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PAPERS.

1. The Fauna of East Africa and its Future.
By C. W. HOBLEY, C.M.G., C.M.Z.S.

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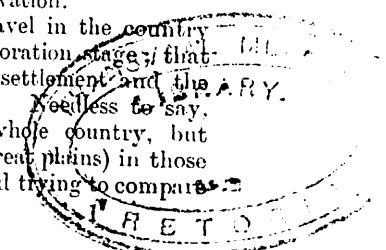
I have been asked by the Secretary to give some of my impressions of British East Africa, which is now known as Kenya Colony.

I am naturally diffident in addressing a learned society like this, and my only claim to attention is that there are probably few present this evening who have had such a long experience of the country of which I propose to speak. My connection with East Africa began in 1890, and since that time I have served continuously in the Uganda Protectorate and British East Africa, and have during the whole of that period been a keen observer of the fauna of the area, so have naturally chosen that subject for my remarks this evening.

The country has been so often described in books of travel and sportsmen's records of slaughter, that any general description is unnecessary. I therefore propose to confine myself to a few remarks on the fauna based on personal observation.

I was fortunate enough to be able to travel in the country when it was in what may be termed the exploration stage; that is to say, before the advent of any European settlement and the consequent disturbance of natural conditions. Needless to say, game was far more numerous over the whole country, but particularly in the favoured areas (*i. e.*, the great plains) in those days than it is to-day; and on looking back and trying to compare

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the stock of game in the country as a whole to-day with that in say 1895, probably the present stock would only represent 15 per cent. to 20 per cent. of the former: this is, however, only to be expected when one considers that upwards of 6000 square miles of land, most of it game country, has been alienated to colonists.

I am not complaining, for it cannot be expected that fertile lands which will provide homes for people of our race and grow products essential to civilization, will remain for ever in the possession of wild game.

I will, however, revert to the question of the future of the game later on, and now propose to recall the conditions which prevailed 20 years ago before man took a hand in the matter, *i. e.* to any great extent.

At that time the areas noted for great profusion of game were the Athi and Kapiti Plains, the Yatta Plateau, the Serengeti Plains, the Loita Plains, the Rift Valley, and the Uasingishu Plateau. A portion of the Kapiti Plains and the Loita Plains are included in the game reserves, so presumably carry a good stock in places, but all the other areas are decimated, mostly owing to the effect of settlement.

The main factors which determined the distribution of game in the early days were yearly variations in rainfall which resulted in a sufficiency or insufficiency of grazing in particular areas: epidemic diseases also periodically affected certain species, and the number of carnivores also counted. All these factors operate at present, but the first mentioned, *viz.*, the variation in rainfall, operates more harshly than formerly, for nowadays the area over which the game can migrate in search of grazing is restricted. If, for instance, the Southern Game Reserve is seriously affected by drought, large numbers of game are doomed; some may attempt to migrate into the farm lands, but many are shot down, and the survivors retreat to the reserve where the grazing is finished and many of the water-holes dry. A good example of this occurred in 1910, when the plains were so dry that zebra and hartebeest came up in force into the town of Nairobi, regardless of man, in their search for water; the lions followed them and killed game nightly in the open land in the centre of the town. Natives and others killed many of the invaders, and the emaciated remnant was driven back to the plains.

Speaking of epidemics, one of my earliest recollections in East Africa was the great rinderpest visitation of 1891. I was then exploring the course of the Tana River, and the buffalo were coming down to that river literally in thousands to die. The bush country fringing the Tana between Hamaye and Munoni is not ideal buffalo country, for the grazing is not too plentiful at any time, but once they contracted the disease they appeared to be impelled to seek water, doubtless coming from great distances to the river, and I estimate that in the stretch of country above mentioned, a distance of about 80 miles, we saw several thousand buffalo in all stages of disease and death, attended by vultures and

marabou storks in myriads, all gorged to repletion. Occasionally dead giraffe, waterbuck, and bush buck were seen; the eland also suffered, and I am told that kudu and roan were also attacked.

From the buffalo the disease spread to the cattle, and at Ngomeni in North-East Kitui, which was a great cattle centre before the epidemic, we were shown some 20 odd beasts, the sole survivors of many thousand head, and the desiccated carcasses of the victims were piled up as a wall outside the villages.

It was during that journey that we happened to follow a day behind a large *impi* of Laikipia Masai which was engaged in raiding the Embu and Mbe tribes. I will not dwell on the evidences of ruthless slaughter we witnessed, but some fifteen years later I was recalling the incident to the chief of the Laikipia Masai, and he laconically told me that he was a "morani" or warrior at the time and had participated in the raid; he parenthetically added that it was an unfortunate venture, for some of the captured cattle were infected with rinderpest, and so they took the disease back to their own herds on Laikipia and practically all perished. Nemesis indeed!

This outbreak was the worst epidemic known in the recent history of Africa; it spread rapidly south through what was then German East Africa, crossed the Zambezi, reached Buluwayo about 1895, and by the end of 1896 it had reached the Cape. During the last year of the visitation its progress was remarkably rapid, *viz.*, about 1000 miles; it was probably spread to a great extent by the transport riders. Since that devastating attack we have had minor epidemics of the disease; in 1904 I saw eland dying of it near Naivasha, and the Masai then lost over 600 head of stock. Although sporadic outbreaks still occur, this disease is now well in hand.

In very dry years, when grazing is scarce and the plains are very dusty, outbreaks of anthrax occur among the game, the principal species to suffer being Coke's hartebeest; the last serious outbreak which was identified was in 1905, when several thousand head of game died on the Athi Plains.

Pleuro-pneumonia is rarely absent from the herds of Masai cattle grazing in the South Reserve; but, curiously enough, there is no record of the disease attacking the game, and the Game Warden has stated that cases are known where eland and buffalo graze over the same land as cattle infected with this disease and are apparently unaffected.

About 1906 an epidemic of what is believed to be distemper broke out among the jackals on the Athi Plains, and large numbers died; a year or two later the same disease was recorded from the Rift Valley, and then from Laikipia. It is not, however, known whether the disease is endemic, or whether it has been introduced by civilization.

Wild game is in some areas infected to a considerable extent with intestinal parasites. I have frequently observed the intramuscular cysts of what is commonly called "measles" in mpala,

as long as the reserves are maintained and contain any game, so long will there be lions; in fact, a reasonable supply of lions is, I consider, a *sine qua non* in a reserve, for they clear off the weaklings and the sick, forming part of nature's scheme in a natural assemblage of animals mainly composed of herbivores. Curiously enough, however, during the war they increased out of proportion, for although an enormous amount of game was shot by the troops, the lions were not hunted to any extent.

The result of this was that game being scarce in the area of military operations, numbers of lions became cattle eaters, and the Masai herds which tenant the Southern Game Reserve have suffered heavily: I believe that the Game Department has had to take steps to reduce the number of lions there during the last year or two. It is not easy to understand what normally limits the number of lions; one never sees a lion which has died of starvation or disease, and lions which are shot always appear to be in a fair condition, but some cause undoubtedly does operate in a natural assemblage to preserve the proportion of carnivores to herbivores.

Considerable troops of lions are sometimes seen, but it is rare. Sir Frederick Jackson recorded a troop of 23 near Lukenya; the largest troop I have seen myself was 11, made up of 1 male, 4 females, and 6 half-grown cubs, near Ngong, where I watched the adults opened out in echelon on a hillside, hunting a herd of zebra, the cubs being assembled under a tree watching the performance, and doubtless learning the art.

Lions have now been well-nigh abolished in the older settled areas and necessarily so, for no one can successfully farm stock in a country where lions are common. There are still, however, but few places where domestic stock could safely be allowed to stay out in a pasture all night.

RHINOCEROS.—This curious beast has suffered severely of recent years, and great numbers have been killed. The greater proportion inhabited the open plains and were thus conspicuous to sportsmen. They have irritable natures and have a stupid habit of charging down on anything that annoys their sense of smell. In hundreds of cases this has induced their death, for many a man has had to shoot a rhino in self-defence. I have myself had several narrow shaves owing to their sudden attacks.

Many were killed during the war in the southern portion of the Game Reserve by the troops of both forces.

The high price which rhino horns have commanded in the Far East during the last few years has, moreover, proved an inducement to the native hunters to slaughter these animals; they were instigated by the Indian traders, who surreptitiously shipped them out in considerable quantities.

This beast does not make long migratory journeys, and, providing that the reserves are of ample size and contain an adequate

supply of the acacia scrub which forms its diet, and water, there is no reason to fear its extinction.

BUFFALO.—After the big rinderpest epidemic it was feared that these fine beasts were practically extinct, and for some 20 years or so they were undoubtedly rare.

They have, however, gradually increased in certain areas, and no anxiety need now be exercised as to their extinction. There are, it is believed, considerable numbers in the Southern Reserve, on the northern stretches of Laikipia, in Southern Kitui, and various other places.

A considerable number also frequent the coastal area where the bush is very thick, and up to recently a few even annually visited the mainland opposite Mombasa town, but left the spot when the bush was cleared to make a plantation. In the spring of 1919 about half a dozen visited the place they knew, but finding no cover they retreated into the interior; one, however, swam across the mouths of the two harbours and landed on the mainland south of the island, a distance of over half a mile.

In the old days buffalo could be seen in the early part of the day and in the late afternoon grazing out in the open like herds of cattle, but since the epidemic this is very rarely the case. They now live in dense bush, only coming to graze in the open at night, retiring to the bush again at dawn. Possibly now there are fewer of them they have lost the confidence they formerly possessed.

The geographical range of the buffalo is remarkable, for, as I have remarked, they frequent the hot coast-lands, and then, again, a desiccated buffalo carcass is recorded from the foot of a glacier on Mount Kenya. As might be expected, the animals inhabiting the higher altitudes have thicker coats than those at the coast.

HIPPOROTAMUS.—This beast is decreasing at a great rate; in the old days the middle and upper Tana swarmed with them, but now not more than 5 per cent. survive. The same applies to the Athi River; they have also greatly decreased in Lake Victoria and in other smaller lakes.

Unfortunately the Game Reserves do not contain much water suitable for them, but it will be a long time before they disappear from the swampy bays on Lake Victoria, and from some of the more remote rivers, such as the lower course of the Nyiro which flows into the Lorian Swamp.

GIRAFFE.—The area occupied by this fine beast is becoming more restricted every year, and the settlement of the Uasingishu plateau will probably settle the fate of the beautiful subspecies which is found there, for the Dutch colonists find it hard to refrain from slaughtering them, as giraffe hide has a peculiar quality