A
0
0
1
1
4
9
8
3
5
9

ANIMAL LIFE IN AFRICA

PART II. THE VEGETARIANS

BY

MAJOR J. STEVENSON-HAMILTON

THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA
LOS ANGELES

ANIMAL LIFE IN AFRICA

THE HERO READERS

SHACKLETON IN THE ANTARCTIC
By SIR ERNEST SHACKLETON, C.V.O.
256 pages, 48 full-page Illustrations from photographs. Price 1s 6d.

In this book which has been specially prepared for young people, the author tells in direct and simple language the thrilling story of his adventurous journey in the Antarctic Regions.

BRITISH SOLDIER HEROES, with a Preface by EARL ROBERTS, V.C., F.M. In two parts, each 256 pages, Illustrated. Price 1s 6d each.

SERIES I. Cromwell, Marlborough, Peterborough, Wolfe, Clive, Coote.

SERIES II. Heathfield, Lake, Moore, Abercromby, Baird, Wellington.

BRITISH SAILOR HEROES. In two parts. Each 256 pages, Illustrated. Price 1s 6d each.

SERIES I. Howard, Drake, Blake, Rooke, Anson, Hawke.

SERIES II. Boscawen, Rodney, Howe, Hood, St. Vincent, Nelson.

It is now generally recognized that history-teaching by means of biographies adds considerably to the interest of the subject, and teachers will find that the above books will make a direct appeal to the young reader.

LONDON

WILLIAM HEINEMANN 21 BEDFORD ST., W.C.

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/animallifeinafri02steviala

IN HIS NATIVE WILDS

ANIMAL LIFE IN AFRICA

BY MAJOR J. STEVENSON-HAMILTON
F.R.G.S., C.M.Z.S., LATE 6TH (INNISKILLING) DRAGOONS
WARDEN OF THE TRANSVAAL GOVERNMENT GAME RESERVES

BOOK II

THE VEGETARIANS

LONDON
WILLIAM HEINEMANN

London: William Heinemann 1917

SK
251
S348a
1917
v.2

INTRODUCTION

I HAVE divided the present edition of ANIMAL LIFE IN AFRICA in three small volumes, each of them practically self-contained and dealing respectively with :

(1) The carnivorous or flesh-eating animals ; together with chapters on apes, monkeys, baboons, and some miscellaneous types ;

(2) The hoofed herbivorous,or vegetable-eating animals;

(3) Some of the birds, reptiles, and fishes.

A table of classification has been added in the form of an appendix to each volume.

Since natural history terms are not in everyday use, the following explanation of some of them may be found useful.

SPECIES : A group of animals which bear a very close resemblance to one another with regard to the most essential points of their bodily structure. Thus all domestic cats, though individuals may differ in colour, size and other points, are alike in the chief characteristics of their structure, and belong to the same species.

GENUS (*plural, genera*) : A group of animals consisting of one or more different species. Thus the lion and the leopard belong to different species of the same genus—that of the true cats. Animals belonging to the same genus are not so closely alike as those belonging to the same species, but they

have certain characteristics in common by means of which they are distinguished from all others.

FAMILY : A group of animals consisting of one or more genera. A family is, of course, a wider classification than a genus, and the characteristics which its members have in common are fewer in number. Thus a dog and a fox belong to the same family, though of different genera.

ORDER : An order is a still more comprehensive group, and consists of animals which are alike in only a very few special features. Thus all flesh-eating animals, to whatever family they belong, are placed in the order Carnivora, and all herb-eating animals in the order Herbivora.

CLASS : This is the largest group of all, and consists of animals which have the broadest and most general characteristics in common.

The principal of the eight classes into which the Vertebrates, or those animals which are possessed of a backbone, are divided are :

(1) MAMMALS : Warm-blooded animals which suckle their young.

(2) BIRDS, which are warm-blooded animals, covered with feathers, and usually, though not always, possessed of the power of flight.

(3) REPTILES, which are cold-blooded primitive animals, with a skin formed of horny plates or scales, but which breathe in the same manner as the foregoing.

(4) AMPHIBIANS : Cold-blooded primitive animals, whose young are aquatic and breathe through gills like fishes. Frogs, toads, newts, and salamanders are amphibians.

(5) FISHES : Cold-blooded aquatic animals, which breathe air through gills during their whole lives.

The above five large classes, together with three others consisting of small marine creatures, make up the Vertebrate sub-kingdom of the great Animal kingdom.

It might seem superfluous to go further and define what an "animal" really is, were it not that there occurs not infrequent misconception on the point. An animal, then, is that which can be classed neither as a vegetable nor as a mineral, and so the term includes all birds, reptiles, fishes, and insects.

Other descriptive terms used are explained in the text. A few of the most common, however, are, for convenience of reference, given below.

ARBOREAL : Used to describe animals which live in, or habitually frequent trees.

NOCTURNAL : Used to describe animals which lie up during the daytime and issue forth to hunt their food, &c., at night.

MIGRATORY : Used to describe animals which wander regularly or occasionally from one region to another.

PACHYDERMS : Thick-skinned animals, such as the elephant, rhinoceros, and hippopotamus.

UNGULATES : Hoofed animals.

SPECIALIZATION : The development of an organ of the body in some special direction. In whatever degree groups or species of animals have developed peculiarities of structure distinguishing them each from older and more simply formed groups or species, so are they described as being more or less highly specialized.

ENVIRONMENT : The surroundings of the animal, and the external conditions with which it constantly comes into contact.

RUDIMENTARY : An organ is said to be rudimentary when it is not fully developed, or is in an early stage of development.

PLANTIGRADE : A term applied to animals which walk on the soles of their feet, and on what in human beings would be the palms of the hands (elephants, bears, &c.).

DIGITIGRADE : A term applied to animals which walk upon what would be among human beings the points of the toes and the ends of the fingers. The wrist and heel thus become what are termed in the horse the knee and the point of the hock respectively. Among the carnivora the first joint of the fingers becomes a pad on which the animal walks, and the nails, instead of solidifying into hoofs, as among the majority of the herbivora, become claws for scraping or for holding prey. The large majority of both carnivorous and herbivorous animals are digitigrade.

FAUNA : The fauna of a country implies its animal as distinct from its plant life (flora).

RUMINANTS : Ungulates which chew the cud.

BOVIDÆ : That large family of the ruminants which have their horns in the form of a hollow sheath enclosing a bony core and do not cast them annually like the *Cervidæ* or deer family. Cattle, sheep, and antelopes belong to the *Bovidæ* family.

ANTELOPE : This term is popularly applied to those of the hollow-horned ruminants which are neither cattle, sheep, nor goats. It is incapable of any clearer definition. Some tribes of antelopes appear more nearly to resemble the cattle and buffaloes, others the goats.

J. STEVENSON-HAMILTON

CONTENTS

ANIMAL LIFE IN AFRICA

BOOK II: THE VEGETARIANS

CHAPTER I

HOOFED ANIMALS

Definition : Food Habits : Tsetse Fly and Game: Rinderpest and Partial Disappearance of Fly : Ticks, Game and Stock Disease

THE hoofed animals of Africa include several sub-orders. These contain the creatures usually classed as "big game" and are (1) animals with an even number of toes like antelopes (two) and hippopotami (four); (2) these with an odd number of toes like zebras (one) and rhinoceroses (three); and (3) the elephant.

The first of these sub-orders (1) is further split up into four divisions: first the cud-chewing animals or ruminants, buffaloes, antelopes, giraffes and the okapi (the true ruminants). In all the above the front teeth have disappeared from the upper jaw, and are replaced by a hard pad, suitable, in conjunction with the tongue and lower front teeth, for seizing and cropping herbage. The second and third divisions contain the chevrotains and camels respectively. The fourth division is made up of the hippopotamus family, and the African wild swine. These have front teeth in both jaws.

The second sub-order (2) includes the rhinoceroses and

horses, the latter being represented in Africa by the zebras and by the wild ass of the north-east.

Although all hoofed animals, with the exception of the pigs, are strictly vegetable feeders, there is a wide difference in the diet of the various kinds, some being grass eaters only, while others favour a leafy diet, and others again prefer roots and barks of various descriptions. Speaking broadly, animals which love the open plains are, as a rule, by habit grass eaters, while those preferring the leafy depths of the forest are generally browsers. Among the latter too there is a great deal of difference in the nature of the food consumed, for, though there are many descriptions of trees and bushes, the leaves and roots of which appear to be indiscriminately eaten by most species, there are others which support certain types of animals alone, and in the absence of which from the forest, these animals are not met with. Water is required in greatly varying amounts by different species ; for whereas some will slake their thirst three or four times in the twenty-four hours, others, even during the dry winter months, seem to require very little liquid nourishment. In the more arid portions of the continent indeed, there can be no doubt that the local animals are very largely independent of it.

Hoofed animals may either go in herds, or be solitary in habit, though by far the greater number of the species incline in greater or less degree to the former mode of life. There seems indeed no hard and fast rule to guide our attempts to explain the causes of their very diverse customs ; for although at first sight it may appear that purely grass-eating animals are found associated in larger companies than are those which seek either a mixed or a purely leafy diet, the exceptions, such as elands and impalas, tend to upset any partially formed theories.

It is true that the more strictly forest species of antelopes —generally speaking browsers—are decidedly less sociable than those favouring a more open country, and that they appear to rely largely on the concealment provided by the denseness of the covert, and their own individual senses, for protection. Plain-dwelling animals, on the other hand, associated in large herds and, when possible avoiding long grass, trust to the added facilities for detecting approaching foes, provided by numbers and an extensive field of view.

But in all these matters it is very difficult to come to any definite conclusion or to lay down any hard and fast rules ; possibly because we do not know what causes of long standing may have combined to influence animals out of their original modes of life, and to drive them to seek surroundings not originally native to them. Indeed, the more personal experience one has of wild animals and their ways, the more clearly it stands out how much caution must be exercised both in making up the mind regarding the factors which influence their individual and collective actions, and even in forming any theories respecting them, except those of the most general character. It may be that, during a considerable period, certain events have been observed to take place with such marked regularity as to give rise to the impression that they are the rule. Just, however, as the problem appears comfortably solved, the observer is confronted by a whole sequence of incidents of so contrary a nature as completely to undermine the very foundations of the theory, and the mind is left floundering once more in the slough of uncertainty, whence it had fondly believed itself to have emerged.

To him who has spent time and taken trouble in studying the ways of African fauna under natural con-

ditions, nothing can be more amusing than to read the uncompromising statements regarding the habits of certain species often set down in print by superficial observers ; unless it be to listen to the dogmatic assertions of occasional " old hunters," regarding what must, to a great extent, remain matters of pure speculation. Therefore, anything the present writer may hereafter set down in regard to the habits of animals must be regarded as correct only in so far that it is a true record of personal observations, extending over a considerable period, and has no pretensions to being final.

Timid as are the majority of antelopes when confronted by their natural enemies, nevertheless the males of all species will on occasion fight desperately with one another, and deaths during these single combats are by no means infrequent. Defeated animals depart to form themselves into little troops of independent bachelors, but when an old bull has been driven out of his herd, he appears to lead thereafter a nearly solitary existence, such old animals seldom being found clubbed together in bands as are the younger males. Not infrequently they join themselves for protection to herds of distinct species. Indeed one of the commonest sights in the bushveld of South Africa is that of an old wildebeest bull running with a herd of impala or zebra. Generally speaking the horns of these old animals are very massive throughout, but have become worn from the tips downwards, so that in actual length they are seldom equal to those either of a good herd bull, or of the best of a troop of young males. Probably the majority before long fall victims to carnivora, but old animals may sometimes be found, which by luck, or superior cunning, have managed to preserve their lives, until their bodies are well-nigh crippled through old age.

A matter which seems likely vitally to affect the position if not the very existence of the hoofed animals in certain parts of Africa, is that of their suggested connexion with the insect-carried diseases which affect man and his domestic animals.

The most pernicious of these insects is the tsetse fly, which carries a disease known as sleeping sickness, fatal to human beings, but not to domestic animals; and another, called nagana, which kills the latter but does not affect the former.

The tsetse is an insect a little larger than an ordinary house fly, and is extremely active and quick on the wing; the bite feels like the puncture of a red-hot needle. There are many different kinds of tsetses, but it now appears that all are more or less responsible for both diseases, where such happen to exist in a locality.

Wild animals do not contract either of these fatal ailments—sleeping sickness and nagana—and experts have discovered the germs of both in the blood of wild animals of many kinds, both warm and cold blooded. It is therefore clear that the tsetse, first biting an immune wild creature which carries the disease germs in its blood harmlessly to itself, then proceeds to attack a man or a domestic animal, injects into one or other the poison which it has taken from the blood of the wild animal, and so causes death. Both diseases are nearly absolutely fatal; sleeping sickness to man, and nagana to stock. A fly which has not previously fed on affected blood gives a harmless bite. Sleeping sickness has been known only in the tropical parts of Africa, but nagana was at one time spread over a large part of the forest country of South Africa, and is still prevalent wherever there is tsetse fly.

Knowledge of the above facts, and the belief that game

and fly cannot exist separately has led to a very strong agitation to have the game exterminated in regions where fly exists and where therefore these diseases are prevalent. The agitation at first sight seems to be very reasonable, and its leaders are for the most part animated by perfectly just motives. Behind them, however, is a mass of support much less commendable in principle. The fact is that in a large proportion of the human race the "hunters' instinct," the desire to kill, to shed blood, that heritage from savage ancestors, is but dormant. To men living as it were on the spot, there is the further inducement of the profit which might be made from the sale of the hides, horns, and meat of the dead animals, so long as the game lasted. When there is added to these inducements to kill everything, a mere surface acquaintance with the facts, an entire want of knowledge of natural history, a callous lack of interest in or sympathy with all lower animals, especially wild ones, except in so far as they may be made of profit to man the tyrant, and a secret objection to all laws and restrictions, just because they are laws and restrictions, it may easily be seen that any anti-game crusade is not likely to lack support.

Fortunately however for the wild animals, the investigations of the experts, while making clear the responsibility of, at any rate some of them, for supplying the tsetse fly with the disease germs, have brought out a number of other facts, which shows the problem to be very much more complicated than it would appear to be at first sight.

As regards sleeping sickness, it has been found that domestic animals, no less than wild ones, are capable of carrying the germs in their blood without harm to themselves, and may therefore be an even greater menace to

human beings, because of their closer relations with them. It is even supposed by some that a proportion of human being are themselves immune to the disease, and that therefore such natives of a district where the disease exists, and the fly is present to carry it about, may be, unknown to themselves and others, a standing danger to their fellows.

Again, it has been pointed out that all the agitation has been against the "big game," that is the larger, hoofed animals. It would not be difficult perhaps to exterminate *them*, but it would be very much harder if not impossible to get rid, in a wild uncivilized country, of all the hosts of smaller buck, the hares, rats, bats, wild cats, jackals, and mungooses, which though not perhaps offering so large an area, each in its own body, for the fly to bite, as the bigger beasts, would still no doubt serve it when better fare failed. It is probable that all warm-blooded creatures, and even cold-blooded ones which do not contract the disease, may be capable of helping to spread it.

Much the same arguments hold good in the case of nagana, which is fatal to domestic but not to wild animals, with the addition that man himself, not being affected by the disease, is very likely one of the chief factors in the infection of his own animals.

On one point every one is agreed, and that is that the tsetse fly must be got rid of. The difference in opinion lies in how it should be done.

"Kill off the big game of course!" shouts one party. "Don't be in such a hurry" answers the other, "you can't be sure that it will achieve our purpose, from what we know at present, and we can't consent to see a million-year-old fauna killed off in a few years as a mere experiment, and to please those of you who are merely seeking to make a little personal profit out of its destruction."

The one thing that is positively known to get rid of tsetse fly is the clearing of country. It must have shade. For this reason cultivation is fatal to it, and that is why it has always disappeared before civilization. The presence or absence of big game appears only to be a secondary consideration. There are many places in Africa where the tsetse fly exists in large numbers without any game being present at all. Much of the western side of Africa swarms with fly in places where there are very few if any large wild animals. On the other hand there are a great number of spots, once the haunt of tsetse, from which it has completely disappeared, although the big game continues to be as numerous as ever, and needless to say there are any amount of tsetse-free game countries.

The Sabi Game Reserve, with which I have had so long an acquaintance, serves as an instance of the former. Up to the time of the rinderpest, that terrible epidemic which carried off so many of the cattle and so much of the game in the 'nineties, the Sabi Bush was full of tsetse fly, but now there is not one left, neither there, nor anywhere else in the Transvaal, nor even in neighbouring Portuguese East Africa. But the game in the Sabi is more numerous than it has been for over twenty years.

Why did the fly disappear? Frankly I can't say. People will tell you it was because the game died out and the fly died of starvation. But the game did not die out; far from it. No zebra died. The principal buck present in the fly bush were impalas, and they suffered little if at all from rinderpest. As a matter of fact the disease attacked only certain kinds of game, such as kudu and buffalo, those animals which have big moist muzzles like cattle suffering most, while those kinds which have hair growing low down on the muzzle, like goats and sheep, escaped entirely or nearly so. Why? I don't

think any one knows, and I doubt whether any one has tried to find out. The fact that it was the more goat-like, in this respect, of the antelopes that were immune, is not generally known, I believe.

The most reasonable explanation for the disappearance of tsetse fly from the Sabi Bush (and many other places in Africa at the same time and under similar circumstances) would seem to be that the fly died from the rinderpest poison; but experiments conducted in East Africa did not support this idea: so the mystery is one that must await clearing up by some investigator of the future. It seems worth while finding out. Fly is admitted to feed on all kinds of game, and in fact any blood it can get, so that the starvation theory is quite out of court in the cases I refer to. The great point is that the fly absolutely disappeared, so that in the Sabi Reserve I have been able to live for nearly a dozen years with stock of all kinds right in the middle of the old fly area.

If the reason for this disappearance, absolute and complete, of all the swarms of tsetse fly within less than six months, and without any marked diminution of the majority of the different kinds of game, from a certain locality, could be discovered, we should I think have gone a long way to the solving of the problem which now confronts the experts in Central Africa.

As regards the main problem of fly and game, the facts from both points of view are now fortunately well known to those in authority, and there seems every probability, reasonable experiments having been tried, of a just balance being eventually struck, which, while duly safeguarding the health of human beings and their domestic animals, will not countenance any reckless and wanton wholesale squandering of irreplaceable wild life.

The relation between game- and tick-borne diseases fatal to stock is another question often discussed.

A great deal of the game country throughout Africa swarms with grass ticks at certain seasons of the year, and though, in many areas, it is exceptional to find many adhering to antelopes and zebras while in good condition, in others the reverse is the case, though to no herbivorous animals are the insects found clinging in such enormous numbers as they are sometimes to the various carnivora. No doubt, speaking generally, game as a whole furnishes a reservoir for ticks of various kinds. There are some five or six diseases which affect stock in South Africa, at present known to be transmitted by ticks. Of these the two most important are biliary fever, which attacks horses, mules and donkeys, and in varying degree other animals, but is only occasionally fatal; and secondly, east coast fever, a most virulent disease which has destroyed, and is still destroying, large numbers of cattle in Africa. Writing of this latter, Sir Arnold Theiller, K.C.M.G., the eminent bacteriological expert, says:

"It has been proved that in east coast fever, a tick, after it has once bitten an animal, can no longer transmit the disease. It must be emphasized here that the popular opinion that ticks pass from one animal to another, and communicate the disease in this way, is wrong. Indeed, males of ticks can live for many months on an animal, but their peculiarity is to remain on that animal, which they only leave accidentally, when they are rubbed off, and since experiments have proved that once they have bitten they become harmless, such an accidental change does not come into consideration in east coast fever."

Now, as game, like all domestic animals except cattle, appears to be immune from this disease, it therefore

follows from the above that an infected tick in any of its stages, by biting a wild animal, thereby frees itself from the disease, and is thenceforth harmless. Thus, so far from being dangerous factors in the spread of east coast fever, game are, in all probability, direct cleansing agents, and, equally with sheep, goats, or horses, may perform useful work in clearing a ground, whereon diseased cattle have been pastured, of the infected ticks.

In the case of biliary fever, if game harbour the germs, so equally do many of the domestic animals of a country. Sir Arnold Theiller writes of this matter:

"When we say that biliary fever affects equines, we must make a reservation in stating that the South African animal—born and bred in the veld—when grown up, is not liable to suffer from the disease, it only does so under special conditions. The chief sufferer is the animal bred in the stable of a town, or imported from oversea, say from England or America, where the disease is unknown. We must remember, therefore, that the animal born in the veld is immune. . . . An animal which has recovered from this disease retains the affection in its blood, and probably if remaining exposed in the veld remains an infectious agent to the end of its life."

From the foregoing, therefore, it seems evident that no stronger case can be made out against game in regard to biliary fever than in the case of the east coast disease, for in order absolutely to protect the relatively few town-bred and imported animals from it, it would be necessary to kill off not only all the wild animals, but the greater part of the domestic ones also.

The clamour, indeed, for legislation involving the wholesale destruction of game, on the pretext that it is a standing menace to the existence of stock, is in great measure an artificial one, based, it must be feared, a

good deal upon mere lust of slaughter, coupled with the appreciation of the pecuniary value of the animals themselves. "The pioneers of civilisation are generally pushing, forceful men, with strongly developed individualism, not always very far-sighted, but unscrupulous in sweeping out of their path all apparent obstacles to immediate success, as well as determined to turn to their advantage all the assets of the new country, so far as in their power lies." * Obviously the wild fauna of the latter is one of the first things that tempts the desire for gain.

CHAPTER II

THE ELEPHANT : HYRAXES OR DASSIES

THE ELEPHANT. Whether the African elephant will ever become a useful domestic animal like his Asiatic cousin, appears at present doubtful. It cannot be said that any very extensive trials of his ability to serve man have, up to now, been made, and, indeed, it is only within the last few years that he has excited any interest at all, beyond that which he rouses as a provider of ivory for the market, and sport for the hunter.

Since African game preservation has assumed practical shape, however, the elephant has received his share of attention—in common with the zebra and the eland—as a possible domestic animal, and it has been felt that in view of his rapid decrease all over the continent, any proposed experiments should not be too long delayed. The authorities of the Congo Free State were the first to carry their ideas into practice, and for the last five or six years a station for the capture and domestication of elephants has been established at Agri on the River Welle.

* Theodore Roosevelt.

A considerable number of young animals are now used for station work at this place, carrying bricks, dragging timber, and so on.

Captain Rinquet, the late commandant at Lado, was kind enough to show the writer, when there in 1909, some interesting photographs taken of these animals. The experiment is extremely interesting, and one which it may be hoped will not only invite imitation elsewhere, but will itself be persevered with through the number of years necessary for a reliable judgment to be formed as to its ultimate utility. The animals are at present young, and therefore perhaps amenable to control in a degree which may not be possible when they have attained maturer age; but if all difficulties are finally overcome, transport in the remoter parts of Africa may receive substantial aid, and another argument for the preservation of this grand species from extinction will exist.

Mr. Sclater as a result of his very long experience of both African and Indian elephants in the London Zoological Gardens, is emphatically of the opinion that both are equally docile. He writes:

"Since 1865 there have been African as well as Indian elephants in the Society's menagerie. Both have been treated alike and both, it may be said, are equally intelligent and tractable. All elephants on attaining adult age are liable to fits of temper, and to become dangerous, but this occurs in Indian as well as in African species."

The argument has often been advanced in favour of the domestication of African elephants, that in classic times, the Carthaginians, and other Mediterranean powers, used them in warfare. Whether this was the case, or whether Asiatic elephants, imported or home bred, are referred to by the ancient writers seems uncertain. The theory has sometimes been held that an

indigenous race of elephants akin to one or other may have existed in North Africa in the past, but this has so far been unsupported by the discovery of any remains. The impressions of elephants upon Roman coins appear, by the shape of the head and body, and allowing a margin for inaccuracy to the designer, to indicate the Indian animal: but the writer Appian states that "the Carthaginians, fearing an invasion by Scipio, collected and trained numbers of elephants in a short time." This could not have been possible if they had to be sought at a great distance.

It is undeniable that there are many apparent obstacles in the way of domestication. Owing to the shape of his body, which slopes considerably towards the tail, the fashioning of a howdah for the African elephant must necessarily present greater difficulties than that of one for the Indian animal; nor is it at all certain that the negro will make a reliable and efficient mahout, being, generally speaking, endowed with no natural love for, or sympathy with, any of the lower animals. A still more serious objection is based on economic grounds. The Ethiopian region supplies, to the square mile, as compared with India, but a limited amount of food suitable for the animals. Elephants consume daily an immense quantity of fodder, and in consequence there must be an unlimited quantity close at hand to satisfy the wants of beasts working in one place.

Some years ago the Indian Government was approached with a view to obtaining information as to what would be the probable cost of catching and domesticating thirty wild African elephants per annum. It was estimated that for this purpose ten trained animals, with their attendants, would have to be imported from India, and that the total cost for the first year, including purchase

price of trained elephants, expenses of attendants, gear and equipment, and food of trained and captured beasts, would come to roughly 70,000 rupees, or about £4660. A little later (1903), Col. Delmé-Radcliffe furnished a report on the capturing of wild elephants, the gist of which was as follows:—"Elephants in Africa move too far and too fast to allow of the ordinary deliberate preparations for a kheddah. The forests are very extensive, and it might be difficult to collect enough natives for the difficult drives required.

"African natives could not be relied upon to have sufficient patience to stick to the kheddah work.

"African elephants would be very difficult and dangerous to drive about. Indian elephants being smaller, less heavily armed, and slower in pace than African ones, would probably be unable to control them.

"In India, a first-class elephant receives about 860 lbs. of sugar-cane, and 60 lbs. of flour chappaties as a single day's ration. African elephants, being bigger, would require more.

"A competent staff is absolutely necessary.

"The beasts if successfully trained, might be used for carrying field guns, or for hiring out to shooting parties.

"They cannot compare with carts or even porters for transport work where roads exist; where there are no proper roads, they might not be able to carry heavy loads through the swamps and rivers, and would break down the makeshift bridges found in wild countries.

"An elephant eats over 900 lbs. of food a day and will carry 12 cwt., that is to say, the loads of twenty-four porters, who in the same period require altogether only 48 lbs. of food.

"Loaded elephants do not travel faster than the ordinary porter marches. Porters are usually reckoned

the least economical form of transport. How much more extravagant, then, would elephants be ?

" Elephants require a great deal of water, and many of the caravan routes are very deficient in this, for a good part of the year.

" It would be sheer waste of money to attempt elephant training without a staff of trained men, who would require high pay."

There is certainly no doubt that there are few if any places in Africa where tame elephants could be shackled and turned out to feed as is done in Asia : in the dry season especially, the labour of collecting food, to say nothing of the expense, would be very great. The nutriment adequate to keep them in good condition in a natural state would probably not suffice when the animals were doing hard work. Thus there are grave difficulties to be overcome before this great beast's strength can be made available as an adjunct to labour in Africa : but they are probably not insoluble, and given the necessity, induced by some great shortage of native labour or other causes, could no doubt be surmounted. In the meantime, although there does not appear any urgent demand for forms of transport other than are being generally used, it is to be hoped that elephants may go on receiving the partial protection lately accorded to them, in the hope that they may prove useful, apart from the value of their ivory, at some future date.

The ivory trade itself, the cause of the enormous destruction of these animals in the past, furnishes good reason why they should not be allowed to be greatly reduced below their present numbers. In former days the whole continent must have swarmed with elephants ; otherwise, taking into consideration the slowness with which they increase, and the huge ivory trade which has

A SCENE IN THE SABI GAME RESERVE

so long existed, they could not have survived to the extent they have done. For a long time after the natives discovered its commercial value, the ivory which was found all over Central Africa, as the result of natural deaths, was sufficient for trading purposes; but at the present day this source has mostly become exhausted, and the living animal alone remains to satisfy the demands of barter.

Omitting the wholesale destruction in South Africa during the last century, which resulted in the virtual extermination of the animals, within the last ten years the numbers killed throughout the continent would, if summed up, present a surprising total. A few instances will suffice. In 1898 and 1899, two sportsmen are known to have shot elephants producing four tons of ivory, between Mobai and Bangue; thirty-six tons were seen in a store at Ibenge, collected between that place and Yakoma, the local price being one franc per kilo! About the same time one sporting party paid £800 duty on tusks of ivory killed or acquired near Lake Rudolf. The destruction of female and immature animals was also very serious, and, without doubt, much of the total weight annually traded, was made up of their small tusks. At the end of 1902, immature ivory was sold in German East Africa to the value of 17,700 rupees, which corresponded perhaps to the tusks of between 1300 and 1400 young elephants, collected during the two or three years within which prohibitory legislation had been in force (Herr Gotzen's report). No doubt before the killing of such animals was forbidden, the numbers destroyed were still greater.

Since 1900, elephant-hunting has been everywhere restricted by regulations, and the killing of females, and of males carrying tusks under a certain weight, has been

altogether forbidden. Nevertheless very large numbers are still slain in out-of-the-way districts, where control is impracticable. It is believed that at the present moment a large illicit trade goes on through Abyssinia and possibly parts of Somaliland, in ivory obtained from animals killed in British territory. In 1907 it became generally known that the Lado Enclave, at that time under Belgian jurisdiction, swarmed with elephants. Thither, accordingly, flocked profit hunters from all parts of Europe and Africa without right or licence, but considering the venture well worth the risk. It is impossible to determine how many elephants fell, but the number must certainly, judging by the immense quantities of ivory which paid transit dues through British territory, have run into thousands. In the year ending March 1908, £15,820 worth of ivory was exported from British East Africa, £61,497 from Uganda; while the same period saw 539 tons or £560,552 worth of ivory imported into the United Kingdom, which means, allowing each elephant to carry 100 lbs. of ivory, that over 12,000 were accounted for in that year. But as it is probable that a very large proportion did not carry tusks of anything like that weight, the total killed was most likely much larger, perhaps double. There was also an increase of 932 cwt. of imported ivory above the imports for 1907, in spite of the fact that the total of elephants then living was smaller. In parts of Africa where natives are in possession of firearms, they kill large numbers of the beasts, and a great deal of this ivory goes to Zanzibar, to which place over 85,000 lbs. were imported in 1907.

The elephant takes many years to come to maturity, the breeding rate is extremely slow, and consequently when the stock has been thinned down, it has not the same chance of recovery as have other and more prolific species.

In the more efficiently administered areas, although females and immature animals are protected, full-aged bulls are shot under licences, by sportsmen and officials, and this is now beginning to result, in many places, in a scarcity of such animals. However, it seems to be generally agreed that the best tuskers are not found with the herds, and that, at least in Uganda and on the Nile, herd bulls are seldom found with tusks weighing more than 40 or 50 lbs. each.

At the present day elephants are found in the Knysna and Addo Bush in Cape Colony, where they have been very little disturbed for many years, and, having to some extent lost their fear of man through long immunity, are on occasions extremely troublesome. There are possibly a few in the northern part of Zululand, and, in Portuguese East Africa, from the Maputa to the Limpopo River, they are sparsely distributed along the Swaziland and Transvaal borders. There is a small herd in the north-eastern Transvaal, acquired since the institution of the Game Reserve there. In the country between Beira and the Zambezi there are still a good many left, but few, apparently, carrying ivory of any great size. In southern Rhodesia some good herds which have survived recent legislation yet remian. In north-western and north-eastern Rhodesia, British and Portuguese Nyasaland, and Moçambique, elephants are still found in considerable numbers, as also through parts of German and British East Africa. Uganda has long been famous for the fine ivory carried by its elephants, which are numerous through a great part of the country, and right across from the Lake Rudolph district to the Nile, being plentiful in the southern Sudan. Probably, however, the Congo is now the principal home of these animals, and in some portions of it they unquestionably exist in immense

numbers. The west coast territories are also said to be, some of them, still fairly well stocked, and most of the shooting is there done by natives armed with trade guns.

Elephants present a curious mixture of timidity and aggressiveness. Though the slightest odour of human beings is sometimes sufficient to scare them away from the neighbourhood, and cause them to travel many miles, on the other hand they will on occasion, and unlike most other animals, attack in an entirely unprovoked manner. Stories are current of the Knysna and Addo Bush elephants occasionally chasing wayfarers, scattering working parties, and so on. At Gondokoro in the Nile Province of Uganda exists a herd of several hundred animals, composed entirely of cows and young animals, which have become such a terror to wayfarers, that the post road from the Kit River is shunned as much as possible by native travellers. Gondokoro was, until a few years ago, a military station, and at that time the herd was continually receiving the attentions of sportsmen, until all the bulls carrying ivory of any size had been shot out. Although for some time past almost entirely left alone, they still seem to cherish the memory of former grievances, and instead of running away on the approach of human beings, usually adopt precisely the opposite course. Half a day's march north, at Lake Birika, the local elephants show an entirely different disposition, and betray no signs of truculence.

It seems to be agreed, that as a rule, cows and young bulls are more aggressive and vindictive than are the large males. Sportsmen getting into a herd of elephants have often more to fear from animals standing concealed, which charge down upon them from unexpected directions, than from their intended quarry. A young officer lost his life in Nyasaland two or three years ago in this

manner, and instances of unprovoked attacks are constantly occurring all over Africa, sometimes without success, at others, with fatal issue to the hunter. My friend, Mr. Neergaard, while following a fresh track in Moçambique last year, was viciously charged from close quarters by an elephant which he had not molested, and before indeed he had so much as caught a glimpse of the animals which he was following. On this occasion only the coolness of his shooting and a heavy rifle saved his life.

It is probable that, under modern conditions, elephant hunting is a more dangerous pursuit than formerly. The small bores which are often used have not the stopping power of the old heavy rifles ; but the chief difference lies in the fact that whereas the sportsman of the past was free of the herd, he of the present day is restricted both as regards numbers, and in that he may not shoot females, or males whose tusks are not up to weight. He must therefore, when the covert is dense, often go right among the animals to look for a big bull, and this is a proceeding fraught with considerable risk.

The habits of elephants, and methods of hunting them, have been so fully discussed by so many competent writers that there is little or nothing to be added to what has already been written. They are not naturally strictly forest-loving animals, but, as occurs with so many other species, continued persecution tends to make them more and more seek the shelter and protection of thick covert, and until very recently the herd in the Transvaal Game Reserve never ventured, even at night, beyond the shelter of a certain large area of very dense bush, which had for many years proved their only safe refuge. The tread of the elephant is astonishingly light ; also, until actual experience has been gained, it is difficult to believe

that it can be possible to approach so very close, in forest or bush, to so huge an animal without seeing it. On one occasion, hearing some shots near the road, the writer left the path to investigate their cause; he was preceded by a native, who presently ran into, almost to the point of touching, a cow elephant, standing under a tree; the wind was of course blowing from her, and she had no idea of human presence. Although at the moment we did not anticipate seeing elephants, and were pressing on with another object, it was still remarkable how the beast seemed, as it were, to loom up only when we were close upon it.

Elephants are good swimmers, and rough or hilly country offers no impediment to their movements. They feed principally during the night or early morning, standing about in shady places in the heat of the day, although when used to being much disturbed, they often keep moving slowly on all day, with only occasional short halts. In hot weather they drink every night; when it is cooler less often, and their arrival at the water is usually between nightfall and midnight. Their sight is very poor, but whether their hearing is also, in reality, indifferent, or whether the rumbling noises which every individual in the herd is continually making render them callous to other sounds, seems uncertain. Their scent is extremely acute, and the flexible trunk is waved to and fro to catch the slightest whiff of tainted air. There do not appear to be any records of African elephants having bred in captivity.

The most experienced hunters favour the head shot, which is taken in a straight line between the eye and the ear, and just in front of the latter; this, if at the right angle, kills the animal stone dead. In old days the Boer mounted hunters used to practise what was known

to them as "knee haltering": that is to say, the first shot was directed at the animal's knee or leg—an elephant when his leg is broken, or the bone badly injured, is unable to move at all, and so the horsemen were enabled to go on after the rest of the herd, and finish off the maimed animals when the chase was over.

The pursuit of the elephant is perhaps the most exciting and attractive of all forms of big game hunting in Africa; certain it is that to most men who have tasted this form of sport, all others become insipid by comparison. Those thrilling moments which the hunter spends after he has come up with the herd in thick bush or long grass, and is peering about for the big bull which he knows is there, every nerve strung to highest tension, and the great forms only partially revealed through the thick covert as they stand or slowly move within but a few yards of him, form a memory which time may not easily efface. The protection now extended to the breeding stock of elephants inspires the hope that this magnificent form of sport may long be enjoyed in due moderation by those to whom mere profit is not the main object.

THE HYRAXES. The hyraxes have a sub-order all to themselves, and although externally resembling rodents, really form a branch of the hoofed animals. They are small creatures, brown in colour, and not much larger than guinea-pigs—which in fact they rather resemble in form. They have very small tails, and possess three well-developed toes on each foot, every one covered by a flat nail, except the second toe of each hind foot, which is clawed. Their ears are round and short, and their faces rather pointed.

A number of different species, extending over the greater part of Africa, are known. Some of these live in trees and others on the ground: of the latter the

so-called "Rock Rabbit" is the best known in South Africa. They are vegetable feeders and said to be good eating. In captivity they become very tame and are quite intelligent. The forests of East Africa, at 7000 feet and over, are full of Tree Dassies, and at night their squalling cries ring all round the camp.

It is difficult to credit that the nearest living relatives of the little Dassies, as they are called sometimes, are the huge elephants and rhinoceroses. Such is the case, however, and a word may be said in explanation. In the dim dark ages of the world, when huge reptiles were predominant everywhere, mammals probably were mostly small tree-living creatures, of the gnawing or squirrel-like type. At a later date most species as they developed in size took to a ground life, and developed hoofs or paws suitable to such an existence.

Among the former appear to have been the ancestors of the hyraxes, and in the course of time the squirrel-like claws which had been useful to them among the trees, began gradually to spread out into nails, which would perhaps ultimately have in their turn solidified into hoofs. Before the transformation was complete, however, some cause drove the hyraxes either up the trees again, or under the ground, and therefore the hoofs being useless to them, the progress of development was arrested in that direction, and we probably see them now in the process of getting their claws back again; but Nature is leisurely in her methods, and a few score thousand years would not be too big a margin to allow for the completion of the process, even if were unhindered.

CHAPTER III

RHINOCEROSES

THE WHITE RHINOCEROS. The English name for this, the largest of all African land mammals after the elephant, is misleading, there being in colour very little difference between it and the more widely distributed black rhinoceros.

" The head is very long and massive ; upper lip straight all round, with no trace of a proboscis ; nostrils are elongated slits parallel to the mouth ; ears longer and more pointed than in the other species, springing from a closed cylinder about three inches long ; tail as in the black variety, but only the last quarter provided with wiry bristles. The front horn is situate on the nasal bones, longer and more slender than in the other species, curved gently backwards, and the upper part of the front usually flattened by friction against the ground ; the rear horn is usually short, straight, conical and somewhat laterally flattened. Both horns vary a good deal in length and shape." (Schlater.)

This splendid beast, which attains a height of over six feet six inches at the shoulder, was once extremely plentiful in many parts of South Africa, between the Orange River and the Zambezi ; but is now probably extinct south of the latter river, with the exception of some fifteen preserved in Zululand. Two of these were killed by natives in 1902, but, with this exception, they have been unmolested for a good many years. Until 1900 it was believed that the species did not exist north of the Zambezi, but in that year Major Gibbons, at the conclusion of his great march from the Barotse country, and while awaiting a steamer to take him down the Nile,

shot one in the Lado Enclave. It is now known that the species is probably quite as numerous in the Enclave, the north-eastern Congo, and the southern part of the Sudan west of the Nile, as it was in former days in any part of its South African range, and the fact of its presence being for so long unsuspected is the more remarkable, when it is remembered that such a keen zoologist as Sir Samuel Baker spent so long in this very region, and that Emin Pasha, also a zealous naturalist, albeit not a sportsman, was for years at Lado, Rejaf, and Wadelai, round all of which places the animals are very numerous. At a later period, when the tide of Mahdiism was ebbing from the Upper Nile, and European officers and travellers shot many rhinoceroses along its banks, no one seems to have noticed any difference between the ordinary black rhinoceros found on the east bank and the totally different animal across the river.

The Nile has evidently proved as impassable a barrier to the progress of the square-mouthed rhinoceros from remote times, as to that of his cousin the prehensile-* lipped animal, whose range extends all along the east bank. The nature of the country to east and west is alike in every way, but, though only a few hundred yards of water separate the two species, each seems exclusively confined to its own side.

Mr. Selous' minute account of the habits of the white rhinoceros in South Africa no doubt applies equally to those of his brother on the west bank of the Nile. He is a sluggish animal by nature, and betrays none of the irritability so characteristic of the black rhinoceros. He seldom charges, and his unsuspicious habits have been the cause of his falling a ready victim to the hunter, both European and native. He is prob-

* Adapted for grasping twigs, &c.

ably entirely a grass-eater, feeding in the late evening, through the night, and in the early morning. He moves steadily along at a slow walk all the time he is grazing, not remaining more or less in one place to do so, as is the habit of many animals. On the sun getting hot he lies down under some convenient tree or bush to sleep soundly through the warmer hours of the day; he is then very easy to approach. Sight and hearing both appear rather deficient, but scent is keen. When on the move the head is carried so low that the horn is almost parallel to the ground. The calf precedes instead of following the mother, and is guided by a gentle pressure of her horn.

White rhinoceroses are seldom found at any great distance from water. They are believed to be very numerous indeed to the west of the Nile, practically from Lake Albert to some distance north of Lado, and have not, so far as can be ascertained up to the present time, been reduced in numbers to any noticeable extent. This is due to the fact that the numerous hunters who recently were busy in their haunts pursued the elephant alone, a chase which precludes thought of all else. It is therefore to be hoped that when access to these remote regions becomes less difficult, Government will take effectual steps to guard these inoffensive and interesting creatures, in this their last known refuge, from the fate which has overtaken them in South Africa.

THE BLACK or PREHENSILE-LIPPED RHINOCEROS. Unlike his so-called "white" cousin, the black rhinoceros has a range embracing nearly the whole of Africa, except where he has been exterminated through human agency. In colour he is not noticeably darker than the other species; the height is much less, only about five feet at the shoulder; the skull is shorter, and the horns, of which the front one usually, though not always, exceeds

RHINOCEROS

the other, are shorter and more massive. In all rhinoceroses these horns are a mass of closely and vertically-packed fibres growing from the skin, and with the slightly hollowed base resting upon a small prominence upon the bone of the skull, whence it can easily be detached; the feet are each provided with three broad nail-like hoofs, so that the track is always an unmistakable one.

Formerly it was considered justifiable to split up the black rhinoceros into several species, according to the relative lengths of the two horns; but it is now known that these variations are merely individual eccentricities, and there is but one species throughout Africa.

At the present day this animal is almost extinct in the Union of South Africa. A few still exist in the north-eastern Transvaal, in the dense bush which extends on both sides of the Portuguese border, between the Singwitsi River and the Limpopo, and also in the Sabi Bush, on the south bank of that river, where for many years one only was believed to exist, so closely had fear of man induced the animals to remain within the shelter of the thick wait-a-bit thorns. Actually there may be a dozen or more present in the two districts, which, so far as the British side is concerned, are within a Game Reserve; but this small number holds out little hope of ultimate survival without the aid of fresh blood. The presence of a considerable number of rhinoceroses at no great distance in Portuguese territory, however, encourages the hope that recruiting may be possible, if indeed it has not already taken place. On the Maputa River between Bella Vista and the Pongola junction, the road passes through a large extent of very thick bush or forest, and here rhinos, which have been for a good many years strictly preserved by the Portuguese authorities, are pretty numerous, and are reported to inspire a good deal of terror in the natives

who travel by that route, though it is not added that any one has ever been actually attacked.

Rhinoceroses have been increasing of late years in Northern Zululand, thanks to protection. In Southern Rhodesia, where they were once so widely spread, they are now confined to a few districts; but a good many still exist in the Zambezi Company's Territories north of Beira. North and west of the Zambezi the species is sparingly distributed through parts of Northern Rhodesia, Nyasaland, Angola, and Moçambique. They become more numerous towards the north, and until quite lately were found in great numbers over most of British East Africa, wherever the country was high and dry. The fact of their favouring the open, treeless plains, and so catching the eye of the man with a gun on every occasion, soon, however, thinned their numbers, while their unpleasant habit, when alarmed, of dashing through caravans, to the great detriment of camp equipment, and terror of porters, led to their being considered a nuisance. The range of the species further extends to Somaliland, and the Southern Sudan, as far as the east bank of the White Nile, in the close vicinity of which, however, they are not met with in any great numbers.

Unlike the other species, the black rhinoceros is essentially a browser. Leaves, twigs, and small roots form his food. To the casual observer the fact that he favours so greatly the treeless plains of parts of East Africa might point to a diet of grass; but a closer examination of the ground reveals the presence of a small plant, which has in reality formed the attraction. When disturbed the black rhinoceros trots away with his head and tail both elevated; the calves follow their mothers instead of preceding them as in the other variety. The beast feeds during the night, and by day spends its time sleeping in

covert ; though in East Africa individuals are often seen standing out right in the open throughout the day. It is often accompanied by rhinoceros birds which give the alarm on the approach of enemies. Sight is poor, but hearing appears very fairly good, and the sense of scent is most acute.

The black rhinoceros has acquired a reputation for savage aggressiveness which the experience of the best-known hunters would by no means support. Considering the enormous numbers of rhinos which were killed in former days in South Africa, and the considerable quantity annually shot in East Africa and elsewhere at the present time, the number of accidents was, and is, ridiculously small. The rhino is a formidable-looking brute, and its appearance when bearing down to the accompaniment of snorts, reminiscent of a steam-engine, is not reassuring ; but it appears probable that many of these so-called charges of *unwounded* animals are merely efforts to escape from what they consider a tight place. If suddenly disturbed it is generally agreed that the rhino will often, by accident or design, come straight in the direction of the aggressor ; but if the latter gets quickly out of the way it will usually rush right on, obviously seeking only to escape. In occasional encounters with the animals within the Game Reserves, the writer has always found that a gentle tapping on a tree or some other slight noise, insufficient seriously to startle the animal, has always sent it off at once ; and the same experiment has had similar results on the occasions when these animals have been encountered in other parts of the continent. No doubt there are old, or ill-conditioned rhinos just as there are in the case of other species, but, taken on the whole, the general evidence points to the wild rushes, frequently so disastrous to transport of various kinds, being induced

more by sudden alarm, coupled with blindness and stupidity, than by natural ferocity.

Rather an amusing incident occurred recently to a sportsman in the Sudan, where one rhino only may be shot upon a licence. Having heard overnight that tracks had been seen not far from the station, he sallied forth at dawn and quickly found them. Before he had followed the spoor for long, a rhino jumped up from behind a bush close at hand, and he killed it with the first shot. As he fired, another, obviously a male, also got up near by, and after one glance round, made off as fast as possible, behaving, as the hunter remarked, "like a perfect gentleman." He had just time to confirm his fear that the animal he had shot was a female, when her calf, a beast about as big as a donkey, suddenly arrived on the scene, and at once taking in the situation, proceeded to scatter the party. The natives took to trees, while the sportsman, finding a convenient ant-heap, proceeded to perch himself on the top thereof, hoping that shouts and the hurling of stones and pieces of earth would serve to scare away the bereaved offspring.

Oblivious of such trifles, the little beast continued to run to and fro between its dead mother and the ant-heap, squealing furiously and continuously, making sufficiently clear its intentions towards the occupant of the latter. He indeed felt himself in rather a predicament; apart from his desire not to injure his small assailant, he had already shot the one animal allowed under his licence, and breach of regulations, however afterwards condoned, imply considerable trouble and official correspondence. At last the situation became an impossible one; the noonday sun was blazing down on the shadeless ant-heap, and the annoyance of the infant increased rather than diminished. So at last the sportsman decided to risk a

solid bullet from his small bore, and taking a steady aim at a fleshy but non-vital portion of the little beast's anatomy, he fired. For a time the noise redoubled, and at first it seemed that an ascent of the ant-heap was meditated; but eventually discretion overcame valour, and at the end of a really strenuous two hours the sportsman was able to descend and stretch his cramped limbs.

In the bush of the eastern Transvaal the old bones and skulls of rhinos are even now often seen, showing how very numerous this animal must once have been in the locality. On the Athi Plains of East Africa, where but a few years ago they existed in such numbers as to form a constant source of annoyance to travellers, they are now only occasionally encountered. Its size, stupidity and want of manners all render it certain that the black rhinoceros is soon fated to vanish entirely from all his more accessible haunts. Although its best friend could not defend its existence upon grounds of possible utility to man, the total disappearance of such a strange old-world type would be none the less regrettable, and care should be taken that all declared game sanctuaries contain sufficient specimens to permit of the due preservation of the species.

CHAPTER IV

ZEBRAS

THERE are at the present day three distinct species of zebras inhabiting the continent of Africa: Grevy's, the True or Mountain, and Burchell's, the last comprising a number of sub-species. All zebras are strictly sociable animals, fond of open plains, hills, or lightly forested country, and are essentially grass feeders. Like the

rest of the horse tribe, they prefer rather a dry climate, and are accustomed to roll in dust or sand. They are regular drinkers, and are seldom found at any very great distance from water.

Various experiments have at different times been conducted with a view to the domestication of zebras, but these cannot be said to have been eminently satisfactory so far as they have gone. The deficiency in the zebra's forehand puts him to a great extent out of court as a riding animal, and for continuous traction he has been found to be incapable of competing with mules, or even donkeys; in fact, he has shown himself "soft" by comparison. On the other hand, he has proved perfectly tractable, even when captured nearly half grown. Captain Hayes relates having handled and broken into saddle within two days an old zebra belonging to the True or Mountain type, a species generally believed to be much less amenable than the Burchell variety. Mr. Zeedeberg, of Pietersberg, in the Transvaal, for some years used zebras in the stage-coaches running to Tuli, and found them satisfactory, except for their serious want of stamina. As is well known, the Hon. Walter Rothschild used to drive a team of zebras in London, and at various times and places these animals have been so made use of.

The underlying weakness of all these experiments, in so far as they were designed to supply an answer to the question as to the permanent utility of zebras as beasts of burden, seems to lie in the fact that they were not persisted with for a long enough time. Horses and asses have thousands of years of domestication behind them, and have inherited from a long line of ancestors, specially trained and often artificially fed, traits of endurance which it would be unfair to expect to find in purely wild animals. The mule unites in himself many

of the best physical qualities of both the donkey and the horse, and has for that reason long occupied a high position as a transport animal. But the zebra, in physical conformation, is sturdier and more compact than the mule or donkey, besides being fleeter than either; he has besides the immense advantage of being entirely immune from horse-sickness and nagana disease, those equine scourges of Africa; therefore his adoption as a transport animal in many places would confer great advantages. But in order to test his usefulness thoroughly, it is absolutely necessary that the experiments should be persisted in through several generations of animals born in captivity, and specially fed and worked, in order, as far as possible, to bring them on level terms with their competitors. It is obvious that upon economic grounds it would be necessary to make any general use of them only in such districts as are unsuitable for other equines, and for the success of the experiment it would be desirable to retain them permanently within these districts, otherwise absence for a generation or two from the influence of infective agents might very possibly destroy their immunity.

Both in British and in German East Africa experiments in capturing Burchell's zebras on a large scale have been made. Large and strong enclosures, with funnel-shaped entrances, were constructed, and into these were driven several herds. Men then took up their quarters within the enclosures, to accustom the animals to their presence, and in a few days not only the young but the full-grown ones had grown so perfectly unconcerned, that in a short time it was possible to handle them with ease. As regards British territory, the experiment was put an end to by the death of most of the animals from a disease which

was probably fostered and quickly communicated through the comparatively restricted range available, while some antidote, which no doubt is easily found where the area is sufficiently large, may have grown in insufficient quantity to meet the requirements of the stock on the ground. I understand that the same trouble is, or was, in less degree, present among the animals in the Duke of Bedford's unique collection at Woburn, and there can be little doubt that this is one of nature's methods of restricting the overgrowth of species within limited areas.

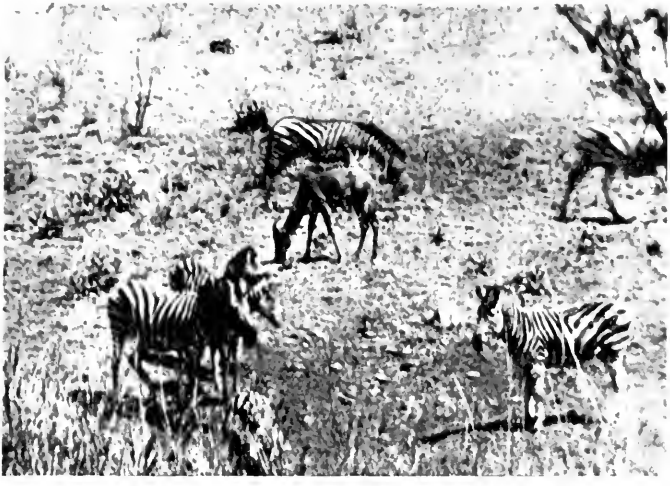
Grevy's Zebra. Grevy's zebra is an inhabitant of Abyssinia, Somaliland, and the Lake Rudolph district. It is the largest of all the tribe, attaining a shoulder height of nearly fifteen hands, and is very closely striped right down to the hoofs. It seems a beast that might well be worth experimenting with for domestic purposes.

The Mountain Zebra. The True or Mountain zebra is the smallest of the group of striped horses, standing some twelve hands at the shoulder. It was always a local animal, never having been found beyond the limits of the Cape Colony and parts of German South-West Africa, though types of the Burchell species, showing a certain likeness, have been noticed elsewhere. The species suffered so much during the past century from shooting at the hands of the colonists, that its range is now restricted to a few isolated districts, and its complete disappearance is possible in the not very remote future. Its principal safeguard, in addition to the protection now afforded it, lies in the fact that it confines itself to the more inaccessible portions of the mountain ranges, where it runs in small troops, and is generally extremely wary. It has often been written of as a very fierce and untamable creature, but, as these were qualities which

the hunters of former days were fond of ascribing to most of the animals which they pursued, without any very solid foundation for the assertion, the Mountain zebra, though doubtless less easily tamed than Burchell's, need not necessarily be judged on this evidence. In fact, Captain Hayes' successful breaking of a full-grown male of the species to saddle is in itself sufficient to show that with proper, quiet handling it can be brought into subjection.

BURCHELL'S ZEBRA. Burchell's zebra is by far the most numerous and widely distributed of the group. So extended is its range that it has become divided into a number of local varieties or sub-species, which merge almost imperceptibly the one into the other, though the extreme types differ considerably in their marking. The most northerly form is that known as Grant's, which extends from Southern Abyssinia and the Egyptian Sudan on the north, through Uganda and British East Africa, until it links up with Crawshay's zebra of Nyasaland and Northern Rhodesia. Both these varieties have strongly contrasted black and white markings (without a trace of shadow stripes), which continue down to the fetlocks. Upon crossing the Zambezi, the impediment offered by that waterway to the free migration of animals, and its consequent bearing upon type, is evident in the presence of what are known as "shadow stripes," that is to say, light brown bands showing upon the white ground which separates the black markings.

Burchell's zebras are naturally so sociable, that not only are they themselves often found in very large herds, but the herds themselves are constantly found associated with other animals, especially in the Transvaal, with blue wildebeest; single individuals however, seldom, seem to join themselves to troops of antelopes. Near Nakurn,



ZEBRAS WITH TSESSEBE BULL

ZEBRAS AT WATERING-PLACE
(Sabi Game Reserve)

in East Africa, the size of the herds is still astonishing. Fully a thousand may at times be seen in one body, while the plain for miles is covered with smaller troops. Latterly, in the Transvaal Game Reserve, where for a long time zebras were found scattered about in small family parties, they have similarly drawn together; so that a piece of country one day nearly deserted is on the next covered with hundreds of animals.

Although in South Africa more shy than the wildebeests, with which they are so often found, and always of the two the first to move off, zebras sometimes betray the most intense curiosity. Where accustomed to be unmolested by man, they have a way of stampeding past a train of pack donkeys at close quarters, most disconcerting to the latter, which are only too inclined to follow suit, to the great detriment of any camping material wherewith they may be loaded.

Zebras are not often noticed lying down; but Major Fraser, of the Game Reserve, relates having observed a whole herd in this position about the middle of the day, in October or November; a number of foals were present, which were chasing each other about through the recumbent troop, occasionally jumping over their mothers. The usual drinking time is at night or very early morning, but in the cold weather in the Transvaal I have noticed them watering pretty regularly about midday. Later in the year, after a hot day, they sometimes drink at sunset, and in this case, no doubt, graze at no great distance from the water during the night.

Although quick with his heels upon occasion, the offensive and defensive weapon of the zebra is primarily his teeth. If a herd is quietly observed, it will be noticed that a great deal of biting goes on amongst the members, but very little kicking, and a tame animal which happens

to be at all vicious always runs at the intruder with his mouth open, or teeth bared. The cry of the Burchell zebra is a shrill "wa-wa-wa," repeated several times. They are rather noisy animals when assembled near the drinking-places, and their call is one of the commonest night sounds in a game country. They are very liable to panic and stampedes, and their custom, when frightened, of dashing through wire fences and other artificial obstacles forms, in East Africa, one of the principal causes of complaint against them.

Once when the writer was following the tracks of some lions, a small troop of zebras, a little distance in front, caught sight of the cats at close quarters, though they were invisible to us, and the sudden headlong rush they made was a thing to remember. Conduct of another kind was observed by one of the rangers a few years ago. As he was riding along the bank of the Olifants River he suddenly heard zebras making a great noise just in front, and, coming into a clearing, he found that three lions had just pulled down a mare, but had not yet killed her. The rest of the troop were standing some twenty paces from the lions, facing them in a semicircle, very excited and making a great noise, but showing no disposition to bolt; the foal was intermediate between its dam and the herd. On the ranger firing at one of the lions the zebras at once stampeded, but the young animal waited about for its mother, which, though badly clawed, was able to get up and make off also.

Another ranger came on a lion and two lionesses taking their midday siesta within a hundred yards of a troop of zebras. Neither party was taking the least notice of the other, so far as he could judge. One lion was lying on its back, with all four legs in the air, like a cat before the fire, while the zebras were standing about

apparently half asleep. The lions must have been clearly visible to them. Incidents such as this illustrate the perfect understanding which the wild creatures have of each other's ways, and how far man is from a clear comprehension of them.

We once lost all the horses from Sabi Bridge for two days, owing to their being stampeded by a solitary zebra, which galloped off, followed by them. Although they kept close behind him, it was remarkable that when at length discovered, nearly twenty miles away, they were vigorously opposing all his efforts to come close to and join them. There are many cases, however, of single runaway horses being found in conjunction with troops of zebras, and this is still more true of mules, which seem to have a better understanding with them. In fact, it is no easy matter to keep mules from stampeding when there are zebras about, and several have been permanently lost in the low country in this manner during the last few years. A horse will often come home again after his escapade, but a mule very seldom. Therefore, any one travelling with transport animals where zebras are numerous would do well to see that the native herds attend to their duties when the animals are at grass.

I have once heard of a perfectly white animal having been seen. Amongst a herd of Burchell zebra was noticed an animal which appeared to be a white mule or donkey, but which, on closer inspection, proved to be a zebra, so far as could be seen, quite devoid of all markings.

The African wild ass inhabits the dry countries to the east of the Nile, from about 17° to 5° north latitude. It is grey in colour, with black markings on the legs and back. Two local races are recognized.

CHAPTER V

THE HIPPOPOTAMUS

THE HIPPOPOTAMUS. The range of the hippopotamus once extended to the whole of the Ethiopian region, wherever there was suitable water, and also down the Nile to its mouth. At the present day it is not found in the latter river until some considerable distance above Khartoum; but south of the sudd, and especially on the Bahr-el-Ghebel, between Nimule and Lake Albert, it becomes quite numerous. It exists east and south of this point, on all the lakes and waterways of equatorial Africa; although the fact that it may be shot without a licence on the Nile, and on Lakes Victoria and Albert, is tending to reduce its numbers in these particular localities.

On the middle and lower Zambezi hippopotami were, until a very short time ago, exceedingly numerous. In 1898, while navigating the former in a steam-launch, we used in places to come on large herds, sometimes consisting of twenty or thirty animals, which practically filled up the whole channel of the river, and so indifferent were they to our presence, that not until the steam-whistle was brought into play would they consent to duck their heads and allow us to pass. At that time, too, they were fairly plentiful on the lower reaches of the river between Tete and Chinde; but the cruel and unsportsmanlike practice of shooting at them from passing steamers has almost entirely destroyed or driven them away from the lower Zambezi and the Shiré, and in 1908, when coming down from Port Herald to Chinde, not one was seen. They were plentiful ten or twelve years ago on the Kwando and other western tributaries,

which, consisting of a deep channel, bordered on one side by extensive reed areas, and on the other by grassy wooded banks, are by their nature well suited to the habits of the animals. In all probability, little has occurred to disturb them since that date in those unget-at-able places.

South of the Zambezi hippopotami are still found in suitable localities in Southern Rhodesia, though to the west and south-west shooting and the desiccation of the country have greatly restricted their range. On the Limpopo and Olifants Rivers, both in British and Portuguese territories, there are still considerable numbers. Near the junction of the latter with the Letaba, when, at certain seasons of the year, the rivers are full and pools adjacent to the banks frequent, there may be seen a really astonishing collection of these animals. During the dry season they seem to go down in search of deeper water, and, getting into Portuguese territory, suffer to some extent from native attacks. The parallel rivers—Sabi, Crocodile, Komati, Lomati, Usutu, and Pongola—are all well stocked. On the Komati, near the boundary, a herd of over twenty has been carefully preserved for the last twelve years, and they have become so tame that belated passengers, meeting them ashore of an evening, find that, so far from giving place to human beings, they desire to assert their right to the path.

In the numerous pans of Amatongaland, near the Pongola, there are great numbers of hippos which are partially protected by a £10 licence, and this forms very nearly the most southerly point at which the species now exists. Some seven years ago more than twenty of them in the largest of these pools—the Ebumbe Pan—died within a few days from some unexplained cause. A veterinary officer was sent down to investigate, but

apparently without result ; so whether they were poisoned by natives, who were at that time suffering from the starvation consequent on a prolonged drought, and may have wanted the meat, or whether the reason lay in some harmful influence exercised by the partial drying up of the edges of the pan and effect on the food-supply, must remain a mystery. At all events, no more died, and no sign of sickness has at any time since been noticed amongst the survivors. In the rivers of the Transvaal high veld, the Orange Free State and Cape Colony, there are no hippopotami at the present day, and the last existing in Natal, which were preserved in Sea Cow Lake, near Durban, were destroyed in 1898, on the plea that they had become very destructive.

Hippopotami are thoroughly aquatic animals, and when frightened or disturbed, at once make for their natural element with all speed. During the day, and in places where they are unmolested, they sleep by preference in rather shallow water, the herd grouped closely together, their great heads sometimes resting on each other's backs. They may even be found occasionally asleep upon mud-banks. In more frequented localities they float in deep water, the nostrils alone protruding above the surface ; or they rise every five minutes or so for the purpose of breathing. Towards evening they leave the water and go ashore to feed, travelling by the well-trodden "hippo paths," which, wherever these animals are plentiful, intersect in all directions the bush and reeds bordering the stream. Although, where food happens to be scarce, hippopotami are capable of travelling considerable distances from the water during the night, under normal circumstances the limit is under a mile, and they always get back to their old quarters before morning, unless they have sought and found a

new abode. An animal belated on his feeding-ground a long way from his usual day haunt would seek the nearest suitable pool until nightfall. On the Transvaal Sabi, where, though not numerous, the beasts are very tame, they are not infrequently to be seen wandering about, or resting on one or other of the shady islands which abound in mid-stream.

The food consists of young shoots, grasses and reeds. The hippopotamus does not grub for roots or eat fruit. It is capable of doing great damage to cultivated lands, not only by actually eating the crops, but by the manner in which it tramples down and destroys things. Consequently its conduct in this respect causes a great deal of complaint, and, where protected by law, natives and others often seek the easiest means of prevention by applying to have the erring animals killed—incidentally looking forward to a big feed of good meat and a plentiful supply of the valuable hide and fat.

As a matter of fact, the lowest fence, provided that it is solid and upright, will always stop a hippo. Like a pig, he never attempts to step over an obstacle, and does not push through an impediment which he recognizes as artificial. Natives of many tribes in Africa are so naturally indolent that they prefer to risk any loss rather than take a little trouble to prevent its occurrence. Therefore, the so-called fences often seen intervening between crops planted close to the water's edge, and the water itself, positively invite attack, in that they consist merely of a few thorn bushes or branches laid on the ground, often not even touching each other. That, under such circumstances, the crops suffer can hardly afford cause for surprise. Among the few African peoples who do go to the trouble of constructing strong obstacles the losses appear to be trifling.

F. W. Bond, Photo.

THE HIPPOPOTAMUS

A HIPPO POOL
(Sabi Game Reserve)

A few years ago, a gentleman owning a farm on the Lomati River in the Transvaal, having a stream frontage, suffered annually considerable pecuniary loss, owing to the manner in which the local troop of hippos were accustomed to raid his young mealies. Although legally free to shoot the animals if caught in the act, he nevertheless refrained in the most laudable way from doing so, and approached the Government with a view to receiving relief. Eventually a sum was detached from the Game Preservation Vote, and with it a barbed-wire fence of three strands (only some three feet high) was constructed, enclosing the part of the farm facing the river. After the next harvest, the present writer had a letter from the proprietor, wherein he expressed his entire satisfaction with the fence, and stated that the hippos had never made the slightest attempt to break through this not very formidable impediment. Other instances of a similar nature might be quoted to indicate that there are other means of checking the inroads of this animal than by destroying him; but the latter method is so much easier, and withal so far more in harmony with traditional African custom than a little hard work, unaccompanied by the tempting inducement of meat and hide, that it is the one usually adopted.

The specific gravity of the hippopotamus is such that it is able to walk along the bottoms of the rivers with ease, rising to the surface to breathe at intervals of about five or six minutes. It is an extraordinarily powerful swimmer and can force its way upstream in face of the strongest currents.

The young hippo, while too small to defend itself, is carried on its mother's back while in the water. Crocodiles would no doubt be serious enemies to the calves

were their dams not at hand to protect them, and there seems to be little doubt that about calving time, either the mother herself or others of the herd drive all the crocodiles away from the vicinity of the pool in which they happen to be lying. I noticed on two occasions on the Sabi, that when a certain deep pool, always the haunt of several crocodiles, became temporarily the resting-place of breeding hippo, the crocodiles completely disappeared, though they were subsequently found there when the other animals had departed.

The cows are, not unnaturally, inclined to be vicious when their calves are small, and it is then that they sometimes attack canoes and boats, perhaps seeing in them strange monsters having designs on their little ones. The old bulls, too, not infrequently act in a similar manner ; but probably most of the accidents which occur are due to animals, either in play, or by chance, rising beneath the boat, and so capsizing it. Except when they are wounded, hippopotami, having acted thus, seldom actually pursue human beings in the water ; nevertheless, it is no light matter to be upset in the middle of an African river, swarming, as most of them do, with crocodiles. The few hippos remaining in the pools just above the Victoria Falls have become very savage and aggressive, through continuous persecution, and accidents to boats, often with fatal results to the occupants, are not at all uncommon. Hunting hippopotami from a boat is therefore one of the most exciting sports imaginable, just as shooting at them from the shore is one of the tamest. Some of the Nilotic tribes harpoon them with a lance to which is fastened, by a long cord, a piece of the very light ambatch wood. The latter acts as a float, and indicates the exact position of the animal. The hunters then pursue it, spearing the beast every time it rises to the surface to

breathe, until at last it becomes exhausted, and sinks dying to the bottom of the river.

The hearing, sight and scent of the hippopotamus are all acute ; but, like many other wild animals, he suffers from an inextinguishable curiosity, and cannot resist putting up his head to have a momentary stare at a passing boat, a weakness which often costs the poor beast his life. His voice once heard can never be mistaken or forgotten : it consists of one deep, roaring grunt, followed by four or five shorter ones in quick succession, and is quite alarming when heard for the first time.

When lying with head partially protruding, a hippopotamus is often most persistently attended by certain large biting flies. That an animal possessing so thick a hide should have an attraction for any blood-sucking insects seems at first sight remarkable ; but probably the soft skin about the eyelids and elsewhere is easily penetrable by their long probosces.

A cross old bull hippo has curious dislikes at times, and one of his pet aversions seems to be a camp fire in his vicinity at night. Ranger Wolhuter was once encamped on a pool of the Ngwanitzi River. About 10 P.M. a well-known old hippo bull which was always found near this particular spot began loudly to voice his objection to the fires. After making a great deal of noise in the pool, he eventually landed and began to approach, grunting all the time, and displaying every symptom of rage. A horse and a number of pack donkeys were in camp, in addition to Wolhuter and his native servants, and began to show signs of considerable uneasiness. A shot or two fired over the beast's head concerned him not at all, and when he had approached within less than twenty paces, as a last resort the fires were put out. This had a magical effect, and, having

apparently in his own opinion thus duly enforced his authority as guardian of the pool, the great beast turned and went slowly grumbling away, to be seen no more that night. The camp was moved next day.

The same animal had, a little after this occurrence, a rather exciting evening with three lions. They must have been very hungry, and they caught Wolhuter's friend at some distance from the water. The noise was deafening, and all the details of the struggle could be distinctly heard at the camp, over half a mile distant. In the morning it was clearly indicated how the hippo had trudged along, until the water was reached, carrying the lions on his back, or dragging them after him as they made unavailing attempts to get their claws through his skin : he had then plunged in, and one of the lions had apparently fallen with him, to scramble out quickly, doubtless glad to escape unharmed. There were no blood marks, nor any sign of the hippo having been in any way injured ; probably indeed, except in the shock to his already none too amiable temper, he suffered little inconvenience. Of course the lions must have been hard driven before attempting to tackle so formidable a brute as a bull hippopotamus, albeit out of his natural element : one snap of his huge jaws would have sufficed to crush the biggest of them into a pulp ; but no doubt they relied on their agility, and his relative clumsiness on land, to preserve them from harm.

In following hippo paths through dense reeds or bush, some vigilance should be exercised, as there is always the chance of one of the animals being on shore : when, if suddenly startled, he will rush headlong towards the water, by the nearest path, in a manner distinctly embarrassing to any one who happens to be in the way.

A most delightful animal was " Sikabo "—the young

hippo given a few years ago by Lewanika, paramount chief of the Barotse, to Lord Selborne, and presented by him to the Transvaal Zoological Gardens. For a considerable time he used to take the air in the grounds in the wake of his native keeper, accepting in the most friendly spirit any attentions paid to him; when he grew too big to go out in this way, his races with his attendant round the edge of his tank, and his somewhat elephantine gambols in and out of the water, always formed a great attraction to the public. He once nearly paid a penalty for his friendliness when an ill-conditioned youth threw an empty soda-water bottle into his mouth. Luckily the native in attendance had the presence of mind to dart in his hand and snatch it out before the jaws closed, or the results would have been disastrous, and probably fatal. When he was being brought down the Zambezi, Sikabo used to swim behind the canoe containing his attendant. On sighting any of his own kin, he would at once seek the bank, and travel by land until well past them.

The whips made of the skin of the hippopotamus, variously known in Africa as sjamboks, kibokos, kourbashes and so on, have considerable value, especially in South Africa at the present day, when they have become rarer than of old, and this naturally puts a premium on the destruction of the species where not specially protected. The ivory had apparently at one time a greater commercial value than is the case at present.

The mention of the animal's hide reminds me of an incident said to have occurred during the South African War, when a number of troops were proceeding up country from Beira. It is related that an enterprising local gentleman, having cut a number of strips of hippo skin into six-inch sections, went round the carriages, as the

train containing the soldiers stopped at a station, and sold all his wares at a shilling each, as genuine " biltong " or dried meat ! The subsequent remarks of the troops, composed principally of Canadians and Australians, are not related : probably the enterprising trader was fortunate in being too far away to be reached.

Like the rhinoceros, this beast, though of no apparent use to man, is a survival, now confined to Africa, of an earlier era in the earth's history, and one which it would be sad to see disappear.

Another species known as the Pigmy Hippopotamus is found in West Africa, in the neighbourhood of Liberia.

CHAPTER VI

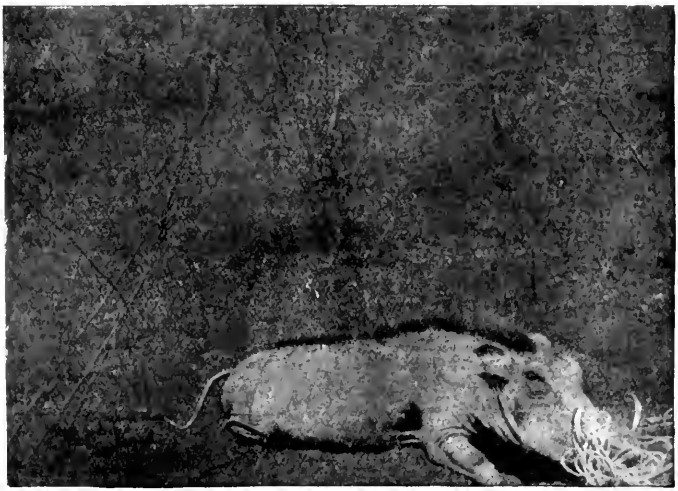
WILD PIGS

THE WARTHOG. Writers describing the warthog generally commence by enlarging upon the hideousness of his appearance. Beauty is of course a relative term, and it must be admitted that the animal in question has neither the gentle comeliness of the gazelle nor the lissom grace of the cat tribe. At the same time, to say he is repulsive in appearance is a little hard. Quaint, no doubt, and so out of the common in feature that his appearance causes surprise on first acquaintance, but why hideous ?

The species is spread all over the Ethiopian region, but is now extinct south of the Orange River. It favours lightly forested country, and is never at any great distance from water. It is generally seen in small parties, the boar and sow accompanied by the last litter ; when the latter have become about half grown the boar appears generally to desert his family, and thenceforth the

females are seen solely accompanied by their offspring, or by such of them as have survived.

The little ones are extraordinarily active almost from birth, and I recollect riding after a sounder once when the youngsters, under a week old, could move as fast as a native could run, and, but for the horses, must have



WARTHOG IN NET

escaped. There were faint indications of dark transverse stripes on some new-born animals which I once found, though they gradually disappeared within a few days. It is the only occasion on which I have ever noticed anything of the sort, and the occurrence was so entirely opposed to all previous ideas on the subject that I afterwards took the opportunity to question a number of old natives at different times and places regarding it. The general impression conveyed by their answers was that

this phenomenon is now and then, though very rarely, observed in new-born warthogs.

The habit of holding the tail erect, when on the run, is common to the young from birth, as well as to the older animals. There has been some discussion as to the position of the little tail tuft. Millais in his charming "Breath from the Veld," insists that it is pendent in a forward direction. Having taken some trouble to observe what actually occurs, the writer can confidently state that the tuft actually wobbles about like a flag, sometimes fore and sometimes aft, but when the animal is stationary with vertical tail previous to departure, the tuft is often nearly or quite perpendicular. Warthogs often lie up during the day in holes or in thick bush; in cool weather, however, they may be seen on the move at any hour. They are very fond of occupying the holes of ant-bears and porcupines, into which they retire backwards, so that care should be taken in approaching a recess believed to contain one of these animals.

Though by no means of savage disposition, the warthog possesses much of the courage of his family, and fights bravely when cornered. Lions and leopards when attacking them are believed to try always to seize them from behind, to avoid the swing of the tushes. Natives say that a leopard does not care about attacking an old boar. Dogs, to most of which the sight of a warthog is as a red rag to a bull, often suffer severely when it has been brought to bay, and, in the Game Reserve, some of our animals have been terribly cut about at different times. I remember once on the Upper Nile suddenly disturbing a female with four young ones, three of which "crouched" instead of running away, and I was much struck by the gallant way in which the sow, finding most of her family missing, turned and came back in my direction, to pause

and retreat only when all had rejoined her. I once saw a female warthog charge a big male leopard that had attacked her offspring. The cat turned tail at once, fled, closely pursued, for about thirty yards, and then sprang into a tree. From this sanctuary it growled and snarled at its adversary, but showed no disposition to descend.

The usual pace of the warthog when running away is a fast trot, the head, as well as the tail, held high; it is seldom that it breaks into a gallop, and then but for a short distance. Occasionally, solitary boars are to be seen in conjunction with antelopes or zebras, but generally feed at a little distance from the herd. Warthogs are gifted with a very keen sense of smell and acute hearing, but the eyesight appears to be rather deficient. Favouring open forest country, they eat grass and also dig for roots, though they do not turn up the soil to the same extent as bush pigs. The yam-like roots of some of the acacias appear to be sought, and the bark is sometimes stripped from the stems of the bushes. I never found that they attempted to do any damage to growing crops of any kind, and I believe them to be in every way harmless, though they are sometimes accused of egg eating. They are very silent animals, only occasionally uttering a low grunt.

The Bush Pig. The novice may easily distinguish the bush pig from the warthog, by his reddish-grey colour, the long pencilled tufts on the extremities of his ears, and the fact that, when running, both head and tail are held low. He is also a much more noisy animal, and grunts and squeals much like a domestic pig. He ranges practically all over Africa south of the Sahara, and, owing to his secretive habits, is likely to have a long life as a species.

Several varieties of the bush pig have been named; but their habits are probably nowhere greatly dissimilar.

The following notes have reference to the animal as found in South Africa.

Bush pigs lie up by day in very thick bush or other covert, so dense that a man has difficulty in forcing his way through, and has constantly to stoop, or even crawl.

BUSH PIG

During the night they leave shelter and proceed to seek their food: this consists principally of roots and wild fruits; but, like domestic pigs, they are largely omnivorous, and eggs, reptiles, insects and carrion are all devoured. They do immense damage to cultivated lands, not only eating, but wasting and destroying growing crops of all kinds. Owing to their strictly nocturnal

habits, they are exceedingly difficult to bring to book. Trapping is seldom efficacious, and sitting up for them by moonlight only occasionally effective. Sometimes in the very early morning they may be found feeding in the open, but by sunrise they are almost always back in the densest brake. They are more sociable than warthogs, and are sometimes seen in quite considerable troops. Where a few of these pigs have been feeding during the night, the ground, sometimes for half an acre, is left torn up as if by a plough, while broken bits of roots and branches are scattered in all directions, and overturned bushes and other debris complete the scene of confusion.

Bush pigs are animals of considerable courage, and charge fiercely when wounded or bayed by dogs, so that under such circumstances they must be approached with caution. They are partial to ostrich eggs, when opportunity offers, and for that and other reasons are considered as vermin in the Transvaal: not that their existence, as a species, is in the least threatened thereby, or their numbers likely even to be appreciably reduced.

THE FOREST HOG. The following notes on the habits of the giant hog were made by the writer while in East Africa recently. The very small degree of information at present to hand concerning this animal must be the excuse for offering them, as they are of the roughest character.

Giant hogs are found in the dense forests of East Africa at heights of 7000 or 8000 feet. They go about singly (probably old boars) or in parties of from eight to ten. They like to root about in much the same manner as the South African bush pig, though their excavations are still deeper. They favour the thickest jungle, in which they have regular "runs" or tunnels excavated through the dense undergrowth. These tunnels are from two to

three feet high, but the pigs can, upon occasion, squeeze under much lower places, indeed so low, that to get through a man has to make his way extended flat upon his face.

The beasts do not seem to travel in the bush far from their regular runs; consequently, when disturbed, it is generally impossible to see them, as they dash down some covered way. The tunnels open out at intervals into glades, and small places in the bush are used as wallows, as well as for rooting; four or five roadways often open into these from all sides. There is an obvious love of much wallowing in soft soil, and at frequent intervals along the streams are very large mud baths, often measuring as much as twenty feet by ten, generally in places where the overhanging banks form natural excavations. The floors of these are one sea of deep thick mud, evidently habitually used by families of pigs to roll about in, as the whole mass is always freshly trampled and is pounded into a sort of brown porridge.

The tushes are sharpened upon trees, and I saw marks on a trunk at a measured height of four feet from the ground (of course to effect this the pig may have been standing on his hind legs, with his fore ones resting against the tree). The usual pace when disturbed is a trot, but when suddenly alarmed they go headlong down the tunnels, making a very loud crashing. They utter deep grunts, much like those of an ordinary pig, though louder and more resonant.

THE WATER CHEVROTAIN. This is the only African representative of the little so-called "mouse deer." Although ruminants, there are certain structural differences which cause the family to form a distinct group. They are tiny animals standing not much more than twelve inches at the shoulder, and of a brownish colour,

profusely spotted and striped with white or yellow. They have no horns, but instead, the males are provided with large pig-like tusks in the upper jaw. They are found throughout the forest region of Central Africa, where they frequent the banks of streams, swimming and diving freely in the water.

CHAPTER VII

THE GIRAFFE

Dr. Johnson's definition of the giraffe as "an Abyssinian animal, taller than the elephant, but not so thick," requires considerable amplification at the present day, when scientists have not only divided the genus into two distinct species, but have classed the first of these into no less than ten sub-species or varieties, something after the manner adopted with the Burchell zebra. The gradation of type is manifested in the changing nature of the blotches on the skin, which vary from an irregular network of light markings imposed on a chestnut field in the northern or typical race, to the deep chocolate patches on fawn-coloured background characteristic of bulls of the Cape race. Again, while the southern types are spotted on the lower parts of the legs, this trait is entirely absent among northern animals. It is therefore clear that the causes affecting coloration have had a precisely opposite effect on the giraffe, from north to south of the continent, to that which they have exercised in the case of the Burchell zebra. That is to say, the animal has evolved from a light-coloured beast with white legs, and no very highly contrasted body marks, into one highly specialized in the matter of markings.

While the body spots have tended to become more distinct in the southern race, the horns on the other hand have tended to modify. In the Nubian form a very prominent third horn appears in front of and midway between the others, and in some eastern types there is a tendency to the formation of a five-horned race, by the appearance of excrescences behind the original horns. Although, in respect of the third horn, a very marked contrast is evident between the extreme northern and southern types, there does not appear any very even and constant gradation between them. An inspection of fourteen giraffe skulls all shot by a professional hunter within a few days' march of each other in German South-West Africa, revealed the presence of considerable variety in the horns. The forehead enlargements varied much in size in individuals, and there were, in one or two, even indications of the two additional rear horns.

The distribution of the giraffe comprised, outside the West African forest zone, nearly the whole of the Ethiopian region from the Tropic of Cancer to the Orange River and from Nigeria to Somaliland. At the present day it does not range farther south than Komati Poort (lat. 25° S.). The species has increased considerably in the Transvaal Game Reserve of recent years, and is found sparingly through Portuguese East Africa up to the Zambezi, and in the northern Kalahari, the western part of Matabeleland, and Khama's country. Thence giraffes are found wherever the nature of the country is suitable, through most of German South-West Africa, Angola, and north-western Rhodesia west of the Zambezi, Nigeria, the Congo, German and British East Africa, Somaliland, and the whole of the country generally known as the Sudan, to the west coast. They do not seem to be native to Northern Rhodesia, east of the Zambezi, Nyasaland,

and northern Moçambique. Indeed the only recorded herd is one on the Loangwa River, probably recent immigrants from the north.

Giraffes are fond of rather dry and fairly open country. They are never found in the strictly forest regions of the

GIRAFFE DRINKING

continent. They are purely browsers, and are especially fond of the leaves of certain thorn acacias, notably the kameel dorn. They are generally seen associated in troops of from three or four, up to twenty individuals, and, as with other wild animals, old males frequently wander alone. In drinking (which in a well-watered country they do regularly), giraffes straddle out their

forelegs in little short jerks, so as to get their long necks down to the water. They appear to be absolutely silent animals. Sight, scent and hearing are very acute, and their curious rolling pace, caused by the fore and hind legs of the same side being moved together, takes them over the ground at a great speed. When standing still amongst the trees they are extraordinarily difficult to distinguish, indeed the head, peering over the top, is often the first part of the animal to catch the eye.

Although the giraffe is a very defenceless and timid animal, his great size renders him, when full grown, to a large extent safe from all enemies except man. During eight years in the Transvaal Game Reserves, I met with only one authenticated instance of a giraffe having been killed by lions. This was an old solitary bull, and four or five of them took part in his death. Until protected by legislation, however, giraffes suffered dreadfully from the attacks of human hunters both European and native, for the tails were worth, amongst the east coast natives, the equivalent of one pound sterling each, and the hides were most valuable for making sjamboks, as well as the lashes of the long whips used with the ox-wagons. To this day one meets everywhere in the Sabi Bush with the old shin bones of these animals, showing how numerous they must once have been.

From a purely sporting point of view there is little in favour of shooting a giraffe ; he is so gentle that there is no excitement connected with the matter, so big that it takes no skill to hit him, and in addition he furnishes no trophy which is worth preserving. In old South African days the wasteful method of hunting the animals on horseback was, of course, intensely exciting, owing to the rough country the chase often led over, but since at the present day there is no room for such practices, the

giraffe is best left alone, the more so that, being harmless in regard to all man's works, the arguments sometimes used to advocate the destruction of other species do not apply in his case.

THE OKAPI. This remarkable animal, the nearest living relative of the giraffe, exists only in the dense forests of the Congo. Its existence was unknown to science until the beginning of the present century, but within the last few years a good many specimens have been secured. It is probably fairly numerous within its area ; but owing to the denseness of the jungle it affects, and its shy and solitary habits, is almost unapproachable by white hunters. Some description of its habits are related in the late Capt. Boyd Alexander's " From the Niger to the Nile."

CHAPTER VIII

THE BUFFALO

THE AFRICAN BUFFALO. Although there are very marked outward differences between the large Cape Buffalo and the small Congo variety, the latter—the so-called bush cow—which retains its red colour through life, is said to be but a less specialized type of its larger cousin, which, of the same reddish colour in its earlier days, becomes black when mature, and thus both are believed to form merely local varieties of the same animal. Generally speaking, the buffaloes of west and north-west Equatoria resemble the Congo form, while those of the east, north-east, and central regions are like the typical variety of the south.

The last-named portions of Africa were, until a few years ago, densely stocked with the animals wherever

AFRICAN BUFFALO

F. W. Bond, Photo.

the country was suitable ; but from 1889 onwards the rinderpest, sweeping west and south, worked dreadful havoc with the herds from Somaliland to the Cape. At the present day buffaloes are preserved in several districts of the Cape Colony, and in the Game Reserves of Zululand. In the Transvaal there are about three hundred in the Reserve, representing the natural increase from the fifteen or twenty individuals which the rinderpest spared, as well as another herd of lesser dimensions on the Sabi River, outside the sanctuary.

Until a few years ago a few buffaloes existed in the Umpeluzi Poort between Portuguese territory and Swaziland. Of these eight were shot during the war by a single individual, and in 1903 there were said to be but three left, and they too have since disappeared. In Damaraland and Southern Rhodesia some yet remain, and though the vast Pungwe herds have vanished before the combined attacks of hunters and disease, there are still considerable numbers in the more northerly parts of the province. North of the Zambezi they are found in Moçambique, and there are undoubtedly herds in parts of Portuguese Nyasaland, which was unvisited by the rinderpest, and has been hitherto little penetrated by the white sportsman. Thence buffaloes are spread through Northern Rhodesia, British Nyasaland, and German and British East Africa to Somaliland, Uganda, and the Nile. Wherever they have not been severely harassed they have increased largely since the cessation of the epidemic, and though nowhere approaching their old numbers, are yet found in herds of considerable size. On the White Nile and its eastern tributaries, they are, in some places, very numerous indeed, and in the southern part of German East Africa spots exist which sportsmen who have been there speak of as having been literally swarming two or

three years ago. In Uganda the animals have been struck off the protected list, as, owing to their reputed bad character, and the fact that the natives seldom attack them, their special preservation has been considered undesirable.*

In north-western Rhodesia, three years after the passage of the rinderpest epidemic, buffaloes were confined to one or two isolated localities. In the neighbourhood of the middle Zambezi the writer at that time saw no signs whatever of them, but the piles of bones and skulls, encountered on nearly every day's march, clearly indicated how numerous they must once have been. Places might be seen where a whole herd of as many as two hundreda nimals had died within a few acres, and probably within a few hours. The country was a veritable Golgotha. About the same time Major Gibbons encountered a few on the Kwito River, some hundreds of miles to the west, but apparently in but small numbers. In British East Africa the Athi Plains are said once to have been covered with the species, though at the present day, except in one or two isolated places, it is never met with.

Mr. Selous has probably said the last word upon the habits of this animal, so far at least as South Africa is concerned. I have noticed quite young calves in the Transvaal Game Reserve in September, and near Gondokoro on the White Nile, there were a large number of young animals, about two months old, seen in December.

The risk involved in hunting buffaloes as compared with that incurred in the chase of other dangerous animals has been much discussed by all authorities, and the

* Lately, I believe, they have been once more partially protected.—J. S. H.

conclusions vary according to the experiences of the individual. Personally I have had a good deal to do with the preserved herd in the Game Reserve, and though often walking close to, and in fact practically amongst them, never found them to betray any feeling other than curiosity. When wounded and followed up, a buffalo is of course a dangerous creature to take liberties with. He is extraordinarily tough, and probably more determined and plucky than any other wild beast except the little ratel ; so that when he does charge, the sportsman must make up his mind for a fight to a finish.

A wounded buffalo will hunt a fugitive as a terrier does a rat. Animals smarting from old wounds are as dangerous as those newly injured by the hunter himself. An instance of this occurred in the Sudan last year. A sportsman was following up an elephant, and had just fired several shots, when, hearing a couple of grunts on his right, he swung round in time to see a big bull buffalo coming straight at him through the long grass. Fortunately he retained his presence of mind, and dropped the beast with a lucky bullet from the heavy rifle he was carrying. On examination it was found to have a round lead ball lodged in one jaw, where an abscess had formed ; the tip of one horn was shot away ; and, most remarkable of all, the iron head of a spear was firmly embedded in the frontal boss of the horns. Some native attendants, who had been sent out to "spy" for the elephant, reported that the buffalo had charged and "treed" them, standing sentry underneath, until the reports of the rifle were heard, when it immediately left them and headed straight in that direction. I saw this head with the embedded spear, myself, when at Mongalla in December. How the spear got there nobody knew, but it seems likely that it had been weighted, and set in the form of

a trap, overhanging some game path, a not uncommon native device.

A charging buffalo sticks his nose straight out, so that the sweep of the horns covers his shoulders and there is very little chance of an instantaneously vital shot, the only one that will stop him when he means business. He keeps his eyes open watching his enemy, and lowers his head only at the very last moment. Buffaloes are seldom found at any great distance from water, and drink twice within twenty-four hours, usually after dark and again about sunrise. They feed during the night, and spend the hot hours of the day lying down in fairly shady places, the whole herd concentrated in a comparatively small space. The most characteristic sound of the animal is a rumbling grunt ; but when dying, a moaning bellow, two or three times repeated, is uttered, and calves seem to bleat upon occasions in the manner common to those of domestic cattle.

CHAPTER IX

ANTELOPES

Sable : Roan : Gemsbuck : The Beisa : Oryxes : The Addax

THE SABLE. If the sable antelope must take second place to the kudu in grace and beauty, there is still a fearlessness and pride in his bearing lacked by the latter, and his magnificent scimitar-like horns, together with the brilliant contrasts of rich brown, black and pure white in the coat, render him, in the opinion of many, a close rival.

At the present time the sable is found in the northern Transvaal bush country from west to east, being very numerous in the Game Reserve, but not existing south

of the Crocodile River. It further extends through Portuguese territory south of the Zambezi, and is still fairly abundant in parts of Southern Rhodesia, Western Bechuanaland, German West Africa, and Portuguese Angola. In the Batoka plateau of north-western Rhodesia the animals are celebrated for the size of their horns, and are, or were, very plentiful; thence the extension continues through north-east Rhodesia and Nyasaland. North of these territories the species becomes rarer, and the horns of dwindling size. Its most northerly range appears to be the coast belt of British East Africa, whence the trophies obtained are relatively poor.

The sable is sociable, being found in herds varying from eight or ten, up to forty or fifty individuals. He is to a great extent, though not entirely, a grass eater, and prefers thin forest country, interspersed with alternate thickets for shade, and open vleis for grazing. He is a regular drinker, and is seldom found more than a few hours from water of some kind.

The calves, like the females, are of a reddish colour and contrast strongly with the males, though females darken perceptibly with age, and old ones sometimes appear nearly of the same hue as the other sex. The bulls fight desperately, at certain seasons, and in these duels the wounds from their long sharp horns constantly prove fatal to one or other of the rivals. The male sable is, in fact, a fighter to the backbone; when wounded, and brought to bay, he usually lies down, and covering every portion of his body with lightning-like sweeps of his long horns, deals out certain death to any rash dog which may approach within their reach. Herbivorous wild animals seldom attack individuals of another species with serious intent, but a few years ago one of the rangers came upon a kudu bull newly dead, with a severe horn

SABLE COWS
(Sabi Game Reserve)

A SABLE BULL
(Sabi Game Reserve)

wound in the body. The loose sand around was so ploughed up that it was impossible to distinguish spoor, but no other kudus were seen in the vicinity, and a solitary sable bull was started out of a thicket less than a hundred yards away from the place.

In captivity sable bulls generally become exceedingly vicious and dangerous when they have reached a certain

FEEDING A SABLE CALF
(Sabi Game Reserve)

age, and it is ordinarily unsafe for a stranger to venture into an enclosure where one of these creatures is confined. Young males are usually found associated in small troops, but old bulls driven from the herds often appear to prefer complete solitude, and to disdain the society of animals of other species as a protection. Many fall victims to lions, but there have been occasions when even these terrible cats have succumbed to the sweeping thrust of the sable bull's horn.

I have never found the remains of full-grown male sable antelopes killed by any species of carnivora except lions, and, excepting for the incident personally witnessed by Mr. Selous, had never heard of even hunting dogs venturing to attack them, until quite recently one of the rangers reported having seen a pack of these creatures chasing a single sable. A native policeman said he saw two sable cows at bay to a pack of wild dogs in a pool of water. It must, I should think, be a very rare occurrence, and when, having found escape impossible, he turns on his pursuers, they must fare nearly as badly as domestic dogs.

Courageous as he is by nature, the sable is never, in a wild state, aggressive towards man ; though the Transvaal magistrate who not long since had to deal with the subject, appeared of a contrary opinion. In a case brought into court, a gentleman charged with shooting three sable antelopes (which are Royal game) without a licence, and out of season, stoutly maintained that the animals successively charged him, and that he was obliged to shoot them in order to save his life. He received the benefit of the doubt ! When alarmed they utter a succession of resonant equine snorts, which is the only sound I have ever heard them make.

The Roan. This species has a wider distribution than his cousin the sable antelope, but is seldom found in troops exceeding ten or twelve individuals.

Roan antelopes are spread over most of Africa south of the Sahara, and four sub-species are recognized. They naturally favour rather upland, rolling country, not too thickly wooded—such as, in the Transvaal, is known as middle veld—but when persecuted take readily to forest, and are then met with in the same sort of surroundings as the sable. The roan is a larger and more heavily

built animal than the sable, standing over fourteen hands at the shoulder, but his horns have not the same majestic sweep, and at a distance they even catch the eye less than the great tufted ears. He fully shares the pugnacious qualities of his relative.

The roan is a grass eater, and drinks regularly. The snort uttered when alarmed is similar to that of the sable. The young are very similar in colour and appearance to those of the latter, and though even in very early youth the face markings are slightly different, the resemblance is sufficient to indicate a common ancestor of which the sable is the more specialized descendant.

Although never found in large herds such as are characteristic of the sable, the distribution of the roan is so very much wider, and the number of small herds spread over any locality where the species is plentiful is often so numerous, that the total number in Africa is probably largely in excess of the total number of sable. Old hunters and natives say that formerly in the eastern Transvaal roan were very numerous in the middle veld, and in the semi-open country about the foot hills of the Drakensberg, while rarely encountered in the bush country proper. Continual shooting exterminated the majority of the species, and apparently drove the survivors to seek an environment not really natural to them : for in the early days of the Game Reserve they were found living in quite thick bush, which within the last six or seven years they have been gradually abandoning for the more open country under the hills, where they may now be seen in considerable numbers.

The most southerly representative of this group was the blaaubok or bluebuck, formerly existent in the Cape Colony, but exterminated by the settlers more than a hundred years ago. Five museum specimens exist in

Europe—at Paris, Vienna, Stockholm, Leyden, and Upsala.

THE GEMSBUCK. The gemsbuck is the only example of the oryx group found in South Africa, and more than one thousand five hundred miles intervene between the northernmost limit of his range, and the most southerly habitat of the next species of the genus. This is, therefore, another remarkable example of immense areas separating two species of the same genus, areas which are neither inhabited by a single representative of either at the present day, nor bear any indication of having been so within recent times.

The gemsbuck is now confined to the extreme north-west of the Cape Colony, Bechuanaland, German South-West Africa, and the southern part of Angola. He is fairly numerous in the Kalahari Desert, and maintains his security, alike from hunters and carnivora, owing to his independence of water. Like the eland, but in still greater measure, he seems to be able amply to quench his thirst from the moist tubers and roots which he smells out and unearths. He is a massive and handsome antelope, of great pugnacity and courage, and his long straight horns can be used upon occasion with considerable effect.

Gemsbuck are typical desert animals; they favour a quite open country, or one covered only with small stunted bush. Solitary bulls will often retire into dense thickets during the heat of the day. They are generally found in small troops. Mr. Selous records fifteen as the largest number he ever saw together. Gemsbuck are particularly wary and long-sighted antelopes.

THE BEISA. The beisa is geographically the next species of the oryx met with, and is divided into two varieties. These oryxes associate in much larger numbers

than is the custom of the gemsbuck, and are sometimes found in herds of as many as fifty.

THE WHITE ORYX is found to the west of the Nile, and thence across the continent nearly to the west coast. It is an essentially desert animal, and, like the gemsbuck, apparently associates in small parties.

THE ADDAX. The addax is distantly related to both the oryxes and the roan and sable antelopes. It stands about forty-two inches at the shoulder, and is of a pale sandy colour, admirably matching the desert wastes in which it lives. An inhabitant of northern Africa, it extends into the Ethiopian region as far as seven or eight degrees north of the Equator, and, living far away amid the waterless sandy desert, is therefore extremely difficult for the European to reach, and so very few have been killed by white hunters.

CHAPTER X

ANTELOPES (*continued*)

Hartebeests and their Kin : Wildebeests

THE HARTEBEEST. Hartebeests present everywhere the same general characteristics. They are large ungainly looking creatures, with long "fiddle" faces; they seem to labour in their gallop, and it is only when there is some means of practically testing their speed that it is realized at what a tremendous pace they can actually move. They are naturally rather inquisitive and stupid, being therefore easy animals to shoot when unused to being much disturbed. They are found either in open forest country or in treeless plains. Just as in past days the Cape hartebeest crowded the high veld of

South Africa in vast herds, so now the Coke hartebeest may be seen in his thousands upon the Athi Plains of British East Africa, sometimes combined in considerable troops, at others mixed impartially with gazelles and zebras. Hartebeests are essentially grass eaters, and they like to drink regularly.

THE CAPE HARTEBEEST. Once existing in immense numbers in Cape Colony ; now found in the more remote north-western districts as far as Lake Ngami, also in Bechuanaland and the north-west of the Transvaal.

LICHTENSTEIN'S HARTEBEEST. Seldom found south of the greater Sabi River, thence through Mashonaland and Portuguese East Africa to the Zambezi. North of this river the species extends through Moçambique, Portuguese and British Nyasaland, the whole of Northern Rhodesia as far west as the Zambezi valley to German East Africa, towards the north of which territory its place is taken by the next species.

COKE'S HARTEBEEST. Extends from German East Africa, through British territory as far north as Lake Rudolph, but is not found west of the longitude of Lake Naivasha.

NEUMANN'S HARTEBEEST. This is a very local species, showing resemblances both to Coke's and Jackson's hartebeests. It is found to the north-east of Lake Rudolph, and also between Lakes Nakura and Baringo in British East Africa.

THE LELWEL HARTEBEEST. The typical race of this species inhabits the Bahr-el-Ghazal, and thence exists along the west bank of the Nile, northwards. It has a dark face blaze. Another variety of this hartebeest has no face blaze, but I do not agree with some writers that the tips of the horns are always either parallel or slightly inclining inwards, having shot several specimens in which

they were inclined at a wide outward angle. This species is found all along the east bank of the White Nile as far south as Lake Albert. In the highlands of Uganda the local race is distinguished by pronounced face and body markings, which vary considerably in individuals, and, in the more pronounced cases, cause it to have some resemblance to the Cape hartebeest. Lastly the Jackson's hartebeest inhabits British East Africa north and west of Lakes Nakuru and Baringo.

SWAYNE'S HARTEBEEST is an inhabitant of Somaliland, and the north-eastern part of British East Africa.

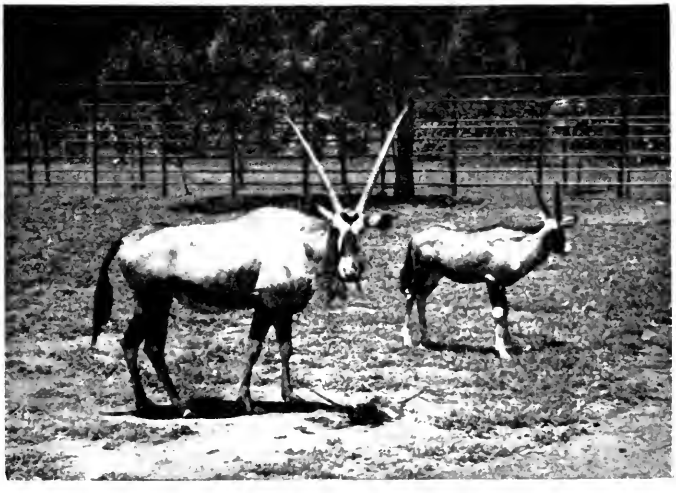
THE TORA HARTEBEEST is found in Abyssinia and the Blue Nile Valley.

THE WESTERN HARTEBEEST. This is the typical hartebeest of Senegal, Nigeria, and other parts of west equatorial Africa.

From the above it will be seen that the various races of hartebeest cover a very large portion of the Ethiopian region, and are represented by more distinct types than almost any other animal.

THE BONTEBUCK. This antelope was once spread throughout the south-west portion of Cape Colony, and was no doubt always a very local variety, being, in fact, merely a specialized type of the more widely distributed blesbuck. So closely in fact do the two animals resemble each other, that the early hunters often confused the species, though it seems pretty certain that their haunts were really widely separated. At the present day the range of the bontebuck is confined to the vicinity of Cape Agulhas, the most southern extremity of Africa, where a few hundred are carefully preserved on the farms "Nachtwacht" and "Zeekoe Vlei" owned by Messrs. Albertyn. Formerly they were the property of Messrs. Van der Byl and Van Breda, to whom belonged

BLESBUCK EWE WITH LAMB



GEMSBUCK COW WITH CALF

the credit of originally preserving the species from extinction.

THE BLESBUCK. Formerly existed in immense numbers on the plains of the north-east of Cape Colony, the Orange Free State, the Transvaal, and eastern Bechuanaland. Though reduced to a mere fraction of its ancient total, the species is in no present danger of disappearance. This is due to the fact that herds are now preserved on a great many farms in the two first mentioned Provinces of the Union; but being confined within large fenced areas, and regarded by the farmers in much the same light as sheep or cattle, they can no longer be looked on strictly as wild animals.

THE TSESSEBE or SASSABY. This is a larger animal than either of the two preceding species, attaining a shoulder height of about twelve hands, and weighing some 300 pounds. Its colour is a rich plum, with black face and points. The range of the tsessebe extends through Southern Rhodesia westwards to north of Lake Ngami, and eastwards through the north-eastern Transvaal, Gazaland, and Portuguese East Africa generally, south of the Zambezi. The Inkomati River, which is formed by the union of the Crocodile and Komati Rivers, at the Transvaal-Portuguese boundary, appears to be its southern limit. The species spreads over all country to the west of the Zambezi, across the Kwando and into Angola. East and north of the former river it appears to be much less numerous, and is said to be met with in but one place in north-east Rhodesia where, however, its horns exceed in size those of its kind from other parts of Africa. It is not found at all north of ten degrees south latitude.

Tsessebe are grass-eating antelopes, favouring rather open, and fairly flat, country; never hills or thick jungle.

They have, however, a partiality for shady patches of bush or forest, wherein they may shelter themselves during the hot hours. The troops are small, seldom, if ever, composed of more than ten individuals, and oftener family parties of from three to six only are seen. The young animals are pale chestnut in colour.

The tsessebe has the reputation of being the swiftest of all South African antelopes. Like his cousin, the hartebeest, he moves off at a lumbering canter, going "on his shoulders" and looking very awkward, but if badly scared, or pressed, he can lay himself out like a racehorse, and move at a pace which defies the efforts of the best shooting pony to rival. He is on the whole rather a confiding, slow-witted animal, often beset by a fatal curiosity. When alarmed he snorts, and when dying, almost always groans in a very characteristic manner. Single tsessebe bulls are often found attached to troops of other species, notably wildebeest and zebra. The hoof is very large for the size of the animal.

Topi, Tiang, and Korrigum, are names applied to the northern representative of the tsessebe from which it differs mainly in its more curved back and goatlike horns. It is spread from Senegambia and the interior of West Africa, through the Sudan, to the valleys of the Upper Nile and Congo, and thence to British East Africa, where it is found in great numbers locally, though large areas seem entirely avoided by it. It apparently does not range for more than a couple of degrees or so south of the Equator. In general habits it appears to be not very dissimilar from the tsessebe, though found in larger herds. The calves are very similar in colour to those of the latter, and I saw a good many not yet old enough to join the herds, near Muhoroni to the east of Lake Victoria, at the end of October.

HUNTER'S HARTEBEEST is an inhabitant of southern Somaliland, and has outwardly little in common with the other members of the group. The colour is rufous-fawn; there is a white V-shaped mark on the forehead, and the horns, which are heavily ringed, and average about twenty-five inches, resemble those of an impala rather than of a hartebeest.

THE WHITE-TAILED GNU, or BLACK WILDEBEEST. This antelope was always confined to the high upland plateaux of South Africa, from the northern part of Cape Colony to the southern part of the Transvaal. He therefore suffered the fate to which wild animals inhabiting a settled country, sooner or later, are doomed, and was exterminated throughout the greater part of his range. Fortunately, however, several farmers of the Free State, possessed of greater foresight than is usual amongst pioneers in a new country, began, many years ago, to preserve small herds upon their farms, and before the late South African War these existed in several isolated districts.

Contrary to the prevalent idea, that the war spelt the fate of the relics of the high veld fauna, it had, in fact, quite the reverse effect. It is true that a few more wildebeest, blesbuck and springbuck were killed by Boers than perhaps would have been shot under ordinary peace conditions, and that a still smaller—in fact, a quite negligible quantity—fell to the British; but such destruction as took place was more than compensated for by the breaking down of fences and farm enclosures, and the scattering and driving of the preserved herds of game all over the country, especially when the big sweeps of troops took place over the Free State towards the conclusion. The effect of this was everywhere the infusion of new blood, and the danger of deterioration, with

TSESSEBE APPROACHING WATER
(Sabi Game Reserve)

A HERD OF BLUE WILDEBEEST
(Sabi Game Reserve)

which long confinement on the same farms threatened the isolated herds, was averted. The facts that black wildebeest and other game have not for years been in so thriving a condition as they are now, and that many farmers of the Free State who had no buck on their land before, now possess herds, speak for themselves.*

The number of black wildebeest believed to exist in 1907 was considerably in excess of that before the war, and if the present enlightened opinions continue to prevail among South African landowners there is no reason to have any fear of the species becoming extinct. Certainly any such entire disappearance would be a serious calamity to the zoological world, for undoubtedly there is no more remarkable beast, either in appearance or manners, upon the whole face of the globe than the white-tailed gnu. His extraordinary antics and capers formed a constant theme for anecdote among the early pioneers and hunters, and his aspect impressed even the least imaginative of them. Even in these latter days of widely spread knowledge, he can still excite surprise when first beheld, as is evidenced by the excited " copy " sent to his paper by one of the smart young men dispatched to Portsmouth to meet a regiment returning from South Africa after the war. " A new animal," he wrote, " was brought home by these gallant fellows—the most extraordinary beast.

* Mr. R. T. Coryndon paid a visit to the farm " Kameeldoorns " (Orange Free State) in June 1911. He writes that on that and the neighbouring farm—" Langkuil "—were 1800 black wildebeest, 6000 blesbuck, and about the same number of springbuck. One morning there were, on a reserved part of " Langkuil," about 1500 wildebeest, 2000 blesbuck, and 1500 springbuck within a mile of his cart, all on bare veld, the herds mixed together, feeding and playing. " Langkuil " is the property of Mr. Jan Delpoort. On such farms it is remarkable how the bucks, at the approach of danger, at once make for the protected portion, and, having reached it, cease to display further anxiety.

It has the head and horns of a cow, the mane and tail of a horse, and the body and legs of a deer. I did not discover what it ate, but it is called ' the wild beast ' ! " Really, not a bad description.

THE BRINDLED GNU, or BLUE WILDEBEEST as its name implies, is of a slaty-blue colour with black transverse stripes,* and possesses a shaggy beard and mane. It is a much larger animal than the black wildebeest. At the present time the blue wildebeest is found along the eastern borders of the Kalahari Desert, northwards from the Molopo River, in German South-West Africa, Angola, Ngamiland, Southern Rhodesia, the Transvaal low country, Portuguese East Africa, and Amatongaland, where about three thousand were said to exist a few years ago. North of the Zambezi, it is spread all over Rhodesia and Nyasaland, and thence, through German and British East Africa, to about the latitude of the Equator, which seems to form about the northern limit of the species. The brindled gnu has, therefore, an extensive range, and is, moreover, found in very large numbers throughout a considerable portion of it.

Blue wildebeests prefer open rolling country, interspersed with thick thorn or other bush, to which they can retire for rest and shade during the day. Sometimes, however, they remain in the open, and then choose the middle of a completely bare space or plain, where they can see all round for some distance. The herd nearly always lie down to sleep and chew the cud on these occasions, one vigilant old cow remaining standing as sentry over her companions. At night, which is, of course, their principal feeding-time, they favour open patches or glades, probably as a safeguard against being stalked successfully by lions. Normally they drink

* *i.e.* down the sides, from top to bottom.

about sundown, and in the very early morning before dawn, though in cold weather sometimes as late as midday, and in going to and returning from water they always follow their own special paths. They are grass-eating animals, and their favourite feeding-grounds are often ploughed up by their hoofs, while the pasture is eaten very short. They are very partial to dry sand wallows, and these hollowed out circular rolling places are certain indications of favourite resorts of a herd.

Each troop appears to have its own well-marked feeding-ground, and is seldom found far away from it while pasture remains, except on its journeys to and from the water. One herd in particular in the Transvaal Game Reserve is always to be seen near the road about the same place, and I have watched it increase from eighteen to sixty individuals in the course of years. Any infringement of grazing rights appears to be strongly resented, and I was once witness of a most interesting episode, when the herd bull of a certain troop chased a party of invaders back on to their own ground on the other side of a small stream, returning quietly to his own party so soon as his duty was done. Not the least remarkable phase of the incident was the sense of wrong-doing exhibited by the trespassers, who displayed not the smallest tendency to offer any resistance.

Blue wildebeests are hardy and courageous animals and fight gamely when at bay. The present writer had an experience of this trait once in Barotseland, when, having foolishly walked up to one with an empty rifle and no cartridges in the belt, as it was lying wounded on the ground, it suddenly sprang to its feet, and, its eyes flashing fire, made a most determined charge. The natives with the ammunition ran for their lives, and the writer was lucky enough to be able to dodge behind a

convenient tree. The poor beast, however, could only come a few yards and then fell, spent.

When accompanied by small terriers—which, devoid of all sense of proportion, generally rush headlong at any animal they see—it is sometimes very amusing to watch, from a place of concealment, their contest with a few of these brindled gnus. As the little dogs rush in, barking as only such small canines can, the big shaggy beasts, at first taken by surprise, dash off in their own inimitable fashion; but, presently, recognizing the insignificance of the foe, they come wheeling round in a cloud of dust, and the chase is reversed. Away go the dogs, and hard on their heels come the wildebeests, vainly trying to reach them with horns and feet. Then, unsuccessful but contemptuous, they pull up and snort their disgust, only to find themselves assailed in rear; and so the play goes on, until at last the dogs, finding the matter becoming a little too serious, run in for protection, and their pursuers, suddenly catching sight of us, are off in a moment.

I have never known, in my own experience or in that of my staff, the full-grown wildebeest to be attacked by any carnivora but the lion, except on a few occasions by the little ratel, or honey badger, as has been related in Book I. Some writers have recorded onslaughts by hunting dogs, but I am of the opinion that such incidents must be rare, and undertaken only by urgent press of circumstances. I think, at any rate where less formidable species are present, full-grown blue wildebeests are safe from all carnivorous animals except the lion. Sick or wounded, they would, of course, fall a prey even to the hyæna, but when in full health and assailed by wild dogs, the adult blue wildebeest would probably act, when at bay, much as he often does with

domestic dogs—that is, he would get his hindquarters well jammed into some thorn bush, to prevent attack from behind, and keep his enemies at bay with lowered horns and stamping hoofs. Wild dogs seldom attack in front, but prefer to get their victim on the run, when, without risk to themselves, they can tear its flanks open. I once owned a big boarhound which ran in and pinned by the hock a half-grown wildebeest bull which I had wounded ; but I think, had I not come up quickly, that it would have gone hard with the dog.

When undisturbed, and calling each other, blue wildebeests utter a peculiar and resonant " kwank," which may be heard most often in the early mornings, when the herds are collecting after the night's grazing. The alarm note is a series of hoarse snorts, while the males may sometimes be heard bleating like big goats. Generally speaking, they are less habitually silent animals than are the majority of antelopes. They are sociable creatures, and are not only often found in very large herds where free from persecution, but are frequently associated with other animals, notably with Burchell's zebra, for which they have apparently so strong a friendship that the individuals of the two species are often found grazing mixed up together ; though, on the alarm being given, each draws away to the companions of his own type. Bulls are sometimes met with solitary, but more often, in South Africa, attached to herds of zebra, impala, tsessebe, or waterbuck, less frequently to sable antelope, and on the occasions when I have noticed this, the wildebeest seemed to keep at a respectful distance from his hosts.

On winding or catching sight of a man, a blue wildebeest will stand stock still, staring for a very considerable time. Then, giving his long tail a preliminary whisk, he springs round abruptly on all four feet and dashes

BLUE WILDEBEEST IN THICK BUSH

madly away—as often as not in a semicircle—for twenty or thirty yards, his tail up and his head down—the rush varied by occasional violent shies and swerves, as if he were practising the evasion of some lurking enemy. Then, with the same abruptness with which he set off, he comes to a halt, his tail swishing. A shorter stare, enlivened by a little pawing, curvetting, and many snorts, is followed by another short dash—a process repeated two or three times—when he generally makes off at a lumbering canter until out of sight. Occasionally, when tame through long immunity, wildebeests will actually follow a man, especially a mounted one—dashing up to and past him at thirty or forty yards distance. They are always, however, much bolder if they have not caught his wind.

The calves bleat much like those of domestic cattle and like those of most other hoofed animals, are concealed in bush or grass until strong enough to join the herd. One day, as my ox-wagon was nearing home, a little wildebeest, not more than a day old, jumped out of its form close by, and came running and bleating towards the stolid oxen, evidently taking one of the leaders for its mother.

As bearing on the courage and pugnacity of brindled gnu, an incident which occurred in the Game Reserve may be worth relating. One of the rangers, while riding across a wide plain which separates two streams, seven or eight miles apart, came upon the dead body of a crocodile about eight feet long. The carcass being very much decomposed, it was of course impossible to tell the actual cause of death; but the ground all around was torn and ploughed up by wildebeest, and, in the ranger's opinion, they had either surprised the reptile on one of the overland night pilgrimages, which these creatures often make

from one water to another, and stamped and gored him to death, or, supposing him to have died from some other cause, they had vented their rage on his dead carcass. It is, of course, impossible to be sure what actually did happen, but there seems no particular reason why they should not have killed him under the circumstances.

CHAPTER XI

ANTELOPES (*continued*)

The Impala

GIVEN its scientific name by the celebrated traveller and naturalist, Lichtenstein, more than a hundred years ago, and variously termed impala, pallah, and rooibok, this antelope may claim to be one of the most beautiful and graceful members of the existing African fauna. In South Africa it is sometimes referred to as "the springbuck of the low veld"; a name that is well deserved, since in its extraordinary leaping powers it certainly equals, and possibly surpasses, its high veld cousin.

Its general colour is a bright chestnut, paling to delicate fawn along the sides, and becoming pure white below; the limbs are clean and slender, and the hind legs have attached to the lower back parts of the cannon bones very distinctive brushes of dark brown hairs, surrounding a gland containing an oily secretion. On either side of the tail extends a narrow elliptical dark line, similar, except in colour, to that present in the common waterbuck. People who believe in the theory of protective coloration maintain that this, in common with the white patches under the tail, found in so many wild animals, must exist in order that individuals of the same species may recognize each other, and that,

when dashing at full speed through the bush in single file, the task of following the leader might be rendered more easy. The opponents of the theory, on the other hand, point out that smell and not sight is the sense made use of in such matters, and that in any case colours would be ineffective at night.

The average height of the males at the withers is some thirty-four inches, and their beautiful lyre-shaped horns reach, in South Africa, a length of about two feet round the curve, while in East Africa they often exceed this by six or seven inches. In Northern Rhodesia and Nyasaland, on the other hand, the heads are generally smaller than in the south. It is remarkable how this variety in size tends to occur locally amongst certain species of the game ; were it due to the influence of climate, it might be expected to affect all types in even degree ; but some East African species are seen to carry heads of lesser, and certain Rhodesian forms of greater dimensions than their South African prototypes. Local influence no doubt counts for something, for the impalas found on the stony slope of the Lebombo Hills, in the Transvaal Game Reserve, attain, in common with other species there, to a greater length of horn, and a heavier bodily weight than their brethren habitually resident in the flat bush country. Impala females are hornless, and exceed the males in number.

There is no prettier sight than a troop of impala feeding in some open glade of their favourite bush, when they fancy themselves unobserved. The rams dotted here and there amongst the preponderating numbers of the other sex, pick their way daintily along, their heads erect, their chests puffed out, and their whole bearing stamped with the sense of conscious superiority. The females, ever wary and alert for danger, glance constantly

around in the intervals of feeding; anon an electric current seems to run through the whole troop: a ewe has started at some imaginary danger, and instantly every other individual thrills in sympathy; every bright eye remains fixed; every delicate ear inclined towards the suspected quarter: a moment of suspense, and the whole herd settle down again as if nothing had occurred to cause temporary alarm.

Sometimes, during the heat of the day, a herd may be seen resting under the shade of some large tree by the river-bank. They stand about whisking their tails and biting at the flies. Suddenly the spirit of movement seizes upon them, and the rams rush round in circles playfully pursuing one another, their tails elevated or even curled over their backs, so that they present, to some extent, the appearance of reedbuck. The more sober ewes stand gravely by; life seems always to them a serious matter, and their constant watchfulness leaves no room for frivolity.

This vigilance of impalas is especially noticeable when they are drinking. During the dry months, especially towards the end of the winter, the herds congregate in the neighbourhood of such streams as are still flowing, satisfying their thirst some three times a day, and never moving far away from the banks in the intervals of drinking. It is no difficult matter for us to conceal ourselves in such a manner, and with such regard for the prevailing breeze, as to be able to study the watering of the herd at very close quarters. We then realize forcibly the dangers which constantly threaten the wild denizens of the bush, and how their existence must be conditional upon their watchfulness.

We have strolled down to the river about 9 A.M. There is so far no sign of life. The winter sun has not yet

gathered strength, and the animals are still quietly feeding within the bush. On our left, the clear river murmurs on its way, sparkling blue in the sunlight ; here and there voicing its remonstrance, and lashing itself into foamy anger, as some rocky barrier temporarily impedes its course. Bordering it lie some thirty or forty yards of yellowish-brown sand, over which the stream ran deep and strong a few months ago, when summer was with us ; the width of its former course plainly shown by the heaps of rubbish and derelict tree-trunks to be seen at intervals. Here and there shoot up patches of reeds and hardy bushes, which appear to be none the worse from having to lead an aquatic life during nearly half the year.

In front of us, and some ten feet higher than the sand, stretches the bank of the river, some fifty yards of open grass gradually sloping up to the edge of the thick thorn bush which, grim and mysterious, reaches away for many a mile to our right. Where we stand the grass is all eaten and trampled into dust by the daily passage of hundreds of impala. It is the thoroughfare to the watering-place. Following the tracks to the river's edge, we come to a little inlet of shallow water, cut off from the main stream by a bar of stones ; all around the sand is churned and trampled by dainty footmarks ; this is the drinking-place itself, chosen with the cunning of experience, for in Africa no beast may satisfy its thirst many times at a deep pool and escape the lurking demon who dwells there, and is ever on the watch for some unhappy victim. See, within ten paces stands a clump of dense reeds, rendered still more impenetrable-looking by the mass of debris washed up against the hither side of it. The very place for an ambush ; and we will temporarily supplant the leopard who has long ago discovered that it is an excellent hiding-place, whence

IMPALA ON THE MOVE
(Sabi Game Reserve)

AN IMPALA RAM IN HIS FAVOURITE SURROUNDINGS
(Sabi Game Reserve)

he can spring out upon his chosen prey. A little manipulation of the natural covert, and a convenient screen is formed, behind which, camera in hand, we may sit or crouch.

The breeze blows gently towards us from the bush. And now a large herd of impala is seen on the edge of the latter, slowly emerging and approaching the river. As they came out on the bank above us, they gradually spread out, some resting in the shade, some grazing, nibbling tender shoots, or tops of young reeds ; while a few old and experienced ewes keep a sharp look-out towards the bush which they have just left. Quite suddenly a detachment of a dozen or so walks rapidly down to drink : these will be mostly ewes and young rams whose horns have not yet attained the lyre-shaped curve of maturity. Mark how each animal stands as far back from the water as is consistent with being able to touch the surface with the extremity of the nozzle : the weight is thrown back upon the hindquarters ; every muscle is braced for an instantaneous spring. Their enemies dwell in the water as well as on dry land, and shallow as the former is at this spot, never for a moment do they take anything for granted.

Hardly have the heads been lowered than there comes a quick snort of alarm, and in the wink of an eyelid each impala is a dozen feet from the water, every sense strained to the utmost. Cautiously once more they approach, a few anxious sips, and they depart at the same rapid walk at which they came, to give place to another detachment ; and so it goes on until all have satisfied their thirst. An old ram, the patriarch of the herd, usually the last to leave, stands staring steadily backwards for a few moments before leisurely joining the remainder. Like the others of his sex, perhaps because accustomed

largely to rely upon female wit to warn him of danger, he betrays less nervousness when drinking and in the neighbourhood of the water than is the case with the ewes.

Now an old ewe has caught sight of something which alarms her, or has inhaled some whiff of tainted air; instantly she turns rigid as a statue, the very symbol of passive vigilance; the danger evidently approaches, and, expelling the air sharply through her nostrils, she gives vent to the peculiar snort distinctive of the alarmed impala, a sound pitched in a key higher and shriller than the bass of the larger antelopes. As each member of the herd gets the wind of, or sights, the cause of alarm he or she too joins in the chorus, till the air rings with sound; then suddenly by one impulse the whole herd, now bunched together, swings round, and all make off with mighty bounds, sailing over bushes, rocks and ravines, without apparent effort, to disappear into the recesses of the bush, just as a couple of natives round the corner of the path.

It has been customary to catch a few of these antelopes alive each winter, the method being to stretch a hundred yards of deer netting along the edge of the bush, and some fifty yards from the favourite drinking-place, and to leave it there until the animals have become thoroughly accustomed to its presence. On the sixth day we sally forth, accompanied by three or four native attendants, and conceal ourselves in some convenient spots in the reeds, a little beyond the trap and on either side of it. We make no sign until a sufficient number of animals are between the river and the stretched net, then on a prearranged signal the natives suddenly spring from ambush and rush forward with shouts and gesticulations. Immediately the herd dashes straight for the bush; some

recollecting or noticing in time the intervening net, dash round one corner or the other of it, but the majority see it too late for evasion, and leap for safety.

And what a sight it is! The net has a maximum height of twelve feet when drawn tight, and seldom sags down at its lowest below ten; it is held in place by stout poles, which are so firmly planted in the earth as to negative all chance of bearing down the obstacle, while it has just enough "give" in it to ensure its not being easily torn or broken. An old ewe is the first to reach the dangerous spot. She dwells in her stride just the slightest shade—there is no such thing as a pause or a "prop"—then rises gracefully, and sails clean over the whole thing in beautiful curve, alighting on the farther side light as a feather. While she is still in the air, fifteen or twenty of her companions take the fence simultaneously; close behind come others, jumping at all angles, taking off, some nearer and some farther from the net; but all displaying the most perfect grace of movement, and affording one of the most fascinating pictures it is possible to conceive.

All are over. No! one ewe, apparently shut in by her companions, jumps short, and in a moment is kicking and struggling in the meshes of the net. Demoralized by the sight, a second one, coming just behind, tries, too late, to stop and turn, but carried on by her own impetus shares the fate of the first. Last of all comes a very young ram, one of the last year's lambs; his horns yet showing no tendency to curve. He has perhaps been standing a little apart from the others, and is rushing madly to catch them up. With the blind impetuosity of youth he either does not see or totally disregards the frail-looking obstacle in front of him; at all events he never attempts to rise, but dashes straight into it. The

whole net trembles from end to end with the shock and bulges far out from the weight of the animal, which in a moment is hopelessly entangled, held by feet and horns alike.

With the exception of the three captives all are now safely over and are disappearing in the bush, still leaping and bounding high into the air, as if there were other barriers to progress to be encountered. Our enjoyment of the spectacle, generally, must not blind us to detail. Observe how, in springing, the forelegs are gathered up under and close to the body, until the moment before alighting; while the hind ones, soon after leaving the ground, are extended at full length behind, so that, while in mid air, the animal is in the form of a perfect arc, and sometimes alights in an almost perpendicular position. There is no obvious effort in the jumping of an impala, such as is noticeable in a horse's leap; he seems to float through the air with graceful undulations, entirely different from the rubber-ball-like action so characteristic of the springbuck. He is indifferent as to whether he leaves the ground from a stand, or when going at full speed, and there is always a distinct dwell between each mighty bound.

But the natives have now hurried up to the net, and are busy extricating the prisoners before their struggles shall have done them any serious harm. Once touched by human hands they seem to abandon all hope and surrender themselves completely to their fate, submitting almost without resistance to have each pair of legs, as it is extracted from the meshes, firmly strapped together. It is a bare 400 yards to the station, and three men are sufficient to carry each animal to the enclosure already prepared there. One supports each pair of legs, while on the third devolves the important task of keeping the

antelope's head elevated: a precaution, which, if neglected, results in the cud blocking up the windpipe and choking the animal to death.

We may now form some idea of the leaping powers of impalas by an investigation of the footprints round the net. As stated, the latter is nowhere much less than ten feet in height, and near the supports fully twelve, and yet, given a fair chance, not one animal so much as touched it. Some have taken off close up to it, and curved neatly over, others—probably the older rams—have risen two or three yards before coming to it and alighted far on the other side. What higher tribute to the powers of an animal which measures but eight and a half hands at the shoulder can be required, and how many trained horses of twice the height could emulate the feat?

Provided that the antelopes are released quickly from the net, this form of capture is unattended by much risk; in fact the only accidents we have had were in one or two cases of stray animals which, at various times, managed to get caught while no one was present, and thus injured themselves, and in early days, before the importance of holding up the captive's head while being carried was appreciated. Of course, all catching of wild animals must be attended by a certain waste of life, however well thought out have been the precautions to avoid it, and all that can be done is to reduce that inevitable waste to as small dimensions as possible.

By the time we reach home the three captives—two full-grown ewes and a young ram—have been released in the compound prepared for them. In deference to their jumping capacities this is enclosed by poles set close together, and of a height prohibitive even to impalas. There is room between each for the animals to

look through, and so become accustomed to the life of the station ; and, having seen that a plentiful supply of food and water has been provided, we withdraw, giving strict orders that no one is either to enter the enclosure, or to pause outside to stare at the animals. The best way to instil confidence at first is to take no notice whatever while passing and repassing. At present they are standing huddled up in one corner of the enclosure ; but on visiting them in the morning we see that they have both eaten and drunk, and each successive day finds an improvement in this respect and a larger degree of confidence.

Full-grown females, and males up to at least one year old, soon become tame in captivity, and at the end of about a couple of weeks will readily accept food from the hand through the fence. One ram of about ten months old would jump backwards and forwards over a stick held out in front of him, the height of which was gradually raised, until he would readily take the leap at the level of a man's extended arm. Old males, on the other hand, when captured, do not readily become reconciled to new conditions, and often savagely attack their companions in captivity. On the morning following the capture of a full-grown ram, it was found that he had both gored and trampled the two young males and the ewe which had been shut in with him. Once confidence in man has been established, the animals are not easily upset. We have found that after a month or two of care and attention at the station, the twelve hours' journey on a railway trolley to Komati Poort, followed by some twenty-four hours in the train to the farm or zoo for which they were designed, amidst continual bustle and noise, hardly affected the animals at all, either in appetite or condition. The boxes used for travelling on these occasions must, of course, be well padded, and so narrow

as to support the animals, and prevent their being jolted about from one side to the other. They should be like miniature horse-boxes: having a grating and a feed-trough in front.

When pursued the impala is capable of moving at a great pace, and the manner in which he gets through the densest bush without decreasing speed is wonderful, though, owing to his preference for this kind of surrounding, it is difficult to estimate what his speed would be in open country, relatively to other animals. Perhaps no antelope possesses more natural enemies, and, therefore, nature has bestowed on the species a remarkable capacity for increase, and on the individuals a rare hardiness and tenacity of life. On one occasion a ram was noticed apparently caught by the horns in a bush. When approached it made no effort to move, and examination showed that it was in a partially stunned condition from having charged into the stem of a tree when going at full speed. It was secured and carried unresisting to an empty cattle kraal, where it lay for three days alive, but never fully conscious. On the evening of the third day it died, and a post-mortem investigation revealed the fact that the top of the skull was broken into fragments, the two horns, with a little piece of bone at the base of each, being held in place merely by the skin and membranes. A blow such as this would in all probability have killed a human being on the spot. At another time a ewe was observed running with a herd, feeding, and apparently unhampered in her movements, notwithstanding that a great piece, nearly a foot square, had been torn from her side, evidently by the claws of some lion or leopard, whose spring had been just a trifle too short.

Wherever impala are at all numerous, the beasts of

prey of all kinds devote their attention in great measure to them, to the advantage of larger and rarer kinds of game. At the lambing time, the hyæna and the caracal are ready to do their share with the lion, the leopard, the chita, and the wild dog. The last named especially plays untold havoc among the new-born lambs which can make no availing effort to escape. Luckily this period is not of long continuance, and the young are soon able to take care of themselves nearly as well as their older companions. When pursued by its most inveterate foe, the hunting dog, the impala often makes for a river, and, if successful in reaching it, plunges in and swims well and strongly to the opposite bank, generally thus ensuring its escape, its cunning enemy having a very wholesome fear of crocodiles. On the other hand, the herd's habit of running in circles, round and round its favourite patch of bush, gives to its pursuers an advantage which they are not slow to make use of.

Impalas are essentially sociable, and males and females herd together during the winter months, continuing to do so up to the beginning of the lambing season. It is, therefore, during the winter that those great droves are met with, which, as the natives say, "turn the bush red." But this congregation is merely temporary, and is due to the limitation of food and pasture during the rainless months, which, combined with the drying up of the forest pools, forces the animals to collect in the neighbourhood of the permanent water. It is during the wet season that their ways can best be studied, when habits are dictated by choice, and not imposed by necessity.

In summer, therefore, impala wander far from their winter haunts, and may be met with scattered in small bands all over the country, wherever the bush is suffi-

ciently thick and their favourite herbs abundant: here an old male with his fifteen or twenty wives; there a band of half a dozen young rams. At this period the necessity of drinking often, so characteristic in the dry season, is less pressing. The long grass and herbage of all kinds is frequently soaked with rain, while at other times the heavy nightly dews keep it wet up to nearly midday. This moisture apparently largely suffices for the animals' needs, and their spoor in the neighbourhood of big forest pools is seldom evident until the last showers have fallen. During the summer each troop will be found in its own particular section of country, which it leaves only when food becomes short or the time arrives for the annual migration to the river-banks. The first rainy day of the season is a joyous one for the impala. As the heavy clouds roll up and the air becomes dense with moisture, the bush for miles resounds with the deep and continuous grunting of the rams, their song of thanks to kindly nature. At the descent of the first drop, every buck leaves the river, to be seen no more in its immediate vicinity for a period of seven months.

Clinging always more or less to the neighbourhood of dense thorn bush, to which they at once flee if surprised in the open, it is not surprising that the impala's food consists largely of leaves and shoots. Though eating grass freely, especially when it is young and tender after the early rains, he is more partial to browsing than to grazing. The staple diet is the leaves and fruit of certain acacias. Some of the latter appears to be exceedingly nourishing and fattening, and when it is in season impala will hardly look at anything else. The leaves of most of the wait-a-bit and other thorn trees also receive attention, and the softer shoots and twigs are likewise nibbled. About March the fallen apples of the marula

HERD OF IMPALA APPROACHING WATER

tree are eagerly sought and the fruit eaten away from the stone which it surrounds.

Towards the end of the dry season, in a district where impala are very numerous, it is worth while closely inspecting the bush to see how completely those species of trees, which are most favoured, are stripped of everything edible up to the extreme height which the animals are able to reach. The tops of reeds are often cropped, but probably as a dessert rather than as a substantial meal; for captured buck soon became very thin and weak when these were given in conjunction with grass only; whereas directly tree foliage and bean pods were substituted, improvement in condition became apparent. The impalas sent to the Transvaal Zoological Gardens lost a good deal of flesh at first, consequent upon the change from their natural food; but eventually their systems became adjusted to the green forage and other nourishing diet supplied, and they waxed fat and sleek. Impala lambs grow very rapidly, and within a few days are able to keep up with the older animals for at least a short distance. When at play together they form a very pretty sight, and are fond of rearing up on their hind legs after the manner of goats. When not persecuted by man, impala become fairly tame and confident, and are very easy to approach; but when accustomed to being hunted and harassed they show great suspicion and wariness.

The species now exists in the Sabi Bush in large numbers, and when the unremitting slaughter of thirty years at the hands of both white men and kaffirs, as well as the constant inroads of the carnivora, is taken into account, it is an eloquent tribute to its regenerative power that it should have attained to at least something of its former abundance. The slaughter reached its culmina-

ting-point at the time of the first construction of the Selati Railway, from 1892 to 1894, when the bush was filled with men armed with guns ; and trucks, piled high with carcasses, were almost daily dispatched down the line. Thence to the outbreak of the war, Europeans during the winter, and natives all the year round, continued to take heavy toll, and during that period itself, first Boer commandos, and later the irregular British corps established in the low country, were unremitting in their happily vain attempts to exterminate the animals. At the present time, with all shooting stopped and their natural enemies kept within proper bounds, impala are increasing in a manner truly marvellous, and spreading far beyond the limits to which they confined themselves seven or eight years ago.

CHAPTER XII

ANTELOPES (*continued*)

Springbuck and other Gazelles : Duikers

THE SPRINGBUCK. This, the most typical member of the high veld fauna of South Africa, is the only representative of the gazelle group which is found in the sub-continent. It has the peculiar face markings characteristic of all the other African species, and, as with them, the females are provided with horns ; but it is distinguished by having five, instead of six, pairs of cheek-teeth in the lower jaw, and a deep fold of skin in the middle of the hinder half of the back, lined with white hairs some six inches long. Under ordinary circumstances these hairs lie flat along the back, but at the will of the animal the flap of skin can be partially turned inside out, when the hairs stand up straight and spread out like a fan.

Once existing in immense numbers on all the high open plains of Cape Colony, the Transvaal, and the Orange Free State, the springbuck in these provinces is now seldom found except as a preserved animal on fenced farms. There are, however, a considerable number of the animals on the Springbuck Flats in the Waterberg district of the Transvaal, where Government has provided for their partial protection. The species ranges beyond the above limits through German South-West Africa and Bechuanaland as far north as Benguela. The springbuck is essentially a lover of high open tablelands, and in South Africa is never found in a bush or forest country, except sometimes in the lambing season. Its pace is considerable, and, when frightened or in play, it indulges in the remarkable leaps whence it derives its name. The animal, as it gallops, takes several successive bounds, sometimes of nearly eight feet into the air, in a manner forcibly reminiscent of an india-rubber ball : the head is held down, the body curved in an arc, and the legs kept quite stiff and close together, while the white hairs on the back are erected to their full height.

Springbucks associate in fairly large herds under normal conditions ; but when forced by lack of food or water to move from their usual haunts, these herds join together and form what is called a " trek." In former days these treks were of almost inconceivable magnitude, consisting of hundreds of thousands of individuals, and naturally the country over which they passed was denuded of every blade of grass, and for the time rendered useless for stock. Such an immense concourse of antelopes was followed by every description of carnivorous animal, which, together with wild creatures of other species, and even domestic beasts, were often seen being borne irresistibly forward in the midst of the congested throng.

When an inhabited district was passed, white men and natives turned out to the last man and killed until they had to stop from sheer exhaustion. These migrations, though less in magnitude than of yore, still occur in the north-western ranges of the species.

THE GAZELLES. Between the most northern range of the springbuck and the southern limit of the typical gazelles more than a thousand miles intervene, in which no trace of the group is now met with.

The typical races of Ethiopian gazelles are as follows :

1. Grant's Gazelle, which has an extensive range through German and British East Africa as far north as Lake Rudolph. It is a fine-looking animal, and the rams carry long and massive horns.

2. Thomson's Gazelle, found through practically the same country as the above. This is the well-known "Tommy" of British East Africa. Single rams are often found associated with the last species.

3. Speke's Gazelle, of the high plateau of Somaliland.

4. Pelzeln's Gazelle, from the lowlands of northern Somaliland.

5. Loder's Gazelle. I heard of this species as existing on the plains some distance east of Gondokoro, but did not succeed in seeing any. It ranges from the Sudan northwards into Algeria.

6. Isabelle Gazelle, from the countries bordering the Red Sea from Massowa to Suakin.

7. Heuglin's Gazelle, from Abyssinia, and the Blue Nile.

8. Red-fronted Gazelle, extends across Africa from the Blue Nile and its tributaries on the east to Senegal and Gambia on the west.

9. Sömmerring's Gazelle, ranges through Somaliland, and part of the eastern Sudan to the Abyssinian Red Sea littoral.

10. Dama Gazelle, an essentially desert species, ranging across the continent from Kordofan to Senegambia.

11. Dorcas Gazelle, extends northwards from the eastern Sudan and Nigeria.

12. Clarke's Gazelle, from central Somaliland.

13. Waller's Gazelle. The remarkable looking gerenuk, with its immensely long neck, and body markings somewhat resembling those of the impala, extends from the north of German East Africa northwards into Somaliland.

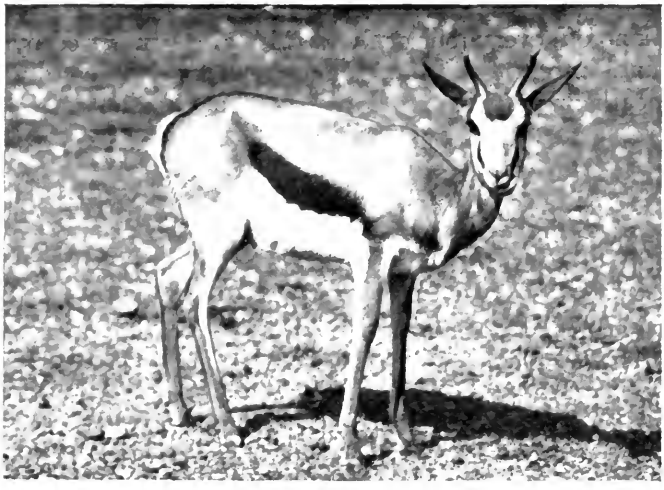
14. The Beira. This little antelope is generally classed with the gazelle group, though outwardly it is more like a klipspringer, and has habits very similar to the latter. It lives in the hills of Somaliland.

The typical gazelles are inhabitants of wide open plains or sandy desert. They mostly bear a strong family resemblance one to another, both in outward appearance and in general habits, and are to a great extent independent of water.

THE DUIKER. The common duiker is one of the most widely distributed of all African antelopes. It is numerous all over South Africa, wherever suitable country exists, even in the settled parts, and its range extends, with but slight variation in type, all through Central and East Africa to Abyssinia.

Generally speaking the females are hornless, but a certain number are nevertheless equipped in this way. Both sexes have a prominent tuft of hair on the forehead, situate between the horns in the males.

The duiker is a solitary animal and is generally met with singly, though a ram and ewe, or a female with her last lamb, are sometimes seen together. He is found in bush country, and, though often to be seen in the open spaces, never wanders very far from thick covert, to which he at once betakes himself if disturbed. When



J. W. Ewd. Photo.

SPRINGBUCK

COMMON DUIKER

making off, every four or five strides are terminated by a bound into the air, and on reaching covert he dives beneath and through the undergrowth, turning sharply at right angles the moment he is out of sight, or believes himself to be so, and continuing this zig-zag course through the bush until he is confident that he is in safety. He never pauses to look round, as do so many antelopes after having gone a little distance, and this, no doubt, is one of the reasons why he has managed to exist for so long in the close vicinity of civilized man.

While resting during the heat of the day the duiker lies down under a bush or in long grass, and on the approach of danger remains perfectly still until he fancies himself discovered, when he at once springs up and bounds away. When accustomed to be left alone, however, these animals show great confidence, and I have often passed close to individuals which rose up from concealment when I came near, stood looking at me till I had passed, and then quietly lay down again. In captivity they become extremely tame, and seldom show fear even of strange dogs, which, discomfited by the air of unconcern with which they are met, generally slink sadly away. A duiker ewe, which was the property of some of the troops stationed there during the war, used to roam all over the village of Komati Poort, quite unprotected, performing a round of calls on all the houses where she was accustomed to receive titbits. Another animal, brought up by one of the rangers, after having reached maturity, was accustomed to sally forth into the forest to seek adventures, but always was careful to return at meal-times, and when frightened or chased by any predatory beast invariably made for the camp. The " call of the wild " at length, however, proved too much for him. His periods in the bush extended and his

visits to camp became shorter, until at length he ceased to come altogether, having doubtless discovered a partner who did not share his confidence in mankind's protection.

Duikers are mainly browsers, and nibble the leaves and young shoots of various acacias, and small bush shrubs, as well as the various bush fruits and bean pods. Grass is consumed also, especially when young and fresh, but I do not think to the extent that is generally believed, as, when apparently grazing, duikers have been sometimes found actually to have been cropping little weeds and tiny sprigs of bush growing in the grass, and the tame ones I have kept at various times always preferred browsing, at least when not consuming paper, tobacco, and other like delicacies. Where water is plentiful they drink fairly often, perhaps daily, but seem, when the necessity arises, to be very well able to do without it altogether. They are deadly enemies to young growing crops, and are very clever at jumping over and crouching under the protecting fences. Of course these depredations take place at night, and are consequently difficult to guard against.

The Red Duiker. This species, which is much smaller than the last, is further easily distinguished by its foxy-red colour, and the fact of both sexes possessing horns. Like the common duiker, it is solitary in habit, and it creeps about in the densest kind of bush, seldom emerging except at night. It is a browser still more than the other, in fact it is probable that leaves and shoots, together with berries and roots, form practically all its diet. It is a regular drinker, and is seldom found far from water. Dense forest and bush, thickly wooded ravines and stream banks are its favourite haunts. Red duikers are generally found associated in pairs, and the cry or alarm note is a compromise between a whistle and a sniff.

The red duiker is distributed through most of the forest districts of Africa and though given different names in different localities, the dozen or so of types into which it has been divided display superficial varieties of colour and marking only, possibly no more than the inevitable result of wide distribution upon a small and individually local animal.

THE BLUE DUIKER. This is the smallest of South African antelopes, being little bigger than a hare. It is found in many of the forest regions of south-eastern Africa, principally near the coast, and closely allied forms are met with through the greater part of equatorial Africa. Like the red duiker, and to a still greater extent, this little animal favours the shelter of dense covert. It appears to drink regularly, and is essentially a browser.

The forest region of Central and West Africa is particularly rich in small antelopes, and one form of duiker existing from Sierra Leone to Angola, attains a shoulder height of thirty-four inches, that is to say, the size of an impala ram.

CHAPTER XIII

ANTELOPES (*continued*)

Elands : The Bongo : The Bushbuck

THE ELAND. Largest and most docile of all the antelope tribe, the eland has deserved a better fate than the extermination which has overtaken him in most of his favourite haunts. The ease with which he can be destroyed, especially by mounted hunters, and the quality of the meat which he provides, have, however, proved his death-warrant. Thus an animal not only beautiful, gentle, and harmless, but one which might have proved

a useful servant to man, had fate ordained that he should live amid enlightened and intelligent human surroundings. is in danger of disappearing from off the face of the earth at no very distant date.

It is true that in several parts of the continent, timely legislation has staved off the evil day, locally and for the time being, but elsewhere, the white hunter with his weapons of precision, and the native with his Dane gun, or Tower musket, are vying with one another to eliminate the species. In fact, the only ultimate chance of survival for the eland seems to lie in domestication, and for this he is exceptionally well fitted. In size and weight the male is the equal of the ox, in intelligence considerably its superior. He is well shaped for traction work, and a few generations of attention and regular feeding would certainly augment still further his bone and muscle. The meat is excellent, equal to the best beef, while the cows give a considerable supply of milk, which domestication might enhance. He is largely independent of water, is immune from the endemic * diseases which afflict cattle in Africa—so far as is known the only epidemic to affect him has been rinderpest—and, an equally important consideration, he can be taken with perfect impunity into tsetse fly areas.

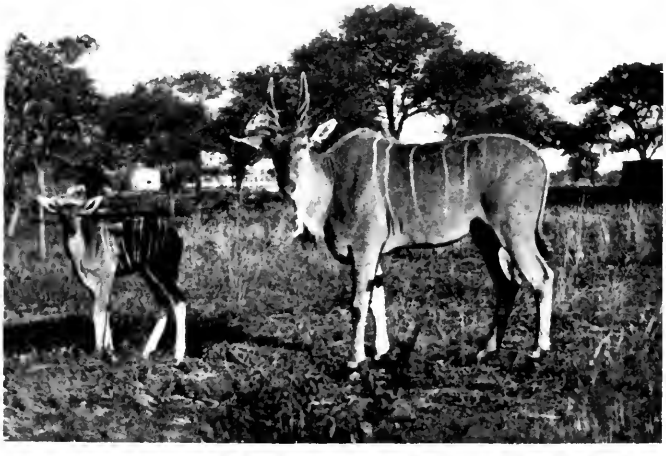
The writer has for several years kept some of these animals in a domesticated state. In the morning they go out to graze with the horses, donkeys, and cattle, and return with them at night. If left unattended to roam about the station, they show remarkable intelligence, especially where their own wants are concerned. The

* An *endemic* disease is one that is permanently established in one region or locality ; an *epidemic* is a disease that sweeps across large areas with violence, but is usually of a temporary nature, and after a time disappears entirely from a locality.

bull has a special liking for garden produce, and often will stand for hours, patiently watching the movements of the gardener from a little distance. The moment that individual temporarily turns his back, " Alfonso " dashes in, cleverly and quickly unlatches the gate with his horns, and, bearing down upon the nearest vegetable bed, pulls up and swallows all he can before he sees himself detected. On the approach of the avenger he makes off, bearing with him such spoils as he can seize, and endeavouring to swallow them as he retreats. The moment the last scrap has disappeared, he halts and calmly faces his pursuer with the most innocent expression imaginable.

From long practice " Alfonso " has learned the secret of opening most kinds of gates, and by patiently working away with his horns generally succeeds in his nefarious attempts. Should all his efforts fail, he gauges the height of the obstacle, and, if it does not exceed five feet or so, he takes a pace or two backwards, and clears the whole thing from a stand, landing with amazing lightness for an animal of his height and bulk. For his own attendant, and for people he knows, he has a wholesome respect, but is not averse from " trying it on " with strangers, especially should they happen to be native women or children carrying grain. Such persons he approaches from behind at a sharp trot, upon which they generally drop their burdens and flee in terror, while the malefactor remains to enjoy his ill-gotten spoils. Washing, hung out to dry, has been found a favourite article of diet. Newspapers are a delicacy, while tobacco, and old cigar and cigarette ends, he counts as luxuries. On one occasion I even discovered him chewing a raw-hide rope ; so that there is little that comes amiss, and it is no wonder that he remains fat whatever the condition of the veld.

BULL ELAND
(Sabi Game Reserve)



COW ELAND WITH CALF

The little weaknesses mentioned above are, however, but the result of Alfonso's early life and upbringing. Discovered standing under a tree in Portuguese East Africa, a lonely little waif of some four weeks old, he has been a spoiled child from the beginning, knowing no fear, and I regret to say, very little discipline. More timid and, perhaps for that reason, less personally attractive, his mate shows all the qualities most desirable in the domestic animal. She does not share her companion's tendencies towards exploration and experiment, even appears to view his excursions in those directions with grave wifely disapproval. In fact, she attempts neither to steal cabbages, nor to jump gates, and I am inclined to fancy that, with advancing years and increasing stoutness, Alfonso himself will eschew these youthful frolics.

To one who has had close and intimate experience of these beautiful and intelligent creatures, the spirit which has prompted and still prompts their ruthless destruction, seems little less than devilish.

Elands once abounded over the greater part of South Africa between the Cape and the Zambezi, but at the present day are represented in Natal by only a few individuals, protected among the Drakensberg Mountains on the western border. In the waterless Kalahari they may still be met with in considerable numbers, their relative independence of water enabling them to wander whither few hunters, except the wandering bushmen, can easily follow. From the Transvaal the last few disappeared shortly before the outbreak of the late war. The rinderpest had killed off most of those which had survived until its appearance, and the white and native hide and meat hunters quickly accounted for the few individuals which the epidemic had spared. Since the establishment of the Game Reserve a few have from time

to time been reported in the north, about the Portuguese border. In Southern Rhodesia a few are still found locally, but are, it is to be feared, being gradually exterminated, notably on the south-eastern border, where Portuguese natives with guns are busy amongst them, In Northern Rhodesia plenty still exist, and the same thing might have been said of many districts of Portuguese East Africa up to three or four years ago ; but the native equipped with the arms of civilization is wearing their number down with amazing rapidity in all but the most remote localities.

The species further ranges through Angola and German and British East Africa as far as the Tana River. Thence northwards it has not up to the present been met with east of the Nile, and west of that river appears in the form of another species, the Derby eland, which is distinguished by its very much larger horns and richer markings. This fine species extends from the left bank of the Bahr-el-Ghebel from Rejaf on the south to at least as far as the confluence of the Bahr-el-Ghazal on the north, and westwards across the Sudan to Senegambia, and is sometimes known as the giant eland. At present no connecting link has been met with between it and the form of the typical species found in East Africa, but thence southwards there is a fairly even gradation of type from an animal with a black back line, white body stripes, dark knee bands, and a small frontal bush, to one whole coloured with no indications of body markings, and large tufts on the forehead and face.

The white chevrons, or V-shaped markings, sometimes quoted as being distinctive of certain local varieties, seem to appear in individuals of all of them, while absent in others. An old bull eland shot near Inhambane had a pronounced white face chevron and no forehead tuft at

all ; the male from that place now in captivity at Sabi Bridge has both, the female being apparently devoid of the chevron while in her winter coat, though in summer there is a faint indication. Mr. Selous also pointed out elands in his collection, which had been killed in Rhodesia and Bechuanaland, possessing very pronounced whitish chevrons, while others had no signs of such things. Like the Burchell zebra then, the eland appears to tend to change from a rich brown-coloured and brightly striped animal in the north, to one dun-coloured and unmarked in the south part of its range, and, between the two extremities of the typical form, there are so many slightly varying local races of which the types merge so gradually into one another, and between which there are so many intermediate forms, even in the present days of local extermination, that it is difficult to find any definite dividing line. The bulls always tend to assume a bluish hue, with increasing age. Both sexes are horned.

Elands are sociable, and are, where numerous, often met with in very large herds. They are great travellers, and seem to be constantly on the move while grazing, while, during the heat of the day, they stop and rest for short periods only, when some large tree, providing a pleasant shade, is reached. They are browsers by inclination, favouring the grass only when fresh and green, and sometimes cropping the tops of young river reeds. At other times the leaves of various trees and shrubs, especially acacias, form the staple diet ; indeed, very little seems to come amiss, and domesticated specimens eat grenadilla creepers and banana leaves, which are usually deemed to be safe from stock. Of fruits, the so-called kaffir orange and the apples of the marula tree are greatly sought after in their proper seasons. Like most antelopes, and in spite of their

general outward appearance, the habits of elands are more akin to those of goats than of cattle. Where water is at hand, they drink regularly about twice a day in the dry weather, but in desert regions where the rainfall is scanty, and streams and permanent water are absent, they seem relatively independent of it.

They are generally found in rather open forest, and are seldom met with far from covert of some kind. I have often come across them in very thick mopani scrub.

Their favourite gait, when in a hurry, is a fast trot; they seldom gallop for more than quite a short distance. For such heavy animals, their leaping powers are most remarkable, and it is not an uncommon spectacle to see the members of a herd jumping over each other when making off.

Elands are silent animals. A low, rolling grunt, sometimes uttered by both sexes, is the only sound I ever heard them make; but the calves bleat like those of domestic cattle when frightened. They are very harmless and naturally gentle creatures, and can be captured and easily tamed even when quite large. Mr. Sanderson of Logogote in the north-east Transvaal, relates how, years ago, he rode down, and, with the aid of his natives, captured and secured a young bull and heifer, each of about a year old, and, though the former died from the injuries inflicted by his struggles when first roped, the latter survived, became extremely tame, and wandered in and around the farm buildings for years, until one day she was shot by some Boers passing on their way to the winter stock grazing.

At Sabi Bridge I have found the elands not very ready to mix with the full-grown cattle, though they herd freely with the calves of the latter and become very friendly with them. Consequent upon some difference of opinion

a fight once took place between a three-parts-grown ox and the young eland bull, in which the former proved no match for his adversary, who, getting his head down very low, brought his long horns up with a jerk, and cut the ox rather badly about the head and neck, speedily putting him to flight. The same success did not attend him, however, when he once became too familiar with one of the horses, and so great became thenceforth his respect for the heels of those animals that Alfonso has since begun to edge off the moment a horse appears in the distance.

The Bongo. This fine antelope extends through the forest regions of Central Africa from Sierra Leone and Liberia on the west, to the Kikuyu escarpment of British East Africa on the east. It agrees with the elands in that both sexes possess horns. Owing to its fondness for the very densest forest, very few of these animals have yet been shot by white hunters. In East Africa four only had been killed thus up to the middle of 1910; namely a female by Captain Stigand, a female and a young male by Mr. Kermit Roosevelt, and finally a full-grown male by the late Mr. George Grey of Rhodesian fame, whose widely regretted death, while lion hunting in East Africa, occurred recently. Mr. Grey told me that he got his bongo the first day out. After following the tracks for several hours he saw a patch of red through the bush at twenty-five yards distance, and, firing quickly, found that he had shot a big bull through the shoulder. In bongo hunting not only must patience, skill in following spoor, and quick accuracy, should a fleeting chance present itself, be present, but the lucky star must be temporarily in the ascendant. The forest is so dense, and the wind sometimes so treacherous, that a man may get up again and again to very close quarters only to

be at last betrayed by some errant breath of air, and hear the unseen quarry dash away through the bamboos and undergrowth.

The Wanderobo hunters, who share the Mau and Kikuyu forests in East Africa with the bongo, kill a certain number of them, sometimes by catching them in pits and snares, and sometimes by shooting them with poisoned arrows.

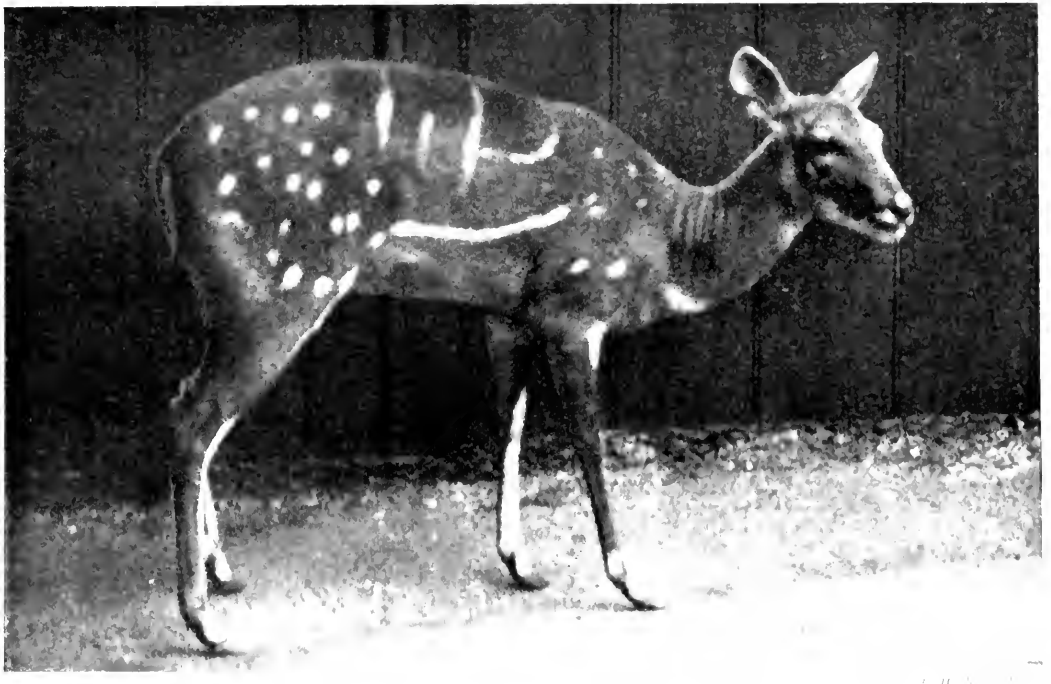
Bongos are found sometimes singly, and sometimes in family parties of three or four, or possibly more. The Wanderobo say that they usually feed up to about 9 A.M., and then lie down during the hottest part of the day. In the writer's own very limited experience, however, they were moving about throughout the day, and animals were several times approached, which, by their tracks, had been standing in deep soil among a lot of thick bamboos. They affect thick bamboo forest or jungly undergrowth, which is often much higher than a man's head, and use well-defined paths through the covert, drinking, apparently, regularly every night. Food seems to consist principally of the leaves and twigs of a certain kind of undergrowth which grows from six to eight feet in height, and the young shoots are all nipped off where bongo have been feeding. There is not much grass in the forest. A large charred stump had all the bark eaten off between three and five feet from the ground, and the dead wood scraped away. The natives say the bongo eats wood, and the stump certainly bore every appearance of having been gnawed by teeth. Bongo have all the cunning and wariness of the common bushbuck, and, for such large animals, can move through thick jungle with comparatively little noise.

THE BUSHBUCK. This is the typical species of a genus of forest dwellers, which is distinguished by the

horns, of a spiral form, being restricted to the males only, while the females are always of a very much lighter colour than the other sex, and generally possessed of white body stripes, which are not universally present in the latter.

The bushbuck, in size the smallest member of the genus, is also the most widely distributed, being found throughout Southern and Central Africa as far north as Abyssinia. Its coloration varies very greatly, according to locality, being dull and dark in the south of the continent, and tending to become lighter and more distinctively marked as the species is met with northwards. Thus in Cape Colony the male is dark brown, with a few obscure spots on his haunches, whereas, north of the Zambezi, the type extending through most of Central Africa is, in both sexes, of bright chestnut colour, with brilliant white spottings and transverse markings. In consequence of these differences, naturalists have divided the bushbucks of Africa into some fifteen local sub-species ; but they all merge so gradually into one another, and show so many intermediate forms, that it is difficult exactly to define the limits of each.

The bushbuck is a solitary animal, being found alone, or at most in pairs. The species is essentially nocturnal, lying up by day in dense bush or reed beds near water, and loving, above all, the densely wooded gullies, or kloofs, as they are called in South Africa, which run down hill-sides or clothe the banks of small tributaries of larger streams in more level country. It browses on the leaves of various small shrubs and trees, and eats grass sparingly when the latter is fresh and green ; it is also rather ardently attached to garden produce, such as beans and pumpkins—a weakness which sometimes calls down wrath upon its head. Roots and tubers form



BUSHBUCK

further articles of diet. It is noteworthy that, at the Pretoria Zoological Gardens, the grass remains long in the bushbuck enclosure only.

Both sexes utter a hoarse bark, equally as a family call and a note of warning, which may be repeated several times or expressed singly ; that of the male is the louder and harsher. The rams are exceedingly pugnacious and courageous. Hunters have many tales to tell of damage to their dogs from wounded males ; while even the formidable and experienced African hunting dog occasionally succumbs, as was evidenced by the discovery of the carcass of one with some two inches of bushbuck horn broken off in his brisket. It is sad to have to add that there was abundant evidence of the rest of the pack having finished off the plucky little antelope.

CHAPTER XIV

ANTELOPES (*continued*)

The Inyala

THE INYALA. This is one of the most local, as it is, in all probability, one of the rarest species of antelopes in Africa. Its most southerly boundary is the Ingwavuma River, in the north of Zululand, whence, to the junction of the Usutu and Pongola Rivers, there extends a dense bush in which these animals are strictly preserved by the Natal Government. North of this point they extend through Portuguese territory for some forty miles to the Umpeluzi River, and from west to east between the Lebombo Hills and the Maputa River—as the united streams of the Usutu and Pongola are named—a distance of, perhaps, thirty miles ; so that the local range is not a very extended one. Moreover, in the Portuguese

portion of the area, as was the case in Zululand until the Natal Government took the matter up, the animals have been systematically destroyed by the natives for many years. As there is a considerable demand for the horns of the males in Lourenço Marques, despite some nominal protection, which in no way affects the native hunter, it seems very probable that the next few years will see the extinction of the species in Portuguese East Africa south of Delagoa Bay.

The inyala is next met with at a point nearly 200 miles north of the Umpeluzi, in the Portuguese provinces of Gazaland and Inhambane, not far from the 24th parallel of south latitude. Here conditions are much as they are in the Maputa district, and the animals are far from being numerous. It was believed, until quite recently, that from this point there extended a gap of great extent, in fact that no more inyala existed south of the Zambezi ; but in 1908 Major Statham, quite accidentally, discovered the species on the Inyamapuzi River in Gorongoza, north of Beira, and secured some specimens. The antelope next appears across the Zambezi, in British Nyasaland, and this appears to be the most northerly point which it reaches. Probably within the next few years the inyala will have ceased to exist except at its present most northerly and most southerly limits.

In the strip of the dense bush which forms the head-quarters of the species in Zululand the animals are very numerous, and beyond it they spread on the Zululand side over an area of, perhaps, 200 square miles, at the rate of one or two to the square mile. Beyond these limits there is no tendency to stray. In spite of the fact that they are to a great extent free from the attacks of natural enemies, while poaching does not go on to any alarming extent, there has been no notable increase in

their numbers during the last six or seven years. There seems to be some likelihood, therefore, that the secret of the intense localization of the species lies in the presence of some peculiar foodstuff, limited in quantity, but necessary to the health of the individual animal, or else in something connected with soil or water. If this is not so why should inyalas in the past have been so numerous on the east side of the low Lebombo Hills, and yet, so far as can be ascertained, never have extended to the west side, where the bush is, to all appearance, similar in character, in so far as it contains the various leaves, shrubs and fruits, which certainly form the greater part of the inyala's food ?

A good deal of inquiry and personal investigation, however, has failed to reveal the precise factor which keeps these animals confined to certain particular and widely separated tracts of country and sections of bush. The food consists principally of leaves and bean pods, the fruit of the marula tree and of the " kaffir oranges," after they have become rotted and broken up through lying on the ground. Grass is also eaten when young and of good quality. All the above, however, form the food of the impala, as well as of many other kinds of antelopes, and none of them are restricted solely to inyala districts. There is that in the character of inyala bush which somehow bestows on it a strong individuality. It is not only densely thick, with tangled undergrowth, and saplings growing close together, but, in addition, has several features of its own, notably, a fleshy-looking cactus of some three feet in height, from whose leaves grow at right angles, long, straight and very sharp spines, which obtrude themselves rudely to the notice of the struggling wayfarer. There are other unfamiliar-looking plants and leaves too, so that amid them, or

in some hidden bulb or root, the secret may, perhaps, lie.

The eastern part of the twenty square miles of bush in which the inyala are most densely congregated in Zululand is occupied by, at a rough computation, some 400 of these animals, and with them are found both common and red duikers, bush pigs, and bushbucks. Whatever may be the case elsewhere, the last named are far from uncommon in this inyala bush. I saw their tracks constantly, and Mr. Lehmann, who lives at Nduma, near by, shot a fine ram close to the inyala drinking-place. The impalas, on the contrary, which occupy the western end of the stronghold, never by any chance show themselves in the inyala territory, though occasional inyalas are to be found on their side.

In appearance the inyala is rather like a glorified bushbuck, only that his markings are altogether richer, and the long fringe on throat and back gives the male a distinctive and bulky appearance. Some bulls are very much darker than others, though this is, no doubt, merely an accidental or age variation. Like common bushbuck, the inyala is often covered with lice. The horns are tipped with pale straw colour. The females are very much smaller than the males, are hornless, and differ markedly in colour, being of a bright chestnut hue, while an old bull looks dark greyish-blue. Both sexes are transversely marked with white stripes.

Inyala like plenty of water, and in the dry season, at least, drink three times a day. In the Zululand Reserve they hang about the margin of a large brackish pan, and seem to prefer its water to that of either the Usutu or Pongola Rivers. The call of this antelope is a loud, hoarse bark, but the males may sometimes be heard grunting.

A day amongst the inyala in their Reserve, where they are extremely tame and therefore lend themselves to observation, is, to the naturalist, one of the most interesting experiences imaginable. The essential point is to get up early enough to be on the ground a little before daybreak. Therefore, the opportunity of spending a few days among them having at last arrived, we overnight instruct the somewhat unreliable Umfundisi, under the alternative of various dire pains and penalties, to call us in the quite small hours.

We seem hardly to have closed our eyes when we hear the familiar fumbling at the door of the hut, and the now unwelcome voice of our retainer announcing that "the kettle is boiling." We strike a light and look at our watch. "Three o'clock," and, sunrise not being until seven, there is not the smallest necessity to be astir for two hours yet. Verily Umfundisi has, native like, "got his own back" this time. It is perfectly certain that, if we obey our present impulse to order him away and compose ourselves for another hour or two between the blankets, nothing short of an earthquake will arouse him a second time; and so we light the lamp and give various elaborate and unnecessary orders about breakfast, with the object of keeping him employed. We also instruct him to go and see that the guide is on the premises according to instructions, and has not to be extracted from his kraal a mile away.

And so the time slowly passes, and 5 A.M. sees us marching down the road in the dense darkness which precedes early cock-crow. The morning air strikes chill, and a thick coat and muffler are necessary luxuries. On each side of the wagon track the bush rises like a solid black wall, and there is at this, the stillest hour of the night, little to catch the ear but the noise of the

crickets and the occasional call of a nightjar. Suddenly with a crash so sudden as to bring us to a full stop, something dashes out of the bush and across the road close in front. It is much too dark to distinguish the nature of the animal, and an irrepressible feeling of comfort fills the mind when it is reflected that predatory beasts are practically unknown in this happy valley.

Now, from the kraals dotted about on the neighbouring hills, chanticleer takes up his task. First one cock, then another, then several together, herald the coming dawn : it is possible, in the still air, to hear them at a great distance. Presently the tiniest streak of light appears on the eastern horizon, and we hurry on faster, for it is necessary to be on the spot in good time. We have left the wagon track, and are plunging down a narrow winding path leading to the large bush and reed-bordered "pan," which is a sure early morning find for the animals.

A big shape looms up a dozen paces in front and melts silently away into the indistinct shadows. Certainly an inyala. See, here is the very place for concealment. A dense patch of covert, isolated in the midst of a perfectly open strip some eighty yards wide, which slopes easily down to the "pan," of which the grey-looking water is just beginning to be dimly visible. On our left is an impenetrable tangle of densest bush, stretching away for miles along the banks of the Usutu ; on our right it gradually thins out into more open country, the nightly feeding-ground of the animals we have come to watch. Here, where they are little molested, they will remain out in the open until some little while after sunrise, when they will slowly make their way back to the water, and, after drinking, will immerse themselves in the densest part of the forbidding tangle of thorns and creepers which they call home. With the possible exception of a midday

visit to the water, they will not move again until about half an hour before sunset, when a visit to the drinking-place is the prelude to a night spent wandering over the feeding-grounds. While standing or lying in their day shelters inyalas are extremely difficult to detect and approach, and the only chance of satisfactory observation is, as we are now doing, to catch them as they slowly make their way homewards.

It is now 6.30, and the light is quite strong. A streak or two of red appears low down in the east, and bird life, till now only perceptible in the voices of the solitary night-flyers, begins to assert itself. The bush francolins first take up the call, to be quickly joined by shrikes, warblers, and all manner of feathered denizens of the forest. A grey lourie, with his persistent "Go away, go away," swells the chorus, and the curious throbbing "hoo hoo" of a flock of ground hornbills comes from beyond the "pan." And now surely some moving form fills one of the open vistas on the right. Inyalas for certain; but, by their bright chestnut hue, females—showing themselves, as they make leisurely progress down the bush aisle, to be a cow with her last year's calf. They disappear behind some bushes, and, as they do so, first another solitary female, and then two more together, appear where the first were seen. A low grunting is heard, the guide murmurs "inkunzi," and sure enough a pair of spiral horns are seen nodding and anon disappearing behind some cover not fifty yards away. Now is the chance for a photograph, surely, and we hasten to make ready, just as an imposing form issues from the shelter of a dense thicket and stands for a moment fully revealed on the edge of the open strip.

Certainly a full-grown inyala bull is a grand-looking beast. His shaggy forehand and dewlap, and his proud

carriage, make him appear much larger than his actual shoulder measurement of about forty-four inches prove him actually to be. His long spiral horns are laid at a graceful angle with his back, as, with head slightly raised, he glances curiously but confidently around him. Suddenly, and without warning, just as we have got him, as we consider, nicely focussed, he curls his bushy tail over his back so that the white underside of it alone is visible, and canters steadily across the open, to halt only on the edge of the opposite bush, into which he presently slowly disappears. He is quickly followed by three full-grown females and the one half-grown beast we saw before, and we resume our pause of expectancy.

And now the upper edge of the sun just peeps for a moment over that far ridge, seems to hesitate for a few seconds, and then as it were, realizing that all is well, rushes up into full view. The birds redouble their chattering, and a flock of guinea-fowl, with enormous clatter, come whirring down to their feeding-grounds. Ducks and geese are busy amongst the reeds, and a couple of ha-da-das, uttering the hoarse cries whence they derive their name, are flying high overhead. The feeding inyalas realize that the time for rest has arrived, and all down as far as the "pan" they may be seen singly, in pairs, and sometimes half a dozen together browsing slowly up to the edge of the clearing, there to halt and consider, as does a man on the point of leaping into a cold bath. Then, having apparently made up their minds to take the plunge, they dash across what is evidently considered the danger-zone, their curled-up tails showing like pieces of white cotton-wool. The younger bulls seem generally to be associated in pairs, while the older ones are seen either singly or accompanied by from one to as many as six females. A good way

down the "pan," where the bush grows nearly to its edge, we can make out individuals busy drinking ere retiring for the day. It is unsatisfactory, from a photographic point of view, this determination not to pause in the open, and we venture to leave our places of concealment, perchance to seize a better opportunity.

The guide has long lost interest in the proceedings. The idea of a white man being so utterly bereft of reason as actually to take any pleasure or interest in these animals except in so far as they provide meat mystifies and disgusts him. Accordingly, as he follows behind, he takes pains to move silently and to conceal himself, only in so far as he dreads the results of doing otherwise, and, bursting into an untimely fit of coughing, startles a magnificent bull, which, having been standing behind a thicket some thirty paces distant, now dashes at full speed for the bush. As he reaches its edge he raises his nose till the long horns lie flat along his back, and, never checking or hesitating for an instant, dives into the tangle, to crouch and dodge under every obstacle with an ease and at a pace incredible till seen. In a moment he is lost to view. We attempt to follow ; but to do so successfully is quite another matter. The creepers trip us up, the branches catch in our face and knock off our hat, the long spikes of the cactus impale our limbs, while hook thorns rend our clothing at every step. For the first time we are of one way of thinking with our follower, who suggests retreat, and, the object of the day being partially attained, we wend our way back to breakfast.

Inyalas seem extremely regular in their daily movements, and on several consecutive mornings it was possible to see the same animals making their way home, by nearly the same route, and at nearly the same time. There is probably no other part of their range where

the habits of the inyala can be observed in the manner possible in the Usutu-Pongola bush.

A new species called the Mountain Inyala has recently been recorded from Gallaland.

CHAPTER XV

ANTELOPES (*continued*)

The Situtunga : Kudus

THE SITUTUNGA. The situtunga is distinguished from other members of the genus by the great elongation of the hoofs, which are admirably adapted to the semi-aquatic life led by the animal. Wherever in Africa are found extensive reed or papyrus swamps bordering the shores of lakes and large rivers, there the situtunga is likely to be found. It still exists in the swamps to the north of Lake Ngami and through the reed beds of the Kwando and upper Zambezi to Nyasaland and Tanganyika. It is probably very numerous in the Nile sudd as far north as the Bahr-el-Ghazal, and thence westwards through Uganda to the west coast territories and the Congo. Quite recently a specimen was secured in British East Africa, to the north-east of Lake Victoria. About four local races of the species are at present recognized, but general appearance and habits are everywhere similar. The females are hornless.

The situtunga is a most remarkable creature, being almost amphibious * by nature, and spending the day in the midst of the marshes, little except its nose protruding when it suspects the approach of danger. By night it comes ashore to feed, and is said to associate in pairs or in small family parties. It is a strong swimmer,

* Amphibious—able to live both on land and in water.

but, owing to the greatly elongated hoofs, finds rapid moving upon dry land a matter of some difficulty. Unless driven from its day haunts by natives in canoes, it is seldom possible to see it. Once many years ago, while marching along the banks of the Kwando River on the eastern boundary of Angola, a female stepped out of the huge swamps which border the stream along its left bank, and walked slowly up the stretch of grass separating reeds from forest. It was just after sunset, and the caravan was on the point of halting for the night. The animal seemed quite oblivious of our presence, having perhaps never before encountered human beings. Three or four of the porters, putting down their loads, gave chase, and, getting between the animal and the water, turned her into the forest, where they quickly ran her down. She moved so clumsily for an antelope that for the moment I thought she was crippled.

Until the countries north of the Zambezi were opened up a few years ago, very few white men had ever had an opportunity of securing a specimen of a situtunga to their own rifle; but then, as now, great numbers were annually killed by the natives in the big periodical hunts, when the animals were pursued in canoes and speared in the water, or else driven ashore by the burning of the dry reed beds and then run down on foot.

THE KUDU. It is no doubt a matter of individual opinion, but to many the lordly kudu bull with his massive body handsomely barred with white, his well-bred head, and his glorious spiral horns, must appear the acme of nature's efforts to attain perfection of type.

Extremely wary and timid by nature, and seeking safety in the densest forest and thorn brake, the kudu has to a great extent escaped the doom which the majestic appearance of the male, the succulent flesh of the female,

KUDU COWS
(Sabi Game Reserve)

KUDU CALF
(Sabi Game Reserve)

and the valuable qualities of the hides of both sexes would otherwise inevitably have called down upon the species. The rinderpest, however, smote him with terrible force ; in common with other members of the sub-family he was wellnigh exterminated in certain districts. Even to this day, and in areas where game is carefully preserved, the species has not yet recovered from the effects of the blow, despite its natural fertility.

At present the kudu exists in various isolated parts of the Cape Colony, in Rhodesia both south and north of the Zambezi, in Bechuanaland, German South-West Africa, the northern and eastern Transvaal, Zululand, and Portuguese Africa. Farther north it extends through Nyasaland, German and British East Africa to Somaliland and Abyssinia. Kudus are seldom encountered in the open, nor as a general rule do they stray far from water ; above all they love stony and rather broken ground, covered with thorn scrub, where it is extremely difficult to approach them unobserved, even with the wind blowing favourably. They are sociable, but the troops are seldom large.

The kudu is, more than most antelopes, a browser, subsisting chiefly on the leaves of the thorn acacias and bush shrubs, together with the fruits of the marula and other trees. He utters a bark not unlike, but louder than, that of the bushbuck, and the males, when fighting and at other times, often grunt loudly. He is an inoffensive creature, and though, when driven to bay by dogs, a bull will often make some attempt to fend them off with lowered horns, he can never be considered really dangerous, and I have seldom known cases of one male killing another in combat. Their method of progression when alarmed resembles that of the inyala and the common bushbuck ; that is to say the animal goes *under*

in preference to *over* obstacles, though when forced to do so it can jump high and well. The bushy tail is raised when the animal dashes away. Kudus are fairly local in their habits, the same troops migrating with considerable regularity each year to and from their winter and summer quarters respectively.

The females are hornless, and though very occasionally there are individuals met with having small and somewhat deformed horns, the occurrence is very rare compared with what takes place in the case of the common duiker.

THE LESSER KUDU. This species, which stands only some forty-one inches at the shoulder and weighs about 230 lbs., is restricted to Somaliland and German and British East Africa.

CHAPTER XVI

ANTELOPES (*continued*)

The Klipspringer : Oribis : Steenbucks : The Grysbuck : Sunis : Dik-Diks

THE KLIPSPRINGER. Except near its northern extremity, where the fauna is that of Europe and Asia, Africa is destitute of the wild sheep and goats typical of the hilly regions of other continents. Throughout the greater part, however, wherever there exists rocky and broken ground, be it mountain range towering to the clouds, or lonely kopje rising fifty feet above the surrounding bush, there will be found the klipspringer, truly the chamois of Ethiopia. Thanks to its habits, this charming little antelope still maintains a wide distribution, and holds its own even within the confines of South African civilization.

In such countries as provide suitable environment, almost every little outcrop of rock will be found to hold

its pair of klipspringers. In these isolated habitats two is the usual number seen together, a male and a female, or the latter with her last year's offspring. Among the larger hills and mountain ranges, however, it is not uncommon to come across quite large parties of even eight individuals collected where some unusually tempting herbage offers itself ; but the fact that on being disturbed they bound away in different directions shows that they are not truly sociable animals.

In localities where they are little disturbed, klipspringers may be seen at all times of the day resting or feeding beneath their rocky fastnesses, the shelter of which they at once seek on the approach of danger, bounding, head and neck erect, from boulder to boulder with astonishing speed and incredible agility : now momentarily balancing on one hoof, now springing, all four feet held close together, on to the top of a pinnacle of rock, of a surface area not much larger than half a crown ; and so with never a stumble or a mistake, ever upwards, until they disappear amid the stones and long grass far up the hill, later perhaps to pause and gaze back at the intruder from some well-hidden coign of vantage. Often, as the wayfarer passes beneath some towering crag, he may notice silhouetted against the skyline, hundreds of feet above his head, a compact little form, the ears inquisitively cocked, and the nose extended in his direction. As he lingers to obtain a better view, or to pull out his field-glasses, he sees the animal, by a springy and apparently effortless leap, clear some yawning chasm, and bound with an easy nonchalance up a slope which a man upon hands and knees could with difficulty tackle. Whether on the boulder-clad hill-side or on the level ground, the klipspringer progresses by a series of jerky bounds, exactly as if his legs were set upon springs ;

and, when surprised in the open, as if conscious of his deficiency in the matter of pace, he makes at once for his beloved rocks.

His food consists of small shrubs and grasses growing among the stones in and near his stronghold, to the foot of which he regularly descends at night to feed. The natural moisture of the grass and the nightly dews serve him for drink during the greater part of the year, and he is often found among hills many miles not only from any permanent water, but apparently from water of any kind. It may be that being content with very little, he finds sufficient to supply his needs during the dry season in little pools of moisture deposited by last season's rains under overhanging boulders, and in shady crevices of the rocks. Perhaps when these are quite dried up he migrates by night to some other hilly ground close to more permanent pools, and in the Transvaal Reserve individuals have once or twice been surprised lying up in the daytime in thick covert far from any rocks.

The call is a thin whistle, rather reminiscent of a child's flute, or toy trumpet, and quite distinct from that uttered by reedbuck.

There are two remarkable natural features about the klipspringer. One is the construction of the hoofs, which are nearly rectangular in shape, have a long narrow sole, and form one line with the legs. The other point is the nature of the coat, which differs in texture from that of any other African antelope, and has rather the brittle appearance and feeling characterizing that of a deer. The hair very easily breaks and comes out, and therefore the preservation of klipspringer skins is a matter demanding considerable attention. The hair makes excellent stuffing for saddle panels.

The principal enemies of the klipspringer are the

leopard and the caracal, while the young not infrequently fall victims to the larger birds of prey.

THE ORIBI. Perhaps the most graceful of all the smaller antelopes, the oribi, in slightly variant forms, is met with throughout most of Africa wherever there exists open grass country, or plains not too thickly forested. The special characteristics of the genus are the bare spots behind each ear, and the tufts of hair which are developed below the knees.

In the Transvaal, oribis are not met with in the eastern bush country, except in the very occasional instance of a wanderer on the extreme edge of it. Their home is what is generally known as middle veld, that is to say, fairly open country between 1500 and 3500 feet above sea-level. They lie close, and when put up go away in a series of long graceful bounds. They are grass feeders, and are seldom found at any great distance from water. Their call is a shrill, thin whistle. The flesh is excellent eating.

The following are the various known species of oribi :

1. The Abyssinian oribi.
2. The Gambia oribi.
3. Haggard's oribi, from British East Africa.
4. Gosling's oribi, from the Congo.
5. Cotton's oribi, from the north-east of Lake Victoria.
6. The Kenia oribi, from the Kenia district of British East Africa.
7. Peters' oribi, from Moçambique and Nyasaland, and
8. The typical form of Cape oribi, from south-central, south-east, and south Africa, which is a slightly larger animal than any of the others.

THE STEENBUCK. The steenbuck, thanks to its habits and its ability to do without water for long periods, still contrives to exist in the civilized portions of South Africa,

in spite of the unremitting efforts of natural enemies, dogs, and men to exterminate it. The species, generally distributed throughout South Africa, as far north as Nyasaland, in all open and lightly forested country, is occasionally found in fairly thick bush, but never in broken and mountainous areas. It specially favours open treeless flats, surrounded by or dotted with patches of forest. In such places the little animals may be seen slowly moving about at all times of the day, and, contrary to the custom of most wild things, they appear to stroll about feeding during all but the very hottest hours. They lie down a great deal in the open, and the shelter of a tuft of grass often serves as an adequate concealment. Often they use old ant-bear and porcupine holes as refuges during the heat of the day. They are solitary little creatures, being generally found singly, less often in pairs. Where undisturbed, they soon become extraordinarily tame and unsuspicious, and allow approach to within twenty or thirty yards; while, should the wayfarer show a disposition to pass on, they will not infrequently quietly resume their recumbent posture, only their large nervous ears appearing above the sheltering grass. Their food is grass, supplemented by young shoots, and occasional roots and tubers. They are silent animals, occasionally uttering a very slight snort as an alarm note; but they bleat piteously when seized by any carnivorous enemy. In captivity they do not thrive nearly so well as duikers, though they become equally tame and friendly.

The steenbuck shows a high specialization in having no false hoofs.

SHARPE'S STEENBUCK. The most northerly home of this species seems to be British Nyasaland, where it was discovered and recorded by Sir Alfred Sharpe. Thence it extends down through eastern Mashonaland to the

north-eastern Transvaal, where it is found all along the course of the Lebombo Hills as far as the Crocodile River at Komati Poort. It is most numerous (in the Transvaal) between the Limpopo and Letaba Rivers, and least often found in its range south of the Sabi River. It reappears in good numbers, however, in Swaziland, and is found all along the border between that country and Portuguese East Africa, on both sides of the Lebombo. It probably also occurs in northern Zululand, that is as far as the southern extremity of the Lebombo Hills.

Owing to the white hairs in its coat it is often mistaken by hunters for the grysbuck; it has, however, no false hoofs. In size it is rather less than the steenbuck. The body-hair is long and rather coarse, and of a reddish colour—much darker than the chestnut of the steenbuck. All over the body, but especially on the flanks, are a number of white hairs mingled with the red ones, giving the animal a grizzled appearance. The horns, which are present in the males only, are very short, seldom more than a couple of inches long.

It is usually found (in the Transvaal) in very thick patches of bush, on, or at the foot of, the rough stony ridges of the Lebombo Hills, and usually at no great distance from water. Often, however, it lies out on the bare ridges, among the rocks and boulders, a big stone or a tuft of grass affording it sufficient covert. Its colour almost exactly matches the red tint of the Lebombo rocks, and consequently when it chooses to lie close it is a most difficult animal to see. It feeds at night or in the very late evenings and early mornings, and, except on dull days, always lies up for the daylight hours among boulders, bush, or long grass. I think it also often goes to ground in the disused burrows of ant-bears during the day, in this way resembling the steenbuck.

In cloudy weather, especially in spring, when the grass is young and fresh, it may occasionally be observed quite late in the day feeding close to one of its refuges, moving slowly about, and frequently lying down. It never wanders freely about by day, however, like the steenbuck, and indeed appears different in nearly all its habits and in its character from that animal. Sometimes it springs up when thirty or forty yards away, but at other times almost from under your feet, in each case making off without delay at a scuttling run, which nevertheless takes it over the ground at so good a rate that it requires an uncommonly fast dog to catch a full-grown buck. Having gone thus at best pace for a considerable distance, it squats again suddenly where it finds suitable covert.

This animal never bounds like a steenbuck or a duiker. Indeed, if, as sometimes happens, a Sharpe's steenbuck and a true steenbuck are put up from the same piece of long grass, the difference in their habits cannot escape notice. The true steenbuck makes at once for the open plain, taking great bounds every few strides, its head carried *high*, and looking the picture of grace. When it has gone several hundred yards it probably pauses and scrutinizes you from behind the shelter of a bush or tuft of grass, for a moment or two, before again making off. The Sharpe steenbuck, on the other hand, its head carried *low*, scuttles straight for the rocks or the nearest big clump of bush, in which it disappears. It never, in my experience, makes the slightest pause, until it suddenly squats down in its shelter. (The steenbuck, when it thinks itself safe from pursuit, generally walks along quietly for a time, before lying down or resuming grazing.)

Sharpe's steenbuck is very solitary in habit, and even when a pair are put out of the same patch of bush, they seem generally to have been lying in different parts of it.

Bush and rocks seem to be regarded equally as natural refuges, and in following up individuals I never could discover a preference for one over the other.

Both in appearance and habits the animal is so essentially unlike the steenbuck, that were it not for the important structural difference in the matter of false hoofs, it would appear far more nearly akin to the grysbuck. In fact its usual name in the Transvaal is "grysbuck" or "grys steenbok."

THE GRYSBUCK. The range of this not very common species is confined to some of the coast and low-lying districts of the Cape Colony, its most northerly recorded home being Port St. John's in Pondoland. Writers who mention its being numerous in the eastern Transvaal have confused it with Sharpe's steenbuck. It certainly bears rather a strong superficial resemblance to the latter animal, which having been described as a distinct species only comparatively recently, renders the mistake of the ordinary hunters not very surprising.

The form of the grysbuck is stouter than that of the steenbuck. The hair is long and coarse, with a number of white hairs mixed with the red ones, giving the animal a grizzled appearance. The under parts of the body, chin, throat, and eyebrows are paler. Ears are large and dark grey in colour. There is often a dark T-shaped mark on the crown. Horns are stouter, and rather more curved forwards than those of the steenbuck. False hoofs are present, though small.

The grysbuck prefers a good deal of covert, and is generally found in rather hilly districts. It moves with its head carried low, and instead of bounding away when disturbed after the manner of the steenbuck, it seems rather to "scuttle": its pace is not very great, and it makes for the shelter of the bush when seeking safety.

LIVINGSTONE'S SUNI. The range of this graceful little creature extends from northern Zululand along the coast to the Zambesi and Nyasaland. It is not found far inland, and does not exist in the Transvaal. In Portuguese East Africa within a hundred miles of the coast it is, however, very numerous in places, especially in the Inhambane district near Coguno, and on the lower Tembe and Maputa Rivers near Delagoa Bay.

Livingstone antelopes, as they are generally termed, are found in the densest undergrowth, where it is generally impossible for a man to progress. They are excessively timid and wary, and, instead of bounding away like most small antelopes, they run under the covert, crouching and slinking, more like jackals or cats, than bucks. They are very difficult to see unless a man has had a lot of practice in picking them out amid the dense scrub. The best plan, perhaps, is to enter the forest before daylight, or late in the afternoon, and to sit down within a small shelter of branches, keeping very still and quiet, the spot selected being near to where the tracks betray the usual runs of the animals. Presently a dainty little form may be seen delicately picking its way along, pausing every few steps to look around or to feed, every sense evidently tuned to extreme alertness, the slim legs, not much thicker than a pencil, in constant and springy motion. The slightest suspicious noise and the animal simply vanishes. The eye scarcely sees him go.

They usually move about singly, or sometimes in pairs. The ordinary cry is a whistling snort, low in tone and not usually repeated. Their food consists partly of leaves and young shoots, and a very distinctive diet is a long carrot-like root of a pale flesh colour, having fibrous protrusions at the thicker end. This root is very common in all bush frequented by Livingstone antelopes, and where it is

absent, though the forest may be in all other respects apparently suitable to their requirements, they are not met with. It is probable that they pick grass in the open glades on the edge of the forest when they leave the latter at night. They are apparently quite independent of drinking, as they seldom venture far from their particular piece of forest, often situate many miles from water of any kind. Probably the roots which they eat so largely supply both food and drink.

Varieties of the genus are the Royal Antelope and Bates's Pigmy Antelope from the west coast, Harrison's Pigmy Antelope from the Congo, and the Suni from Kilimanjaro to Moçambique ; they are also found in some of the small islands near Zanzibar.

THE DIK-DIK. Dik-diks are very small antelopes with pointed and elongated noses almost completely covered with hair. The crown of the head possesses a tuft of long hairs. The tail is very short. False hoofs are present, but they are very small.

The genus extends diagonally across Africa from Abyssinia and Somaliland to Damaraland, and inhabits dry and open country. Eleven species are described in "The Game Animals of Africa," and none are much larger than a hare.

CHAPTER XVII

ANTELOPES (*continued*)

Waterbucks : The Lechwe : Cobs : Reedbucks : The Vaal or Grey Rhebuck

THE WATERBUCK. The waterbuck ranges through the more open forest country of eastern Africa from Somaliland in the north to Zululand in the south, and spreads westward to northern and southern Rhodesia, and German

South-West Africa. In the eastern Transvaal it is the most numerous of all the larger antelopes, and attains there a considerable size, both in bodily bulk and in length of horn. Towards the limit of its northern range, the trophies carried by the males are very much smaller; there being in this respect a remarkable agreement with the sable antelope.

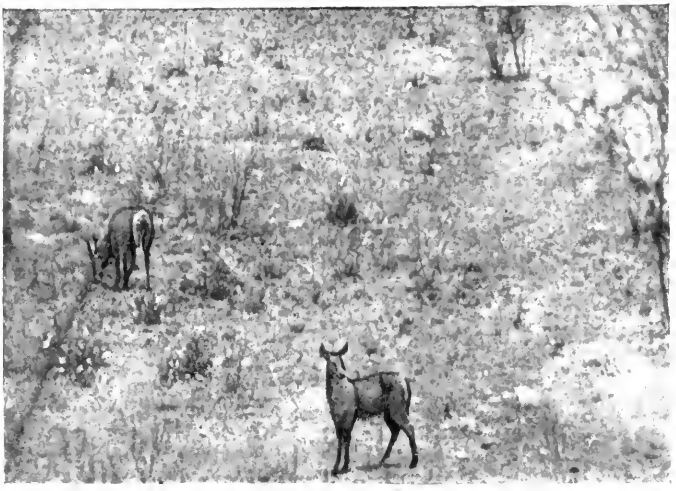
Waterbuck favour the neighbourhood of the element whence they derive their name, and are seldom found very far from the banks of large rivers, or from permanent water of some sort. They are partial to rough and broken country, stony hill-sides, and the vicinity of fairly thick bush, and are not found on the high open plateaux, When single animals are pursued, and find they cannot otherwise escape, they take to the water; I have seen individuals chased by wild dogs swim right across deep rivers; but their usual custom is to come to bay in a pool, where they stand with little but the head and neck protruding. In this position their enemies can approach by swimming only, giving the antelope a considerable superiority, of which he takes full advantage by striking with his horns and fore feet. When thus "held up" by domestic dogs, the animal's whole attention is often so concentrated on keeping them off, that it is possible to approach quite close to him.

Unlike most antelopes, which, when drinking, stand rather back from the water, waterbuck go right in, often above the knees, and take a considerable time over the process of satisfying their thirst. They generally drink from about dawn to a little after sunrise, and again rather late in the afternoon; in addition, they may possibly seek the water at some time during the night, and in hot dry weather, about midday. Opposite my station at Sabi Bridge I once saw a waterbuck bull walk quietly

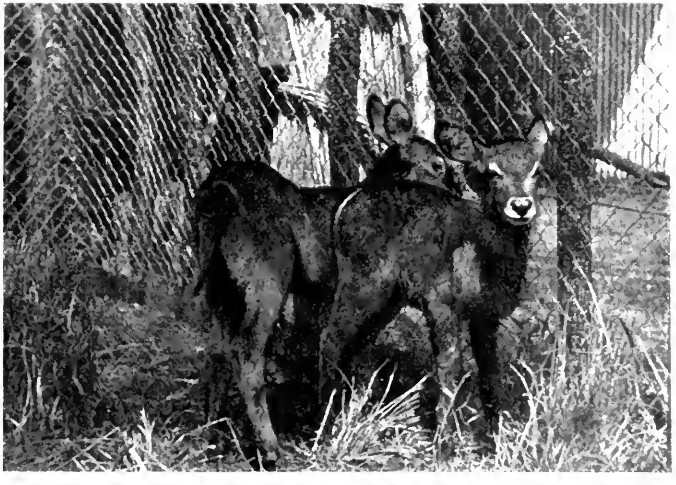
down to the river, deliberately swim across a deep and swift channel to a rock some twenty-five yards distant, where he remained looking about for some fifteen minutes, and plunge in and swim back again. Nothing, so far as could be seen, had alarmed him. On dry land, the pace of the waterbuck is relatively slow ; he prefers to trot, but when excited or alarmed breaks into a heavy gallop, not maintained for any very great distance. He can move over broken and stony country with great facility.

The waterbuck is essentially sociable. Of course, as with other wild animals, solitary bulls are not uncommon, and are seldom noticed seeking the society of members of other species ; but generally speaking four or five young males are found together, while one herd bull will be seen attended by a considerable number of females and half-grown animals of both sexes. The largest number of cows I ever saw in the Transvaal to one bull was nineteen, but in north-west Rhodesia I once counted thirty-five. During the dry season, when succulent herbage becomes restricted to the banks of the streams, it is not uncommon for two or more herds to join forces at watering and feeding times, when forty or fifty individuals may be temporarily associated. Along the Ngwanitzi River, in the Transvaal Game Reserve, where the species is especially numerous, herds numbering from eight to thirty are practically never out of sight of the traveller.

The bulls often fight obstinately. I once killed a solitary bull which was absolutely covered with horn marks, some old and some quite fresh ; there was one partially healed wound in the shoulder at least three inches deep. An old bull having one horn of normal shape, while the other grew quite straight and at an unusual angle, kept all rivals successfully at bay for several years, his malformation doubtless giving him an advan-



WATERBUCK COWS
(Sabi Game Reserve)



WATERBUCK CALVES
(Sabi Game Reserve)

tage in combat ; but at last his career of victory was cut short by a lion. Waterbuck cows are very watchful and wary, though the bulls are usually rather slow of apprehension, in my experience. The calves are at first of a reddish colour.

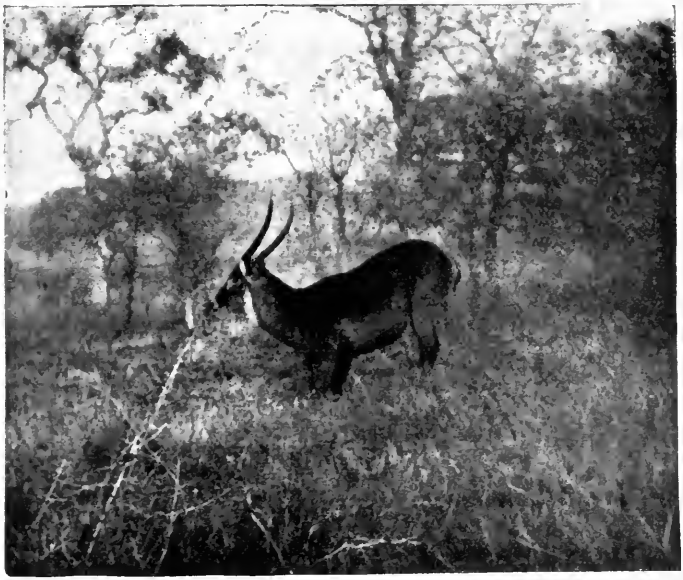
Once about the beginning of March I was riding through the bush, when a little waterbuck calf rose from the "form" where it had been left by its mother, and came trotting up to the horse. It betrayed practically no nervousness when I dismounted, and stretched out its nose to touch my extended finger. After a time the mother appeared upon the scene and trotted round and round with every appearance of anxiety for her offspring, sometimes making as if she would approach close up, when, her natural fears momentarily proving too much for her, she would spring away out of sight. When at last her errant offspring saw fit to join her, she lost no time in taking him out of the way of further adventure.

Although wild dogs, leopards and chitas hunt and kill the females, calves, and half-grown males of waterbuck, the adult bulls are seldom attacked, so far as our experience in the Reserve goes, by any natural enemies except lions. A ranger records an experience of a bull charging two chitas, which had pulled down a calf.

Natives in the eastern Transvaal have sometimes pointed out that there are two different types of waterbuck ; and no doubt some herds are uniformly darker in colour, and I think larger in size, than the majority, which appear of a sandy-grey hue. This variety seems dependent on the haunts of the animal, the waterbucks on the Lebombo Hills belonging to the former category, and most, though not all, of the flat country ones to the latter.

Waterbuck are grass feeders. The meat is rather

stringy, and it is fashionable to speak of it as uneatable. As a matter of fact the flesh of most adult male antelopes is hard and tasteless, if cast fresh into the cooking-pot and boiled to a rag by the untrained raw native who is



WATERBUCK IN ACT OF RISING

dignified by the name of "cook" in most South African hunting parties. Waterbuck meat being coarser grained than usual, suffers from this treatment in an extra degree; but if it is hung for the correct period, and cooked with some small amount of scientific attention, there is not much difference apparent between it and that of most other species. Quite a number of people, who might easily escape being mistaken for experienced epicures, think it the correct thing to express the utmost

fastidiousness in such matters. I recollect "an old hand," who was horrified at being asked to share a meal of waterbuck meat, partaking with relish several days later of a portion of the identical joint, which had in the meantime been properly cooked; doubtless if he had been told the nature of what he was eating he would not have expressed the same satisfaction.

Waterbuck are highly scented animals, and their not disagreeable odour is easily perceptible to the nostrils even at some distance, when the air hangs damp and heavy.

THE SING-SING WATERBUCK. The sing-sing is easily distinguishable from the common waterbuck in possessing a continuous white patch on the hindquarters, instead of a white ring. It is also decidedly more rufous in its general colour, and is more strongly marked. It is not found south of the Zambezi, and north of that river exists in several sub-species in Angola (Penrice's waterbuck), German and British East Africa, Nyasaland, Sierra Leone, Nigeria, Uganda, and the Upper Nile to Abyssinia. The largest recorded horns come from Toru in the north-west of the Uganda Protectorate. I think the horns of the waterbucks found north of Lake Victoria tend to be longer, slighter, and more gracefully lunated * than those of animals met with farther south.

The habits of the sing-sing appear very similar to those of the common variety.

THE LECHWE. A little smaller than the waterbuck, with the hair firmer and less coarse, the lechwe is, in general colour, a darkish chestnut, becoming white below; the hoofs are rather elongated and pointed, and the space between them quite bare. The horns are much more curved than those of the waterbuck, and the tips are inclined strongly forwards.

* Lunate—crescent-shaped.

The lechwe ranges from Lake Ngami northwards along the Kwando and the upper Zambezi and its tributaries, wherever conditions are favourable to its habits, and extends into north-east Rhodesia. In the Lake Mweru district there is a curious variety of type, the old males being almost black on the upper parts of the body and outer surfaces of the limbs.

Lechwe inhabit the great reed swamps which, consequent on the annual overflow, border the rivers in many parts of Northern Rhodesia. After situtunga, they are no doubt the most aquatic of all antelopes, and in the heat of the day may be seen standing knee, and even body deep in the middle of one of the large shallow lagoons which occur here and there amid the wastes of reeds or papyrus. They are met with in troops of considerable size, ewes and herd rams—generally several of the latter—and parties of bachelor males. When disturbed they stick their noses out straight, and the males lay their horns flat along their backs ; they then trot away and later increase the pace to a rather heavy gallop, always making for the shallow water, through which they progress by a series of bounds, swimming where it is out of their depth, and then splashing on again when their feet once more touch the bottom. At night they come ashore to graze, and may sometimes be seen in the cool of the morning feeding and lying down on the banks. Their food consists of grass and young reeds.

Mrs. Gray's Waterbuck. This animal is very much like the lechwe in form, though it differs in its much darker colour and striking markings. Some observers consider it to be merely the northern form of the latter, which perhaps has tended to lose its contrastive hues in the course of its southern progress, as indicated by the dark type found near Lake Mweru. This very handsome

antelope is found on the Bahr-el-Ghazal, among the White Nile sudd, and in other suitable parts of the southern Sudan. A few may often be seen from the steamer on the tongue of land at the junction of the Bahr-el-Ghazal and the Bahr-el-Ghebel.

The following is extracted from Mr. E. N. Buxton's account of an expedition to secure some specimens :

"As a general rule, Mrs. Gray's antelopes are hidden when standing 'um suf,' as the common reed grass is called, which covers vast expanses ; but when a herd starts running, a number of black points—the tips of horns and ears—become visible, apparently skimming over the top of the grass like a flight of swallows. . . . They have a curious gait, carrying head and neck very low, which is a part of their secretive habits. . . . The species is in no danger, as there are wide regions frequented by them, which are practically inaccessible from the river. The natives hunt them with dogs, concealing themselves in the reeds, and spear them when they rush for cover. We saw loin-cloths made of the skins of these animals worn by women. I do not think they are much preyed upon by lions or leopards, at least I saw no tracks of these animals, and it is obvious that the antelopes could not be easily approached by them when they are standing, as is their wont, in shallow water. The peculiar colour of the old males—nearly black, with a large white patch on the withers—is only attained by a small percentage of the herd. At a later stage, in a more open place, I had a good sight of a large herd ; I counted seventy, and, as far as I could make out, there were not more than three or four black males accompanying them, the remainder, whether male or female, being fawn coloured."

THE PUKU. General colour, a rich orange-yellow ; a small tuft of black hairs marks the opening of the

WATERBUCK BAYED BY DOGS

WATERBUCK BAYED BY DOGS

glands beneath the eyes, the ears have black tips ; horns are stout, with a slight forward and outward curve at the base, and with the tips directed forwards, strongly ringed for the greater part of their length.

The puku stands a couple of inches or so less at the shoulder than the lechwe (about thirty-nine inches), and is of stout build. It extends from the Zambezi through Northern Rhodesia as far as Lake Mweru.

It is less aquatic in habit than the lechwe,and approaches in this respect rather to the waterbuck, being found close to, but not in, the water. Where numerous, the species is found congregated in large herds, and a dozen years ago they were to be seen in great numbers on the swampy plains bordering the Kafue River in north-west Rhodesia.

THE UGANDA COB. This is a local variety of the typical Buffon's Cob, and its range extends from the southern shores of Lake Victoria through Uganda. It is found associated in very large herds, and in appearance and size approaches rather closely to the puku.

Uganda cobs are fond of open rather swampy plains in the neighbourhood of rivers or permanent water. I found them in great numbers near Kabulamuliro in Uganda, in a spot where, the swamp grass having been burned, the young shoots were coming up fresh and green. They were very unsuspicious animals and allowed approach to sixty or seventy yards, without any necessity whatever for concealment. When they did make off, it was only for a distance of a hundred yards or so, when they would stop and recommence feeding. The rams seemed to like climbing on to the top of the numerous large ant-heaps which studded the plain, whence they could have a good view of the surrounding country. A herd was very often accompanied by a single bohor reedbuck, which, grazing slightly apart, always appeared very much more on the

alert than the cobs, and was always the first to set the example of departure.

The typical race ranges through Western Africa north of the Equator, and eastwards through the Sudan.

VAUGHAN'S COB. Apparently intermediate between the Uganda cob and the white-eared cob, is found to the west of the Upper Nile.

THE WHITE-EARED COB. Is found along the various branches of the Upper Nile, between Bôr and the Sobat.

THE REEDBUCKS. These animals are in some respects not unlike the cobs, but are generally of smaller size and have very bushy and short tails, they also have glandular and naked spots on the side of the head below the ears.

THE COMMON REEDBUCK. This antelope is still found somewhat sparingly in the Cape Colony. It is common in the lowlands of Natal and Zululand, the Transvaal bush country, Ngamiland, German South-West Africa, Rhodesia, both north and south of the Zambezi, to Angola on the west and Nyasaland and Moçambique on the east. Lately the species has been discovered to exist so far north as the southern Sudan.

Reedbuck favour what are known in South Africa as "vleis," that is to say, grassy or reedy valleys near streams or permanent water of some kind; occasionally they are met with in thin bush. Although partial to the close proximity of water, they appear to avoid entering it, nor have I ever seen or heard of them taking to it when pursued, as do waterbuck and impala. They associate in family parties of three or four, and solitary rams are often seen. Their pace is not great, and they are cursed with an inquisitiveness which often proves fatal to them. When frightened they move off with a rocking-horse action, the quarters thrown high with every stride, and the bushy tail erected fanwise over the rump.

The alarm signal and general call of the animal is a shrill and distinctive whistle. When camping near their haunts this note will be heard all through the hours of darkness, and is one of the most typical of African night sounds. When not used to being disturbed the reedbuck become extraordinarily confiding; often I have passed ewes lying down at close quarters, which did not even take the trouble to get up, and others of both sexes, suddenly startled from sleep, will stand staring in astonishment, the idea of danger apparently not occurring to them. Their food consists entirely of grass, so far as I have noticed.

Undoubtedly, the shooting season in the Transvaal, when prolonged into August, interferes greatly with the breeding of reedbuck, and causes many young lambs, through the death of their mothers, to perish of starvation, or fall victims to the smaller carnivora. The rams fight fiercely at times, and a good many of the combats have fatal results.

Reedbuck show a remarkable partiality for the neighbourhood of human habitations, and at night are sad depredators of growing crops and garden produce, unless efficient means are taken to keep them out—a precaution not popular with the natives of Africa. Several albino, that is pure white reedbucks, have been seen at various times in the Sabi Game Reserve. When captured full-grown, reedbuck are difficult to tame, being quite unlike impala in this respect.

I have always considered the meat excellent, though some epicures appear to take exception to it.

THE MOUNTAIN REEDBUCK. This species is generally referred to in South Africa by its Dutch name of rooi rhebok. It is spread through the eastern part of Cape Colony, Natal, Zululand, Swaziland, Orange Free State, the Transvaal, and Bechuanaland, and appears in East

Africa as a separate sub-species known as Chanler's mountain reedbuck, and in Abyssinia under the name of the Shoan mountain reedbuck.

Rooi rhebok favour the lower slopes of hills where there are many rocks and loose stones, mingled with plenty of scattered bush and long grass. They are very wary animals, and partly on that account, and partly because of the noise necessarily made in moving over the stony ground when approaching them, they are difficult to get near. When disturbed they usually run round and round the hill a short way below the top, stopping in the open valleys and necks between adjoining features, to see if they are still pursued. They seldom move more than three or four hundred yards before pulling up to look back. The ears are so long and slender, and the horns so short, that, except for their smaller size, the females, in the absence of a pair of field-glasses, might easily be mistaken for males at a distance. They are found in parties of sometimes as many as eight individuals. Their method of moving is similar to that of the common reedbuck and their fanlike tails are spread over the back in the same way. Their call is a shrill whistle scarcely distinguishable from that of their cousin.

Rooi rhebok are grass eaters. After dark they come off the hills and feed down towards the nearest water, near which they remain during the night, getting back to the rough ground before dawn. They drink once or twice during the night, according to the state of the atmosphere ; so far as we have been able to observe their habits in the Reserve, when the weather is hot and dry they do so on first getting down to the water, and again just before leaving its neighbourhood. When looking for these animals it is useful to remember that it is the sides, and not the tops of the hills, which they affect.

THE BOHOR REEDBUCK. The bohor reedbuck, in several local races, is spread over western and northern Africa from Gambia to Abyssinia, including the Sudan, Uganda and East Africa. In the Nile race the horns take a great outward spread, which gives them a very distinctive appearance.

These reedbucks are generally met with in family parties, and the single males have a way of attaching themselves to the herds of Uganda cob, which affect the same country, namely, open vleis and bush or swamp land. They like the neighbourhood of water, and seem to be on the move until pretty late in the day. Their action in moving off is much less pronounced than that of typical reedbuck, and the head appears to be held straight out and low ; the bushy tail is spread, however, in the manner characteristic of the other species. They are altogether seemingly more alert and active animals than the latter, and the pace at which they move is considerable.

THE GREY or VAAL RHEBUCK. This animal has woolly fur, a large bare nose, and no gland patches under the ears, such as have members of the preceding genus. The horns are nearly vertical, ringed, and straight, in fact, except for their greater size, much like those of the steenbuck.

The rhebuck is found only south of the Zambezi River, and is restricted mainly to the great mountain ranges and their immediate neighbourhood. Its existence north of the Limpopo does not seem to be well authenticated.

Unlike the mountain reedbuck, this species is generally found on the flat tops of the table mountains which are so common in South Africa, as well as on the higher levels of the ranges. It goes in small parties, and when making off, the rocking-horse action is very pronounced, the hind-

quarters being flung high into the air at each stride and the tail spread out fanwise over the back. The alarm note is a sharp cough. Rhebuck are grass feeders, and descend at night to drink after the manner of the mountain reedbuck.

APPENDIX

ETHIOPIAN UNGULATE MAMMALS

Class *MAMMALIA*

Order UNGULATA (hoofed mammals)

Sub-order *ARTIODACTYLA* (even-toed ungulates)

Division PECORA (ruminants of above Sub-order)

Family BOVIDÆ (hollow-horned ruminants)

Subfamily *Bubalinæ*

GENUS	SPECIES	ENGLISH NAME
Bubalis	*boselaphus*	Bubal Hartebeest
,,	*major*	Western Hartebeest
,,	*tora*	Tora Hartebeest
,,	*swaynei*	Swayne's Hartebeest
,,	*cokei*	Coke's Hartebeest
,,	*caama*	Cape Hartebeest
,,	*lelwel*	Lelwel Hartebeest.
,,	*neumanni*	Neumann's Hartebeest
,,	*lichtensteini*	Lichtenstein's Hartebeest
Damaliscus	*hunteri*	Hunter's Hartebeest
,,	*corrigum*	Topi or Tiang
,,	*pygargus*	Bontebuck
,,	*albifrons*	Blesbuck
,,	*lunatus*	Tsessebe
Connochætes	*gnu*	Black Wildebeest
,,	*taurinus*	Blue Wildebeest
,,	,, *albojubatus*	White-bearded Wildebeest

Subfamily *Cephalophinæ*

GENUS	SPECIES	ENGLISH NAME
Cephalophus	*grimmi*	Duiker
,,	*coronatus*	Crowned Duiker
,,	*sylvicultor*	Yellow-backed Duiker
,,	*coxi*	Rhodesian Yellow-backed Duiker
,,	*ituriensis*	Ituri Yellow-backed Duiker
,,	*jentinki*	Jentink's Duiker
,,	*spadix*	Abbott's Duiker
,,	*natalensis*	Red Duiker
,,	*centralis*	Ituri Red Duiker
,,	*nigrifons*	Black-faced Duiker
,,	*claudi*	Alexander's Duiker
,,	*rubidus*	Ruddy Duiker
,,	*weynsi*	Weyn's Duiker
,,	*johnstoni*	Johnston's Duiker
,,	*ignifer*	Isaac's Duiker
,,	*harveyi*	Harvey's Duiker
,,	*robertsi*	Robert's Duiker
,,	*leopoldi*	Leopold's Duiker
,,	*leucogaster*	White-bellied Duiker
,,	*dorsalis*	Bay Duiker
,,	*custaneus*	Chestnut Duiker
,,	*leucochilus*	White-lipped Duiker
,,	*ogilbyi*	Ogilby's Duiker
,,	*brookei*	Brooke's Duiker
,,	*callipygus*	Peter's Duiker
,,	*rufilatus*	Red-flanked Duiker
,,	*doriæ*	Banded Duiker
,,	*walkeri*	Walker's Duiker
,,	*leucoprosopus*	White-faced Duiker
,,	*niger*	Black Duiker
,,	*maxwelli*	Maxwell's Duiker
,,	*melanorheus*	Black-rumped Duiker
,,	*æquatorialis*	Uganda Duiker
,,	*monticola*	Blue Duiker

GENUS	SPECIES	ENGLISH NAME
Cephalophus	*nyasæ*	Nyasa Blue Duiker
,,	*hecki*	Heck's Duiker
,,	*lugens*	Urori Duiker
,,	*emini*	Emin's Duiker

Subfamily *Neotraginæ*

Oreotragus	*oreotragus*	Klipspringer
Ourebia	*scoparia*	Oribi
,,	*hastata*	Peter's Oribi
,,	*nigricaudata*	Gambian Oribi
,,	*montana*	Abyssinian Oribi
,,	*kenyæ*	Kenia Oribi
,,	*haggardi*	Haggard's Oribi
,,	*goslingi*	Gosling's Oribi
,,	*cottoni*	Cotton's Oribi
Raphicerus	*campestris*	Steenbuck
,,	*sharpei*	Sharpe's Steenbuck
Nototragus	*melanotis*	Grysbuck
Nesotragus	*pygmæus*	Royal Antelope
,,	*batesi*	Bates' Pigmy Antelope
,,	*harrisoni*	Harrison's Pigmy Antelope
,,	*moschatus*	Suni
,,	*livingstonianus*	Livingstone's Antelope
,,	*zuluensis*	Southern Livingstone's Antelope
Madoqua	*saltiana*	Salt's Dik-dik
,,	*phillipsi*	Phillip's Dik-dik
,,	*hararensis*	Harar Dik-dik
,,	*erlangeri*	Erlanger's Dik-dik
,,	*damarensis*	Damara Dik-dik
,,	*kirki*	Kirk's Dik-dik
,,	*thomasi*	Thomas's Dik-dik
,,	*cavendishi*	Cavendish's Dik-dik
,,	*guntheri*	Gunther's Dik-dik
,,	*nassoguttata*	White-spotted Dik-dik

Subfamily *Cervicaprinæ*

GENUS	SPECIES	ENGLISH NAME
Kobus	*ellipsiprymnus*	Waterbuck
,,	*defassa*	Sing-sing Waterbuck
,,	*maria*	Mrs. Gray's Waterbuck
,,	*leucotis*	White-eared Cob
,,	*vaughani*	Vaughan's Cob
,,	*coba*	Buffon's Cob
,,	*nigricans*	Dusky Cob
,,	*vardoni*	Puku
,,	*leche*	Lechwe
,,	*smithermani*	Black Lechwe
Cervicapra	*arundinum*	Reedbuck
,,	*fulvorufula*	Mountain Reedbuck (Rooi Rhebok)
,,	*redunca*	Bohor Reedbuck
Pelea	*capreolus*	Grey or Vaal Rhebuck

Subfamily *Antilopinæ*

Æpyceros	*melampus*	Impala
,,	*petersi*	Angola Impala
Antidorcas	*euchore*	Springbuck
Gazella	*dorcas*	Dorcas Gazelle
,,	*spekei*	Speke's Gazelle
,,	*pelzelni*	Pelzeln's Gazelle
,,	*leptoceros*	Loder's Gazelle
,,	*isabella*	Isabelle Gazelle
,,	*tilonura*	Heuglin's Gazelle
,,	*rufifrons*	Red-fronted Gazelle.
,,	*thomsoni*	Thomson's Gazelle
,,	*granti*	Grant's Gazelle
,,	*soemmerringi*	Sömmerring's Gazelle
,,	*dama*	Dama Gazelle
Ammadorcas	*clarkei*	Clarke's Gazelle
Lithocranius	*walleri*	Waller's Gazelle
Dorcotragus	*megalotis*	Beira

Subfamily *Hippotraginæ*

GENUS	SPECIES	ENGLISH NAME
Hippotragus	*equinus*	Roan Antleope
,,	*niger*	Sable Antelope
Oryx	*gazella*	Gemsbuck
,,	*beisa*	Beisa
,,	,, *callotis*	Fringe-eared Oryx
,,	*leucoryx*	White Oryx
Addax	*nasomaculatus*	Addax

Subfamily *Tragelaphinæ*

Tragelaphus	*scriptus*	Bushbuck
,,	*angasi*	Inyala
,,	*buxtoni*	Mountain Inyala
,,	*spekei*	Situtunga
Strepsiceros	*strepsiceros*	Kudu
,,	*imberbis*	Lesser Kudu
Boöcercus	*euryceros*	Bongo
Taurotragus	*oryx*	Eland
,,	*derbianus*	Lord Derby's Eland

Subtamily *Bovinæ*

Bos	*caffer*	African Buffalo

Subfamily *Caprinæ*

Ovis	*lervia*	African Wild Sheep
Capra	*nubiana*	Nubian Ibex
,,	*vali*	Abyssinian Ibex

Family GIRAFFIDÆ

Giraffa	*capensis*	Southern Giraffe
,,	*reticulata*	Somaliland Giraffe
Ocapia	*johnstoni*	Okapi

Division TRAGULINA

Family TRAGULIDÆ

Doreatherium aquaticum	Water Chevrotain

Division SUINA (non-ruminants)

Family HIPPOPOTAMIDÆ

GENUS	SPECIES	ENGLISH NAME
Hippopotamus	*amphibius*	Hippopotamus
,,	*liberiensis*	Pigmy Hippopotamus

Family SUIDÆ

Potamochœrus	*chœropotamus*	Bush Pig
,,	*hassama*	Abyssinian Bush Pig
,,	*porcus*	Red River Hog
Hylochœrus	*meinertzhageni*	Forest Hog
Phacochœrus	*æthiopicus*	Wart Hog

Suborder *PERISSODACTYLA* (odd-toed ungulates)

Family EQUIDÆ

Equus	*asinus*	African Wild Ass
,,	*zebra*	Mountain Zebra
,,	*burchelli*	Burchell's Zebra
,,	*grevyi*	Grevy's Zebra

Family RHINOCEROTIDÆ

Rhinoceros	*simus*	White Rhinoceros
,,	*bicornis*	Black Rhinoceros

Sub-order *HYRACOIDEA*

Family PROCAVIDÆ

Procavia	*capensis*	Rock Rabbit
,,	*arborea*	Tree Dassie
,,	*brucei*	Bruce's Dassie

(South African species only given)

Sub-order *PROBOSCIDEA*

Elephas	*africanus*	African Elephant

PRINTED AT
THE BALLANTYNE PRESS
LONDON

UNIVERSITY OF CALIFORNIA LIBRARY

Los Angeles

This book is DUE on the last date stamped below.

RECD UD-URL

UD DEC 16 1970
URL

DEC 22 1970

UD
URL REC'D NOV 8 '71

OCT 2 [illegible]

Form L9–Series 4939

SK-251.- S848A-1917--2----

UC SOUTHERN REGIONAL LIBRARY FACILITY
A 001 149 835 9

PLEASE DO NOT REMOVE
THIS BOOK CARD

THE LIBRARY OF THE UNIVERSITY OF CALIFORNIA LOS ANGELES

University Research Library

CALL NUMBER
SER
VOL
PT
CI

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33