nished with a clearer and fuller exposition of the fauna of Equatorial and Central Africa.

In the middle of the last century, English naturalists, in conjunction with others in France, Germany and Portugal, and, later on, Italy, formulated the division of Africa into four sub-regions, in respect of its land-vertebrate fauna. There was firstly North Africa, north of the Tropic of Capricorn, which runs through the northern Saharan Desert. This northern region appertained to the great Holarctic division of Europe, Northern and Central Asia. From the middle of the Sahara, southward to the course of the Zambezi and Kunene rivers, was a huge sub-region, which, though it might be further subdivided into a Desert tract on the north, an Abyssinian province, a Senegal, Upper Niger, and East African provinces, remained pretty uniform in its reptiles, birds and mammals. With this, however, the Trans-zambezian sub-region was pretty near akin. Finally, there remained the Forest sub-region, chiefly of Western Africa, which in the east began with the western shores of Lake Tanganyika and extended across the Congo Basin to the Atlantic, and further on crossed the Lower Niger and continued through forested West Africa to the vicinity of the Gambia river, where it terminated.

A much-increased knowledge of the African fauna attained during the last twenty-five years, by the researches of men like Dr. Cuthbert Christy, T. Alexander Barns, George Grenfell, Emile Torday, S. P. Verner, G. L. Bates, Walter Doggett, Auguste Chevalier and numerous Frenchmen and Belgians, has somewhat modified and disturbed our conclusions regarding the distribution of African mammals, and (to a lesser degree) of birds, reptiles, amphibia, and fresh-water fish. There is a close approximation in peculiar forms of these classes between Equatorial East Africa—east of the main stream of the Nile and north of the Rufiji—and Trans-zambezian South Africa.

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North-zambezian Africa, including Nyasaland and Moçambique, *lacks* many forms like the giraffe, the Oryx antelopes, gazelles, the Chita hunting leopard, striped hyena, black-backed jackal, small foxes, the Otocyon "fox"—an aberrant dog with four molar teeth—the ostrich, secretary bird, divers vultures, weaver-birds, and waxbills; which are found in the region *north* of the Rufiji and *east* of Tanganyika, and again in Trans-zambezian Africa and Southern Angola.

Then, again, many East African antelopes and tragelaphs, *all* forms of ass or zebra, of rhinoceros, and many bird types are *absent* from West and West-central Africa lying to the north of the Forest belt, from the Bahr-al-Ghazal, Lake Chad, Northern Nigeria and Senegal. The "black" rhinoceros with a pointed upper lip is said to extend its range from Nile-land to the limits of eastern Northern Nigeria, but not to the *westward* of the Niger. If—with its two horns—it is to be identified with the Greek term "monoceros," which is by no means certain, Roman accounts of nineteen hundred years ago have indicated the presence of many rhinoceroses in Kanem or Bornu which have since died out. But the Latin describer of the Roman plunge into the Central Sahara beyond Fezzan in 17–19 A.C. may have meant some form of oryx or giraffe by the term "unicorn." Or the Romans may have met with the black or the white rhinoceros in lands now hopeless desert, to the north of Lake Chad. Otherwise these beasts have never been reported to exist anywhere in *West* Africa. Fossil remains and cave-drawings by early man have established the presence of a white rhinoceros in Algeria-Morocco, down to some thirty or forty thousand years ago. But the rhinoceroses, like the zebras and many antelopine types, avoided West Africa in their southward migrations. Why, we cannot guess, unless there was a great extension of shallow water surface over the Sahara, as there has been over the Congo basin.

Lastly to be considered is the Equatorial-West African

out the ivory, otherwise they swarm over it and pandemonium reigns. In this case there was the difficulty of how to get the tusks out in two feet of water. Eventually the head was severed from the body after a vast amount of labour. It was then rolled up, tusks and all, on to dry land and the operation carried out at leisure next day.

I learnt subsequently from the natives that, two days before I shot this elephant, three women from a fishing village further along the flats had been carrying loads of sticks or rushes for thatching along the path which ran between the cliffs and the lake. Seeing them, the elephant, enraged at being trapped below the escarpment, or so it seemed to me, somehow managed to overtake and kill one of them.

The hippopotamus is also quite good at climbing up and down steep places. I can scarcely imagine the rhino doing the same. Years ago, amongst the rocks and broken water below the Ripon Falls in Uganda, one might observe any day scores of hippos and crocodiles leading a life of careless relaxation. The high, almost perpendicular banks of the Nile at this spot were then covered with trees and bushes instead of as now with grass only. They were cleared and are kept clear in order to prevent the approach of the sleeping sickness tsetse-fly to the adjacent Government post of Jinja. When covered with trees the hippos used to climb these high banks nightly to feed in the bush above (now built over), returning the same way in the early morning.

As far as I have seen, elephants have no fear of water. They will enter it at any time, day or night, no matter what the current or the depth. In the Bahr-el-Ghazal I have known a whole herd cross the Bahr-el-Jebel Nile at a spot where doing so meant their having to negotiate several miles of swamp, sudd and open water. One morning on the Ituri I was a witness of an interesting spectacle in which a baby elephant figured. I caught sight of several elephants making their way along a well-worn game path on the further

CHAPTER XIV

THE WHITE RHINOCEROS

Not a forest animal—Surviving in two far-distant localities—Approaching extinction—A harmless beast—The West Nile animals—The Nile–Congo Divide—The Wele districts—At close quarters—Careering down the line—A young calf—Capture—Untimely end—Rhino horns—Characteristics of the White Rhinoceros—Wallowing—Like an anthill in the distance.

THE White or Square-lipped Rhinoceros (Figs. 53, 54) is not a forest animal, though frequently found in heavily timbered bush. Nevertheless, in spite of this book dealing mainly with the denizens of the great forests, I cannot refrain from writing something here of a beast so intimately connected with the game fauna of Equatorial Africa. His range area, moreover, in North-Eastern Congo, links up at the forest edges with the range areas of the forest animals.

Like the elephant, the rhinoceros doubtless is a remnant of the indigenous African fauna of a very remote age. Up to comparatively recent times the rhinoceros, both hook-lipped and square-lipped species, probably roamed far and wide over all the regions in Africa not covered with rain-forest. How the differentiation of the two species, presumably both originating from the same stock, has come about is difficult to conjecture. Though the black species is common in many east and southern regions, the white rhino is only found in two localities, namely, the Umfolosi Reserve in Zululand, and the regions on both sides of the Nile–Congo Divide, between the belt of equatorial rain-forest and the Upper Nile (Bahr-el-Jebel). The animals surviving in Zululand are said to number only a few, and are protected, I am glad to say; those in the West Nile and North-Eastern Congo areas are more numerous, but hitherto little protection has been afforded them.

The case of the White Rhinoceros seems a fairly hopeless one. He is behind the times, and his extinction as a wild species is pretty certain in the near future, even with stringent protection, which I fear he is not likely to get yet awhile. His northern range area is too easily reached from the Nile, and is situated unfortunately in country administered by three different nations—Belgian, French and British. Compared with the common black rhinoceros this species, in my experience, is stupid, slow, and might almost be described as harmless. Rhino meat seems to have been thought much of by the early Boer settlers, who must have found shooting the beast as easy as hitting a haystack. It is speared by the natives with the utmost ease. Hence I fear that its extermination is within sight. If the Sudan Government has not already placed it upon their permanently protected list, the sooner this is done the better. The majority of the animals, however, are in the Congo, and to make protection effective a joint compact should be arranged between the three nations which in Africa control the destinies of this diminishing species.

In the British Sudan comparatively few individuals now survive. I should fancy that those along the left bank of the Bahr-el-Jebel Nile can scarcely exceed a score. Further westward along the Nile–Congo Divide, from about Yei in Western Mongalla to a point in the Bahr-el-Ghazal some distance north-west of Tembura, they are more numerous. In the Meridi and Yambio districts in 1916 I came upon them many times during my long rounds in the bush. The fact that I saw two or three animals with horns of what seemed to me extraordinary length is perhaps evidence that there at least they are not molested. I left them alone having shot the one allowed me on my Sudan licence, and I expected to have other chances in the Congo later on.

On the Congo side of the Divide, up to and beyond the Franco-Belgian boundary at the Mbomu river, I found the White Rhinoceros much more common than anywhere on

the British side. On the morning of my arrival at Aba, the Congo frontier post on the Rejaf–Congo motor road, in 1916, on sleeping sickness investigation work, the natives had speared two rhinos, both young males, within sight of the station. I went out to see them chopped up. As I tramped through the recently burnt-off bush north of Aba I observed, scattered here and there, quite a number of rhino skulls bleaching in the sun. In a Greek store at Aba on the same occasion I was shown, in a locked room, a pile of eighty or perhaps a hundred rhino horns, bought for a few bits of cloth or for beads, and worth, I think the trader told me, from £1 to £2 apiece. These he could not dispose of owing to the restrictions put upon their sale by the Sudan authorities, and the difficulties of shipment from Egypt. Export from these north-west Congo districts has to be effected through the Sudan.

Westward of Aba and more or less throughout the whole of the Upper Wele district, I have met with the animals themselves, or their extraordinary private middens, almost daily. I have little doubt that the same conditions exist further west in the unforested part of the Lower Wele. When roaming about the bush in these sparsely inhabited regions, where elephant and giraffe, lion and antelope are all extremely common, we occasionally walked almost into the arms as it were of single rhinos, or family parties of three. On more than one occasion this happened three times in a day. In the burnt and blackened bush the animals were unnoticed until within a few feet of us, and I have had to back away with my finger on the trigger. Sometimes the first intimation I had that the great walking gargoyle was near was the croak of the white paddy-bird—the little egret. Very near though I often was, I can only remember two occasions upon which the big beasts initiated proceedings, or seemed to take much notice of my intrusion, beyond commencing an up-and-down motion of the ugly armed head, as if to make sure that the tossing muscles were in working order. Of all the rhinos I

Photo., Author.

FIG. 53.—THE SQUARE-LIPPED OR WHITE RHINOCEROS, WELE DISTRICT, UPPER CONGO.

The burnt and blackened bush throwing out green leaves in the early spring is well shown.

Photo., Author.

FIG. 54.—THE SQUARE-LIPPED OR WHITE RHINOCEROS, SHOT IN ORDER TO CAPTURE ITS SMALL CALF FOR THE ANTWERP ZOOLOGICAL GARDENS.

Showing the burnt grass stalks of the bush in the dry season.

saw in the Wele not one had a horn worth securing as a trophy.

On one of the occasions referred to we were marching along the water parting of the Divide, in uninhabited and trackless country. With compass and notebook in hand I was making the way, with my two askaris at my heels, and a long string of porters behind. I and the two men passed within a few feet of a rhino before catching sight of him. When we did he was already on the move, and the first porter was either knocked down or stumbled. On looking round as I seized my heavy rifle, I saw the beast careering down the line, and my forty-five porters diving into the bushes. It was ludicrous to see how instantaneously my row of little Niam-niams shed their loads; but it was no laughing matter for me afterwards, when I realised the extent of the breakages.

Some time before the war I was camped at a place called Gangara Bojo on the Dungu river, a tributary of the Wele. I had gone there for a fortnight's shooting and collecting, and in the hope of capturing a young white rhinoceros. To judge by the tracks the country seemed full of elephant and rhino. The very first day out, in crossing a wide expanse of burnt and tangled grass stalks, we came on the fresh tracks of a rhino with a small calf. This seemed the opportunity I was looking for. Soon we caught sight of the mother little more than a hundred yards away, and from an anthill I could see what at first I thought was a wart-hog raising dust near by. Then it dawned upon me that it was the calf, which turned out to be about a month old. To catch it I must first shoot the mother, so I moved up fifty yards closer. She at last seemed to become aware of my presence, and with her head up ran two or three steps to one side, then began walking towards me. One shot was enough. The little calf rushed about like a pig, but was soon caught and tied up. Troubles seemed to begin from that moment. How was I to get it to camp? It would not be led, neither pushing nor pulling was

Wele = Uele River

of any use. So we tied it up again, and I went off to camp, some five or six miles away, to get help, leaving the local native who was with me to look after the little beast. I made a mistake in not sending the man and remaining myself. It was carried into camp that night, and I saw at once that it was either injured or exhausted by struggling. Whether the men had ill-treated it, or whether the method of carrying it had caused some internal injury I could not tell. I had a quantity of goat's milk ready, but it had to be given in spoonfuls. We tried everything that could be thought of, but it died on the third day after being brought in.

The female rhinoceros usually carries a longer front horn than the male. Of the two species the horns of the females of the square-lipped species are much the longer.

The chief outstanding characteristics of the white rhinoceros, besides the longer front horn, are the square or grazing upper lip, instead of a hook-shaped browsing one, as in the common species, the peculiar muscular lump on the nape of the neck, and the marked shoulder hump, reminding one of the hump to be seen in native cattle. The lump on the neck is largely due to the backward projection of the occipital part of the enormously long skull.

The White Rhinoceros is no whiter in colour than the commoner species, but has probably received its name from its habit of wallowing in mud-holes, the mud of which is yellowish-red, the prevailing colour of the soil of most of the South and Central African regions. Plastered with this mud, caked by the sun, the animal is often difficult to make out in the open, or looks in the distance very like an anthill.

CHAPTER XV

THE AFRICAN BUFFALO

Two extreme types—Conformation of horns—Brooke's three species—Lydekker's two groups—Forest and bush races—Two distinct species—No gradation of characters—Definition of groups and races.

AMONGST the African representatives of the genus *Bubalus*, the buffaloes, are a number of types, or variations in size, colour and shape of horns. The extreme forms, the little red pygmy buffalo of the Ituri forest and the huge black buffalo of the Cape, are very unlike. Much uncertainty has existed as to whether they and their intermediate types are merely local races of a single variable species, or specialised representatives of two distinct species.

Systematic zoologists, working mainly with museum specimens, have attempted to distinguish the different types or races by supposed differences in the conformation of the horns of the males; and it has been claimed that a gradation of types exists between the extremes of variation, the little red buffalo and the black Cape Buffalo.

Many years after the Cape Buffalo was discovered by the early Dutch settlers, the West African "dwarf" buffalo was described as a new species,* from the examination of a single skull. In 1861 the explorer Du Chaillu obtained specimens of the same little red equatorial buffalo. He gave some excellent illustrations, and the species was subsequently renamed *Bos brachycerus*.

Reviewing the whole subject of the African buffaloes in 1875, Sir Victor Brooke † divided them into three species as

* Under the name of *pumilus*, Turton's translation of *Systema Naturæ*, 1806.

† *Proc. Zool. Soc.*, 1873, p. 474, and 1875, p. 454.