

NOTES ON SNAKES FROM THE NEIGHBOURHOOD OF DARJEELING.

BY

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(WITH A PLATE.)

Between the 24th June and the end of November 1908, I had opportunities of examining 984 snakes representing 48 different species from the locality of Darjeeling. Of this large total 778 were collected by myself with the very material assistance of friends, 95 were in the Darjeeling Museum, and 111 in St. Joseph's College collection. My thanks are due to several gentlemen who spared no pains in helping me. Among these I would mention Mr. J. L. Lister of Pashok Tea Estate, Mr. A. W. Wright of Tindharia, Mr. H. K. Robinson, the Forest Officer at Kurseong, and Mr. de Abreu of Victoria School, Kurseong. My acknowledgments are also due to Mr. Fritz Moller for allowing me to examine the collection in the Darjeeling Museum, and to the authorities at St. Joseph's College for giving me access to their collection.

The area over which Mr. Lister's coolies collected is an extensive one ranging between altitudes varying from 1,200 to 5,200 feet near Darjeeling and the mention of Pashok hereafter implies this area. No less than 408 specimens were collected here. Mr. Wright's coolies collected about the Railway between the foot hills and Tindharia, *i.e.*, at an altitude between about 500 and 2,800 feet. Tindharia in the following pages implies this area. From here I received 75 specimens. Mr. Robinson and Mr. de Abreu collected at Kurseong between elevations of 5,500 and 6,500 feet, and got me 242 specimens. The Darjeeling Museum specimens have no localities attached, but Mr. Fritz Moller told me that nearly all had been collected by a neighbouring Planter from slopes ranging between about 2,000 and 4,500 feet. The St. Joseph's College collection has been for the most part accumulated locally. Amongst other interesting specimens there are several which had been collected by the late Dr. Vincent Richards, one of our greatest ophiologists in the special department concerning

toxicology. These specimens, nearly all venomous, I could distinguish because they had been preserved in spirit, whereas the rest of the specimens are in formalin. Dr. Vincent Richards' specimens are not local ones, but were certainly collected in the Bengal Plains where he spent all his service.

The specimens collected by me locally in and about Darjeeling are from altitudes well between 6,000 and 7,500 feet.

From Pashok I obtained 31 species, and from Tindharia 25. From Kurseong only 6 out of 242 specimens. From Darjeeling I got only 9. In the Darjeeling Museum there are 30 species and in St. Joseph's College 37, at least 9 of which are certainly not local, viz., *Eryx conicus*, *Simotes arnensis*, *Dipsadomorphus gokool*, and *D. forsteni*, *Bungarus cœruleus*, *B. fasciatus*, and *B. walli*, *Echis carinatus*, and *Vipera russelli*.

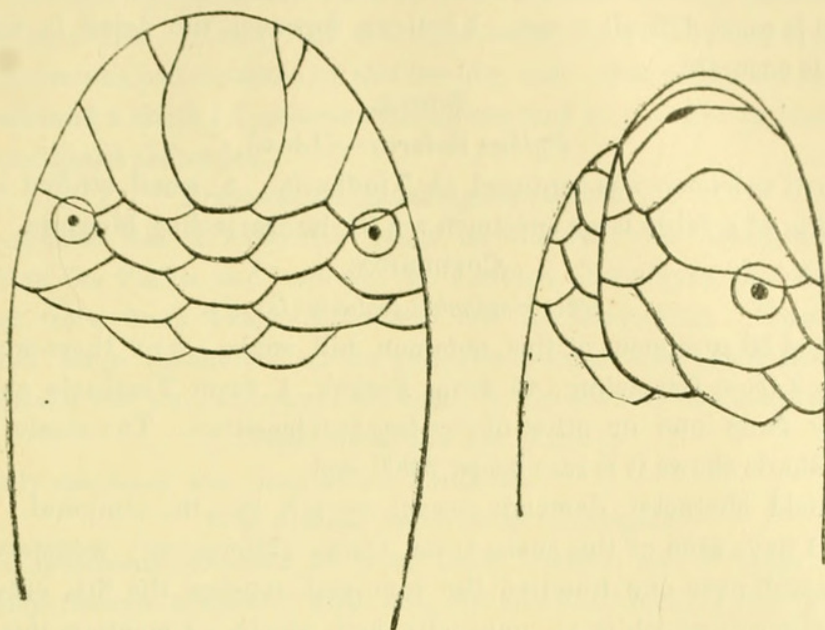
Of the 48 species with which this paper deals 42 were obtained by or for me, the remaining 6, viz., (1) *Typhlops oligolepis*, (2) *Zaocys nigromarginatus*, (3) *Ablabes stoliczkæ*, (4) *Dryophis fronticinctus*, (5) *Bungarus bungaroides*, and (6) *Naia bungarus*, were seen in one or other of the two museums referred to above. Of the 48 species, two, not including the snake *Bungarus niger*—which remains to be described in a future paper on the snakes of Assam—are new, viz., *Typhlops oligolepis* and *Oligodon melaneus*. In 6 instances the previous records of habitat have been extended, viz., *Lycodon jara*, *Ablabes stoliczkæ*, *Dryophis fronticinctus*, *Dipsadomorphus cynodon*, *Bungarus lividus*, and *Bungarus niger*.

I have also tried to show justification for doubting the Eastern Himalayas as within the range of distribution of one species, viz., *Trachischium monticola* (see footnote, p. 343).

TYPHLOPIDÆ.

Typhlops jerdoni.—Boulenger.

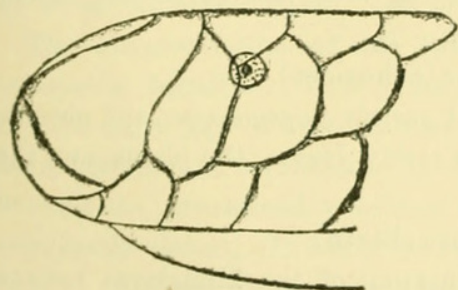
I obtained one specimen of this rare snake hitherto only known from two examples, the type from the Khasi Hills, and a specimen in the Indian Museum from Buxa Dooars. My specimen came from Pashok or below Tindharia, I cannot be sure which, as some specimens got mixed. In either case it must have been below 5,200 feet. It measured $9\frac{1}{4}$ inches. The body is depressed and its transverse diameter one thirty-fourth the total length. It agrees with Boulenger's description except in the breadth of the rostral which is at its broadest part above about one-third the broadest part of the head. (Blgr. hardly one-fourth). It is brownish-black above, dun beneath.

*Typhlops jerdoni* (× 7).*Typhlops oligolepis*, spec. nov.

In the Darjeeling Museum I found a very small *Typhlops*, only $5\frac{1}{2}$ inches long, with the lepidosis so different from any other species yet recorded that I have no hesitation in considering it new to science. To begin with the scales are in 16 rows, fewer by two than in any other recorded species. It is almost certainly the specimen Dr. Seal spoke to me about which he had presented to the Museum, and which he found dead on a road in the Nagri Valley below Darjeeling at an altitude of about 5,000 feet. Several people who saw it discredited the idea of its being a snake at all, and as there is only one *Typhlops*, viz., this one in the Darjeeling Museum there can be little doubt that it is Dr. Seal's specimen.

Description.—Snout rounded. Nostrils lateral. Eye very small. Tail with no terminal spine. Cigar—brown above, paler beneath.

Lepidosis. *Rostral*—Broad, more than one-third as broad above as the greatest

*Typhlops oligolepis*.
(Much enlarged).

breadth of the head, not extending back to the level of the eyes, but about as far as the posterior edge of the nasal shields. *Internasal*, *frontal*, *supraoculars* *parietals* and *postoculars* subequal. *Nasals* very large, completely divided, the upper suture passing to the rostral, the lower to the 2nd labial; largely in contact behind the rostral; the anterior shield not or

barely seen above. *Præocular* subequal to ocular; in contact with the 2nd and 3rd labials. *Ocular* in contact with the 3rd and 4th labials. *Postocular*

a single shield. The detail of the scales partly owing to the diminutive size of the snake is most difficult to see. I believe, however, the detail in the figure attached is accurate.

BOIDÆ.

Python molurus.—(Linn).

One small specimen was captured at Tindharia. A small stuffed example, and the skin of a fairly large specimen are in the Darjeeling Museum.

COLUBRIDÆ.

Polyodontophis collaris (Gray).

I obtained 58 specimens of this common hill snake. 5 of these were from Kurseong, 2 from Darjeeling, 46 from Pashok, 1 from Tindharia and 4 are doubtfully from one or other of the last two localities. The single example from Tindharia shows it is rare below 3,000 feet.

One shield character demands special remark, viz., the temporal. In every specimen I have seen of this snake from China (Hongkong) westwards, and I have seen well over one hundred, the temporal touches the 8th only of the supralabial series, which is an unusually high shield. I mention this because Boulenger says the anterior temporals are one or two, and he figures, Catalogue Vol. 1, 1893 (Plate xii, fig. 1c), a lower temporal touching two of the supralabial series. I am strongly inclined to the view that this arrangement denotes a species apart. The constancy of these shields in this Genus is remarkable, so much so that I believe they can be relied upon to carry considerable weight in differentiating the species, some of which are very closely allied and in consequence have been confused. The largest specimen was a ♀ 2 feet 6¾ inches long, the smallest probably a hatchling was killed in July and measured 8½ inches. In one the 3rd subcaudal shield was entire. One was killed in the act of swallowing a skink (*Lygosoma indica*).

Tropidonotus parallelus (Blyth).

I only saw two specimens of this seemingly rare snake, one was collected at Pashok in September. The other was in the collection of St. Joseph's College, probably of local origin, but locality not recorded. The species is remarkably like *platyceps* in general appearance. The anterior temporals are two in one specimen. The ventral and subcaudals are 163 + 92, and 167 + 88, the 3rd and 4th subcaudals entire in one specimen.

Tropidonotus piscator (Schneider).

The solitary specimen received was one of variety *quincunciatus*, and obtained below Tindharia. It is evident this snake rarely leaves the plains and then only ascends to the low foot hills.

Tropidonotus platyceps (Blyth).

This is an extremely common snake in this part of the Himalayas between 5,000 and 6,000 feet. Of a collection of 242 specimens made in Kurseong 57 were of this species, but below 4,500 feet it was far less common. I got 11 from Pashok, 2 from Tindharia, and one from Phoobsering (circa 4,500 ft.). Above 6,500 feet I got but 1, viz., from Darjeeling. The most remarkable feature in

the colouration of this snake is the brilliant crimson band on each side of the ventrals in adults. Nearly all the specimens were so ornamented. Very young specimens had no trace of this flaming hue. One young specimen which had swallowed a skink (*Lygosoma indica*) was rent in the side so that the back legs of the lizard protruded.

Tropidonotus himalayanus (Günther).

This species has an extensive range of altitude. In Assam it is not uncommon in the Plains, and here in the Eastern Himalayas the 6 specimens collected were from below Tindharia up to Darjeeling. Two examples had eaten large specimens of the common eastern toad (*Bufo melanostictus*). The labials in two were aberrant numbering 7, the 3rd and 4th touching the eye.

Tropidonotus stolicus (Linn).

My only specimen was from below Tindharia.

Tropidonotus subminiatus (Schlegel).

Of 37 specimens collected, 34 were from Pashok, and 3 from Tindharia. The labials though usually 8 with 3rd, 4th and 5th touching the eye, are very frequently 9 with the 4th, 5th and 6th touching the eye. There were 4 postoculars on one side in one specimen, and the anal was entire in another. The subcaudals were 96 in one example. The young have bluish heads, a hue which enhances the ornamentation of this very brilliantly coloured snake. My smallest specimen was 10 inches, and was killed between the 25th of July and 5th of August.

Pseudoxenodon macrops (Blyth).

57 specimens of this very common Eastern Himalayan snake were acquired, 2 from Darjeeling, 17 from Kurseong, 35 from Pashok, and 3 from Tindharia. One brought to me by Dr. Seal had been encountered in his garden, and when disturbed struck fiercely at him with erect, and flattened neck. The degree to which this snake flattens its neck is very marked being more pronounced, I think, than in any of the *Tropidonoti* with which I am acquainted. One example was found to have eaten a frog. The largest was a ♂, 4 feet 2½ inches, and in this the secretion of the anal gland was ochraceous-yellow and of the consistency of custard. A pahari told me it is called by them "Gooroobi Samp," and he referred to the way it flattened its neck.

The ornamentation of this species is very varied, and in some specimens extremely beautiful. In a young example the head was slaty-blue, behind this the nape bore a broad intensely black arrowhead, bordered behind with a narrower band of cinnamon. In some specimens the head is rich dark-green, in some the arrowhead is billiard-cloth green, in others lilac, and in others is completely absent. In some the back is nearly uniformly olivaceous-green or brown. In some the series of dark costal spots is but obscure, in others very black, or purplish. In some no trace of light crossbars can be seen, in others they are more or less distinctly visible, in others very conspicuous sometimes whitish, sometimes cinnamon, or the anterior whitish, and the posterior cinnamon. Some specimens are chequered with green, black, amber and

ochre spots. With all this variety of form the specimens do not lend themselves to a grouping into colour varieties, for scarcely two specimens are quite alike. The costal scales are, as far as I am aware, quite unique in this species. The median 5 or so rows are straight, the remaining rows slightly oblique, except the two last which again are straight. As in the *Tropidonoti* the scales are in 19 rows till just beyond the middle of the body when they become 17 by an absorption of the 3rd row above the ventrals. Sometimes this absorption takes place at or before midbody.

Trachischium fuscum (Blyth).

In the vicinity of Darjeeling this is by far the commonest species to be met with between about 5,000 and 7,500 feet. I obtained 194 specimens, 151 from Kurseong, 33 from Darjeeling, and 10 from Pashok. These varied in length from $5\frac{1}{4}$ inches to 1 foot $4\frac{3}{4}$ inches.

Sexes.—Of 88 specimens sexed 51 were ♀♀, 37 ♂♂. The largest ♂ was 1 foot $2\frac{1}{4}$ inches, but several ♀ exceeded this measurement, the largest being 1 foot $4\frac{3}{4}$ inches.

Breeding.—The pairing season was evidently over, for many hatchlings between 5 and 6 inches in length were obtained in July. Seven out of 31 ♀♀ collected in that month in Kurseong were gravid, the smallest being 1 foot and $\frac{3}{4}$ of an inch. One contained 6 eggs, two 4 eggs and four 3 eggs, the largest egg measuring from $\frac{3}{4}$ to 1 inch in length, and about $\frac{1}{4}$ inch in breadth. The young are apparently between 5 and 6 inches long as they emerge from the egg.

The secretion of the anal gland was found to be custard-like.

Food.—This snake appears to feed exclusively on earth worms, several were killed in the act of swallowing a worm, almost every specimen I opened had fragments of worms or entire worms in the stomach, and the intestines much distended with mud, evidently from the alimentary system of worms. From the many specimens I opened I should judge the snake to be voraciously vermivorous.

Lepidosis.—Boulenger says that the præfrontal is usually single. I found it invariably single. 165 was the largest number of ventrals and 31 the smallest number of subcaudals. In one specimen the first 9 subcaudals were entire, in another the last ventral was divided. The ♂ have the scales in the region of the vent rather more obviously keeled than the ♀. The eye is very black, but if closely viewed the iris is seen to be dark-brown (almost liver coloured), and the pupil is discernible.

It is a very gentle little snake, often encountered in daylight about the roads in Darjeeling. I frequently handled it without its attempting to bite me. At Kurseong it is so abundant that it can be found under most stones on the slopes about there, and Mr. H. K. Robinson told me that after rewards for snakes had been offered, the hill men would alter the landscape features of a whole hill side by rolling over each stone in their search for snakes which when brought in consisted almost entirely of this species.

Colour.—Adults are black, or blackish with iridescent effects on reflected

light in life. When looked at closely the scales are seen to be studded with black dots and often these are congregated more heavily at the sides of the scales so as to produce an obscurely striated pattern. The belly is glossy uniform black. The young are very obviously streaked with black on a brownish or greyish ground, the two lines on the confines of the 1st and 2nd, and 3rd and 4th rows above the ventrals being usually most pronounced. Young specimens too have an opaque yellowish collar which is incomplete vertebally.

Trachischium guentheri (Boulenger).

I obtained 37 specimens, 7 of these were from Darjeeling, the rest from Pashok. It is fairly common at altitudes between about 3,000 and 7,000 feet, being more abundant than *fuscum* at the lower limits of this range, far less so than *fuscum* at the higher elevations.

Sexes.—Of 18 sexed, 14 were ♀♀ and 4 ♂♂. The largest specimen was a ♀ 1 foot $5\frac{1}{4}$ inches.

Breeding.—Only one gravid ♀ was included in the above total. This was killed in Darjeeling on the 11th of July and contained 6 eggs measuring about $\frac{3}{4}$ of an inch in length.

Habits.—Like *fuscum*, I found it a very gentle snake, and it was nearly always encountered in day-light. I found one crossing a jungle road in Lebong at dusk one evening, and having dismounted secured it with little difficulty. One young one I caught one morning on the floor of the rink.

Lepidosis.—The ventrals ranged up to 154 in number, and the subcaudals as low as 30. In one specimen the 6th subcaudal was entire, and in another the first 8 were entire.

Colour.—Adults are streaked brown and black usually. In some there is a coral-reddish tinge in the brown, especially noticeable posteriorly. The scales in life exhibit an iridescence as the light glances upon them. The belly is usually uniform bright coral-red, but in some specimens a variable extent of the anterior length is black (rarely greyish-black) which becomes mottled with coral-red more and more till this hue becomes uniform. In one or two specimens almost the entire length of the belly was black, a very limited extent posteriorly showing any red, and the specimens were in consequence extremely like *fuscum*. Young examples have a more or less obscure yellowish collar.

Trachischium tenuiceps. (Blyth).

Of the 17 examples collected, 15 were from Pashok, and 2 from Tindharia. It is obviously the least common of the three Himalayan species.* One speci-

* I say the "three" Himalayan species because I cannot help thinking that *monticola* though recorded from this Range does not really occur there. The only specimens known are the 9 collected by Jerdon now in the British Museum, and said to have come from Darjeeling, but I strongly suspect are from the Khasi Hills. It would appear from this record that the snake is, to say the least, not uncommon about Darjeeling. I venture to think that no part of India has been so well worked over as the vicinity of Darjeeling and it is significant that there is no specimen in either of the two fairly large local collections there, and that I failed to obtain a single specimen among the large number which passed through my hands. Further Jerdon collected extensively in the Khasi Hills, where last year I found *monticola* a common snake, and it is surprising that no specimen appears to

men—that from Tindharia—obtained in July was gravid. It measured 1 foot 4 inches and contained 5 eggs. In many specimens the loreal failed to touch the internasal. This is remarkable for the contact of these shields is a generic character and I have known no exception in all the other species I am familiar with. The adult is blackish but if examined closely, a yellow ground colour is to be observed dorsally which is more or less heavily speckled with black, especially at the lateral margins of the scales forming an obscure black striation. The belly in all my specimens was brilliant uniform yellow or orange.

The length varied between $6\frac{1}{2}$ inches to 1 foot 4 inches. The ventrals ranged from 129 to 140; and the subcaudals from 28 to 39. It appears to be rare at the altitude of Darjeeling if it occurs there at all, and it is evidently uncommon below Tindharia, but not uncommon at altitudes between about 2,500 and 5,000 feet.

Lycodon jara (Shaw).

A solitary specimen was sent me from Pashok, an adult ♀, and I examined another in the Darjeeling Museum. The labials were 8 as I usually find them, (Boulenger says 9 or 10) and the 3rd, 4th and 5th touched the eye. The anterior temporal was single. The ventrals and subcaudals 188+66. It does not appear to have been recorded before from the eastern Himalayas*.

Lycodon aulicus. (Linn).

All the 19 specimens collected were from comparatively low elevations, viz., 8 from Tindharia where Mr. Wright tells me it is one of their commonest snakes, and 11 from Pashok. They all conform to variety D of Boulenger's Catalogue, except that the labials are variously mottled or spotted. One ♀ captured between the 10th and 20th July contained 5 nearly mature eggs. One specimen had swallowed a skink probably *Lygosoma indica*, and another a mouse and a skink. In one the labials were 10, the 4th and 5th only touching the eye, in another the first 3 subcaudals were entire.

Dinodon septentrionalis (Gunther).

A single young specimen from Phoobsering (circa 4,500 ft.). Length $9\frac{3}{4}$, tail $2\frac{1}{2}$ ins. Ventrals 207, anal entire, subcaudals 92. Costals, two heads-lengths behind head 17, midbody 17, two heads-lengths before vent 15. In the step from 17 to 15 the 3rd and 4th rows above the ventrals blend. The frontal is extensively in contact with the præoculars. Contained a lizard of the Genus *Lygosoma*.

Zaocys nigromarginatus (Blyth).

I examined a single specimen which is in the Darjeeling Museum.

Lepidosis.—The costals are in 19 rows in the fore neck, but become 18 by the 7th scale in the vertebral row behind the parietals being absorbed into the next

have been obtained by him there if one refers to the Catalogue of the British Museum (Boulenger, 1893-96). Added to these considerations, there is the fact that in at least one other instance, viz. *Dinodon septentrionalis* (Boulenger, Cat., Vol. 1, p. 363, a specimen of Jerdon's collecting has been recorded dubiously from the Khasi hills or Himalayas.

*I have examined another young specimen from Tindharia sent to me by the Bombay Natural History Society about four years ago.

row on the left side. This reminds one of the costal absorption in *Zamenis mucosus* when the rows reduce from 17 to 16, which is invariably produced by the vertebral row becoming confluent with the next row on the left side. At a point 2 heads-lengths after the head the rows are 16, at midbody 16, and 2 heads-lengths before the vent 14. I cannot agree with the designation of the shield, called by Mr. Boulenger a subocular. It appears to me obvious that this has originated from a division of the 3rd supralabial, and I am of opinion that this labial should be recorded as divided and included as one of the labials touching the eye. The ventrals and subcaudals are 193 + 124.

Zamenis korros (Schlegel).

Two specimens were collected at Pashok.

Zamenis mucosus (Linn).

A single specimen from Tindharia.

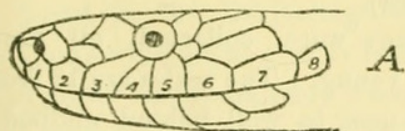
Coluber porphyroceus (Cantor).

Of 8 specimens collected, 2 were from Tindharia, and 6 from Pashok. Probably it is more common than these figures would suggest as I saw 6 specimens in the St Joseph's College collection, and 11 in the Darjeeling Museum. The young are buff coloured with uniformly black, white-edged broad cross-bars, which make them appear very different from the adults.

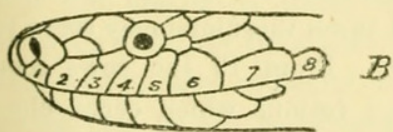
Coluber cantoris (Boulenger).

This is one of the commonest species to be found about Darjeeling, but does not occur or is rare below about 5,000 feet elevation. I got 10 specimens, 1 from Darjeeling, 4 from Pashok and 5 from Kurseong. There were 7 in the Darjeeling Museum and 4 in St. Joseph's College collection.

Lepidosis.—The costals are unusual in this species, in that the rows are two less in front than in midbody, a condition I have seen in some others of the genus, viz., *hodgsoni*, *helena*, etc. Other species of the same Genus as now understood have the same number of scale rows in front as in the middle of the body, viz., *porphyroceus*, *oxycephalus frenatus*, *prasimus*, etc. It appears to me likely that this difference in some of the species may make it possible to subdivide the Genus which as it now stands is large and cumbersome. The rows anteriorly for some distance number 19, then at a point from one to five heads-lengths behind the head the 4th row above the ventrals (rarely the 5th) divides, the rows then remain 21 till some distance behind the middle of the body where they fall to 19 again owing to a coalescence of the 4th and 5th (rarely 3rd



A



B



C

3 Specimens of *Coluber cantoris*.

A 3rd Labial entire.

B „ „ partially divided.

C „ „ completely divided.

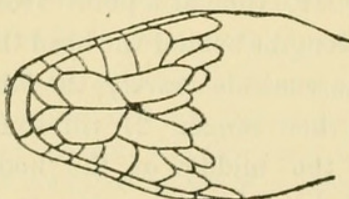
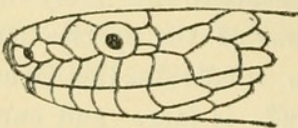
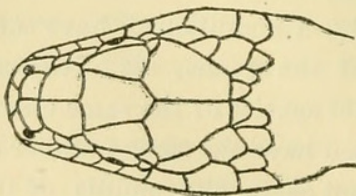
and 4th or 5th and 6th) rows above the ventrals. From 19 they again reduce almost simultaneously to 17 by a fusion of the 3rd and 4th or 4th and 5th rows. The anal was divided in one specimen only. Here again I cannot agree with Mr. Boulenger's designation of a subocular, and in this species the arguments in favour of my own view are very strong, for many specimens are to be seen with and many without this little shield. In some it is present on one side and not on the other, and a comparison of the two sides makes the origin of the shield obvious. In one example the 3rd labial is seen but partially divided, very clearly indicating that the so-called subocular is an integral part of this shield. I attach figures for comparison.

The iris of the specimen brought to me freshly killed was red, and the pupil horizontally subovate. The chin was ruddy, and the throat canary yellow. The posterior transverse bars were ruddy. In another specimen the sides of the throat were salmon, and the belly behind pinkish about the angulation of the ventrals.

Coluber tæniurus (Cope).

I obtained two specimens from Pashok, and saw another in the St. Joseph's College collection. In all specimens the costals were 23 from close behind the neck, to a point well behind midbody, where they became 21. The reduction to 21 is due to fusion of the 4th and 5th rows above the ventrals; from 21 to 19 to fusion of the 3rd and 4th rows. In one example they remained 19 nearly to the vent, in the other two they reduced to 17, more than two heads-lengths before the anus, the reduction being brought about by fusion of the 5th and 6th rows. The labials were 9, the 5th and 6th touching the eye, the 4th not divided. The ventrals and subcaudals were $246+100$, $254+94$ and $252+98$. The anal was divided in all.

Coluber prasinus (Blyth).



Coluber prasinus.
(nat. size).

Five specimens were collected, all from Pashok, and all young. The scales are 19 from just behind the neck to well behind midbody. The absorption of rows is interesting, and so different from many species now included in the genus that I think this alone may serve to further divide it. From 19 the rows soon become 15 by two fusions which occur close together, so that their order may be reversed. Usually the first from 19 to 17 is due to a fusion of the 3rd and 4th (rarely 4th and 5th) rows above the ventrals; the next from 17 to 15 is due to a coalescence of the two rows next to the vertebral on each side (not the vertebral itself).

Boulenger says the anal shield is rarely entire. I found it so in all the specimens, and also in one of the two in the Darjeeling Museum. I omitted

to record it in the other. I found the ventrals as low as 193, and the subcaudals as high as 109.

Coluber radiatus.—Schlegel.

6 examples, all from Pashok.

Dendrophis pictus.—Gmelin.

I obtained 6 specimens which I assign to this species,* three from Pashok, the rest from Pashok or Tindharia. The scales were 15 anteriorly and in midbody, and 11 or 9 at a point two heads-lengths before the anus. The ventrals and subcaudals were 203 + 140, 205 + 145, 191 + 145? 206 + ? and 204 + ? and 202 + 132, respectively. The vertebrals in midbody were as broad as long or rather broader. The anal was divided in all.

One specimen I saw in St. Joseph's College collection which I include here pro tem belongs, I consider, to a species as yet not described. In this the anal was entire, the ventrals and subcaudals 187 + 151, and the scale rows 15 anteriorly and in midbody, 9 behind at a point two heads-lengths before the anus. The vertebrals at midbody were a shade longer than broad. This specimen appears to me to agree in every way with a large series of specimens I have collected in Assam and two others I have had from Jalpaiguri in all of which the anal is entire. This last is a noteworthy feature for no other of the species of *Dendrophis* and *Dendrelaphis* hitherto described is similarly distinguished. In a future paper on the snakes of Assam I intend to refer to it as new species under the title *proarchos*.

Dendrelaphis tristis.—Daudin.

Six specimens which I think there can be no doubt are of this species† were received, two from Tindharia, the rest from Pashok. Another similar specimen I found in the Darjeeling Museum. In these the costals anteriorly and in midbody were 15, at a point two heads-lengths before the anus 9 in ♂, 1 in ♀. The vertebrals in midbody were about $\frac{2}{3}$ to $\frac{3}{4}$ as broad as long, and the ventrals and subcaudals noted were 190 + 132, 191 + 145, and 192 + 131, respectively. The anal was divided in all. This species and the last are in general appearance, and the details of their lepidosis extremely alike. The differences I see between them are as follows:—In *tristis* there is a small light interparietal spot, and a light vertebral stripe anteriorly. The 2nd, 3rd and 4th supralabials (the 1st also sometimes) have narrow black posterior margins. There is a short, narrow rather indistinct postocular stripe. There are black interrupted oblique stripes on the sides of the forebody arranged in pairs. Two supralabials only, viz., the 5th and 6th touch the eye. The vertebral row develops gradually on the nape, and in midbody the length of each shield exceeds the breadth. The maxillary teeth number 16 to 19, and the most posterior are rather smaller than the preceding. The nasal bones are of a distinct shape.

In *pictus* there is no interparietal light spot, no vertebral light stripe anter-

* I have prepared 3 skulls from these.

† I have prepared 5 skulls from these, and all are undoubtedly typical of this Genus.

iorly, and no oblique black stripes on the sides of the forebody. None of the supralabials show black posterior margins. There is a broad black conspicuous band from the eye continued well down the body. Three supralabials usually touch the eye, viz., the 4th, 5th and 6th. The vertebral enlargement is sudden and due to the confluence of two or three scales on the nape. The vertebral shields in midbody are as broad as long or broader. The maxillary teeth number 20 to 23, and the most posterior are compressed, and rather longer than the preceding. The nasal bones too are distinct in form.

Simotes cyclurus.—Cantor.

I got two specimens from Tindharia and saw one in St. Joseph's College collection. All belong to variety B of Boulenger's Catalogue. In one of my specimens the costals were 19 in anterior and midbody, 17 at a point two heads-lengths before the anus. In the other the lepidosis was very peculiar, the costals being 17 anteriorly becoming 19, and then again 17 and 19 several times over; 19 in midbody, and 15 behind at a point two heads-lengths before the anus. As in *Zaocys* and some *Zamenis*, I consider that the 3rd supralabial is divided in this snake, and therefore touches the eye as well as the 4th and 5th shields of that series. The upper division of this shield is misnamed a subocular.

Simotes albocinctus.—Cantor.

Of 38 specimens received, 25 were from Pashok, 12 from Tindharia and 1 from Darjeeling; 26 of these were of the A variety of Boulenger's Catalogue, i.e., *typica*, 16 being from Pashok and 10 from Tindharia. 11 examples belonged to variety C of Boulenger's Catalogue, 9 of these being from Pashok and 2 from Tindharia. My Darjeeling specimen was also of this variety.

The two varieties are very distinct, so much so that to one unacquainted with the subject of ophiology they would certainly be taken to be different species. I have never seen any forms connecting the two.

In variety A there is a great variation in the ground colour which varies irrespective of age from a dark-brown to a bright berry-red, this latter hue being especially bright in the flanks. In more than one specimen the colour was a very beautiful shade of pink very like that of a boiled prawn. There are from 21 to 25 light, dark-edged, conspicuous and well defined cross-bars on the body, 5 to 8 on the tail. These are narrow, and end laterally close to the ventrals. In light specimens they are quite white, in darker specimens buff, or more often ashy-grey, and often bordered with black. In some of the specimens, the brown ones especially, longitudinal streaks may be more or less distinctly traceable. These resemble those in *cyclurus* consisting of an upper broad dark band 4 or 5 scales broad, and separated more or less distinctly by a light vertebral streak, and a lower narrow dark band on the 3rd and 4th or 4th and 5th rows above the ventrals.

In the dark specimens the usual sagittate *Simotes* markings are blackish-brown, but in light specimens they are light edged with blackish. In the



1.



2.



3.



4.



5.



6.

J.Green del.et lith.

1-3. *Dryophis fronticinctus*. 4-6. *Oligodon melaneus*.

prawn-coloured specimens they are quite white. In the reddish specimens there is usually some mottling of red or pink on the belly.

In variety C I never saw any ruddy tinge in the ground colour which was of various shades of brown. The marks on the back, 23 to 34 on the body and 6 to 8 on the tail, are very distinctive in form, and similar to those seen in *Simotes splendidus*, *Oligodon venustus* and some other species of these genera. They are of a darker brown than the ground and their anterior and posterior borders are more or less indented in the vertebral line, sometimes causing complete bisection. More often they are merely indented to produce a walnut shaped mark thus X I usually refer to this variety in my notebooks as *juglandifer*, from the shape of these marks. Sometimes outside each of these marks is a smaller dark spot. In the dark specimens the shape of these marks cannot always be determined. In some examples there are longitudinal streaks exactly similar to those already mentioned under the last variety, but usually even more obscure. In other specimens the ground colour is variegated with short oblique light and dark streaks a scale long as one sees in *Oligodon subgriseus*, *Simotes theobaldi*, and some other species of these genera.

In some of these specimens I noticed a more or less distinct dark cross bar between each or some of the walnut marks.

Lepidosis.—I can find no differences in the lepidosis of these two varieties, which must therefore remain as varieties rather than species. The scale rows were 19 in all the specimens in the anterior and midbody. At a point two heads-lengths before the anus they were 15, except in 3 examples where they only reduced to 17. All of these exceptions were from Pashok, one was variety A and the two others variety C. I found the labials 8 with the 4th and 5th touching the eye in one example. The 3rd labial which is usually divided was entire in one specimen. In another the 3rd and 4th subcaudals were entire. The ventrals vary from 188 to 206 and the subcaudals from 50 to 68.

Food.—I found a mouse had been taken once. The tail of a mouse was found in the stomach of another, and in a third there was a mass of soil with small stones, shreds of vegetable fibre and two longish hairs—probably horse-hairs.

It is obviously one of the commonest snakes in this part of the Himalayas. It rarely ascends above 5,000 feet. Mr. de Abreu, who has collected snakes at Kurseong for some years, told me he only once got this species. It not infrequently descends to the level of the Plains though it is essentially a mountain snake. Variety *typica* appears to prefer the lower slopes to those of higher elevation, but *juglandifer* seems to be the more common variety at the upper limits of its habitat.

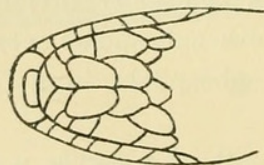
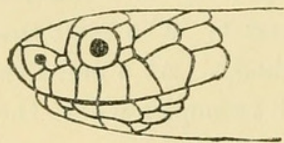
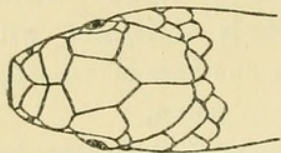
Oligodon melaneus, Spec. nov.

(See Plate figs. 4, 5 and 6.)

Two specimens, a ♂ and a ♀, were collected at the same time at Tindharia, probably in company, in July. They very obviously constitute a species

hitherto unknown, which I think should be referred to the genus *Oligodon*. The ♀ was gravid, and contained 4 eggs varying from $\frac{1}{2}$ to $\frac{5}{8}$ inch in length. She measured $13\frac{1}{8}$ inches, the tail accounting for $1\frac{3}{4}$ inches. I have omitted to record the length of the ♂, which was very similar. One was presented to the British Museum, the other to the Indian Museum.

Description.—*Nostril*.—Touches 6 shields; the nasal sutures are equal to, or rather greater than, the internasals, and about twice the 1st labials; the portion visible above equal or less than the distance from it to the frontal. *Internasals*.—Two; the suture between them equals that between the præfrontal fellows; less than half the internasopraefrontal sutures. *Præfrontals*.—Two; the suture between them about half the præfronto-frontal; in contact with internasals, postnasals, loreals, præoculars, and supraoculars. *Frontal*—Touches 6 shields, the sutures of which are subequal; longer than parietals.

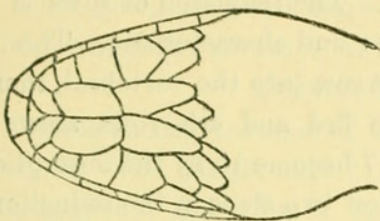
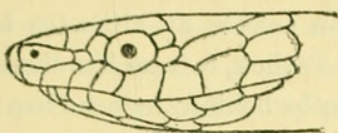
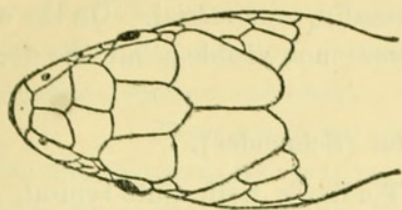


Supraoculars.—Length about three-fourths, breadth about one-third that of the frontal. *Nasals*.—Semi-divided; in contact with the 1st labial only in the ♂, with the 2nd also in the ♀. *Loreals*.—One, small, about half to one-third the length of the nasals. *Præoculars*.—One. *Postoculars*.—Two. *Temporals*.—One anterior. *Supralabials*.—7 with the 3rd and 4th touching the eye on both sides in the ♂ and on the left side in the ♀, the 4th and 5th touching the eye on the right side in the ♀. *Infralabials*.—4, the 4th largest and in contact with 2 or 3 scales behind; the suture between the 1st rather longer than that between the anterior sublinguals. *Sublinguals*.—Two pairs, the posterior about three-fourths the anterior, and touching the 4th only of the infralabial series. *Costals*.—15 in the whole body length; vertebrae not enlarged; the last row about twice as broad as the vertebrae; no keels; no apical pits. *Ventrals*.—152

Oligodon melaneus ($\times 2$). in the ♂, 159 in the ♀. *Anal*.—Divided in the ♀, entire with a basal indication of a division in the ♂. *Subcaudals*.—Divided; 42 in the ♂, 40 in the ♀. *Colour*.—Uniformly blackish above merging to greyish in the flanks. Discerned closely it is seen to be very finely speckled with black on a grey ground. Beneath, the ♂ is uniformly blue-grey of a beautiful shade; the ♀ is of the same shade but speckled with black. The grey fades to whitish on the chin and both lips. Eye with round pupil.

Ablabes stoliczkae.—Selater.

In the Darjeeling Museum I found two specimens of this little known and apparently rare snake of which but 3 specimens have been previously recorded. These were from the Naga Hills, Assam; Samaguting and Bia-po in the Karen Hills of Upper Burma. The habitat is now extended to the Eastern Himalayas.

*Ablabes stoliczkae* ($\times 2$).

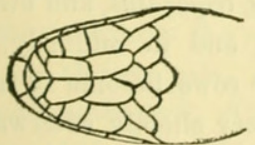
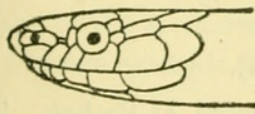
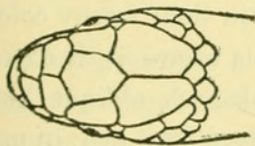
Lepidosis.—The costals are in 15 rows in the anterior and middle parts of the body 13 behind; the reduction being effected by an absorption of the 3rd row above the ventrals into either of the adjacent rows. The ventrals and subcaudals are $148 + 131$ and $152 + ?$, the tail imperfect. The loreal in one specimen is completely confluent with the postnasal forming an elongate shield in contact with the first 3 supralabials. The 3rd labial in the other specimen does not touch the nasal. The colour is uniform and putty-like above, white beneath with an indistinct, ill-defined, fawn, lateral line. A blackish streak passes from the lore, and behind the eye to be lost in the neck.

Ablabes rappi.—Günther.

All the 16 specimens collected were from the lower elevations, 5 being from Tindharia and 10 from Pashok. In 1 the locality was not recorded.

My largest was 1 foot $3\frac{1}{2}$ inches long.

Lepidosis.—The costals number 15 in the whole body length. In one speci-



men however the 6th and 7th rows above the ventrals repeatedly fused, and divided in the anterior parts of the body whilst the last two rows similarly united and divided several times posteriorly so that the rows varied accordingly from 15 to 13. The 5th (penultimate) supralabial is an unusually long shield which is very characteristic of this species. In one specimen the 5th and 6th were completely confluent on one side, and partly so on the other, and in a second partly confluent on one side. The last ventral was divided in one example, and the 1st, 2nd, 3rd, 5th and 6th subcaudals were entire in another. The loreal, normally small, was specially so in one specimen on one side, and absent on the other, so that the præfrontal touched the 2nd supralabial on that side. In another the loreal was so small on one side that the præfrontal met the 2nd supra-

labial in front of it. In one recently acquired specimen the belly was sulphur yellow, and I think it is probable that in life all the specimens may be yellow beneath. The dorsal yellow in the scales of many *Lycodon* and the ventral yellow of *Simotes cruentatus*, I know, fade to white almost at once in spirit. Boulenger says there is a double series of transverse

dark spots anteriorly. I found three series usually, one mesial. On the other hand in two specimens at least, these spots were not visible at all, the dorsum being uniformly dark-brown.

Dipsadomorphus trigonatus (Schneider).

Two specimens were obtained from below Tindharia, both quite typical.

Dipsadomorphus hexagonotus (Blyth).

One of the commonest of Eastern Himalayan snakes at altitudes below about 5,000 feet. Of 72 examples, 67 were from Pashok, 5 from Tindharia.

Lepidosis.—The costals at a point two heads-lengths behind the head are in 21 rows normally (19 in two, soon becoming 21), 21 in midbody, and 15 at a point two heads-lengths before the anus (17 in one). The reduction of rows is very similar to that of other species in this genus and characteristic. The rows become 19 by the absorption of the uppermost row into the vertebral, then 17 very shortly afterwards by a confluence of the 3rd and 4th rows above the ventral. Finally some distance behind, the 17 become 15 by the absorption of the uppermost row into the vertebral. The first two steps in the reduction are occasionally reversed. The 3rd and 4th subcaudals were entire in one example. The supralabials were 9 with the 4th, 5th and 6th touching the eye in one example on one side. The ventrals were 223 to 247, the subcaudals from 100 to 119.

Food.—In two specimens I found an agamoid lizard, probably a *Calotes*, had been swallowed and twice another lizard, viz., *Japalura variegata*, once a fledgling, and in another I found a mass of bird's eggs with light blue shells.

Many of the specimens had a remarkably ruddy shade in their tawny colouration, most accentuated towards the edge of the ventrals where it became a pinkish or salmon-red stripe. In two young specimens blackish oblique costal streaks were visible, in one faintly, in the other distinctly. The eye in many examples too (perhaps in all) was bright pink, reminding one of pink enamel and quite distinct from the effects produced by hæmorrhage into the eye from local injury.

Dipsadomorphus multifasciatus (Blyth).

Four specimens of this uncommon species were collected at Pashok. The largest was 3 feet 9½ inches, and the tail 10 inches in length.

Lepidosis.—The costals agree with those of *hexagonotus*, *trigonatus*, and others of the genus. There are normally 21 rows anteriorly, and in midbody, 15 behind at a point 2 heads-lengths before the anus. The rows become 19 from the absorption of the uppermost into the vertebral. Very shortly afterwards they become 17 by a fusion of the 3rd and 4th rows above the ventrals, and then again 15 by an absorption of the uppermost row into the vertebral. One example was aberrant in a manner strictly comparable to what obtains in rare examples of other species of this genus. The vertebral row divides into three, reunites and again divides several times so that the scale rows become alternately 19 and 21. The ventrals and subcaudals were 228+109, 223+111, 245+115 and

238+106. The præoculars were two in one example, two on one side, three on the other in the second specimen. One example had swallowed a lizard of the species *Japalura variegata*.

Dipsadomorphus cyaneus (Duméril et Bibron).

One fine specimen was sent me from Tindharia. As in most of the species of this genus the costals are 21 anteriorly, and fall to 15. The reduction of rows is effected by the same fusion as in *hexagonotus* and others (*q. v.*) The ventrals and subcaudals were 254+124, the tail being slightly docked. The mucous membrane of the mouth is quite black in this snake, extending on the roof of the gullet for some 5 or 6 inches in this specimen, then breaking up into a coarse mottling and disappearing. This black is not seen in any of the other green snakes I know of the genera *Dryophis*, *Coluber*, or *Lachesis*, in all of which the mouth is white (pinkish in life).

Dipsadomorphus cynodon (Boie).

I obtained a fine example of this from Tindharia, conforming to Boulenger's variety B. The costals were 21 at a point two heads-lengths behind the head, 23 in midbody, and 15 at a point two heads-lengths before the anus. The reduction from 23 to 21, from 21 to 19, and from 17 to 15 is due to the absorption of the uppermost row into the vertebral. From 19 to 17 the 3rd and 4th rows above the ventrals coalesce on the left side, the 4th and 5th on the right. The ventrals were 256, the tail imperfect. This species is known from the Plains, and is not to be considered a true Himalayan snake. I have had two other examples from the Jalpaiguri District, which with this specimen extend the previously recorded habitat.

Psammodynastes pulverulentus (Boie).

Of 15 specimens 4 were from Tindharia, 11 from Pashok. The ventrals range between 163 and 170, and the subcaudals between 52 and 63. I found the remains of a skink—probably a *Lygosoma* in the stomach of one. A ♀ captured between the 20th and 24th of September at Pashok was gravid, containing 10 eggs about half an inch long. It was 1 foot 7½ inches long. Many of the specimens had bright ochraceous spots or mottling in the flanks, and in one example these were so abundant as to form an ochraceous band.

Dryophis prasinus.—Boie.

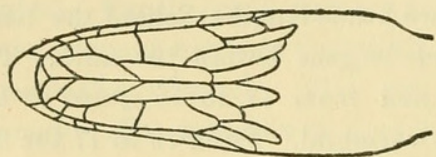
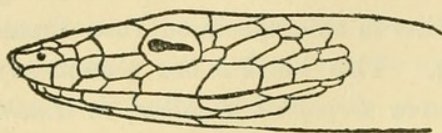
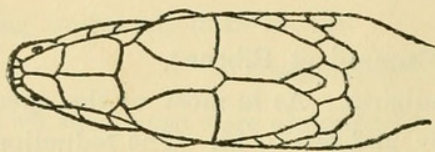
The only 6 specimens acquired were from Pashok. In all the scales were 15 anteriorly and in midbody, but 13 behind at a point two heads-lengths before the anus, the reduction arising from a fusion of the 3rd and 4th rows above the ventrals. In all the supralabials were 9 with the 4th, 5th and 6th touching the eye. The ventrals ranged from 197 to 201, and the subcaudals from 159 to 175. My largest was a ♀ 3 feet 7½ inches in length.

Dryophis fronticinctus.—(Günther).

See Plate, figs. 1, 2 and 3.

In the Darjeeling Museum I found a single specimen of a snake of this genus which I think must be assigned to *fronticinctus* but in case there is any doubt I describe and figure it.

Description.—*Rosir.*—Touches 6 shields, the anterior nasal sutures are rather



greater than the internasal, and about twice the 1st supralabials with no pointed appendage. *Internasals.*—Two; the suture between them three-fifths that between the præfrontal fellows, subequal to the internaso-præfrontal; in contact with the anterior loreal. *Præfrontals.*—Two; the suture between, them about twice the præfronto-frontal; in contact with the internasals, anterior and posterior loreals, præoculars, and frontal. *Frontal.*—Touches 8 shields; the fronto-supraocular sutures are about four times the length of the fronto-parietals. *Supraoculars.*—Nearly as long, and about three times the breadth of the frontal. *Nasals.*—Undivided; touch the 1st and 2nd supralabials. *Loreals.*—Two (1 + 1). *Præoculars.*—One, touching the frontal. *Postoculars.*—Two.

Dryophis fronticinctus ($\times 2$).

Temporals.—Two anterior. *Supralabials.*—8, the 3rd, 4th and 5th touching the eye, the 3rd divided into an upper and a lower part and the 4th into two upper and one lower part. *Infralabials.*—5, the 5th much the largest and in contact with 3 scales behind. The suture between the 1st about three-fourths that between the anterior sublinguals. *Sublinguals.*—Two pairs; the posterior longer, and in contact with the 4th and 5th infralabials. *Costals.*—Anteriorly and in midbody 15, at a point two heads-lengths before the anus 13; the reduction is due to a confluence of the 4th and 5th rows above the ventrals on one side and the 5th and 6th on the other; the vertebrae rather enlarged; the lateral rows oblique; the last row enlarged; no keels; no apical pits. *Ventrals.*—196. *Anal.*—Divided. *Subcaudals.*—135; divided.

Colour.—Uniform khaki-brown above with a rather darker ill defined dorsal stripe. In the forebody there are the usual black oblique marks seen in other species of this genus. No flank line. Beneath, buff with an obscure blackish lateral line on the ventrals, some ruddy streaks between these, and a median stripe of punctiform blackish spots. An obscure postocular streak. The specimen measured 2 feet 10 inches of which the tail accounted for $10\frac{3}{4}$ inches.

The only other *Dryophis* previously recorded from the Himalayas is *prasinus*. *Fronticinctus* has only once been recorded outside Burmese limits and the specimen which is from Sibsagar in Assam is in the Indian Museum. I have examined this and agree with Sclater's identification though it is aberrant in that the anal is entire, and the scales are 15 in the whole body length. In all the other species of this genus the nasal shield touches only the 1st of the suprala-

bial series, and the internasal meets the 1st and 2nd supralabials. In *fronticinctus* the nasal touches the 1st and 2nd supralabials, and the internasal touches no supralabial owing to its contact with the anterior loreal.

The habitat is now still further extended into the Eastern Himalayas.

Bungarus lividus.—Cantor.

I obtained three specimens all from Tindharia, and examined another in the St. Joseph's College collection. The ventrals and subcaudals were as follows:—212 + 36, 211 + 35, 209 + 37 and 212 + 38. The vertebral row was but feebly enlarged in all on the body but quite as well developed on the tail as in other species of the genus where they are well developed on the body as *ceruleus*, *niger*, etc. The habitat of this species is now extended to the Eastern Himalayas.

Bungarus niger.—Spec. nov.

I acquired 8 specimens of a krait with which I have become familiar in Assam as a fairly common species in that locality. As the majority of the specimens I have seen come from that region, I am describing and figuring it in a paper on the snakes of Assam. Two of these specimens were from Tindharia, four from Pashok and two dubiously from either Pashok or Tindharia. The ventrals ranged between 221 and 231, and the subcaudals from 51 to 57. The vertebrals are as much enlarged as in *ceruleus*, being as broad or broader than long. It is completely black dorsally like *lividus* but is a larger snake. Two specimens measured just four feet.

Bungarus bungaroides (Cantor).

I failed to obtain a specimen of this rare snake, but examined one in the Darjeeling Museum and two others in St. Joseph's College collection. The ventrals and subcaudals were 233 + 49, the 1st to the 4th of the latter entire; 232 + 51, the 2nd to the 6th of the latter entire; and 238 + 48, the 2nd subcaudal only entire. The black bands are mostly complete as in the species *fasciatus* and *ceylonicus*. Mr. de Abreu told me he had but once acquired this snake at Kurseong during five years' collecting. This was found after dark in a bathroom of one of the boys at Victoria School. The ventrals and subcaudals were 237 + 51, the 3rd, 4th and 5th only of the latter entire.

Naia tripudians.—Merrem.

Nine examples were received, eight from Pashok, the ninth from either Pashok or Tindharia. All belonged to variety *fasciata* (Gray).

Naia bungarus.—Schlegel.

I obtained no specimen, but examined one in the Darjeeling Museum and two in St. Joseph's College collection. The costals in all are 17 at a point two heads-lengths behind the head, 15 at midbody, and at a point two heads-lengths before the anus 15. The rows become 15 owing to a fusion of the 3rd and 4th rows above the ventrals. The ventrals and subcaudals were 237 + 80?; 239 + 91, the first of the latter entire; 250 + 80, the first 7 subcaudals entire.

Callophis maclellandi (Reinhardt).

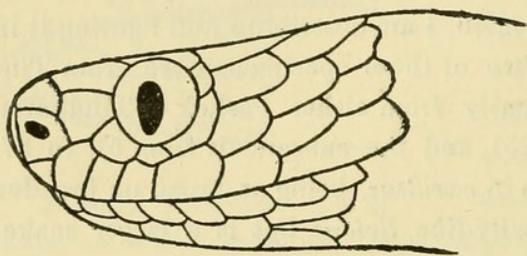
Four specimens were all from Pashok. I examined another in the Darjeeling Museum and two others in St. Joseph's College collection. All were of variety *univirgatus* (Günther). The costal rows are 13 in the whole body length. The ventrals ranged between 199 and 222, the subcaudals between 27 and 32. The last ventral was divided in one. There were from 23 to 32 black rings on the body, 4 on the tail. Some of the first and last rings on the body are complete in some specimens, the rest incomplete, not meeting the black vertebral stripe.

AMBLYCEPHALIDÆ.

Amblycephalus monticola (Cantor).

All ten specimens collected were from Pashok, the largest measuring 2 feet $3\frac{1}{2}$ inches.

Lepidosis.—The costals are in 15 rows in the whole length of the body, and



Amblycephalus monticola ($\times 2$).

the vertebrae but slightly enlarged, the enlargement beginning gradually, and not due to a confluence of shields on the spine. Boulenger says that the 4th or 4th and 5th supralabials touch the eye, and shows this in his figures in the Fauna of British India Reptilia and Batrachia (p. 415) and in his Catalogue, Vol. III, plate XXIII, figure 1. I have now seen nearly twenty examples, and have only once found a supralabial, *viz.*, the 4th, touching the eye. I find the shield surrounding the eye behind and below subject to much variable division. In Boulenger's figure in the Fauna of British India he shows but one supralabial, *viz.*, the 1st, as touching the nasal. This is incorrect, the 2nd also invariably touches that shield. The supralabials are peculiar in the great length of the last of the series which is as long as the preceding two or three shields. The ventrals and subcaudals noted were $184+70$, $184+70$, and $186+70$.

Food.—In the stomach of one I found five small snails, one with the shell quite perfect, the others with vestiges of shell adhering. In three or four others there were small snails without shells of what appeared to me the same species as in the first case. Slugs appear to be the staple diet of this species, for in the Khasi Hills last year I noted large slugs taken on two occasions.

VIPERIDÆ.

Lachesis monticola (Günther).

Of 23 specimens, 15 were from Pashok, 7 from Tindharia, and 1 from Darjeeling. I examined several others in the two local collections.

Lepidosis.—The costals are usually in 23 rows anteriorly and in midbody, and 19 at a point two heads-lengths before the anus. In two specimens at a point two heads-lengths behind the head they were 25, where in midbody they were 23. In only two examples were the scales 25 in midbody, and in both they

were 25 anteriorly also. In one of these they fell to 19 behind and in the other only to 21. The ventrals varied from 140 to 151, the subcaudals 32 to 47. In one the last 3 subcaudals were entire, in another the 41st, 42nd, 46th and 47th; in a third the 2nd to the 6th were entire.

Food.—It appears to subsist chiefly on mammals. In one a tuft of fur was protruding from the anus, in three others there were large masses of fur in the cloaca, and two had swallowed a mouse. It is a common snake between elevations of about 4,000 to 8,000 feet.

Lachesis gramineus (Shaw).

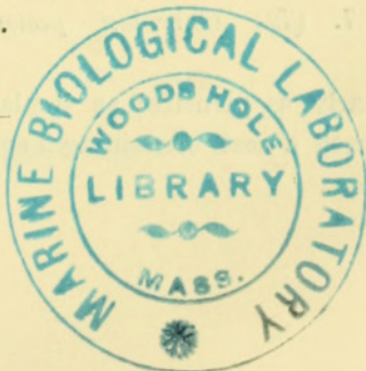
I acquired 12 specimens, 6 from Pashok, 3 from Tindharia, and 3 were dubiously from one or other of these localities.

Lepidosis.—In all the costals were in 21 rows anteriorly and in midbody, 15 behind. In the three steps where the rows reduce, it is the 4th and 5th, or 5th and 6th rows above the ventrals that coalesce. The ventrals ranged between 162 and 171, the subcaudals between 57 and 70. The 1st supralabial was divided into an upper and a lower part on one side in one example. I noted last year in *L. monticola* that the anal glands secrete a limpid fluid which on pressure at the base of the tail spurts out as a very thin stream such as issues from the needle of a hypodermic syringe. I found an exactly similar secretion in the glands of this species, and it is remarkably abundant, for the stream continues with some force for two or three seconds or more. It has a peculiar odour, not exactly disagreeable, which recalled to my recollection the distinctive smell I had noted last year in *monticola*.

Colour.—I have never seen such extremely beautiful specimens of this snake as I saw this year. The dorsum is the most brilliant of foliage greens, and where the scales are overlapped the colour is intense sky-blue. In some there is no vestige of a flank line, in others this was obscurely indicated by a whitish streak on the upper edge of each scale in the ultimate row. In others again a very conspicuous enamel white line adorned the last row, but the most beautiful ornamentation consisted of a double line along the last row, white below, and liver colour or crushed strawberry above. In one these colours were pink below, pale-blue above. The belly was usually intense light green but in some specimens hedge-sparrow-egg-blue. The head was green above, fading to sky-blue or pale greenish or white on the lips and chin. Above the tail tip there was more or less blotching with pinkish-brown or red. The eye in most (perhaps all) specimens was an opaque pink like enamel. This had nothing to do with hæmorrhage into the eye from injury.

Food.—I found a mouse in the stomach of one.

The hill-men told me it is called by them "Sirisi samp." It is a common snake on the lower slopes below about 5,000 feet.





Wall, Frank. 1909. "Notes on snakes from the neighbourhood of Darjeeling."
The journal of the Bombay Natural History Society 19, 337–357.

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