

insulanus, carrying its young on its back. The specimen had been presented to the Society by Mr. Henry Munt, F.Z.S.

Dr. P. Chalmers Mitchell, the Secretary to the Society, read a paper, illustrated by lantern-slides, entitled "On the Intestinal Tract of Mammals."

This paper will be published entire in the 'Transactions.'

The following papers were read:—

1. Rough Notes on the Natural History of the Country West of Lake Victoria Nyanza. By Lt.-Col. C. DELMÉ-RADCLIFFE, M.V.O., F.Z.S.

[Received June 6, 1905.]

These notes contain the general results of my observations on the Natural History of the region traversed by the Anglo-German Boundary Commission in the years 1902-4. Memoirs dealing more exactly with the collections that were made have already appeared in the 'Proceedings' of the Zoological Society (P. Z. S. 1904, vol. i, pp. 371, 459) and 'The Ibis' (1905, p. 199).

MAMMALS.

Beginning with the larger mammals in the country under discussion, it may be stated that Elephants appear periodically in the swamps and forest near the mouth of the Kagera River on the northern side. These elephants stray in this direction, probably, at a time when it is dry in the interior. They come, no doubt, from the herds in northern Ankole and Toru. At no other point were traces of elephants seen except one single track going from north to south from the Koki hills towards the Busenya forest. In the west, a few elephants were noticed near the shores of Lake Albert Edward, also probably stragglers from the herds further north. There was no evidence of elephants crossing from south to north, or *vice versa*, along the 1st parallel south latitude.

It may perhaps be assumed that the herds of elephants reported by E. S. Grogan and other travellers in the Mfumbiro district belong to the forest-regions of the west. The herds of elephants on the east of Lake Albert Edward and Ruwenzori probably do not wander into the Congo forests. It has been noticed that the elephants to the west of the great line indicated by Lake Tanganyika, Lake Kivu, Lake Albert Edward, Lake Albert, &c., and the Nile differ in many particulars from those lying to the east of this line. At the same time, it must be remembered that large herds of elephants are in the habit of crossing the Nile to

the north of Lake Albert, and there seems no reason why they should not extend their wanderings into the Congo forests, although so far observation tends to show that these herds find their way back again, as a rule, to the countries east of the Nile.

Hippopotami are not very numerous in the Victoria Nyanza near the mouth of the Kagera. The locality does not seem very well suited to them. In the Kagera River itself there are more, and parts of the river are infested by a number of very savage brutes that make navigation in canoes or small boats extremely dangerous. Lt. Weiss, of the German Commission, was repeatedly attacked when in a very large canoe. He was almost upset—one man was dragged out by the arm, but escaped. Finally his crew refused to go on and ran away with their paddles. The actual number of hippopotami cannot be considered large in comparison with the huge herds in the Nile north of Lake Albert. Probably in the great swamps of the Kagera, considerably to the south of the area traversed by the Boundary Commission, the hippopotami are much more numerous. The specimens secured in the Kagera were decidedly inferior in size and in development of ivory to those of the Nile.

Rhinoceroses are extremely numerous on the right bank of the Kagera, especially in Karagwe. The number of these animals is quite remarkable, and, according to accounts received, they are to be met with in even greater numbers a little further south. It is a curious fact that no rhinoceroses are to be found on the left bank of the Kagera. All those seen belonged to the common black African type. Stories were current of the existence of the White Rhinoceros on the right bank of the Kagera, but these rumours require confirmation. The rhinoceroses appear to have no hesitation in frequenting the extremely steep and difficult hills of Karagwe. Their tracks and signs were seen up and down hills and on ridges which appeared more adapted to the habits of klipspringers or goats than of such bulky animals as rhinoceroses.

In the virgin forest west of the lake near the mouth of the Kagera, in the swampy and open forest east of Koki, and in the Busenya forest west of the Gambaizi group of hills, several herds of Buffaloes are to be found. These buffaloes are of a very interesting, new, large variety. They are, perhaps, the largest buffaloes in existence. In all, in the district referred to, there may be 400 or 500 buffaloes, and as their numbers are not likely to be interfered with, except by men armed with rifles, they may be considered to be firmly established again after the devastation caused by the great cattle-plague of some ten years back.

In Bukanga the buffaloes wander in search of young grass, after the fires, as far as the hills of Ankole and Koki, from the forests which form their strongholds. There is one disadvantage, however, connected with the presence of the Buffaloes, of the Eland, and perhaps of other Antelopes. This is the tsetse-fly, and it is to be feared that as long as large herds of buffaloes and the greater antelopes exist, so long will the tsetse-fly make it

impossible for domestic cattle and horses to live in the same part of the country. I myself lost an Arab horse I had had for six years in Africa and was very fond of. He was bitten by tsetse-fly in Bukanga.

Eland were met with at two points in Bukanga—near the Nyakafunzo swamp, and in the districts known as Mpororo and Rushenyi. In Bukanga there were herds amounting to, perhaps, 200 animals, and the uninhabited country surrounding the Nyakafunzo swamp seemed admirably suited to their needs. They were considerably preyed upon, unfortunately, by natives, who organised hunting-parties into this district both from the British and the German side. Still more unfortunately, the natives are sometimes armed with rifles. The result could be seen in many wounded animals observed from time to time, and in dead bodies found with bullets in them. Lions also take toll of the elands, but the natural decrease due to this cause is nothing compared to the damage inflicted by natives with firearms. Further west a herd of considerably over 300 elands was seen, and this, probably, is only an outlier of still greater herds in the open country further south. It seems, therefore, that this country is abundantly supplied at present with representatives of this magnificent antelope, which, I believe, might be made of great economic value. The meat is equal to the best English beef, and a bull eland weighs about 17 cwt.

Zebras occurred coincidentally with the Eland in Bukanga, and they number, perhaps, 400 individuals. In Rushenyi another very large herd of zebras was seen; and it may be remarked that in the Rushenyi herd a single zebra was seen almost entirely pure white in colour, a few stripes only appeared on the neck and hind-quarters. Another small herd of zebras, amounting, perhaps, to 150 individuals, was seen in the plains in southern Ruampara, on the left bank of the Kagera, just north of the point where the river turns from the south to east.

Roan Antelope were encountered, a few at a time, in Bukanga, in the narrow valley of the Kagera, and in south-west Ruampara north of the bend of the Kagera just referred to. They were occasionally met with in Rushenyi and Mpororo, and appeared more numerous in Karagwe, where for some reason there appeared to be no Eland, no Zebras, and no *Damaliscus*. These last were the common hartebeeste throughout the area west of the lake. In Bukanga, *Damaliscus* were very numerous. The number in this part may be estimated at 1000 individuals. No other variety of hartebeeste made its appearance: 200 or 300 individuals were found with the herd of zebras in south-western Ruampara, and in Rushenyi and Mpororo the *Damaliscus* hartebeestes are very numerous.

The Nile Valley variety of Water-buck (*Kobus defassa*) is common in Bukanga, and may be met with in herds up to a dozen or fifteen individuals. They also appear fairly plentiful throughout the valley of the Kagera and in western Ruampara, but

apparently not further west. These water-buck have fine heads, as a rule considerably larger than *K. ellipsiprymnus* in East Africa, although the heads are not nearly so big as are found in the Semliki Valley.

In the swamps near the mouth of the Kagera, on the shores of the lake, and on the islands of the Sesse group, *Limnotragus spekei* was fairly common. This animal, owing to its nocturnal and swamp-loving habits, is of course seen extremely rarely, but it is frequently hunted by natives with nets and packs of dogs. The horns are often to be met with in possession of natives. There is at present a doubt whether more than one species of this antelope is not found in the same district.

In Bukanga, especially about the Nyakafunzo swamp and to the south of it, large herds of Mpala (*Epyceros melampus*) may be met with. These beautiful antelopes are to be seen in herds of 200 or 300, and in the district referred to perhaps 1500 individuals exist at the present time. They were met with at no other point throughout the country traversed.

Very common, although occurring only in ones and twos at a time, was a species of Reed-Buck (*Cervicapra?* sp.). This antelope was chiefly confined to the low-lying grassy country in Bukanga, along the banks of the Kagera, and in Ruampara.

Another very common antelope was the Oribi (*Ourebia montana*). This little antelope appeared almost everywhere on the low ground in the mountains, except in the highly cultivated parts of Ankole and the mountains in the west. In general, it may be said that no antelopes or game animals of any description were seen in the Ruchigga mountains and their northern and eastern extensions. Bush-buck and Harnessed Antelope were seen at rare intervals in the valley of the Kagera. The latter appeared occasionally at the edges of the dense forests near the mouth of the Kagera, and in one or two places in the narrow valley of the Kagera between the mountains.

Bush-buck were occasionally seen in the Koki hills and the mountains of Ruampara, where the deep gullies choked with vegetation afforded them shelter, and the open grassy hillsides excellent feeding-grounds.

On the steep hills of Ankole and Karagwe, Klipspringers were common wherever the ground suited them. The form in this country shows some differences when compared with the klipspringers of other parts of Africa, and may prove to be an intermediate variety.

Of Monkeys, *Colobus guereza* was seen in the forests near the lake. The common grey African monkey was also observed in many places, and an interesting species, *Cercopithecus atterimus*, was also seen in the dense forests near the lake and in the dense forests round Minziro. The last-named monkey looks almost black and is very shy. Its cry is very loud and peculiar, reminding one slightly of the cry of the Chimpanzee. Baboons are common, especially in the mountains in Ankole and Karagwe.

Wart-Hogs (*Phacochoerus aethiopicus*) were occasionally to be met with all along the valley of the Kagera, though nowhere very numerous. Aardvark were present, though of course never seen unless dug for. Their holes, however, were found in all directions in the low-lying country, and they are probably fairly common.

Of beasts of prey Lions are fairly common in Bukanga, in the neighbourhood of the Nyakafunzo swamp. They also appear in western Ruampara and in Rushenyi and Mpororo. In general terms, it may be said that they are to be found wherever large herds of zebras and antelopes exist. In Bukanga, however, it appears that they have taken to man-eating fairly extensively. The natives in this part of the world have a wholesome dread of them, and during the short time the Boundary Commission was at work in Bukanga repeated instances occurred of lions attacking human beings.

Leopards are also found throughout the whole area under discussion except the extreme western portion. Although they live principally on the small antelopes, monkeys, guinea-fowl, &c., they also take toll of the natives' goats, &c., and thus become sometimes a great nuisance. At Mulema camp, for instance, a leopard took goats from one hut or the other almost every night for a month, and when Captain Laughlin, Dr. Bagshawe, and Mr. Doggett endeavoured to kill him at the natives' request, he wounded, more or less seriously, no less than thirteen men before being finally despatched. Cheetahs apparently do not exist in this part of the country west of the lake. Serval Cats were occasionally met with, and a smaller grey, rather long-tailed Wild Cat. Hyenas appeared occasionally, but may be said to be rare. They were of the usual spotted variety.

Otters are common in the lake. Two forms were met with, one very large, the other smaller. These two are stated also to be common in Lake Kivu.

Among smaller mammals, interesting species were a *Pæcilogale doggetti*, an extremely handsome, large, striped Stoat; *Tatera fallax*; *Procavia bettoni*: these three being new species. Another extremely interesting animal was *Herpestes galera robustus*, a fish-eating Mongoose.

In all about 180 specimens of mammals were collected, and a large number have been described in the 'Proceedings' of the Zoological Society of London, the most interesting being the new Buffalo (*Bubalus caffer radcliffei*), *Pæcilogale doggetti*, *Tatera fallax* and *Procavia bettoni*. There is no doubt that a scientific investigation would disclose a much larger number of small mammals than were secured for the collections of the Boundary Commission. All the region west of the lake abounds with species of great scientific interest, the interest increasing the further west one goes, and it is a matter for the greatest regret that a collection could not be made in the neighbourhood of the Mfumbiro Mountains.

BIRDS.

Lake Victoria is a disappointing sheet of water in bird-life as in fishes. Birds are of course present, but not in the vast numbers so extended a sheet of water in the heart of Africa might lead a naturalist to expect. The reason is probably to be found in the fact that the food-supply in the lake is very deficient for birds and fishes alike—for many species of birds in consequence of the poverty in fish.

The White-headed Fish-Eagle (*Haliaeetus albicilla*) is fairly common all round the lake-shore and up the Kagera River. This bird is invariably found in pairs, and appears to divide the districts into beats, each containing its pair of fish-eagles in possession. Their cheerful squalling, as described by Sir Harry Johnston, is one of the most familiar sounds near African river and lake.

An Osprey may also occasionally be seen on Lake Victoria seizing fish on the surface of the water in a manner peculiar to its kind.

A species of *Plotus* is fairly common, and may be seen in small congregations at certain points where the ambatch or rocks afford a convenient spot for perching and hanging their wings out to dry.

With them may also be seen the large Cormorants, which here and there form communities numbering several hundreds. The northern end of the island Usuwgwe and the small rocky Mwasambwa Islands and Dumbo Point are favourite haunts of all these birds.

A large Gull, resembling the black-backed gull at home when on wing, is also not uncommon close in-shore and especially in the rivers.

The Pied Kingfisher is fairly common inland. The two varieties of brilliant-hued Kingfishers appear to forsake their occupation of fishing to devote themselves entirely to the capture of insects.

Heron are fairly plentiful in the swamps and at the edge of the lake. The most conspicuous amongst these is the Goliath Heron, a bird whose immense span of wing can be fully appreciated when, disturbed by a canoe, he flaps slowly across the Kagera River. The common Grey Heron is also a familiar sight, and at times flocks of the White Egret. Night-Herons are fairly common along the Kagera River.

In the lake, Egyptian Geese and Spur-winged Geese may be seen in small numbers; Pigmy Geese are not uncommon near the lake-shore, where the open reeds afford them shelter.

Yellow-billed Ducks are perhaps the commonest of the ducks on Lake Victoria. Throughout the course of the Kagera River no ducks and geese were observed until reaching the Rufua River, and especially the Karenga Lake. The latter seems a favourite haunt of wild-fowl, and for this region of Africa is very well supplied with water-birds of all descriptions.

Huge flocks of Pelicans are to be seen, and large numbers of Pochards and Yellow-billed Duck; also Egyptian Geese.