

perceive signs of animal existence. Rat, mouse and birds' nests are also looked for. They often yield a good supply of fleas which are saved in tubes of vinegar for Mr. Rothschild. I also hunt around for haunts of bats and lemurs and look out for runs and droppings, foot-marks and bitten leaves and grass. A supply of animals soon turns up and I get to work on them.

With birds it is not so easy to use traps. The .410 shot gun is a more useful instrument, though birdlime and snares will get many a specimen for which the gun is of little use.

The mammal skin must in each case be accompanied by its skull. The label on the skin must record the following data :—

Collector's number.	Locality.
Date.	Altitude.
Sex.	Collector's name.
The dimensions in millimetres of	
Tail.	Hindfoot.
Head and body.	Ear.

And in the case of bats the length of forearm.

In conclusion I must say that I have experienced the greatest help and kindness from the Protectorate officials and would particularly mention those at Mumias.

RIVER CAMP, Vol. 24 April 1910.

SPITTING COBRA

By C. W. HOBLEY.

It has been well known for some years that one of the colubrine snakes of East Africa when disturbed possesses the unpleasant habit of spitting a venomous saliva into the face of its assailant, in fact cases have been recorded in Nairobi itself. In Portuguese East Africa the name given to these snakes with reference to this habit is *Cobras cuspidairas*.

In the Soudan the spitting cobra has been definitely identi-

fied as *Naja nigricollis* by Dr. F. Werner of Vienna, who actually saw a specimen spit at a colleague of his.

As far as is known the spitting snake of this country has never been scientifically identified, but it is probably *Naja nigricollis*; two sub-species or varieties are recorded from Uganda, viz.: *mossambicus* and *melanoleuca*, their difference from the type being mainly in coloration.

I was recently travelling between Athi River Station and Kitui and observed two specimens of this snake; the first was coiled on an ant hill about 9 A.M. on the north side of Chumbi Hill and when disturbed it hastily retired into the ant hill; the following day, between Machakos and the Athi cable-way near the Iwai River, a young dog belonging to the District Commissioner suddenly stopped and began to bark at a tiny bush which was growing out of an ant-hill close to the path, and immediately a snake rose up out of the bush in the typical attitude of the cobra and I distinctly saw it distend its hood to a width of about $4\frac{1}{2}$ inches. It swayed its head slightly and gradually drew it back and I expected any second to see it strike the dog, but instead of that a stream of colourless liquid suddenly shot out of its mouth into the dog's face and the snake dropped and wriggled into the bush; the dog rushed at it but was foiled by the twigs, and after another small feint at striking the snake slid down a hole in the ant-hill. I was riding a mule at the time and the incident was over so quickly that I was unable to take any steps to kill the snake.

At first the dog did not seem to have suffered at all, but in about ten minutes it began to rub its head on the ground and was in evident discomfort, and when we reached the camp about half an hour afterwards its right eye was completely closed and the vicinity of the eye was very much swollen. We poured some milk into the eye and next morning it was distinctly better, and in a few days the effects had quite worn off.

In general appearance these snakes were blackish grey on the back and much lighter below and the approximate length was 5 feet or perhaps a little more.

Some years ago on the edge of the Yatta I was attacked

by a cobra which I had slightly wounded ; this did not attempt to spit and I luckily shot it before it struck, it was over 7 feet long. While clearing the site for Kisumu township many cobras were killed by the workmen and one man was bitten and died ; I never heard of any of them spitting, the longest I saw was between 7 and 8 feet.

The cobras in this country are popularly called *mamba*, a name, I believe, imported from South Africa, and are divided into two classes—black mambas and green mambas. It will, however, probably be found that most of the black mambas are of three species, viz. : *Naja hajæ*, *Naja melanoleuca* and *Naja nigricollis*, the latter being the spitting species.

As for the green mamba I can find no record of a green cobra, and this snake which is said to have a great preference for trees is probably not a cobra at all, but a green viper closely allied to that of the Nile Valley which is called *Causus resimus* and is very poisonous. The Soudan species, however, is said to be only about 2 feet 6 inches, whereas the green mamba is said to reach 5 feet in length.

It may be of some use to collectors to be able readily to distinguish a snake of the cobra group from one of the viper group and to which the puff adders belong. The poison fangs of a cobra are grooved along their front edge and the poison runs down this groove into the wound. In the vipers, however, the poison fang is hollow and the poison issues from a tiny hole near the point of the tooth.

Mr. F. J. Jackson tells me that he believes he has identified five species of the large poisonous snakes and classifies them as follows :—

- (1) Shiny black 'Mamba' with a yellow throat, length about six feet. He is inclined to believe that this is not a cobra as he has never seen it dilate its neck into the typical hood.
- (2) Dull black cobra, length 6 feet to 10 feet.
Note : This is probably *Naja melanoleuca*, which is the largest of the African cobras.
- (3) Earthy grey cobra, length 5 feet.
Note : Probably *Naja hajæ*.

- (4) Earthy olive brown cobra, length 5 feet.

Note : Probably *Naja nigricollis*.

- (5) Green 'mamba'—lives in trees to a great extent—length 5 feet.

Note : Probably a green viper of genus *Causus*.

The poisonous snakes of this country are not very well known, and it is hoped that members of the Society will devote some attention to the collection of specimens; for the purpose of identification it is not necessary to send in the whole body of a snake, but the head and upper part of the neck should be sent in, in spirit; but the length should be measured and a careful description of the body markings noted immediately after death; the body should be skinned and the dried skin forwarded, or the skin can be left attached to the hood and placed in spirit with the head.

It is very important that all residents should be able readily to identify all the poisonous reptiles of the country.

EUROPEAN MIGRANTS IN BRITISH EAST AFRICA

By A. B. PERCIVAL.

Few subjects have interested naturalists more than the migration of birds, and it is only comparatively recently that it was accepted that birds migrated for any great distance. Even such a good naturalist as White of Selborne had doubts about the Swallows, and quoted cases of hibernating Swallows having been found in various places, though he admits that he never saw any himself.

One can quite understand doubts being held as to the possibility of such weak-winged birds as the Willow-Warbler and Sedge-Warbler being able to cross even the English Channel, but the man who had told White that they actually travelled for 4000 miles to their winter resort would have been laughed at. Yet such is the case. One can easily understand such strong-winged birds as Swallows and Swifts travelling any distance, but that the small warblers that flit from tree to tree