

BY GLOVER M. ALLEN.

In January and February, 1913, I accompanied Dr. J. C. Phillips on his expedition up the Blue Nile and the Dinder River in the interests of the Museum. A considerable effort was made to collect the birds (see Bull. M. C. Z., December, 1913, 58, p. 1-28) and mammals of the region, and Dr. Phillips has generously left to me the working out of the latter. Our route lay along the Blue Nile, from Sennar, where our real start was made, to Singa, the present seat of government for Sennar Province. At this point we crossed to the north bank, for the south bank is a game reserve, and proceeded along it to the Abyssinian border, stopping at Fazogli, an outlying 'gebel' of the Abyssinian foothills. We later retraced our steps to Abu Tiga, and thence crossed over to the Dinder, an affluent of the main river, that becomes partly dry in the rainless season. The upper portion of this river seemed to have been very little disturbed, and large game was abundant and very unsuspecting. Along the Blue Nile, however, and on the lower parts of the Dinder, the native population is increasing and there is much travelling up and down along the river banks. On the Blue Nile especially, parties of Arabs and negroes are constantly passing, and English officials make their rounds between Singa and Roseires or other points. With the increase of native population, the clearing of the land, and disturbance incident to human occupation, the large game must inevitably be gradually driven back or exterminated by hunting. It is generally believed that the native population of the Sudan, during the time of the Mahdi and his successor (1883-1898) was reduced through war, famine, and disease about 75%, amounting to the almost total extinction of the inhabitants along the Rahad and Dinder, as well as on the Blue Nile, so that many of the villages marked on the older maps no longer exist. This no doubt has been favorable for the increase of large game in later years. On these rivers now, however, the habitations are being reestablished gradually, and population will doubtless reclaim the country in time. It therefore has seemed worth while to record the more striking facts we noted concerning the habits and distribution of the larger mammals, for they must eventually be much reduced or destroyed altogether. A few species seem better adapted to survive

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than others and these, on the Blue Nile, for example, already show through their difference of habits, compared to their congeners of the upper Dinder, an adaptation to the changing conditions.

The entire country up to the Abyssinian border is monotonously flat, and covered largely with an open forest of thorn trees among which the red-barked gum-arabic tree is conspicuous. A very few

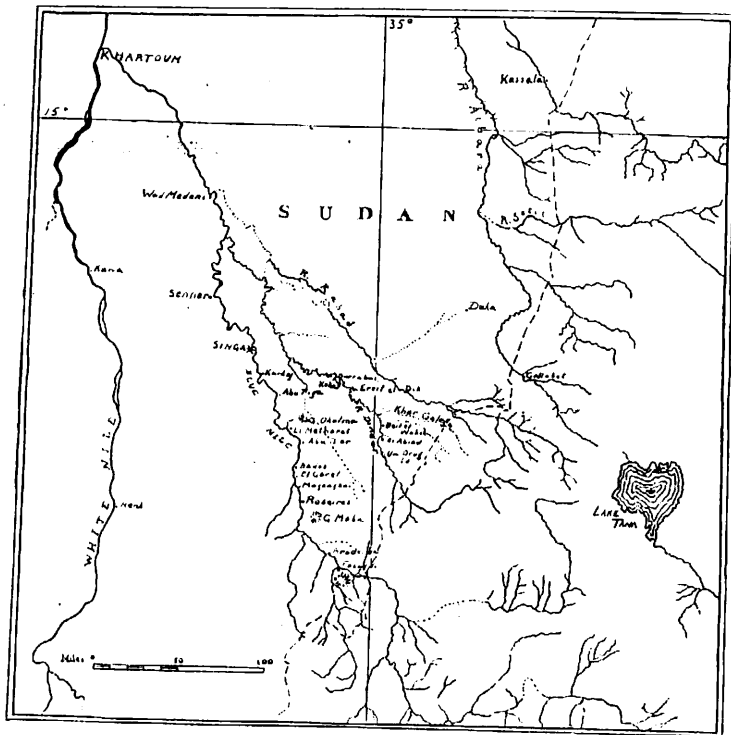


Fig. 1.—Sketch map of the Blue Nile Valley.

small and isolated hills or 'gebels' project here and there abruptly from the plain, and alone break its monotony. The Blue Nile has cut a channel through this broad plain, but so steep are its banks for many miles in succession, that access to the water is difficult, and hardly to be obtained except where gullies, cut down during the torrential rains

of the wet season, afford a passage. As settlements increase along the rivers, the native villages are planted at such spots, termed 'mesharats,' or "places where one can get down to the water." Since the large mammals are also dependent on these for reaching the water, the settlements result in driving them farther and farther away where there are 'mesharats' at a distance from habitations, with their accompaniment of droves of cattle, yelping dogs, and native hunters.

The luxuriant growth of tall grass that springs up after the summer rains becomes exceedingly dry by late autumn, and the natives set fire to it and burn the country for many hundreds of square miles. The soil itself becomes transformed from a mass of sticky mud in the wet season to a hard baked or a powdery condition, often much cracked and very difficult for walking. Such unfavorable conditions appear to have had a direct influence in reducing the ground-living species to a minimum, so that it was very hard to obtain small mammals, and even in comparatively sheltered places the number of species was disappointingly few. According to local report, there is much more large game along the Blue Nile during the wet season and just previous to it, in April and May, when the drying up of the smaller and remoter pools forces the animals to seek the main stream. The rank growth of vegetation during the summer rains also causes a more general dispersal.

There has been but little collecting done in the area covered, though travellers have from time to time sent specimens to Europe. As long ago as 1842, Sundevall published descriptions of mammals obtained in Senar by the Swedish traveler Hedenborg, but as then used, Senar was a somewhat indefinite term applied to the country between the White and the Blue Niles. Rüppell and Heuglin later did much exploration in northeastern Africa, including journeys into the Sudan. They gave names to many of the species whose range includes the Blue Nile country. What has since been done in the study of the mammalian fauna of the region has been of fragmentary nature, and consists chiefly of reports on occasional specimens sent by Europeans to the museums of England and Germany. In 1898, Lord Lovat's expedition crossed from southern Abyssinia to the Blue Nile Valley, and obtained a few specimens from the latter region, including a new multimammate mouse, described by de Winton (1900). Captain S. S. Flower, of the Gizeh Zoölogical Gardens has several times been in the region to obtain living animals for the splendid collection under his charge. Mr. A. L. Butler, head of the Game Preservation Department of the Sudan, also knows the country well and has sent many specimens of birds and mammals to the British Museum.

attack we watched the animal for some time and found that it came very regularly to the surface for air at intervals of 3.5 minutes. The fight was short but furious, the men jabbing with their spears each time the enraged beast rose to attack the broadside of the boat. When at last it rose no more, the watchers on the bank shouted exultingly and one twanged a small harp in praise of the hunters. No hippos were seen at Roseires, the head of navigation for large boats, but we observed a few above that town near Adreiba. On the Dinder there are very few, at least on the upper portion. This is partly on account of the intermittent nature of the stream, though in the larger pools an occasional one is found. At Um Orug a few skulls of young animals were seen, from which the front teeth had been removed. W. B. Cotton (1912, p. 43) says there are still a few in the Abbara and Setit Rivers, but none at all in the Rahad.

*PIACOCOERUS AFRICANUS* NUFO Heller.

Nile Warthog.

*Piacocoerus africanus nufo* Heller, Smithsonian misc. coll., 1914, 61, no. 22, p. 2.

Small numbers of Warthogs are still to be found along the Blue Nile and on the upper Dinder. Dr. Phillips shot one at El Meshurat and we met with a few others along the river to Roseires. On the upper Dinder we saw not a few, once a party of three large ones with four young. As noted by Cotton (1912) there seem to be few if any with large tusks in this region.

Two skulls preserved agree with Heller's description of the Nile Valley Warthog, and, as he points out, differ from the East African race in the prolongation of the parietal portion and the nearly flat interorbital region.

*DICEROS BICORNIS* (Linné).

Black Rhinoceros.

*Rhinoceros bicornis* Linné, Syst. nat., ed. 10, 1758, 1, p. 56.

The Rhinoceros is nearly extinct in the eastern Sudan. In the days of Sir Samuel Baker they were plentiful on the upper Abbara and the Setit, but now apparently there are extremely few between the Nile and the Abyssinian border. It is worth recording therefore, that at

the present time they are quite gone from the Blue Nile, but a very few yet remain on the uppermost reaches of the Dinder River, about a day's march beyond Um Orug Island, as our native hunters told us. According to our Arab guide who had hunted this region, one was killed in 1911 on the 'mere' near El Abiad by a white hunter, who mistook it at night for a Buffalo. Beyond Um Orug, at a place called Hageirat, south towards the Abyssinian border a few are still to be found. The Rhinoceros is protected under the present game laws of the Sudan, but the few that survive are more or less in danger from poaching Abyssinians. Capt. Stanley S. Flower told us at Cairo that so far as he could learn there were probably not more than ten or a dozen rhinos left on the upper Dinder, and that these are probably not breeding for the natives report no tracks of young ones.

Lydekker (Proc. Zool. soc. London, 1911, p. 958) recognizes the Black Rhino of Somaliland as distinct under the name *somalensis*, but in the absence of specimens I cannot attempt to settle the identity of the Sudanese animals.

*ELEPHAS AFRICANUS OXYOTIS* Matschie.

Sudanese Elephant.

*Elephas africanus oxyotis* Matschie, Sitzb. Ges. naturf. Freunde Berlin, 1900, p. 196.

In reviewing the African elephants, Lydekker (1907, p. 398) considers that the form inhabiting the Blue Nile Valley and western Abyssinia may stand as a valid race. It is characterized by Matschie as having a very long and pointed lobe at the base of the ear. The upper border of the ear is much rounded but the value of this character is still under discussion. The tusks are rather small in this race, hardly above 60 lbs.

Elephants were formerly common over the eastern Sudan, and have been much hunted for their ivory. Sir Samuel Baker's accounts of their pursuit and capture by the Arab hunters, mounted on agile ponies and armed only with a keen-edged sword, are familiar to readers of African travel. At the present time Elephants are practically gone from the travelled region along the northeastern bank of the Blue Nile. I. C. Johnson, in 1901, hunted Elephant near the little village of Omdurman above Karkoj, and although a small herd of five was discovered, the animals were traveling and struck off toward the