eggs are olive-brown in colour, blotched with reddish brown, and much resemble those of the wattled crane.

The wattled crane *(Grus carunculata)* is a very large bird, measuring more than 4 feet 6 inches in length and standing somewhat taller than the Stanley crane. The general colouring is slaty grey, darker on the back, head, and at the ends of the wings ; the rest of the plumage is black, save for the neck and cheeks, which are white. In the male the forepart of the head is bare and red in colour, while in the female this characteristic is much less noticeable. Below the chin hang the wattles, two flaps of skin, well covered with short white plumage. The bill and irides are also red. This fine crane is found usually in pairs in many parts of South Africa. It manifests a peculiar liking for particular localities, and the same pair will breed season after season in the same nest. E. L. Layard wrote of these birds :

> I had the pleasure of watching a pair through my binoculars engaged in this process [nesting]; both birds contributed to the work, stopping now and again to do

a little courting, like an ordinary sparrow or canary, but surely undignified in so rare a bird!

During the rainy season, when many of the cranes and storks migrate, these birds are occasionally to be seen in troops. I once saw thirty or forty at a large *vki* in the Southern Kalahari, and as they took flight and ascended in curious gyrations to a great height the sight was an extremely interesting one.

By far the handsomest crane in Africa is the magnificent crowned crane *(Ealearica regulorum),* commonly known to colonists as the [c] Kaffir crane,' sometimes as the *mahem^* a native name. This grand bird, with its bluish-grey plumage, white and red wings, velvety black head, crowned with a singular crest of long, stiff, wiry bristles, alternately yellow and white, and tipped with black, and with the bare spaces around the eyes and beneath the chin painted a brilliant vermilion, is quite one of the most striking among all the birds of Africa. It is more properly known as the ' southern crowned crane,' to distinguish it from two near relatives in East and North Africa *(Balearica gibbericeps* and *Balearica pavonina),* from which it is differentiated by slightly varying characteristics. When the wings are closed there may be noticed covering them some long, decomposed yellow plumes. The tail is black, and the underparts are of a leaden grey hue. The bill is short, slightly shorter than the head. This most graceful and striking crane, which measures about 3 feet 8 inches in length, is a familiar figure in South Africa. The young are often captured and tamed, and as they grow up develop quaint traits of their own. They are extremely independent, very curious and mischievous, and love to poke their bills into places where they are distinctly unwelcome. I have known a cricket match in Bechuanaland much impeded by one of these birds, which refused to be

driven away, and hindered the fielders by running after hit balls, bothered the bowlers, and generally made itself a nuisance ; yet no one could help laughing at it.

In the wild state the crowned crane is more often to be met with singly or in pairs, but occasionally small flocks of from five to ten are encountered. These birds are most excellent eating, and the Boers and colonists, who are well aware of this fact, occasionally shoot them for the table. Although in captivity this crane is absolutely fearless of men and dogs, in the veldt it is extremely wary, and not by any means easy of approach. Some of the native tribes kill it for the sake of the curious bristling crest, which they prize greatly as an adornment to their heads or hats. These cranes feed on insects, reptiles, grain, worms, and, I believe, fish and small mammals. In captivity they are practically omnivorous. The eggs, usually two in number, are of a bluish-white hue.

All the cranes that I am familiar with are notable for their fine flight and their majestic appearance in the air, although they do not rise from the ground with ease, running clumsily for a little distance, and flapping heavily with their wings until they attain mastery over the air. Once in the clear element, they fly, their long legs outstretched, with wonderful freedom, and delight the eye by the singular grace and ease of their gyrations as they soar upward.

The white stork *(Ciconia alba),* so well known in South Africa as the [c] great locust bird ' *(groot springhaan vogel* of the Boers), is identical with the common stork familiar in Holland and other parts of Europe. In South Africa it is a migratory species, appearing in large numbers with the rains, and being especially plentiful in seasons when locusts are abundant. To the colonists, by reason of the immense destruction which they inflict on the

devastating swarms of locusts, these birds are very welcome. Their attacks, and those of the black-winged pratincole *(Glareola nordmanni)*—the 'small locust bird'—do something towards keeping down the overpowering numbers of these insect pests; and both species, where locusts occur, seem to live for nothing else than their destruction, slaughtering them on the wing, settling as they settle, and devouring myriads. The white stork breeds in South Africa, and it has been observed that these birds build in the vicinity of swarms of young locusts, which in their early stage of existence are known as *voet-gangers ('*foot-goers'). In this way a plentiful supply of food is provided for the young storks.

Abdim's stork *(Ciconia abdimii}* is a handsome bird, in length about 2 feet 9 inches and having the upper plumage of a dark greenish-purplish hue. The neck is brown, glossed with purple. The under-parts are white. The chin, the bare skin of the front of the head, and the space round the eye are orange-red, the bare cheeks bluish purple; the legs are green touched with vermilion at the joints. The bill also is greenish, tipped with red. These storks appear in large numbers during the rains, and when swarms of locusts abound the birds may be observed up-country, chasing them in flocks of thousands. Like many of the storks, they are omnivorous feeders, devouring frogs, fish, reptiles, rats and other small mammals, beetles, of which they are especially fond, and other insects. When locusts are abundant Abdim's storks, like so many other birds, and even beasts, of Africa, prefer them to any other kind of food. Their flight is a very fine one, and the sight of hundreds of them, extending their curious evolutions far up into the sky, is, especially at evening and early morning, magnificent. In some parts of Africa they are called by

natives " birds of blessing," probably for the reason that, like the white stork, they devour these enormous quantities of locusts. These birds seem to be little known south of the Orange River, but in the well-watered regions round Lake Ngami, in Damaraland, Ovampoland, and about the Zambezi they are often to be seen in large flocks.

The violet stork of the colonists, a somewhat rare species in South Africa, is identical with *Ciconia nigra*, the black stork of Europe. This is a very handsome species, the wonderful iridescent blue-green, purple, and coppery hues on the dark plumage being very remarkable. The under-parts are pure white, the bill, chin, space round the eyes, and legs being all red. It is a big stork, in size about on a par with the white stork, and measuring in fair specimens 3 feet 8 inches in length. Perhaps one should say that the violet stork is uncommon rather than rare. It is solitary in its habits, and I have never seen it otherwise than singly or in pairs. I first procured a specimen many years ago near a dam at Riet Fontain, in the eastern portion of the Great Karroo. I have since seen this bird on the Botletli River, Ngami-land, and in a few other localities. This stork is usually found near water, and feeds for the most part on fish, frogs, crabs, water insects, reptiles, and occasionally small mammals.

The saddle-billed stork *(Mycteria (ephippiorrhynchus) senegalensis)* is fairly plentiful in many parts of the South African interior north of the Orange River, where occasionally large flights of these birds are to be seen performing their strange evolutions in high mid-air. This stork is well known in Natal, Southern Rhodesia, and other parts of South-east Africa, and has been observed as far west as Damaraland. I have watched these birds and their fine flight with interest on the Botletli River,

towards Lake Ngami. This is one of the largest of the storks, measuring as much as 4 feet 9 inches in length. The general colouring is white, with black head and neck, having bronze-green reflections. The wing, tail feathers, and scapulars are black. The species is distinguished by a triangular frontal shield of bright yellow skin, and has, moreover, a bare crimson breast spot. The bill, which measures a foot in length, is bright crimson, with a notable black median band or 'saddle.' The shanks and *tarsi* are black, the knees and feet being brick-red in hue. It was long ago noticed in the *Ibis* by J. H. Gurney that in this stork and its eastern representative *(Mycteria indicd)* the colour of the iris differs in the two sexes, being pale yellow in the male bird and dark brown in the female. A big flock of these great storks rising from some African riverside and skimming about the air in a series of complicated yet most orderly evolutions is one of the most wonderful sights in the wild life of Africa, and may well be compared in beauty with the towering and fanciful flights of pelicans at dawn and sunset.

Ciconia leucocephala, a species found in Natal and other parts of South-east Africa, as well as in Ceylon and elsewhere, is violet-black in hue, with green reflections. The wide plumes of the lower neck are blackish green, with violet-purple tips. The forehead, chin, and neck are white, as are the under-parts, rump, and tail. The top and back of the head are black. In length this bird measures 2 feet 6 inches. It seems to be unknown in South-west Africa. I have neither seen nor heard of it in Cape Colony, the Transvaal, Bechuanaland, or Ngamiland; nor does it appear in the collection made by C. J. Andersson in Damaraland and elsewhere.

The last bird on my list is the well-known African marabou stork or adjutant *(Leptoptilus crumeniferus)* a

true scavenger of the veldt, which will devour any sort of carrion, including the flesh of human beings. Its dietary is, however, not carrion alone, for it will eat greedily of locusts when they are about, as well as fish, small tortoises, snakes, and other dainties. The marabou, from its disgusting habits, is not a favourite among bird-lovers, although the soft, fluffy white feathering found between the legs—the coveted marabou of commerce—causes it to be often pursued and killed. This is a huge bird, measuring sometimes more than 5 feet in length and as much as 9 feet from tip to tip of the wings. The wings and back are greenish black, the under-colouring is dirty white. The head and neck are bare, the back of the neck having a scant stripe of woolly hairs, which are also found sparsely on the pouch and bare breast spot. These bare places are bright carmine in colour; the bill, yellowish white, is straight, and, as befits a bird which preys so largely upon flesh, very powerful. These quaint-looking birds are almost always seen in flocks, sometimes on the ground, at other times perched in trees. When not engaged on their favourite carrion they will stand for hours motionless, often resting upon one leg, with the other drawn up. Hideous as is the undertaker's business at which they are so expert, these birds fulfil a very useful duty ; and when the carcass of an elephant or some other large mammal is left on the veldt they assist rajfcjdty in the removal of a poisonous nuisance. The marabou stork is seldom seen south of the Orange River, but near Lake Ngami, the Zambezi, and in South-east Africa it is a familiar figure.

XXIX

THE LION IN AFRICA

LIONS in their own country of Africa—there are few left in India in these days—have always been dangerous and troublesome neighbours to natives and white settlers ; and it would seem, from a recent telegram from Nairobi, that their numbers and daring are still a deadly menace in certain parts of the country. For some time the natives of the Masai Reserve had found their cattle greatly harried, so that they called in the assistance of the Government, who, some years ago, sent to their aid a white hunter. In four months, assisted by the Masai, this hunter killed no fewer than eighty lions and ten leopards.

In fairness to the Masai, who are a very brave and were once a very warlike race, it should be said that in the old days when lions troubled them it was their custom to send out a party of young warriors, who, with shields and long spears, rounded up the foe, and never left him till they had killed him. In these furious encounters many of them suffered death or dangerous wounds. Then, in the interests of peace, their long spears and great shields were taken from them by the British authorities, and with short assagais only they were practically defenceless. It is good to learn that these brave pastoral people have been rearmed with their war shields and long, huge-bladed spears.

The late Theodore Roosevelt, in the account of his famous hunting and collecting expedition of 1909-10, gave a stirring description of the similar round-up of a

huge black-maned lion by hunters of the Nandi tribe in Kenya. These men, who use a shorter shield than the Masai, but carry long spears, made it a condition of their display that no white hunter should assist them; and Roosevelt and his friends were merely onlookers at a marvellous scene. The lion being located and rounded up, the Nandi hunters surrounded and advanced steadily upon him. Suddenly he charged at close quarters, and in ten seconds, after a furious fight, during which he wounded severely two natives, all was over. The slain lion looked somewhat like a huge and ferocious porcupine, with a dozen spears through his body. Only the very bravest of men can venture to take such risks with so dangerous an adversary. In the days of the blood-stained tyrant Chaka, King of Zululand, his young men were sent out to kill lions in similar fashion, many of them dying at the command of their overlord.

British sportsmen have for more than a hundred years past been renowned as lion-slayers in Africa, and the names of such hunters as Cornwallis Harris, Gordon Gumming, Oswell, Baldwin, and Selous will always be remembered in the annals of the earlier years of big-game hunting. All these men, except Selous, used very inferior muzzle-loading firearms, compared with the perfect weapons of the present day. In the early seventies Selous began with muzzle-loading rifles, but was able later on to equip himself with the breech-loader. He and his contemporaries faced the lion on foot, and their exploits were remarkable. Selous, in his earlier days, shot with an ancient Dutch muzzle-loading smooth-bore elephant gun, carrying 4-oz. spherical bullets, backed by 17 drams of trade-powder. This, Selous's first weapon, which I have often handled, weighed 15 pounds, and was as formidable almost to the pursuer as the pursued. During his long career Selous killed thirty-

one lions and was in at the death of eleven others. The Boer hunters of former days were, of course, compelled to kill lions—as men are in East Africa at the present time—for the protection of their flocks and herds. But many of them who became professional ivory-hunters had often to slay the lion in self-defence, or killed them from the mere love of what the Englishman calls 'sport,' Old Piet Jacobs, a Boer whom Selous knew well, was one of these. During his long career he killed over a hundred lions with very primitive weapons, yet he died in his bed. Jan Viljoen, a very famous hunter, whom the writer can remember in his retirement in the Western Transvaal, near Marico, was just such another *Voer-trekker,* and shot some scores of lions.

William Judd, who was a professional hunter for many years in Kenya, killed forty-eight lions and assisted at the death of forty others. It is sad to recall that this brave man and great sportsman, the friend and comrade of Selous and Theodore Roosevelt, was killed in an encounter with an elephant in East Africa. Mr E. Blayney Percival, formerly Game Warden in one of the Kenya reserves, is credited with at least fifty lions. Sir Alfred Pease, Mr W. D. M. Bell, Colonel Curtis (who killed twenty-seven lions in Somaliland years ago), General Sir A. Paget, General Mellis, V.C., and others have all had great success in their lion-hunting adventures. It is probable that the most remarkable scores of the present day among lions may, on the authority of Sir Alfred Pease, be accredited to the brothers Harold and Clifford Hill. Of these Mr Harold Hill has killed 136 lions and his brother rather more. Theodore Roosevelt and his son during their African expedition killed seventeen lions between them.

Mr Paul Rainey, the American hunter, who rounded up lions in East Africa with a pack of big American

hounds, is said to have killed as many as two hundred lions during his hunting trip some years ago. By his methods, however, the attention of the lion was completely fixed on the pack of hounds and its death easily accomplished. A hunter once described this form of chase to me as " Just like a rat-hunt, and about as dangerous!"

That the ordinary encounter with so fierce and dangerous a foe as the lion is, even in these days of perfect firearms, by no means devoid of risk, is easily proved by recent happenings in East Africa. Men not accustomed to African hunting, and not previously used to dangerous game, have suffered many casualties; and it is reported on good evidence that in a recent year of forty sportsmen who hunted lions seriously twenty were badly mauled. Of these twenty more than half were killed, or died from the effects of their wounds.

Plentiful as the lion still is in various parts of Africa, he is nevertheless slowly being exterminated. Wherever settlements are made and pastoral farming is introduced the lion has surely to vanish from the scene. They are no longer to be found in Cape Colony, the Orange Free State, Natal, and the greater part of the Transvaal. Nowadays you cannot encounter them in South Africa till you reach Khama's Country, the North-east Transvaal, and the Lake Ngami region. In Northern Africa lions have vanished from Morocco and, I believe, from Algeria; but below the Sahara Desert they are to be found from the Northern Sudan and Abyssinia to the countries I have indicated in the south of the continent. The lion, in fact, has still a vast amount of wild and little explored territory in which to wander, often unmolested; and his roar will, we believe, resound in Africa for more than a century yet to come.

XXX

FLAMINGOS

THE old-time writers on sport and natural history had some quaint terms in describing the beasts and birds about which they sought to interest their readers. They wrote of " a pride of lions," " a sleuth of bears," " a charm of goldfinches," " a muster of peacocks," and so forth, all of them more or less descriptive. They had not ranged the world over, these ancient writers, to the extent that modern naturalists have done, or they might have added many a fresh and glowing description to their pages. " A glory of flamingos," for instance, might by this time have been within their purview. Who that has seen a troop of several hundred of these wonderful birds in flight upon the air together can forget the lovely pageant set forth before his eyes : the roseate general colouring, scarlet and black-edged wings, the long necks and pink-red legs outstretched to their fullest extent ? View a vast throng of the same tall birds at rest, some standing on one leg, the long necks often coiled and twisted back most curiously on the body and wings, and they present an equally magnificent array. When the great sportsman-naturalist the late Abel Chapman discovered flamingos nesting in the vast Spanish Marisma in 1885 he had before his astonished eyes just such pictures. Chapman's flamingos were, of course, the European species, *Phctnicopterus roseus* (the rosy flamingo), which has been recorded as a mere wanderer a few times in Britain, and has an immense range, from Central and South Europe to the Canaries,

the Cape Verde Islands, much of Africa, Lake Baikal, in Central Asia, India, and Ceylon. This species is distinguished, as its name implies, by its lovely roseate body hue, scarlet and black wings, red legs and feet, and pink, black-tipped bill. In Europe the best places to view these birds in large numbers are the lagoons of the Rhone delta, and the great marshes of the Guadalquivir, in the south of Spain. In parts of Africa suitable to their habits they may be seen at times in companies of thousands 1 Imagine such a scene, or, better still, go to Africa and search one out for yourself.

Half a dozen species of flamingos, varying in size and coloration, are to be found in different parts of the world, the tallest of them being *Phanicop tents andinus,* inhabiting the salt lakes of the high desert regions of the Bolivian Andes, and extending thence to Chile and the Argentine. The most brightly coloured is *Phanicopterus ruber^* found from Florida to Para and the Galapagos, whose body hue is a pale scarlet, with brighter wing coverts. A great flight of thousands of these vermilion-coloured birds is one of the most wonderful things that nature has to offer in any clime or country. On the whole, however, the lovely hues of the European flamingo, whether seen in flight or at rest, do not yield in beauty to those of any of the various species scattered over the world's surface. Viewed at sunset or sunrise, a vast gathering of these tall birds, or, still better, a flight of hundreds, offers a spectacle of extraordinary beauty.

The lesser South African flamingo *(Phanicopterus minor)* which, with its bigger relative, *Phœnicopterus erythraus,* I have found in the Lake Ngami country, Bechuanaland, is very similar in hue to the flamingo of Europe, and is a most beautiful bird. This species attains to no more than 3 feet 3 inches in length. The

European species measures in the tallest examples as much as 5 feet, while the larger South African flamingo attains to 4 feet 6 inches. This last species is pure white in colouring, with black and crimson wings, crimson legs, and the bill crimson with a black tip.

Until Abel Chapman saw flamingos nesting on the Guadalquivir marshes (during the nineteenth century), the actual method of the disposal of their legs during the four or five weeks of incubation seems to have been a matter of some uncertainty. Chapman and other recent observers have, however, proved that these birds sit with their long legs doubled beneath them. Surely an uncomfortable attitude, albeit made familiar and easy to be borne by long centuries of usage. In the Spanish Marisma the curious mud nests, conical or cylindrical in shape, are said to be fashioned by the feet of the flamingo. These nests are high enough to stand well above the water of the shallow lagoons or marshes in which they are placed. One or two eggs, greenish blue in hue, covered with a chalky incrustation, are laid early in May in the Guadalquivir marshes. The nestlings are covered with greyish-white down.

Flamingos are, strictly speaking, wading birds, the gait being slow and somewhat laboured; but they are on occasion quite bold swimmers, and will fly into five or six feet of water. On the coast of South-west Africa they may be seen thus arriving at times in thousands, apparently for the pure pleasure of the performance. Their food, gathered in the shallows of the coastline, consists of small crustaceans, marine *animalcules*, and sea-grasses. They attain excellent condition in these localities, and have even been described by C. J. Andersson as " enormously fat," though such a description is almost a libel on so beautiful and graceful a bird. I have shot these flamingos, as specimens, in the Lake

Ngami country, but, although I found them well nourished, I could hardly describe them as immensely fat.

These and the lesser South African flamingos I always found rather shy birds, even in the solitudes in which I saw them. When one was wildfowling on the great lagoons of the Botletli River the sound of a shotgun (very rare in that region) would quickly send them up into the air in great flights, and away the tall birds would scour, in V-formation, in that steady, graceful, and most brilliant flight which is one of their characteristics—a perfect African picture in colour. They were a little laboured in getting off the ground, but once up and stretched out in flight they flew with consummate ease and grace. In this inland region of Central South Africa the food of these birds included crustaceans, molluscs, frogs, and aquatic vegetation. I never saw any evidence of their devouring fish, though they may occasionally do so. All the flamingos have a most singular method of feeding, the head being inverted (the crown completely underneath), while the curiously shaped bill is held backward, forming in that position a kind of spoon by which the food is obtained, the mud picked up being sifted in a fashion by the formation of the bill and tongue. The lower jaw is very roomy, and is provided with *lamella*, which assist in the sifting process by which the food is extracted.

Flamingos have been placed by naturalists between the anserine and the stork-like birds. Huxley, in fact, separated them under the designation *Amphimorpha*. Their strong relationship to the geese is clearly demonstrated by their voices, which are noisy and very anserine. To hear a 'gaggle' of flamingos at evening or night, as I have often done in Africa, is to be convinced that somehow or other, in spite of the vast difference in shape,

there is a connecting link between the two species. The webbed feet are another link with the geese, and yet another is the helpless state to which flamingos are reduced during the moulting season, when they are deprived of the feathers which give them flight.

The name ' flamingo' comes to us from the Portuguese. The Spanish word is *flamenco.* Both refer undoubtedly to the lovely colouring of these birds, almost flame-like as it is under the hues of sunrise and sunset.