

The
JOURNAL
OF THE
Darjeeling Natural History Society.

EDITED BY

C. M. INGLIS, F. Z. S., F. E. S. M, B. O. U.,

Vol II.

*Consisting of four numbers and containing one
photograph, 6 statements and 3 plates.*

Date of Issue.

Number I	(Pages 1 to 20)	... June	1927.
"	II (Pages 21 to 42)	.. October	1927.
"	III (Pages 42 to 60)	... December	1927.
"	IV (Pages 61 to 82)	... April	1928.

Darjeeling Natural History Society.

The Society was started about the end of 1923,

The objects being to maintain the Museum in a proper condition and to promote the study of Natural History. To get together, as complete as possible, collections of Natural History specimens from a limited area, including "the civil districts of Jalpaiguri and Darjeeling and the State of Sikkim" as well as what could be procured from the neighbouring Countries of Tibet, Bhutan and Nepal.

The Government and Municipal grants not being sufficient for our purpose it was proposed to enrol members so as to increase our funds and a Quarterly Journal has been started. It is hoped that everybody will join the Society and co-operate to make the Museum and Journal a success.

The annual subscription is only Rs. 10.

Application for membership should be made to:-

*The Curator,
Natural History Museum,
Darjeeling.*

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Journal
OF THE
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No. 4

Game Birds of Sikkim including the Darjeeling District
and of the Jalpaiguri District, Bengal.

BY

C. M. INGLIS, F. Z. S., F. E. S., M. B. O. U.

(Continued from page 44).

8. The Northern Green Imperial Pigeon (*Muscadivora
aenea sylvatica* (Tick).

This fine Pigeon, the last of the Green and Imperial Pigeons, is slightly smaller than the last bird, but makes up it in its beautiful colouration and is, I consider, the finer bird of the two.

The head, neck and lower parts are grey tinged with pink, varying in tint in different specimens; the feathers next the bill and the chin are white. The remainder of the upper plumage, as well as the exposed portion of the wings, is bronze-green; in some birds this is much mixed with blue while in others the prominent colour is fiery copper-bronze. The under tail-coverts are maroon. The bill is greyish and purple-red at the base; the iris is lake-red and the legs and feet purplish-red.

The length of this Pigeon is from 15 to 18 inches. Stuart Baker writes:—"This is a bird of hills and plains alike, being found throughout the latter wherever there is forest.....and ascending the former up to at least 6,000 ft. It is perhaps most common in the foothills of mountain-ranges and the broken grounds and plains immediately adjoining them up to some 3,000 ft. in the mountains themselves, though many observers do not give them credit for going higher up than 1,000 or 1,500 ft." As far as our area is concerned it is *wholly* a plains species and I very much doubt if it even ascends the hills as high as 1000 or 1500 ft. Neither Stevens nor Shaw ever came across it and I have only got it in the Duars. The only Imperial got there at 2000 ft. was Hodgson's bird. It is resident and well distributed over the plains area, wherever there is forest and also freely comes into the open wherever there are ber (*Tizyphus jujuba*) trees in fruit.

This Pigeon is generally seen in pairs, small parties or singly but sometimes large numbers congregate where trees are in fruit. They are partial to fruit and berries of all sizes, varying from the small figs of some species of *Ficus* trees to wild plums such as *jaman*. The Ceylon sub-species also feed on wild cinnamon and wild nutmegs. The gape of these birds being very wide enables them to swallow plums of an enormous size. They drink regularly at streams and elsewhere and walk well while on the ground though not as fast as ordinary pigeons. Stuart Baker found both this bird and Hodgson's Imperial Pigeon visiting "salt-licks" to pick up scraps of the earth or drink "the brackish water and mud that oozed up from the ground."

The note has been differently described. Stuart Baker says it is a deep guttural "coo" "consisting of two notes well syllabified as "wuck-woor," the second syllable the deeper and prolonged with a rolling sound" and I think this represents it better than any other description.

The flight is fast and very similar to that of the last species and they usually fly higher than the Green Pigeons; while flying between patches of forest I have seen them flying well above the tree tops.

O'Donel gave me some interesting information about their roosting. Before doing so the first bird gets on to a big tree and is gradually followed by others, sometimes quite a large number are assembled; then they

dive down into a thick bush where they stay the night. I have myself seen them come down from the tree to the bushes.

There is no information as to the time of the year they breed with us, but April and May appear to be the principal breeding months elsewhere.

The nest is much the same sort of structure as that of Hodgson's Imperial Pigeon and as to situations Stuart Baker writes:— 'The majority of nests are built upon small saplings at a height of ten to twenty five feet from the ground, but I have taken them occasionally from high, heavy-foliaged trees, such as the banyan and popul, at a height of over forty feet. Occasionally, also, they may be placed in bamboo-clumps, but though two or three such nests have been reported to me, I have never *seen* any so placed.

"The tree selected is one generally placed in fairly thick forest, but close to, or on the borders of some opening, either natural, such as a river bed or open glade, or artificial, such as caused by a road or a piece of cultivated ground. On the other hand they are sometimes placed on a tree well in the interior of evergreen forest and far removed from all cultivation.

"I have not found it breeding over 3500 feet, and very seldom over 2500 feet., its usual breeding grounds being from the level of the plains up to some 1500 or 2000 ft."

The single egg is white, sometimes with a slight gloss on it and measures 1.78 ins. \times 1.28 ins.

These birds are sometimes kept in captivity and have lived for three years in the Alipore Zoo. They, like all Green Pigeons, are lethargic and rather uninteresting pets. They should, on account of their large size, be kept in an aviary and certainly add to the appearance of one. They are not quarrelsome or aggressive birds and so other birds can be kept with them without any fear. The usual *sattoo cum* plantain food given to other green Pigeons may be given to them with sliced plantains and other fruit and berries when procurable.

They are excellent table birds both on account of their size and flavour but should preferably be skinned before cooking as Stuart Baker says "the skin is often loaded with a denal coating of yellow fat, not always pleasant to the taste."

(To be continued).

The Snakes of Northern Bengal and Sikkim

BY

G. E. SHAW AND E. O. SHEBBEARE.

Preface.

The instinctive horror of snakes is so deeply rooted in some people that the mere handling of one, dead or alive, is an impossibility to them. To all not thus afflicted we recommend snakes as a fascinating study. Besides their beauty, for most of them are surprisingly beautiful when closely examined, they have several points to commend them to collectors.

Firstly they are easy to get; throughout the rains (there are few snakes to be got in the cold weather) the offer of two annas a head will provide anyone who lives on a tea-garden with as many specimens as he can afford, once the labour force has grasped the fact that money can be so easily earned. Secondly they are easy to keep; all that is necessary is to drop them into methylated spirit, which incidentally preserves paper labels written in pencil as well as it preserves snakes. Thirdly, though there is ample variety in our area, there are not so many as to overwhelm a collector who has not unlimited spare time. Fourthly snakes are more easily identified than almost any other class of creatures as it is mainly a question of counting scales. Lastly, there is some practical use in knowing whether a snake is poisonous or not, and you may take it that there is no simple rule of thumb to guide you in this.

This last statement may be challenged by those who claim to know of some simple yet infallible test by which any poisonous snake can be recognised. To such a claim we can only reply that if the test is infallible it cannot be simple. For this very purpose Colonel Wall has drawn up a set of rules which we believe to be the most concise that could be devised, and they, printed in bold type in the form of a chart, take up about as much space as a map of the world. Very simple rules, such as that all poisonous snakes are spotty and harmless ones stripy, may be regarded as unreliable.

We had perhaps better make it clear at once that to collect snakes is not to carry one's life in one's hand. It is easier to examine a snake dead than alive, and just as easy to kill it before picking it up as after. A rap with a stick on the back of the neck will put any snake, even the largest python, out of action and, if you are wise, you will give no snake, however dead, the chance of biting you. Most snakes will be brought to you dead for, though familiarity breeds contempt and *chokras* have been known to produce live cobras from their pockets, the practice should be discouraged. It is more common to find would-be helpers going to the other extreme and, at first at any rate, some are sure to produce for reward specimens with their heads pounded to a jelly or removed entirely out of harms way.

Of the seventy-four species which we know of in our area, only thirteen are poisonous and of these none are particularly common and some are very rare, so that it is doubtful whether, of all the snakes one ordinarily meets, even two per cent are dangerous.

We think that any one who began collecting seriously would get half of these seventy-four species in his own neighbourhood while a pair of collectors, one living in the plains and the other in the hills could by collaborating and exchanging specimens get all but two or three or the rarest species in the course of a season or two.

It may come as a surprise at first to find colour playing a comparatively small part in the key; it will not surprise you when you get to know snakes better and find how variable they are, especially young ones.

In the key, the whole of which is published in this number of the Journal, we have not used scientific names, which are rather alarming at first. They will be given in subsequent numbers together with the descriptions of the snakes and their distribution and habits as far as we know them.

The English names we use have been taken from various papers published by Colonel Wall; where two or more names exist we have adopted the one we liked best for the key, but all names, so far as we know them, will be given with the description in subsequent numbers of the Journal.

If, as we hope, several readers take up the study of snakes it is safe to predict that we shall know more about those in our area by the end of the coming rains.

Finally we would make a request. If you find a snake which cannot be run down in our key or that does not tally with it, please let us know. If it is your mistake we shall be glad to help you, if it is ours we shall want to correct the key and, if it is neither it may be a snake new to our area or possibly even new to Science.

How to use the key.

Before trying to identify a snake by this key it is well to make sure that the creature really is a snake. All snakes are scaled and the scales are visible to the naked eye. The only creature in our area that has scales and looks like a snake, but it is not, is the local slow-worm (*Ophisaurus gracilis*)--a legless lizard. This can be recognized as no snake by the following two points:--(1) it has a moveable eye-lid and can therefore wink, (2) its tail is longer than its body, in other words the vent is nearer to the tip of the snout than to the tip of the tail.

Having satisfied yourself that it is a snake that you are examining, the first point is to see whether the scales all round the body are similar or whether the belly is covered with parallel overlapping shields (know as ventrals, Plate I, fig. A). In the former case, that is if the belly is scaled like the back, it is one of the little blind snakes in the key on p. 69, (unless, in spite of my warning in the last paragraph, you are trying to identify the slow-worm as a snake. This also has a scaly belly).

Usually, however, the belly will be found to be covered with ventrals and it is then necessary to count:-

- (1) The number of rows of scales (costals) at mid-body, counted diagonally over the back (see Plate I, fig. C)
- (2) The number of ventrals from the neck to the vent (Plate I, fig. A.)

Mid-body means a point half way between the head and the vent.

With this information turn to the appropriate table of the key and lay a straight-edge vertically down the line representing the number of ventrals in your specimen. It will probably pass through several of the horizontal black lines, each representing a separate

21
230

species to one of which your snake belongs. A word of warning is necessary here. Of the common snakes the number of ventrals have been counted in hundreds of individuals and it is unlikely that the number in the specimen you are dealing with will fall outside these limits (or in other words that your straight-edge will fall clear of the black line representing the species). Some species, however, are so rare that only one or two specimens have ever been found. You should therefore regard very short lines with suspicion and be prepared to extend them.

* Note: With a few exceptions the lines represent the maximum and minimum limits in the number of ventrals in all specimens observed by us, or recorded in the books and papers that we have been able to consult, but where we have counted the ventrals of over a hundred specimens of any species from our own area, we have decided to ignore higher or lower counts recorded in books dealing with the whole of India on the assumption that the limits we have found are those of our area.

You have now run your snake down to one of six or seven (at the outside ten) species. You have next to consider which of the scale patterns in Plate II most nearly resembles that of your specimen. The letters A, B, C, D, E, or F, which immediately precede the black line in the tables refer to the sections of this plate, each of which represents, as it were, a flat piece of snake-skin cut from the mid-body region.

A is the simplest type. The pattern is that of wire netting formed by the intersection of two series of practically straight diagonal lines.

B, the keelback type, is the same as A except that each scale has a keel, (the part inside the circle is supposed to be magnified). Combinations of A and B are common. Sometimes the rows of scales along the back are keeled while those on the flanks are plain (A back B) or the snake has keeled scales towards the tail and smooth scales everywhere else (A hind end B). In dry skins scales which were smooth in life often appear keeled.

C, the type found in all kraits, is the same again except that scales in the vertebral row (along the spine) are wider than the rest. Note that, in this type the lines forming the pattern are roughly straight as in A & B; enlarged vertebrales are found in types D & E,

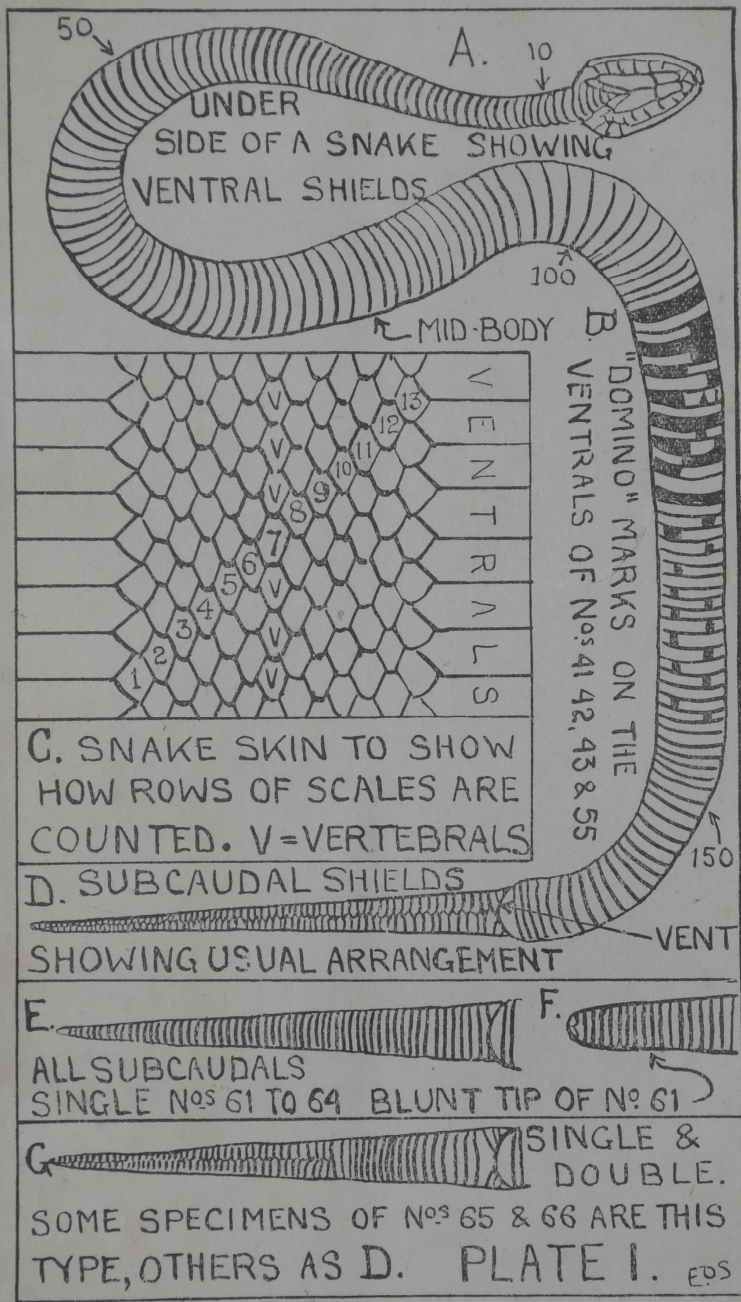
but here the pattern is formed by curved lines, also rows of scales increase in size progressively up to the vertebral row; in kraits the vertebral row *only* is enlarged.

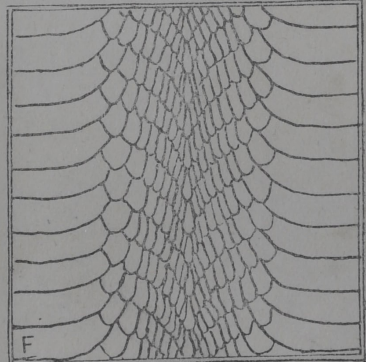
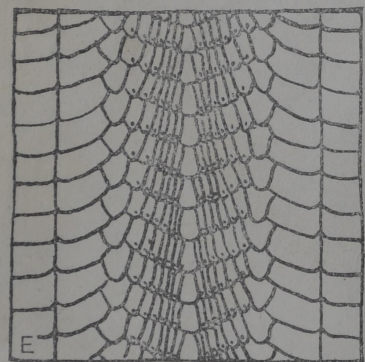
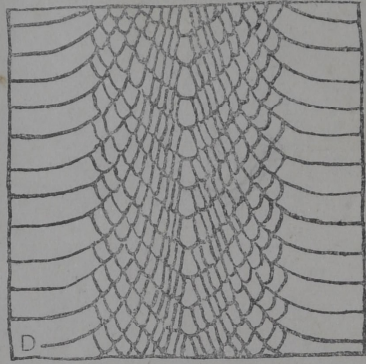
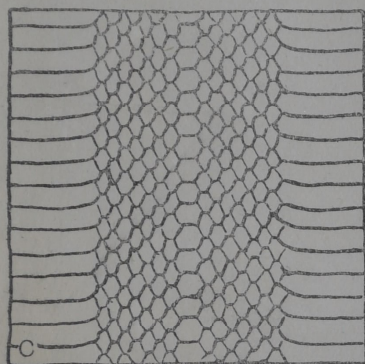
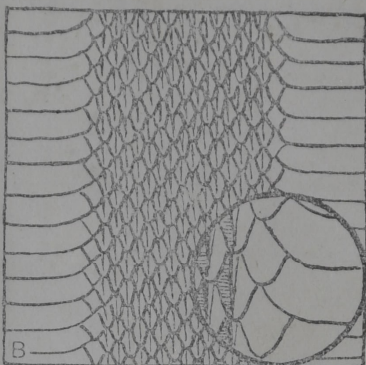
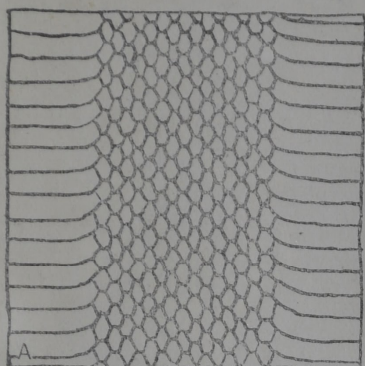
D, the whipsnake type, has the pattern formed by the intersection curves. It is useful to remember that this pattern is only found in the whipsnakes (which have a horizontal pupil to the eye), the cat-snakes (which have a vertical pupil) and the Golden Tree-Snake (with a round pupil).

E, the bronzeback type, is the same as D except that there is a line along each side of the ventrals which are notched where it crosses them. There is also a pit near the tip of each scale, except the outer rows.

F, the cobra type, is only found in the cobra. The scale pattern of the mature King Cobra is a sort of compromise between this pattern and type A. The young King Cobra is type A.





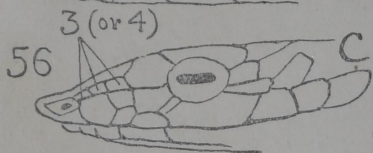
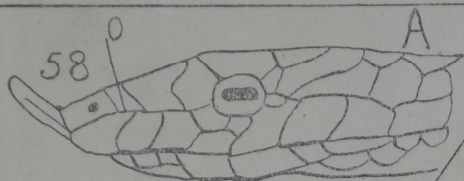


A. SIMPLE
 C. KRAIT
 E. BRONZEBACK

B. KEELBACK
 D. WHIP-SNAKE
 F. COBRA

PLATE II.

© S.

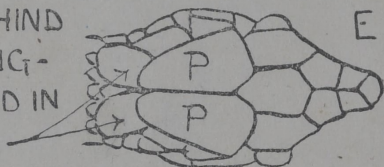


WHIPSNAKES

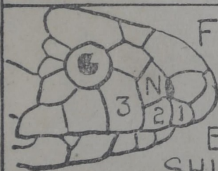


PAIR OF
PALE SPECKS
ON PARIETALS OF
N°37 DISTINGUISHING
IT FROM 35 & 36: N°13
HAS SIMILAR SPECKS

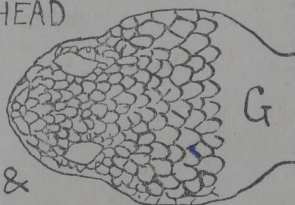
PAIR OF SHIELDS BEHIND
PARIETALS (P) OF KING-
COBRA (N°66) FOUND IN
NO OTHER SNAKE



F 3RD SHIELD
OF UPPER LIP
TOUCHING
EYE & NASAL
SHIELD (N) IN
66, 67 & 68: ONLY.

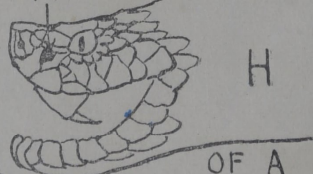


SCALY (NOT SHIELDED)
HEAD



&

PIT



OF A
TYPICAL VIPER
E.O.S.

HEAD MARKINGS



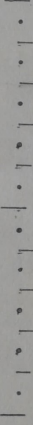

N°s 39, 40, 41 & 42




N° 27
PLATE III


16 rows of Scales at Mid-Body.


Number of ventrals :- 150 200 250

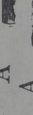
24. Black-bordered Rat Snake A  B  Green, each scale black-edged.

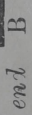
17 Rows of Scales at Mid-Body.

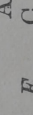
14. Cobra ... B  Can extend a hood; "domino marks" Pl. I. B.

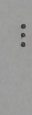
55. Mock Viper ... A  Brown, faint buff longitudinal pattern.

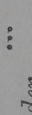
40. Coral-bellied Kukri Snake A  Grey, pink belly; beautiful minute pattern.

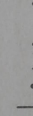
18. Twin-spotted Wolf Snake A  Black speckled with yellow dots in pairs.

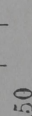
6. Collared Polydent A  Brown, broad black and narrow yellow collar.

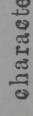
39. Common Kukri Snake A  Green or orange, black or black & white bars.

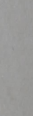
23. Dhaman Front end A, hind end B  Green sometimes barred with black.

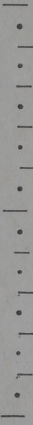
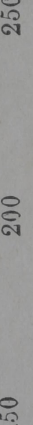
19. Common Wolf Snake ... A  Checkate, white pattern, more distinct in front.

62. Common Krait see Pl. I. E. ... C  Black, narrow white bars less distinct in front.

22. White-banded Wolf Snake ... A  Black with narrow white bands.

20. Anderson's Wolf Snake ... B  Black and red bands.

59. Golden Tree Snake Slender ... E  Varieled but gaudy, head black & yellow.

 200  250

Heavy type-Poisonous. 150

Note :- Nos. 39 and 40 have a characteristic head marking shown in Pl. III J.

20 or 21 Rows of Scales at Mid-Body.
















	150	200	250
73. Large-spotted Viper	B or A	A pit, scaly head,* brown with darker mottlings.	
71. Himalayan Pit-Viper	B	A pit,* head with shades, brown, black spots or bands.	
47. Schneider's Water Snake	A	Olive, belly whitish, black line on edge of ventrals.	
12. Painted Keelback	...	B	Olive, belly white, shot canary, neck shot red.
72. Green Pit-Viper	...	B	A pit, scaly head,* uniform green (rarely brown),
43. Striped Kukri Snake	...	A	"Domino marks" see Pl. I. B. no neck.
67. Cobra	...	F	See Pl. III F.
29. Ring-tailed Dhaman	...	A hind end feebly B	reticulate, ringed behind, belly marbled.
49. Arrow-backed Cat-Snake	...	...	D
48. Common Cat-Snake	...	...	D
50. Many-banded Cat-Snake	...	...	D
51. Grey Cat-Snake	...	...	D
28. Copper-headed Rat-Snake	...	A hind end B	black-edged white zig-zag on back. brick-red to grey, distinct black lines. ditto. lines absent or very faint.
52. Green Cat-Snake	...	...	D

Heavy type-Poisonous.

* For explanation of "pit" and "scaly head" see Pl. III. G. and H.

23 to 31 Rows of Scales at Mid-Body.

Number of ventrals:-- 150 200 250 300

- 73. Large-Spotted Viper Bor A  a pit, scaly head,* brown, darker mottling.
- 71. Himalayan Pit-viper B  a pit,* head shields, brown, black spots on bands.
- 70. Russel's Viper  no pit, scaly head,* brown, 3 rows of black rings.
- 72. Green Pit-viper B  a pit, scaly head,* green (rarely brown), no pattern.
- 74. Gray's Pit-viper B  ditto. variegated purple, brown and pale green.
- 67. Cobra F  Pl. III, F.
- 30. Hodgson's Coluber a  olive, most scales edged black.
- 33. Trinket Snake b  brown, black and white pattern.
- 31. Stripe-tailed Coluber  olive, black side-stripes behind.
- 32. Boie's Coluber  23 rows at mid-body B  bright green above, belly paler.
- 53. Black-barred Cat-Snake  23 rows at mid-body D  light brown, black cross-bars.
- 54. Forsten's Cat-Snake  27-31 rows at mid-body D  brown, black angular cross-bars.

60 to 75 Rows of Scales at Mid-Body.

150 200 250 300

5. Indian Python

Heavy type-Poisonous.

* for explanation of "pit" and "scaly head see Pl. III, G. and H.

Another First Tiger (an almost true story).

In the December issue of the Journal my friend Mr. Field describes how he shot his first tiger.

He sat up for hours on a hard uncomfortable machan over a dead cow, which stank considerably. It came on to rain—he got wet through and miserably cold (he hadn't the sense to put a flask of whisky in his pocket). The Tiger came and for once he happened to shoot straight. Then a long wait, still raining, while coolies were collected to load the beast on the elephant.

This done, he started for home, sitting on the Tiger with ticks swarming at him all the time.

The elephant's pad had been badly put on and slipped (again bad bunderbust) and consequently he had to drop the tiger and finish his journey on foot in the the dark and rain. He admits that he arrived dead beat, but even then his troubles were not over, as he had to convince Dr. Stone that he really had shot a tiger before the latter would arrange a cart to bring it in.

A more unpleasant business from start to finish I cannot imagine!

A grateful Government provides the Forest Officer of the Sunderbans with a very smart twin screw launch about 120 feet long, having two cabins, an upper deck and fitted with electric lights, fans and every other convenience.

I was touring in February 1913 and after an excellent tiffin—Bekti alive a minute before the cook popped it in the frying pan followed by prawn curry and accompanied by a large bottle of beer perfectly iced—I retired to my cabin for a well earned afternoon's snooze. About 3 o'clock the stopping of the launch and yells from the crew woke me up.

I admit I was a bit annoyed at being disturbed, but recovered my temper when they told me a tiger was in sight.

We were then in a stream 2 miles wide and the tiger was in the middle of it. The launch was run alongside him, I leant over the side, put a bullet in his head and the crew lifted him on board. All over in 5 minutes after which I retired to finish my repose.

Now that is the way to shoot one's first tiger and mine was an immense beast.

J. H.
13-1-28.

Measurement of big game shot within our area.

I would be very much obliged if members would send me the measurements of big game shot by them. whether good heads or large skins or not. I want to compile a list of records for our area and also to find out what the average size is the various big game we get. I have so far, only been able to obtain a few of these and give them in case they may be of interest to sportsmen.

Mr. W. P. Field gave some measurements of tigers in Vol 1 page 28 of our Journal. I give these in case this Journal is not in the hands of all our members.

Sex.	Peg to Peg.	Round curves.	Head and Body.	Tail.	Shot by.
Male	9' 1"	10'			Self.
Male	9'	9' 4"			C. Bateman.
Male	9' 1"	no record	5' 10"	3' 3"	Self.
Male	8' 10"	9' 3"	...	...	Self.
Male	9' 6"	10'	6' 4"	3' 2"	Self.
Male	9' 3"	9' 7"		...	Self.
Male	8' 11"	no record		...	Self.
Male	9'	9' 6"		...	Self.
Female	no record	9' 3"		...	Self.
Female	no record	8' 7"		...	Self.

I can add the following one shot by Mr. H. V. O'Donel in the Duars last February.

Male	9' 1"	9' 5"	6'	3' 1"	H. V. O'Donel.
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The forearm of the above animal measured 1' 7/4".

Leopards (*Felis pardus*)

No record	8' 2"	J. J. Macpherson.
No record	8'	...	...	Wibmer.
No record	7'	...	...	W. P. Field.

Sambhur (*Rusa unicolor*)

One horn 37" the other 36" shot by Mr. A. R. Nicholson in the Duars.

36" head shot by Mr. A. K. Glasson in the Duars.

32" head shot by Mr. W. P. Field in the Duars.

Bengal Barking Deer (*Muntiacus vaginalis*).

Right horn 7 1/4" left one 6" without pedicles shot by Mr. T. A. Baldry.

Jamrachs' Serow (*Capricornis sumatrensis jamrachi*).

Mr. W. H. Matthews in our Journal Vol. II page 8 says:—

A good average pair of horns in 8¼ inches for this district, the record being, as far as I know 11¼ inches obtained recently in the Runggeat Valley and 9¼ inches for a female head in the Rungbee gorge below Sanchal.

Brown Himalayan Goral (*Nemotacedus Hodgsoni*).

One horn 7½" the other 7¼ killed by a leopard and recorded by Mr. D. G. Smyth Osbourne.

Darjeeling,
9th April 1928.

The Editor.

Probable Cannibalism among Bears.

I sent out some men to track a small bear which had been feeding on makai, they found his tracks and further on those of a much larger bear. The latter followed up the former for over half a mile, caught up with and killed him, and apparently ate part of one thigh. The chest was torn open and the liver &c., also very much torn. The kill when found was 24 hours old and some of the eating may have been done by vermin. The victim had been held down against a tree trunk, the lowers ribs crushed and torn open. The corpse was that of a male weighing two maunds and I think it may have been the cub of a female which I shot in October 1925, because there was a cub with her which I tried to catch, but it was too big and quick.

Lopchu T. E.
7th August 1927.

B. N. Crees,

[Mr. Crees is probably quite correct in assuming that the big bear killed and fed on the little one. They are the most carnivorous of our bears and are known to kill sheep, goats, deer, cattle and ponies and don't disdain carrion. We are sure Mr. Crees could tell us more about this interesting incident and understand the bear visited the kill a second time. Editor].

Can Snakes Hear?

The "Statesman" of the 24th April 1927 has a very interesting paragraph about "Animals and Music." It is:—"There can be no doubt that some Animals are fascinated by music, and such legends as that of Orpheus and the Pied Piper are based upon some substratum of fact. One myth enjoying world-wide belief dies very hard—*i. e.*, the supposed fondness of serpents for music. No snake evinces the slightest interest in music of any kind. The dirge invariably played by "charmners" on their flutes is purely a piece of professional "bluff," the reptiles dance being caused by the snakes fencing for an opening to strike as the charmer moves from side to side with a rhythmic motion."

[This is interesting as it more or less confirms Mr. Shaw's theory, in his note under the above heading in the first number of our Journal, where he says, "a more probable explanation seems to be that it is not the music at all that charms the snake. The snake charmer always sways to the music he is producing, lifting his pipe up and down with the tune, and it seems possible that the snake is fascinated merely by this rhythmical movement and keeps time with it." The suggestion that the snake is only fencing for an opening to strike appears to be a very sound one. Editor].

Spiders,

Many of our readers will have seen Kim's remarks on spiders in the Statesman and probably many like him had a very vague idea as to whether spiders could be called insects or not and whether they really have poison glands. Kim adopts Ray Lankester's dictum that spiders are insects and the information given by Madame Phisalix that they have poison glands "like bagpipes." He also adopts very firmly the belief that "spider lick" is not due to spiders but to Cantharid beetles.

Many naturalists will demur to the first of these statements but Ray Lankester knew that the average man has no time for detailed classification and would not want to know that the Arthropoda are most conveniently divided into Crustacea, Prototracheata, Myriopoda, Insecta, Arachnoidea and Paleostraca.

Crustacea and Insects are enough for him. With the other statements we all agree though a little more information from Madame Phisalix' book may be welcome to some. On looking at a large spider from above only the many jointed maxillary palps are seen coming from the mouth region, but from below a pair of *chelicerae* can also be seen, two jointed appendages with the second joint sharp and fang like. At the point of each of these is an opening to a canal leading from the poison gland. In the embryo spider an invagination of the outer layer at the very extremity of the end joint grows inwards forming the gland and it gradually grows deeper till after the small creature has had several moults the sac is found in the lower joint or in some spiders even farther down in the body itself. If a *chelicera* is pulled off, the whitish sac can often be seen hanging attached to it. The sac forms a small reservoir for the poison which is secreted by the cells which line it.

Only in the very large spiders is there enough venom to affect human beings though I knew one man who allowed small spiders to bite his lip in order to find out whether the stinging effect was noticeable or not and found this a help to identification of the species. But the effects of some of the very large ones can be quite serious. Men have been incapacitated for weeks from a bite and there is one record of the death of a child of seven from the bite of a spider in the Argentine. In all these cases however there seems room for doubt whether the effects are all due to the venom or whether some virulent germs have found an entry and a suitable medium for growth in the small wound. Ordinary English garden spiders have been tested on all sorts of animals but the largest that was visibly affected by the injection of an infusion of the glands was a toad. Insects of all kinds though died very quickly from bites.

G. E. SHAW,
12th April 1928.

EDITORIAL.

We will now make some remarks on our Journal and give our financial position during the past year.

The Journal :---We have now completed the second volume and thank all those who have assisted us with it. It is still a very modest one but our appeal has brought more members to our aid, though not as many as we should like to have. Some of those who promised us notes have failed to send them in and we hope this will catch their eye and make them sit down and pen some interesting articles. We know our members are a busy lot of people but those who have helped us are likewise busy and, nevertheless, have found time to come to our aid, any success that our Journal has so far achieved is wholly due to them. We are especially indebted to those who have sent us papers from home such as Professor Poulton of Jesus College, Oxford who notwithstanding his many duties, sent us a long and interesting article of seven pages, Mr. Hugh Whistler also sent us in a couple of interesting ones. We want more articles on our big game, giving full notes on habits etc. like Mr. Matthew's one on the Serow. Messrs Shaw and Shebbeare's papers on the snakes found in our area should prove interesting and a help to our members, the keys given are simple and the descriptions by Mr. Shaw very comprehensive. "Kim" in the "Statesman" kindly brings our Journal to the notice of the general public and finds matter of interest in it. In the "Statesman" of the 19th November 1927 he wrote:—"People interested in quaint and curious things connected with the Indian jungle should get hold of the Journal of the Darjeeling Natural History Society." We again ask all our members to endeavour to help us to make Volume three a more pretentious one than its predecessors.

Finance :---We are really in a slightly sounder financial position than last year though we show a slight decrease in donations.

The number of members on our books is 97 but some 12 went home, either on leave or for good, which left us with 85 as against 67 in 1926. We are still far short of the number we ought to have and would be very grateful to those who would help us by getting others to join.

The following is a statement of the subscriptions and donations received during the past financial year as compared to the previous one.

1926-27.			1927-28.		
Members' Subscriptions	Rs 700	0 0	Members' Subscriptions	Rs. 829	14 0
Donations	Rs. 532	1 9	Donations	Rs. 376	14 9
	Rs. 1,232	1 9		Rs. 1,206	12 9

The decrease in donations is because in 1926-27 we received Rs. 200 from the Jaldacca Fishing Club before the end of the financial year.

With regard to donations we have to thank our local Shooting and Fishing Club as well as the Jaldacca one for their generous contributions and hope that the newly formed Toorsa Shooting and Fishing Club will also come into line and help us as much as they can. Mr. W. E. Griffith very kindly gave us Rs. 50 to be used on our Journal and Mr. W. L. Travers has again assisted us with a donation of Rs. 40.

We have also to thank the local firms and others for their continued support.

We append a Statement showing the amount of pecuniary donations received:—

Darjeeling Fishing & Shooting Club	...	Re.	100	0	0
Mr. W. E. Griffiths, Calcutta	...	"	50	0	0
Mr. W. L. Travers, C. I. E., O. B. E., M. L. C., Baradighi T. E.	...	"	40	0	0
Lt. Col. F. C. Fraser, I. M. S., Waltair	...	"	20	0	0
Mrs. Drysdale, Chalauni T. E.	...	"	20	0	0
Messrs The Rendezvous Darjeeling	...	"	10	0	0
„ Vado and Pliva	...	"	10	0	0
„ Whiteaway Laidlaw & Co.	...	"	10	0	0
„ Hall and Anderson & Co.	...	"	10	0	0
„ Smith Stanistreet & Co.	...	"	10	0	0
„ Parvion, Darjeeling	...	"	5	0	0
„ P. C. Banerjee, Darjeeling	...	"	5	0	0
Smaller donations	...	"	86	14	9

TOTAL Rs. ... 376 14 9

Acknowledgements:—We thank Their Excellencies Sir Stanley and Lady Jackson for the interest they have taken in the Museum and our work.

We have also received much kind help from Mr. and Mrs. Lindsay and Messrs Shaw and Shebbeare and wish to thank our Chairman Mr. D. H. Wares and the Committee for their help and advice.

Thanks are also due to those who have kindly assisted us with material for the Museum.

We much regret the delay in the publication of this number of the Journal but the Article on Snakes has been a difficult job for the printers, the charts or keys proving a bigger proposition than was expected.

