from the photo, it could not have weighed less than 80 lb. This was stated to be a *small one*!

Günther (p. 432) states that sword-fishes attain to a length of from twelve to fifteen feet, and native fishermen at Malindi assert that they frequently have to cut away their lines when a large specimen is hooked, so fierce are their attacks on the boat.

The ventral fins, which are in the form of two long styliform appendages, fit into a deep groove in the belly extending to the vent, which would seem to be a provision of nature to permit of the fish resting on the bed of the ocean, for, owing to the length and bony nature of these fins, this would otherwise be impossible. The Swahilis give them the name of 'Frasi ya Bahari,' and the Arabs that of 'Sulsuli.' They are taken trolling. In calm water they are said to erect the dorsal fin and to sail on the surface.

Whilst the above list comprises what may be termed the game fishes of Mombasa and Malindi waters, or at least those that have come under the personal notice of the writer and from exhaustive inquiries from natives, there are several species of Sparidae and Percidae that occasionally take a moving bait. Drifting along slowly on a calm morning, I have repeatedly hooked and landed specimens of both these families; and only quite recently when entering Mombasa harbour and sailing with a strong following wind at quite seven knots, I hooked and landed a red fish, weighing 11 lb., which I took to be a species of Lethrinus.

When 'trolling' with rod and line becomes more popular in Mombasa waters (and there are signs of its rapidly becoming so), no doubt more varieties will be added to our already varied list of sporting fishes. Very little help in this direction, I fear, can be obtained from native sources, but readers can assist materially in forwarding any photos or measurements of fish (caught in the above manner) to the editor for publication in the Journal.

The main points essential for scientific classification are:

1. The number of spines and rays in dorsal and anal fins.
2. Number of scales from gill opening to caudal fin along lateral line.
3. The number of scales in a line running from the commencement of the dorsal fin or the middle of the back to the lateral line down to the vent or ventral fin or the middle of the abdomen.

For instance, the following formula would represent the scales between the head and caudal fin: L. Lat. 40; whilst the formula L. Transu $\frac{8}{5}$ would represent those eight longitudinal series of scales above the lateral line and five below those same.

I hope to be able in my next article to give a few hints with regard to tackle, bait, native methods of dressing line, &c.

GAME AND WAR

By C. W. Woodhouse

This article only proposes to deal roughly with observations made in peace time and those noticed during the first year of the war in British East Africa, with regard to the various game animals normally present on the scene of the present hostilities in the Mombasa military area, i.e. from the Kitirua and Engumi waterholes, i.e. Lake Njiri (Ologinya) District, Southern Masai Reserve, to Mount Rukinga near Kasigau.

The Taru desert is apparently unaffected. On making a brief survey of the terrain, the country is found to consist of several well-marked types which may be classified as:

1. The open grass lands, i.e. the Masai country from Lake Njiri to the Rombo river and from the Anglo-German border to the lava beds at the foot of the Chyulu Hills. Very similar country, though with rather more bush, is to be found from Campi Ya Bibi, five miles west of Maktau, to near the Lanjoro drift.

By the definition 'open grass lands' it must not be taken to mean absolutely bare rolling plains like the Nairobi, Athi, and Kapiti plains, but, with the exception of the Kuku plain, open grass land must be regarded as parklike country capable

of grazing cattle and with occasional patches of scrub. The whole of the grass land is interspersed with solitary thorn trees.

The country seen from the Uganda railway near Kiu approximates to this sketch of country.

2. The 'bush country,' i.e. the country along the Tsavo river as far west as Mzima, and then on its right bank up to the Ziwani swamp. The country from Voi westwards to Campi Ya Bibi and from the Tsavo river to Rukinga and from the Uganda railway to the Chyulu Hills. This also includes the bush from Salaita Hill to Lake Jipe at present temporarily occupied by the enemy.

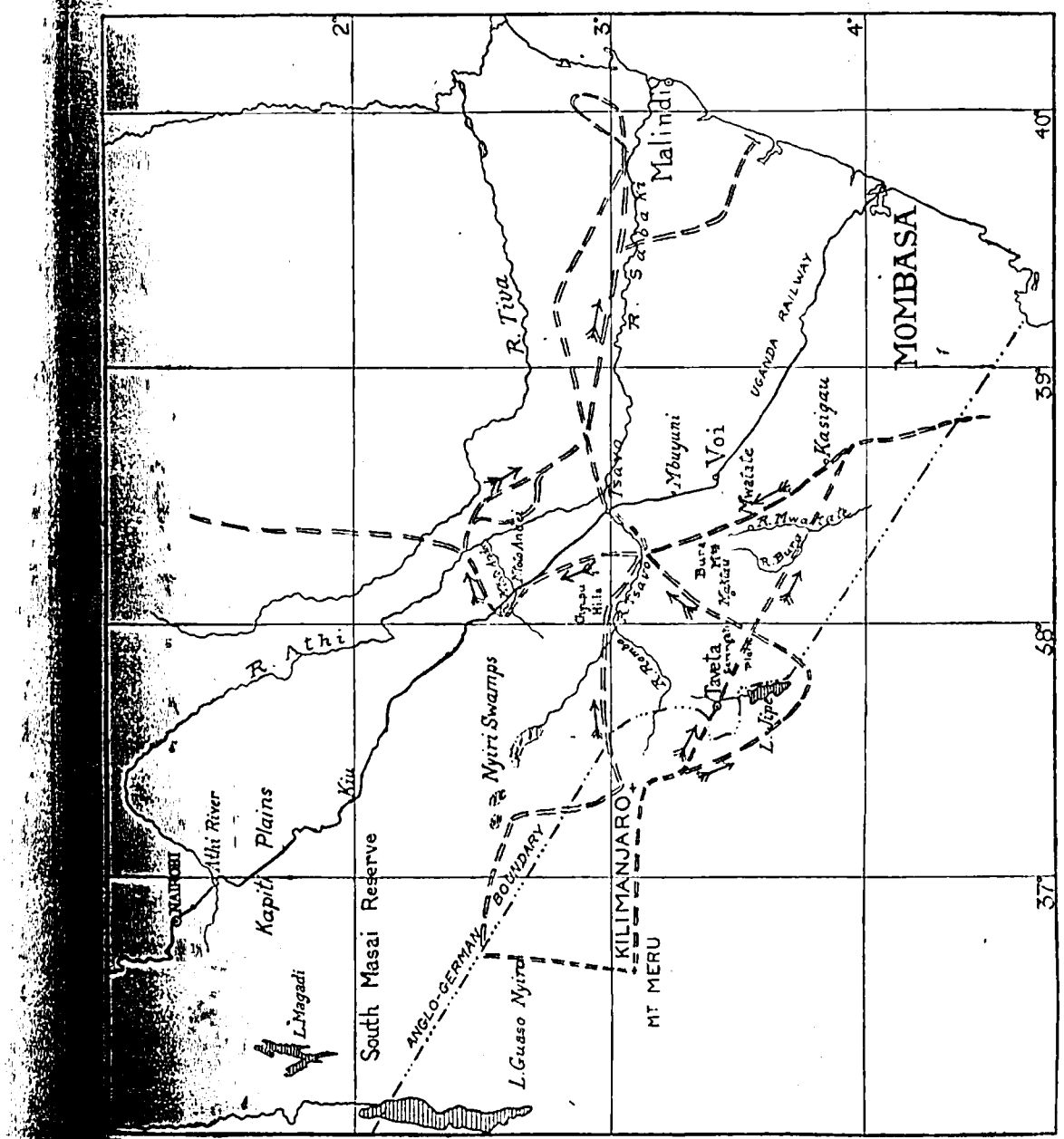
The more important game occupying these areas are as follows:

Elephant	Coke's Hartebeeste
Rhinoceros	Wildebeeste
Buffalo	Impalla
Hippopotamus	Zebra
Lion	Grant's Gazelle (Serengetti and Typica)
Leopard	Thomson's Gazelle
Eland	Giraffe
Greater and Lesser Kudu	Ostrich
Gerenuk	

Naturally when large bodies of men are encamped and are constantly moving about in areas which before the war were practically deserted, when these large bodies of men have at certain times to rely on game for food, when certain animals, such as rhinoceros, have to be destroyed on their endangering troops on patrol, and when at irregular intervals heavy rifle and maxim fire takes place, the local fauna becomes disturbed, and either changes its feeding-grounds or becomes destroyed. This is most noticeable in several animals, viz. elephant, rhinoceros, buffalo, and lion.

Taking these animals separately:

Elephant.—The normal migration of the elephant appears to keep to the following general lines: At the start of the long rains the elephants leave the Kilimanjaro forests and move down into the plains, one party coming *via* Lake Jipe,



Elephant migrations: =

from whence the herd divides, part moving direct to the Upper Tsavo, others moving over to the Lower Bura and Mwatate rivers, perhaps *en route* visiting Kasigau. The others, passing Laitokitok through the L'Endim Lo Soit (Stony Forest), come down into the Tsavo river between Kivukuni and Mzima, and work down towards Campi Ya Tembo. These elephants feed in the thorn scrub north and south of the river, crossing down to the Tsavo at night to drink. In this scrub they are either joined or followed by the Bura-Mwatate herds.

The elephants then pass north *via* the Chambui spring to the Mtito Andei river, thence crossing the Uganda railway and proceeding to the Athi river perhaps as far as the Tiva river.

The herds then move south-west along these streams and visit the hill Rovuma in the Girvama country, and some members of the herds raid the Malindi plantations.

Few, if any, of these elephants in the war zone have been shot either by British or Germans, but the presence of troops has disturbed them considerably.

In 1914 the annual migration took place, but in 1915 only a few scattered small herds came over and along the Tsavo, and except for two or three small herds in the lower reaches, elephants have been conspicuous by their absence. These elephants only come to the river to drink, and speedily make off. (NOTE.—It must be noted that the elephants north of the Uganda railway may be recruited from the Wakamba District elephant herds.)

Rhinoceros.—A large number of rhinoceros have been shot, especially by the enemy. Regular rhinoceros parties used to go out from Taveta and Salaita to kill rhinoceros with, it appears, the double object of providing meat for African troops and sport for the German officers.

Thus the large number of rhinoceros which used to exist in the Upper Rombo, Ziwani Swamp, the bush fringing the Taveta Forest, Lake Jipe, on Latema, Reata, the Mokinni Hills, and in the Kitovo Forest may be taken to be nearly extinct.

On the British side a fair number have been shot when

charging patrols and bodies of troops, and doubtless many more have escaped after being wounded. The large number of rhinoceros which used to live in the bush north and south of the Tsavo river have been much reduced, but probably numbers of these have moved down to the Athi river.

As an instance, the writer counted fifty-four different fresh tracks between Tsavo station and the mouth of the Rombo in 1913, and on an early patrol (August 1914) during the war, saw eighteen in three hours from Kivukoni while travelling due south, but at the present moment only an odd rhino is to be seen or heard. Many still exist, but they are much reduced in numbers.

The rhinoceros are much reduced or have migrated to a large extent on the Serengetti Plains, especially near Maktau.

Buffalo.—The large herds of buffalo along the Tsavo river, especially those on the north bank, appear to have moved back into the Chyulu and Nbulia Hills.

Lion.—Few lions were apparent on the Serengetti (1914–1915), and they appear to have practically left those parts of the Tsavo river where formerly they were common. As far as can be ascertained, very few lions have been shot in the Mombasa area by our troops.

Giraffe.—A fair number have been shot for food, but they will certainly quickly recuperate after hostilities.

Eland.—The writer is of the opinion that the numerous wild dog have caused far more damage to the eland than the few shot by the military. The wild dog nuisance also applies to other game.

Hippopotamus.—A certain number of hippopotamus have been killed in the Mzima river, but these will later be speedily replaced from the Athi. The Mzima river is a noted breeding-ground for hippopotamus, but the majority of hippo there are migratory.

Greater and Lesser Kudu.—Far more Greater Kudu have been shown to exist than was previously imagined in the Mombasa area.

They are fairly generally distributed over a large area, but are very shy and semi-nocturnal.

Of the remaining game animals, the gerenuk about Campi

Ya Bibi and Mbuyuni and along the Tsavo river appear to have disappeared (probably migrated), and the large herds of impalla along the Tsavo have nearly all gone.

On the contrary, the greater and lesser kudu and the buffalo near Killakuni have undoubtedly increased, many calves having been seen.

To sum up, it may be stated that the war has seriously disturbed the game from their usual haunts, but with the exception of the rhinoceros, who, it is feared, will never recover, the damage is only temporary.

The above remarks, be it understood, only apply to the Mombasa area, and in no way apply to the area of country including Ol Doinnyo Erok, the Ol Egeju, L'Ado, or the Bissi river.

October 1915.

REPORT ON THE COLLECTION OF OPHIDIA IN THE SOCIETY'S MUSEUM

By A. Loveridge

It has been suggested that it would be well to publish from time to time in the Journals, lists of the specimens in the Museum, so that members and others may know what species we are in need of and assist the Society to complete its series by filling up the gaps. In future numbers we hope to publish lists of the Mammals, Birds, Lizards, &c.

It is greatly to be regretted that in the present list of snakes lack of space renders it impossible to place the donor's name opposite each specimen, as will be done in future lists. The best collections which have been received are those of Mr. H. J. A. Turner from Kakumega District, B.E.A., and the Hon. C. W. Hobley's collection from Kitui District. In the following list only snakes found in B.E.A. or Uganda are listed; there are a number of other species in the collection from West and South Africa, but these are omitted. A number of the specimens had been sent to the British Museum for identification last year, and these I brought back with me

in January. The Society is therefore indebted to Dr. Boulenger for determining all those in the following list marked with an asterisk.

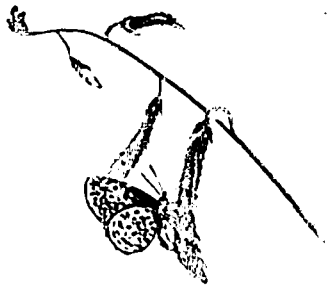
There are no new species to record, but quite a number of interesting variations in scalation worth recording. The second and third columns record the length of body and tail respectively, the fourth the number of encircling scales at mid-body. For the benefit of members I might add that the ventrals are the broad scales along the belly (wanting in burrowing forms such as *Typhlops* and *Glauconia*). Caudals or sub-caudals are beneath the tail, and are usually paired. The number of scales bordering the upper lip (labials) are recorded in the last column, and where there are two numbers given it shows an azygous condition of scalation on the right and left sides. The letter 'M' after the length of the tail implies that that member has been mutilated and part of it is missing, which, it must be remembered, renders valueless the corresponding number of caudals.

Tropidonotus olivaceus (Banded Olive Snake).—The shortness of the tail in I 25 is remarkable. It is probable that the end is missing, but the stump has healed over so remarkably and become pointed that no trace of injury can be seen. Snakes, unlike lizards, do not regenerate their tails.

Boodon lineatus (Brown House Snake).—Most of the males in the collection are olive in colour, the larger females are plumbeous; there are quite a number of light sandy-brown specimens. By the numbers sent in to the Museum it would seem to be the commonest species. I think, however, that *Chlorophis neglectus* is commoner, but does not come under notice so much, as it spends most of its time in shrubs and bushes, away from the haunts of man and in the neighbourhood of streams.

Lycophidium capense (Cape Wolf Snake).—The range of ventral scalation as given in Boulenger's 'Catalogue of Snakes' is 164–189; this can now be extended to 162–202. I 410 has also 26 caudals.

Pseudaspis cana (Mole Snake).—In I 218, the fifth, not fourth, labiale nters the eye. Boulenger states, 'Sub-caudas 50–70,' whilst our four young specimens have respectively 39, 40, 43, 43 caudals. The range may therefore be increased 39–70.



♀ Ovipositing, 2/9/15, 9 a.m.

Larva
seven days old
feeding on cuticle.

Scale ⅓

Larva
twenty-one days old.

Pupa.

LYCÆNID
Life cycle, thirty-eight days.

PAPILIO ANGOLANUS.
Pupa.

P. ANGOLANUS
Larva.

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