A REVIEW OF THE INDIAN SPECIES OF THE GENUS *OLIGODON* SUPPRESSING THE GENUS *SIMOTES* (*OPHIDIA.*)

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Last year at my request all the available specimens of *Simotes* and *Oligodon* in the Indian Museum were submitted to me for study, also all those available in the Bombay Natural History Society's collection. I also had an opportunity while in England of examining some of the specimens in the British Museum. To notes from this material I have added notes from the many scores of specimens examined in smaller museums and of my own collecting. I propose in the following paper to review this genus and put on record all that is known of the various species up to date.

In a previous paper (*Journ. Bombay Nat. Hist. Soc.*, XIX, p. 556, foot-note) I showed from a study of skulls in my collection that Duméril and Bibron had established a genus *Oligodon* distinct from *Simotes* on the erroneous observation that species to which they applied the generic title *Oligodon* had no teeth in the palate. Later Boulenger discovered that some of these had palatine teeth, but he retained the genus as distinct from *Simotes* on the erroneous assumption that these same species had no pterygoid teeth. All those whose skulls I have prepared, except doubtfully *templetoni*, have pterygoid teeth so that the grounds for separating *Oligodon* from *Simotes* on dentition do not exist.

As *Oligodon* has priority (1827) over *Simotes* (1853) the former title must be retained to designate the whole.

A study of the genitalia show that there are two very different varieties to be met with among the species, and it is possible the genus, as now represented, may be divided hereafter on this basis.

However, as I have genitalia of only four species, it is wisest provisionally to let them all remain under the one generic title *Oligodon*.

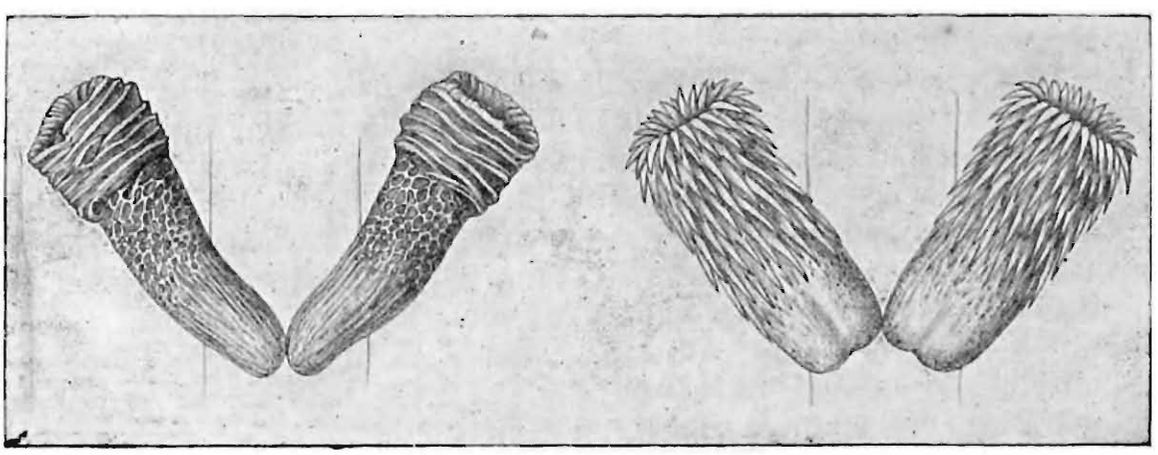
IDENTIFICATION.—Distinctive as are all the species of this genus, there is no easily defined guide to their recognition. The follwing associated characters concerning lepidosis appear to me to afford the most important basis for identification. *Rostral.* In the median line the portion visible from above is twice or more than twice the length of the suture between the internasal fellows (except in *cruentatus* and *theobaldi*). *Internasals.* In species where two are present, as is usually the case, the suture between them is half or less than half the internaso-præfrontals. *Frontal.* As long as the parietals (except in *cruentatus* and *theobaldi*). *Temporals.* Two shields border the parietals, the posterior subequal to, or longer than, the anterior (except in *splendidus* where three border the parietals). *Infralabials.* The last of the series (the 4th or 5th) is as long as, and rather broader than the posterior sublinguals, and touches only two scales behind.

HABITS.—Terrestrial. Diurnal. Active. Courageous.

FOOD.—Chiefly lizard's (or snake's) eggs and frog's spawn. Sometimes small mammals, lizards, and other reptiles.

BREEDING.—Oviparous in all the species whose habits I have investigated.

The male genitalia vary in the species here included in one genus, and it is possible that this variation may be used as a basis for a subdivision of the genus into two. I have dried genitalia of four species in my collection. In *taeniolatus* and *sublineatus* the organ is relatively small, cylindrical and beset with recurved cartilaginous processes from base to extremity, just as one sees in so many other species of the Colubridæ. In *albocinctus* and *juglandifer*, however, the organ is relatively very large, cylindrical, and increases in girth from base to extremity, being cleft at the extreme tip. There are no recurved processes. The proximal third has feeble longitudinal rugae, the middle third a honeycomb network of rugae, and the distal third concentric and somewhat imbricate rugae (see figures).



A B

A Genitalia of *Oligodon albocinctus* (× 2).
B „ „ *sublineatus* (× 5).

LEPIDOSIS.—For Indian species. *Rostral.* Touching six shields (eight in *splendidus*). Portion visible above as long as or nearly as long as its distance to the frontal. *Internasals.* A pair. (Absent in *brevicauda* and *herberti*, four in *splendidus*. Separated by the rostral in *planiceps*.) *Praefrontals.* A pair. *Frontal.* Touching six shields. Length greater than its distance to the end of the snout (except in *cruentatus*, where it is subequal or less); equal to or almost equal to the parietals (two-thirds to three-fourths in *theobaldi* and *cruentatus*). *Nasals.* Entire, semidivided, or divided. *Loreal.* Present or absent. *Praeocular.* One. *Postoculars.* Two. (One in *herberti*, *mcdougalli* and *dorsalis*.) Temporals. 1+2, or 2+2, well developed (small and hardly differentiated in *splendidus*). Two border the parietals, the posterior being as long as or longer than the anterior (except in *splendidus*, where three border the parietals). Two shields between the parietals and the last supralabial (except in *splendidus*, where there are three). *Supralabials.* Usually 7 or 8. 4 in *planiceps*, 6 in *herberti*, *melanozonatus*, and *woodmasoni* (where the 3rd is divided into an upper and lower part) and in *violaceus*, *purpurascens*, and *splendidus*, where the 4th is similarly

divided. Two touching the eye (except in *planiceps*, where only the 3rd touches). *Infralabials.* 4 or 5. The last as long as, or longer than the posterior sublinguals, as broad or broader than those shields, touching two scales behind. *Sublinguals.* Two pairs, the posterior shorter than the anterior. Two or three pairs of scales between the posterior and the 1st ventral.

OSTEOLOGICAL CHARACTERS.—*Skull. Praemaxilla.*—Broader than high. *Nasals.* Whole breadth of posterior border forming a ligamentous suture with the frontals. *Praefrontals.* The suture with the frontal equal to the orbital rim of the frontal. *Frontals.* Longer than broad, slightly constricted opposite the middle of the orbit. Contributing about one-third to two-fifths to the orbital rim. *Postfrontal.* Touching the frontal in some species, not in others. *Parietal.* Contributing a little to the orbital rim in some species, nothing in others. *Supratemporal.* Projecting beyond the quadrate. *Maxilla.* Projecting beyond the palatine anteriorly, and posteriorly. As long as the dentary. Teeth 6 to 16; much compressed; anododont, syncranterian, strongly coryphodont. With or without an edentulous space anteriorly. *Ectopterygoid.* Rather shorter than the maxilla. *Palatine.* Slender; teeth 0 to 10; anododont, isodont or feebly kumatodont. With or without an edentulous space anteriorly. *Pterygoid.* Teeth 1 to 23 (? none in *sublineatus*). Anododont, kumatodont. With or without an edentulous space anteriorly. *Mandible.* Angular present. Sphenoid present. Coronoid absent. Dentary about as long as its distance to the quadrate. Teeth 6 to 20; anododont, feebly kumatodont. With or without an edentulous space anteriorly. *Quadrate.* About as long as its distance to the orbit. Oblique from above backwards. *Columella auris.* Short, ending in cartilage which is attached to about the middle of the quadrate.

Vertebrae. Neural spines.—Wanting on the atlas. On the axis as long as the body. On the 3rd somewhat oblique backwards. On the succeeding vertebrae the depth is about three-fourths the body, length rather shorter than the body. *Hypapophyses.* On the atlas a small tubercle. On the axis bifid, the posterior part oblique backwards. Well developed in succeeding vertebræ, disappearing in the anterior part of the second eighth of the body, where they are replaced by a shallow, even ridge. Bifid to form two laterally disposed laminæ on the 2nd and succeeding caudal vertebræ.

Costae.—1st rib articulated to the 3rd vertebra, rather shorter than the 2nd. Penultimate bifid, the outer ramus about one-fifth the inner. Ultimate bifid, the outer ramus about two-thirds the inner.

Pseudo-costal processes.—Bifid to form outer and inner rami on the first three caudal vertebræ, single in succeeding vertebræ.

Oligodon planiceps (Boulenger).

Simotes planiceps, Boulenger, *Cat.* II, 1894, p. 232.

COLOUR.—Pale brown dorsally, some of the scales with blackish lower borders. A blackish bar behind the parietal shields. A black oblique subocular streak. Ventrally white (pinkish, Boulenger), with lateral, squarish, black spots, usually in pairs.

Food and Breeding.—Nothing known.

Growth.—Maximum Length. 130 mm. (5¼ inches.) Tail 15 mm. (⅗ of an inch).

Lepidosis.—As detailed in the synopsis. *Rostral.* Entirely separating the internasals, and partially separating the præfrontals. In the specimen in the Indian Museum the supralabials are 4. The 4th is a very long shield and possibly a confluence of two.

Distribution.—*Burma.* The type is from Minhla, Burma (Lat. 20° Long 95°). Another specimen in the Indian Museum killed on the Yunnan Expedition is dubiously from Upper Burma or Yunnan.

Oligodon herberti Boulenger.

O. herberti, Boulenger, *Bomb. N. H. J.*, XVI, p. 235.

Type.—In the British Museum, from Mogok, N. Shan States, Burma.

Colour.—Dark grey dorsally. A buff, black-edged vertebral stripe involving the vertebral and upper half of the next row from the nape to the tip of the tail, and constricted at intervals to form elongate splindle-shaped segments. An ill-defined, blackish line on the confines of the second and third rows above the ventrals, and ending at the vent. Ventrally whitish (orange-red, Boulenger) with squarish, black, lateral spots, usually on alternate shields. Head with an indistinct præfrontal blackish bar, re-appearing below the eye, and an ill-defined blackish bar on the parietals, sending forward an angular process to the frontal, behind which is a buff oblique bar on the neck, separated from its fellow vertebrally.

Food and Breeding.—Nothing known.

Growth.—Maximum Length. 560 mm. (1 foot, 10 inches).

Lepidosis.—As detailed in the synopsis.

Dentition.—Maxillary. 7 ? with an edentulous space anteriorly.

Distribution.—*Burma.* Mogok, N. Shan States. Sinlum Kaba (Lat. 24° Long. 97°·5). 6,000 ft. (Bombay colln.)

Note.—I have seen four specimens.

Oligodon mcdougalli Wall.

O. mcdougalli, Wall, *Bomb. N. H. J.*, XVI, p. 251.

Type.—From Sandoway, in the Bombay Natural History collection.

Colour.—Dusky black dorsally with a rufous-brown, vertebral stripe from the nape to tail tip, bordered interruptedly with black and involving the vertebral and half the next row. A linear black line on the confines of the 2nd and 3rd rows above the ventrals, interrupted anteriorly and ending at the vent. A supra-anal and a subterminal caudal black bar. Ventrally black mottled with fawn. Tail beneath black laterally, and crimson centrally. Head blackish. Rostral rufous yellow blotched with black below. Labials mottled black and rufous-yellow. A rufous collar, incomplete on the nape.

Food and Breeding.—Nothing known.

Growth.—Maximum Length. 350 mm. (1 foot, 1¾ inches).

Lepidosis.—As detailed in the synopsis.

DISTRIBUTION.—*Burma.* Sandoway.

NOTE.—Known from a single specimen.

Oligodon torquatus (Boulenger).

Simotes torquatus, Boulenger, *Cat.* II, 1894, p. 232.

COLOUR.—Dorsally brown with or without four indistinct longitudinal stripes. The anterior superior edge of the 3rd row above the ventrals, and both anterior edges of the superjacent rows with a whitish speck. Ventrally white with a few irregularly disposed black spots on a few shields before the vent. Tail immaculate beneath. Head with obscure blackish marks. A more or less distinct blackish bar behind the parietals. A subocular blackish streak.

FOOD.—Nothing known.

BREEDING.—A gravid ♀ killed at Myitkyina by Captain Venning on the 1st of May 1911 was sent to me which was found to contain two (dubiously three) eggs. One of the eggs was protruding from the cloaca proving that the species is oviparous. No mention was made of any eggs already discharged.

GROWTH.—Maximum Length. 292 mm. (11½ inches). Tail 37 mm. (1½ inches).

LEPIDOSIS.—As detailed in the synopsis.

DENTITION.—As detailed in the synopsis. I have two skulls in my collection.

DISTRIBUTION.—*Burma.* Hills between Lat. 24° and 26°, and East of Long. 96° Bhamo. Myitkyina.

NOTE.—I have seen four specimens including the types.

Oligodon erythrorhachis Wall.

O. erythrorhachis, Wall, *Bomb. N. H. J.*, XIX, p. 923.

TYPE.—From Jaipur, Assam, in the British Museum.

COLOUR.—Dorsally pale grey with a powdering of black, giving a dark grey effect extending to the edges of the ventrals. A conspicuous red vertebral stripe from the nape to tail tip, involving the vertebral and next one and a half rows, 29 narrow, black, light-edged cross bars on the body and 7 on the tail. Ventrally white with square black lateral spots in the whole length. A pinkish suffusion in the middle from tail tip, disappearing in the fore-body. Head with a blackish transverse bar across the præfrontals, reappearing below the eye. A broad oblique black temporal streak. An elongate, black, median arrow head on the nape with the point confluent with the præfrontal bar, but not united with the temporal streaks.

FOOD AND BREEDING.—Nothing known.

GROWTH.—Maximum Length. 375 mm. (1 foot, 2¾ inches). Tail 62 mm. (2¾ inches).

LEPIDOSIS.—As detailed in the synopsis.

DISTRIBUTION.—*Assam.* Namsang near Jaipur, at the foot of the Naga Hills.

NOTE.—Only one specimen is known.

Oligodon dorsalis (Gray).

O. dorsalis, Boulenger, *Cat.* II, 1894, p. 241. Venning, *Bomb. N H. J.*, XX, pp. 338 and 772. Wall, *Bomb. N. H. J.*, XVIII, p. 327; *l. c.* XIX, p. 831.

COLOUR.—Dorsally brown the colour deepening in the flanks. A light vertebral stripe from the nape to the tip of the tail, outlined with black, involves the vertebral and half the next row. A black linear stripe on the confines of the second and third rows above the ventrals. A basal and a sub-terminal caudal blackish bar. Ventrally parti-coloured black and white, some shields being entirely black or white, others half black and half white. Beneath the tail is crimson, unspotted and unbanded. Head powdered with black. A more or less distinct transverse bar on the præfrontals, and a chevron on the nape sending forward a median streak to meet the præfrontal bar. These may be very obscure, losing definition as age advances.

FOOD.—Nothing known.

BREEDING. (*A*) *The Sexes.*—The female appears to grow longer than the male. In females the body is rather longer, and the tail rather shorter than in the males as seen by the ventral and subcaudal shields. (Ventrals ♂ 162 to 182, ♀ 170 to 189. Subcaudals ♂ 35 to 51, ♀ 27 to 40.)

(*B*) *Method of Reproduction.*—From the size and character of eggs I have seen " in abdomina " there is no doubt that the species is oviparous.

(*C*) *Season.*—From available data eggs appear to be hatching from June to about the end of September. Venning's six inch specimen was killed on the 17th of June. A gravid female with eggs in an advanced stage of development was acquired by me on the cartroad below Shillong on the 20th of August 1907. Supposing these eggs were fit for discharge they would not probably have hatched for six or eight weeks.

(*D*) *The eggs.*—The specimen just referred to contained two eggs, but as it had been mutilated by cartwheels it is possible there were more.

GROWTH.—(*a*) *The Hatchling.*—The smallest specimen known to me was 152 mm. (6 inches) in length, but it is uncertain whether this was a hatchling.

(*b*) *Maximum Length.* 560 mm. (1 foot, 8 inches). Tail 68 mm. ($2\frac{3}{4}$ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies.*—In a specimen from Haka the 3rd and 4th rows above the ventrals blend, redivide, and reunite repeatedly on the left side in the anterior part of the body. I have seen two postoculars on one side in one specimen.

DENTITION.—As indicated in the synopsis. I have two skulls.

DISTRIBUTION.—*Assam.* Garo Hills. (Tura, Ind. Mus.). Naga Hills. (Samaguting. Ind. Mus. Namsang, near Jaipur, F. W.) Khasi Hills. (Ind. Mus., Shillong, F.W.). *Bengal.* Chittagong Hills. (Ind. Mus.). *Burma.* Chin Hills. (Haka 6,500 ft. Bombay Colln.). Mansi, Katha Dist. (Lat. 24°·1. Long. 97°·4. Bombay Colln.).

NOTE.—I have now examined eighteen examples.

Oligodon brevicauda Günther.

O. brevicauda, Boulenger, *Cat.* II, 1894, p. 240.

COLOUR.—Light brown dorsally with two lateral darker stripes. The upper involves the lower half of the seventh, and the sixth rows above the ventrals, and extends from the nape to the tip of tail. It is bordered with a black line above which is interrupted anteriorly and renders the light vertebral stripe increasingly conspicuous from the fore body posteriorly. The lower stripe involves the lower half of the third, and the second rows, and extends from the neck to the vent. Ventrally pink, half or the whole of several ventrals blackish. Tail pink beneath, immaculate or with a few spots. Head with a transverse dark bar across the praefrontals reappearing below the eye. An oblique, dark, temporal stripe from the gape to the parietals. A dark frontal spot which may be confluent with the præfrontal bar. A broad dark chevron on the nape.

FOOD AND BREEDING.—Nothing known.

GROWTH.—Maximum Length. 480 mm. (1 foot, 7 inches). Tail 50 mm. (2 inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis. Peculiar in that the internasals are wanting as in *herberti.*

(*b*) *Anomalies.*—There is sometimes a segment detached from the parietals which forms a spurious upper anterior temporal.

DISTRIBUTION.—*Western Ghats.*—South of the Goa Gap. (Nilgiris. Anamalais. Travancore Hills.)

Oligodon taeniolatus (Jerdon).

Coronella taeniolata, Jerdon, *J. A. S., Bengal*, XXII, 1853, p. 258.

Oligodon subgriseus, Boulenger, *Cat.* II, 1894, p. 243. Ferguson, *Bomb. N. H. J.*, X, p. 71. Millard, *Bomb. N. H. J.*, XV, p. 348. Pearless, *Spol. Zeylan.* 1909, p. 54. Sarasin, *Zool. Jahr. Jena*, 1910, p. 130. Sclater, *List. Sn. Ind. Mus.*, 1891, p. 25. Wall, *Bomb. N. H. J.*, XVI, p. 298; *l.c.*, XIX, p. 556; *l.c.*, XXVI, p. 568. *Spol. Zeylan*, 1921, p. 406. Willey, *Spol. Zeylan*, 1906, p. 233.

Oligodon taeniolatus, Wall, *Oph. Tap.*, 1921, p. 239.

COLOUR.—Subject to much variation. Dorsally the ground colour is tawny or light brown. The anterior inferior edges of some of the scales are edged with a lighter and some a darker shade so as to form a fine variegation. The darker streaks show a more or less decided tendency to form crossbars of which there may be from 28 to 42 on the body and 7 to 11 on the tail. In some specimens there is an intermediate series of less obvious bars. In most specimens there are four more or less distinct darker longitudinal stripes. The upper and broader stripes pass from the nape where they are confluent, to the tip of the tail, and involve the edge of the vertebral, and two and half adjoining rows. The lower stripes pass from the neck to the vent, and involve the contiguous halves of the 2nd and 3rd rows above the ventrals. A pale line occupies the middle of the vertrebral row, and expands anteriorly to the edge of the uppermost row. The belly is pearly white and usually quite immaculate but some specimens exhibit a few scattered brownish spots in the posterior part of the body. The head is marked with three dark bars.

The anterior crosses the præfrontals and reappears below the eye; the median is chevron-shaped with its apex on the frontal and its limbs pass obliquely to the gape; the third and broadest is chevron-shaped and situated on the nape, its apex extending forwards to the parietals. These marks which are so characteristic of the species of this genus are usually complete and discrete, but may be more or less confluent in the median line, or disintegrate. In some old specimens they become effaced, and replaced by a fine mottling.

Four varieties may be recognised of which the first three are completely connected.

Variety (A) (*a*). In this the variegations are light and sparse, the bars are not or hardly suggested, and the stripes are wanting or very faint.

Variety (A) (*b*) *taeniolatus* (Jerdon). The variegations are more pronounced than in (A) (*a*) and both bars and stripes are fairly conspicuous.

Variety (C) (*c*) *fasciatus* (Günther). Like the last but with the bars replaced by from 23 to 37 round, indented, or completely bisected spots on the body, and from 5 to 11 on the tail. I have examined specimens intermediate between (A) (*b*) and (A) (*c*), *i.e.*, with spots anteriorly and crossbars posteriorly.

Variety (C) *spilonotus* (Günther). Differs from the previous forms in having large, light-edged marks, shaped like a walnut kernel, and reminding one of the ornamentation seen in *splendidus*, *venustus* and *juglandifer*: There are from 13 to 23 of these on the body, and 4 to 6 on the tail.

Food.—I have found lizard's (or snake's ?) eggs in the stomach many times and also frog's spawn.

Breeding.—(*a*) *Method of reproduction.*—I have examined a gravid female with eggs of such a size and character, as to make it fairly certain that the species is oviparous.

(*b*) *Season.*—Two specimens found in company at Bangalore, on the 23rd of April 1920, proved to be ♂ and ♀ The latter showed no enlargement of the ovarian follicles. A young specimen, apparently a hatchling which measured 122 mm. ($4\frac{7}{8}$ inches), was taken by me at Cannanore in March. None of the 18 females collected by me in the Nilgiris and Wynad in the months of June to September 1917 were gravid, but 14 young of the year varying from 150 to 232 mm. (6 to $9\frac{1}{4}$ inches) were brought in during that period.

(*c*) *The Brood.*—The only gravid female that has come into my hands contained four large eggs. The date of capture is unfortunately not on record.

Growth.—(*a*) *The Hatchling.*—The smallest specimens I have seen were 118 mm. ($4\frac{3}{4}$ inches), date unknown, and 121 mm. ($4\frac{7}{8}$ inches) in March. I have seen another $4\frac{7}{8}$ inches long, date and locality not on record.

(*b*) *Early Life.*—From rather meagre figures at my disposal it would appear to grow about 5 inches a year in the first three years of life, when it would be about 20 inches long.

(*c*) *Maximum Length.*—The longest I know taped 585 mm. (1 foot 11 inches).

Lepidosis.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies.—Praefrontals.*—Rarely quite separated by the frontal. *Parietals.* Sometimes a small detached portion forms a spurious upper anterior temporal. *Loreal.* Rarely absent, being confluent with the præfrontal. *Praeocular.* I have seen two in one specimen. *Postoculars.* Rarely three. *Supralabials.* The 3rd and 4th are rarely confluent. I have seen the 3rd divided in one specimen, as one sees the 4th divided in *purpurascens* and *violaceus.* In one specimen the 6th was cuneate and failed to reach the edge of the lip. Rarely there is a supernumerary making the total 8. *Ventrals.* I have seen the last divided like the anal in one example. *Anal.* Rarely entire. *Subcaudals.* Rarely some at the base of the tail are entire.

DENTITION.—From five skulls in my collection.

Maxillary.—An edentulous space anteriorly followed by 6 to 7 teeth. *Palatine.* Edentulous anteriorly and posteriorly; a single tooth (or none ?) in the middle. *Pterygoid.* Edentulous anteriorly and posteriorly; 6 to 10 teeth in the middle. *Mandibular.* A short edentulous space anteriorly followed by 12 teeth.

DISTRIBUTION.—*Ceylon. Peninsular India* to Sind and Baluchistan in the North-West, the Western Himalayas, and to Bengal (Purnea) in the North-East.

Variety (*A*) (*a*).—Baluchistan (Khila Abdulla). Sind. Punjab. Western Himalayas (Dhikala, Garhwal District). Bengal (Purnea District). Throughout the Peninsula. Ceylon.

Variety (A) (*b*). Sind. N.-W. Frontier. Punjab. Western Himalayas (Dhikala, Garhwal District). Bengal (Barrakur) to South India and Ceylon.

Variety (*A*) (*c*).—Western Ghats (Matheran. Mysore Hills. Wynad. Nilgiris. Anamalais. High Range, Travancore. Tinnevelly Hills). Ceylon.

I have examined specimens intermediate between (A) (*b*) and (*A*) (*c*) from Mysore Hills (Koppa), the Anamalais, Tinnevelly Hills and Bellary.

Variety (*B*).—Western Ghats (Castle Rock, Canara. Mysore Hills. Anamalais. Nelliampathi Hills. Travancore.)

Oligodon ellioti Günther.

O. ellioti, Sarasin, *Zool. Jahr. Jena*, 1910, p. 138. Wall, *Bomb. N. H. J.*, XIX p. 533.

COLOUR.—Very like *taeniolatus* (Jerdon). Dorsally brown, with the anterior inferior borders of some scales edged lighter and others darker, so forming a variegation. There are from 36 to 40 darker, light-edged crossbars on the body (or spots with a median indentation anteriorly and posteriorly), and 10 to 11 on the tail. The spots are completely bisected in the forebody and on the tail in one specimen, which thus resembles a specimen of variety *fasciatus* of *taeniolatus.* Three darker ill-defined stripes are more or less in evidence. The median stripes begin on the nape, and end at the tail tip, and involve the vertebral, and the next one and a half rows. A narrower lateral stripe begins in the neck and passes to the vent, and involves the lower half of the fourth, the third and the upper half of the second rows above the ventrals. Ventrally

yellowish and unspotted, or with the basal parts of the ventrals dusky. A dark transverse bar crosses the præfrontals and edge of the frontal to reappear below the eye. A dark chevron with its apex on the frontal and its arms passing to the gape curves forward to the throat, and nearly meets its fellow behind the posterior sublinguals. A dark broad mark on the nape is projected forwards in the middle line to the posterior angle of the frontal.

FOOD AND BREEDING.—Nothing known.

GROWTH.—*Maximum Length.*—343 mm. (1 foot, $1\frac{1}{2}$ inches). Tail 47 mm. ($1\frac{7}{8}$ inches).

LEPIDOSIS.—As detailed in the synopsis.

DISTRIBUTION.—South India. Ceylon ?

NOTE.—Only three specimens are known, the type in the British Museum, labelled "Madras Presidency," and two discovered by me in the Bombay collection labelled *O. subgriseus*.

One of these is from Nasik, and the other said to be from Ceylon, but before finally accepting the last locality it would be advisable to await confirmation of this.

Oligodon sublineatus Dumeril and Bibron.

O. sublineatus, Abercromby, *Sn. of Ceylon*, 1910, p. 72. *Spol. Zeylan.* 1911, p. 206. Annandale, *J. A. S. Beng.*, 1905, p. 175. Boulenger, *Cat.* II. 1894, p. 242 ; *l.c.* III, 1896, p. 640. Pearless, *Spol. Zeylan.* 1909, p. 54. Sarasin, *Zool Jahr. Jena*, 1910, p. 134. Sclater, *List Sn. Ind. Mus.* 1891, p. 25. Wall, *Spol. Zeylan.* 1910, p. 37 ; *l. c.* 1921, p. 400. *Oph. Tap.* 1921, p. 248. Willey, *Spol. Zeylan.* 1906, p. 233.

COLOUR.—Dorsally brown, the anterior inferior borders of many scales edged darker and lighter to form a variegation. A series of from 12 to 15 paired dark brown, light-edged spots on the body, 3 to 4 on the tail. These sometimes alternate with those of the opposite side. Ventrally whitish with three series of brown spots, sometimes confluent into lines. The lateral pass from the neck to the tip of the tail. The median ceases at the vent. Head with a dark præfrontal bar re-appearing below the eye. A similar transverse bar on the posterior part of the frontal, and anterior edge of the parietals. A dark bar on the nape, sometimes interrupted in the median line, sometimes confluent in the median line with the frontal bar. These marks tend to become obscure with age. They are sometimes very distinct and discrete, sometimes more or less confluent, or disintegrated.

FOOD.—On two occasions I have found the eggs of a lizard (or snake ?) in the stomach. In one there were two soft shelled eggs 17 mm. ($\frac{5}{8}$ of an inch) long, and in the other a single egg about 13 mm. ($\frac{1}{2}$ an inch) long.

BREEDING.—(*a*) *Method of Reproduction.*—The single gravid female that has come into my hands contained an egg of such dimensions as to leave no doubt that the species is oviparous.

(*b*) *Season.*—The gravid specimen was killed on the 4th of October 1920, and must have been very near the climax of her cyoesis.

(*c*) *The Brood.*—My one gravid female contained but one egg which measured 26 × 5 mm. (1 inch × $\frac{1}{6}$ of an inch).

GROWTH.—(*a*) *The Hatchling.*—The length at exovation is not known, but one is justified in assuming that it is appreciably smaller than in *taeniolatus*, probably less than 100 mm. (4 inches).

(*b*) *Early Life.*—Two specimens obtained in 1920, one in January 200 mm. (8 inches) and the other in February 178 mm. (7½ inches) were probably hatched in the preceding year, and these seem to indicate that the young as in so many other snakes double their length in the first year of life. Eight specimens obtained between August and October and varying from 225 to 263 mm. (9 to 10½ inches) would make it appear that these were about eighteen months old.

(*c*) *Maturity.*—My egg-bound female taped 412 mm. (9¼ inches), a length suggesting that she was about eighteen months old.

(*d*) *Maximum Length.*—The largest known to me was 324 mm. (12¾ inches) long, the tail 38 mm. (1½ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies. Loreal.*—I have seen this absent on one side in three specimens. *Supralabials.* The 2nd and 3rd were confluent on one side in two specimens, and on both sides in one example. *Costals.* In one specimen the 6th and 7th rows above the ventrals blended and redivided several times anteriorly so that the costals were alternately 15 and 13. Rarely the 2nd and 3rd rows above the ventrals blend posteriorly, so that the rows count 13 at a point two heads lengths before the vent.

DENTITION.—From three skulls in my collection. *Maxillary.* An edentulous space anteriorly that would take about 2 teeth, followed by from 6 to 8 teeth. *Palatine.* Edentulous? *Pterygoid.* A long edentulous space anteriorly, followed by from 4 to 6 teeth. *Mandibular.* An edentulous space anteriorly that would take two or three teeth, followed by from 9 to 10 teeth.

DISTRIBUTION.—Peculiar to Ceylon. A denizen of the low country ascending to 3,000 feet. South Prov. (Galle), West Prov. (Colombo, Matugama, Veyangoda), Sab'wa Prov. (Ratnapura and Yatiyantota Districts), Central Prov. (Peradeniya.)

NOTE.—There are two specimens in the Indian Museum labelled Nicobar Islands on the authority of de Roepstorff. This is to be distrusted. The same authority is responsible for two other equally startling records from the Nicobar Islands, *viz.*, *Polyodontophis sagittarius* which does not occur south of Lower Bengal, and *Amblycephalus monticola* a hill-snake that does not occur south of Assam.

Oligodon templetoni Günther.

O. templetoni, Abercromby, *Sn. of Ceylon*, 1910, p. 73. Boulenger, *Cat.* II, 1894, pp. 241 and 359. Sarasin, *Zool. Jahr. Jena.*, 1910, p. 127. Wall, *Spol. Zeylan.* 1921, p. 400. *Oph. Tap.* 1921, p. 245. Willey, *Spol. Zeylan.* 1906, p. 233.

COLOUR.—Dorsally brown, with a more or less distinct lighter vertebral stripe from the nape to the tip of the tail. A series of darker brown or blackish brown transverse lateral bars, involving the 5th, 6th and 7th rows above the ventrals. There are about 18 of these on the body, and 5 on the tail. Ventrally dappled with squarish black and white (yellow or pinkish in life) spots. A fine peppering of dark brown on the

head, a dark oblique stripe below the eye. An oblique dark bar behind the gape nearly meeting its fellow over the nape.

FOOD AND BREEDING.—Nothing known.

GROWTH.—(*a*) *The Young.*—The smallest specimen I have seen was 126 mm. (5 inches) in length, but as the navel was completely effaced it is certain that the young are less than this when hatched or born.

(*b*) *Maximum Length.*—The longest I have measured was 290 mm. (11½ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies. Loreal.*—Sometimes touches the eye below the præocular. *Postoculars.* Sometimes only the upper touches the parietals. *Supralabials.* The 6th is sometimes cuneate and fails to reach the edge of the lip. *Sublinguals.* The posterior rarely touch the 3rd as well as the 4th infralabial.

DENTITION.—From one skull in my collection. *Maxillary.* An edentulous space that would carry 2 teeth followed by 7 teeth. *Palatine.* Edentulous. *Pterygoid.* Edentulous. *Mandibular.* An edentulous space anteriorly that would take 1 tooth, followed by 7 teeth.

DISTRIBUTION.—Peculiar to Ceylon. A low country species ascending to about 3,000 or 4,000 feet. South Prov. (Udugama), West Prov. (Hewissa, Matugama), Sab'wa Prov. (Ratnapura, Balangoda), Cent. Prov. (Peradeniya).

Oligodon melaneus Wall.

O. melaneus, Wall, *Bomb. N. H. J.*, XIX, p. 349.

TYPE.—In the British Museum. Co-type in the Bombay Natural History Society's collection. Both from Sukna, Darjiling District.

COLOUR.—Dorsally blackish. Under a lens the ground colour is seen to be blackish and finely powdered with lighter blue-grey speckling. Ventrally uniform deep bluish grey, the throat and chin rather paler. Head like the body above, and without marks.

FOOD.—Nothing known.

BREEDING.—The type was egg bound and contained four (five ?) eggs about 12 mm. (½ an inch) long. This and a male (the co-type) were dislodged from a heap of loose metal on the road side. Unfortunately no date of capture was recorded.

GROWTH.—*Maximum Length.*—333 mm. (1 foot, 1⅛ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies. Anal.*—In the co-type the anal is entire.

DISTRIBUTION.—*Bengal.* (Sukna, Darjiling District, 540 feet).

NOTE.—Only two specimens are known.

Oligodon travancoricus Beddome.

O. travancoricus, Ferguson, *Bomb. N. H. J.*, X, p. 71. Sarasin, *Zool. Jahr. Jena* 1910, p. 138.

COLOUR.—Dorsally light brown, with a series of dark brown or blackish, light-edged bars, 25 to 33 on the body, and 5 to 6 on the tail. These bars are frequently indented in the middle line anteriorly and posteriorly. Belly marked with squarish black and white dapplings.

On the head there is a dark light-edged transverse præfrontal bar reappearing below the eye, a similar transverse bar over the frontal passing obliquely over the temporal region, and a similar bar behind the parietals passing to the side of the neck. These bars may be more or less confluent in the median line.

FOOD AND BREEDING.—Nothing known.

GROWTH.—*Maximum Length.*—465 mm. (1 foot, $6\frac{2}{5}$ inches). Tail 65 mm. ($2\frac{3}{5}$ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies. Supralabials.*—The 6th sometimes reaches the edge of the lip, the 5th and 6th are partially confluent on one side in one specimen.

DENTITION.—From one skull in my collection. *Maxillary.*—An edentulous space anteriorly that would take 2 to 3 teeth, followed by 7 teeth. *Palatine.* Edentulous. *Pterygoid.* An edentulous space anteriorly that would take 5 to 6 teeth, followed by 12 teeth. *Mandibular.* An edentulous space anteriorly that would take 1 tooth, followed by 8 teeth.

DISTRIBUTION.—*Western Ghats.*—South of the Palghat gap. (High Range, Travancore. Tinnevelly Hills).

Oligodon cruentatus (Günther).

Simotes cruentatus, Boulenger, *Cat.* II, 1894, p. 231. *Faun. Mal. Pen. Rept.* 1912, p. 150. Flower, *P. Z. S.*, 1896, p. 885. Wall and Evans, *Bomb. N. H. J.*, XIII, pp. 349 and 617.

COLOUR.—Dorsally brown, with the anterior inferior borders of many scales edged lighter and darker to form a sparse variegation. A light vertebral stripe from the nape to the tail tip involving the vertebral and the next two rows. An indistinct dark stripe from the neck to the vent on the contiguous halves of the 3rd and 4th rows above the ventrals where the rows are 17, and of the 2nd and 3rd where 15. A blackish band on the base of the tail, and a similar band subterminally. Ventrally dappled with squarish black and yellow (white in spirit) spots to the vent. Crimson beneath the tail. Head with a dark transverse bar on the edge of the præfrontals and frontal reappearing below the eye. An oblique dark temporal bar from behind the gape to the parietal, usually meeting its fellow on the frontal. A dark sagitta with its point on the frontal or detached, and the arms passing to the side of the neck. In old specimens these head marks are more or less disintegrate and obscure. Chin whitish with some fine mottling on the lips.

FOOD.—In one specimen I found four soft-shelled eggs in the stomach dubiously snake's or lizard's.

BREEDING.—Nothing known.

GROWTH.—(*a*) *The Young.* I have never had a specimen smaller than 245 mm. ($9\frac{5}{8}$ inches). The annual growth cannot be estimated from my records.

(*b*) *Maximum Length.* 387 mm. (1 foot, $3\frac{1}{4}$ inches).

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Loreal.* Rarely absent, being confluent with the præfrontal. *Præocular.* Rarely two. *Supralabials.* I have seen the

2nd and 3rd confluent on one side in one specimen. *Infralabials.* Sometimes only four, in which case the 4th only touches the posterior sublinguals. *Subcaudals.* Rarely one or more at the base of the tail or entire.

Dentition.—From two skulls in my collection. *Maxilla.* 14 to 16, no edentulous space. *Palatine.* 8 to 10, no edentulous space anteriorly or posteriorly. *Pterygoid.* 14 to 18, no edentulous space anteriorly. *Mandibular.* 17 to 18, no edentulous space anteriorly.

Distribution.—*Burma.* Pegu, Toungoo, Rangoon, Minglegon, Yuathit, Prome District, Mandalay. Bhamo.

Note.—Stoliczka's record of Penang seems to me to call for confirmation.

Oligodon violaceus (Cantor).

Simotes violaceus, Boulenger, *Cat.* II, 1894, p. 222; *l. c.* III. 1896, p. 640. Sclater, *List Sn. Ind. Mus.* 1891, p. 23. Wall and Evans, *Bomb. N. H. J.*, XIII, pp. 350 and 618. Wall, *Bomb. N. H. J.*, XII, pp. 672 and 766; *l.c.* XIX, p. 831.

Colour.—Very variable. I would divide individuals into the following categories, all of which however are completely connected by intermediate forms.

Var A. *violaceus* Cantor (=Var *cinereus* Günther). Dorsally varying shades of brown with sometimes a ruddy or violaceus tinge. Rarely the colour of a boiled prawn. There are no cross bars or stripes. Belly whitish with or without dark, squarish, lateral spots.

Var B. *multifasciatus* Jan (=*semifasciatus* Anderson). Usually darker brown than the last, the anterior inferior margins of many scales edged darker and lighter to form a variegation. The dark streaks congregate to form cross bars, varying from 19 to 27 on the body, and 3 to 7 on the tail. In most specimens an intermediate series of less distinct bars are to be seen, but in a few examples the intermediate series are as distinct as the former, and then there may be from 39 to 55 bars on the body. In some specimens all the bars are obscure and the belly is unspotted. To such Günther applied the name *swinhonis.* Belly with dark, squarish, lateral spots usually disposed on alternate sides and alternate ventrals. Some specimens exhibit an ill-defined, darker, longitudinal median stripe from the neck to tail tip, involving the vertebral and the next two and a half rows and enclosing a narrow pale vertebral stripe. A similar narrower lateral stripe passes from the neck to the vent, and involves the contiguous edges of the 2nd and 3rd rows above the ventrals. The head in all varieties has a dark præfronto-frontal cross bar which reappears below the eye. A similar dark oblique temporal bar passes from behind the gape to the parietals. A dark sagitta on the nape is projected forwards to the frontal, or has its point detached. These head marks are very distinct in some examples, obscure in others, especially in old specimens.

The two varieties referred to are completely connected by specimens showing every gradation, from faint (*swinhonis*) to dark cross bars, and every degree from scanty and small, to numerous and dark, squarish spots on the belly.

Food and breeding.—Nothing known.

GROWTH.—(*a*) *The Young.* I have seen examples 178 and 185 mm. long (7 and 7⅜ inches) which appeared to have been recently born or hatched. No dates unfortunately are on record.

(*b*) *Maximum length.*—760 mm. (2 feet, 6 inches). Tail 75 mm. (3 inches).

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Internasals.*—Quite divided by the rostral in one example. *Parietals.* Sometimes a small portion is detached to form a spurious upper anterior temporal. *Supralabials.* Rarely the 2nd and 3rd, or the 4th and 5th are confluent. The 3rd may be cuneate, and not reach the edge of the lip. In some specimens the 3rd as well as the 4th is divided into an upper and a lower part. In some the 4th is not so divided. *Infralabials.* The 3rd and 4th are sometimes confluent. *Subcaudals.* It is not very unusual to find some of these shields entire at the base of the tail.

DENTITION.—From one skull in my collection. *Maxillary.* 10 to 11, no edentulous space anteriorly. *Palatine.* 8, no edentulous space anteriorly or posteriorly. *Pterygoid.* 11 to 13, no edentulous space anteriorly. *Mandibular.* 15 to 16, no edentulous space anteriorly.

DISTRIBUTION.—*Assam. Chittagong. Burma. Indo-China. South China.*

Var. (A) *violaceus.* Uniform or with bars and stripes very faint.

Burma.—Tounggyi, S. Shan States (Brit. Mus.). Rangoon. Minglegon. Arakan Hills. (F.W.). *Indo-China.* Camboja (Brit. Mus.). *S. China.* Hongkong (F.W).

Var (B) *multifasciatus.* (*a*) With 19 to 27 distinct bars on body, 3 to 7 on tail, and less distinct intermediate bars. *Assam.* Cherrapunji, Khasi Hills. Samaguting, Naga Hills. *Bengal.* Tinsukia (F.W.). Chittagong Hills (Ind. Mus.). *Burma.* Mansi, Katha District. Tounggyi, S. Shan States (Bombay colln.). Kunchoung (F.W.).

(*b*) With 39 to 55 bars on the body, 4 to 8 on the tail; all equally distinct. *Assam.*—Nazira (Ind. Mus.). Halem (F.W.). Naga Hills (Anderson). *Burma.* Kunchoung (F.W.).

NOTE.—Boulenger mentions Bengal as part of its habitat. I cannot trace the authority for this. There is a specimen from the Chittagong Hills, which are politically in Bengal, in the Indian Museum, but I have found more than one specimen from the Eastern Himalayas in museums, wrongly identified, which proved to be *albocinctus.* (One such is specimen No. 16523 in the Indian Museum).

Oligodon venustus Jerdon.

O. venustus, Boulenger, *Cat.* II, 1894, p. 235. Sarasin, *Zool. Jahr. Jena,* 1910, p. 138. *Bomb. N. H. J.,* XXIII, p. 169; *l.c.* XXVI, p. 567.

COLOUR.—Dorsally brown, with a series of from 23 to 31 spots on the body, and from 6 to 7 on the tail. These spots are large, and shaped like walnut kernels. They are demarcated by a blackish areola, outside which is a pale border. Sometimes some of the spots are bisected in the median line. In many specimens a similarly-coloured, smaller spot is seen laterally especially in the fore body. Ventrally dappled with squarish black and yellow spots. Sometimes the black is replaced by a few small brownish spots disposed laterally. Head with a dark præ-

frontal bar reappearing below the eye, a dark oblique temporal streak from behind the gape to the parietal shields, usually meeting its fellow. A dark sagitta on the nape with its point on the frontal and usually confluent with the temporal stripe in the median line, and sometimes with the præfrontal bar. In old specimens the head marks may be obscure, and more or less disintegrated. Chin yellow with black sutures.

Food.—I have found reptilian eggs (lizard's, possibly snake's), and frog's spawn, with occasionally a snail with more or less of the shell intact.

Breeding.—The young appear in the month of June and preceding months.

Growth.—(*a*) *The Young.* The smallest specimen I have seen, which appeared to be newly hatched or born, measured 112 mm. ($4\frac{1}{2}$ inches).

(*b*) *Early life.* Specimens measuring from 240 to 264 mm. ($9\frac{1}{2}$ to $10\frac{1}{2}$ inches) in August and September seem to indicate that the young double their length in the first year of life.

(*c*) *Maximum length.* 495 mm. (1 foot, $7\frac{1}{2}$ inches). The tail 70 mm. ($2\frac{3}{4}$ inches).

Lepidosis.—(*a*) *Typical.* As detailed in the synopsis. The 6th supralabial is almost as frequently excluded from the edge of the lip, as extending to the labial margin.

(*b*) *Anomalies. Loreal.*—Frequently absent, being either confluent with the nasal, or the præfrontal. *Supralabials.* Rarely the 2nd and 3rd, or the 5th and 6th are confluent. Rarely there is a supernumerary making eight. *Costals.* Rarely the 3rd and 4th rows above the ventrals blend, and re-divide several times before the 15 rows are finally established.

Dentition.—From seven skulls in my collection. *Maxillary.* An edentulous space anteriorly that would take 1 or 2 teeth, followed by from 7 to 8 teeth. *Palatine.* An edentulous space anteriorly that would take 2 to 3 teeth, followed by from 1 to 3 teeth. An edentulous space posteriorly that would take about 5 or 6 teeth. *Pterygoid.* An edentulous space anteriorly that would take about 5 teeth, followed by from 4 to 8 teeth. *Mandibular.* No edentulous space anteriorly. 9 to 11 teeth.

Distribution.—*Western Ghats. South of the Goa gap.* Wynad. Nilgiris. Palnis. Cochin. Travancore.

Oligodon melanozonatus Wall.

O. erythrorhachis, Annandale, *Rec. Ind. Mus.* 1912, p. 48. *O. melanozonatus*, Wall, *Rec. Ind. Mus.*, XXIV. p. 29.

Types.—In the Indian Museum (Nos. 16798 and 16799).

Colour.—Dorsally light brown obscurely mottled with blackish. A series of twenty rather ill-defined, black cross bars on the body, and four on the tail. In the smaller and half grown specimen these are edged anteriorly and posteriorly with black as in *albocinctus*. Ventrally white with transverse, black, irregularly-disposed cross bars, many as broad as the ventral shields. The tail is similarly marked beneath. Head with an obscure, dark, præfronto-frontal bar, reappearing below the eye,

a black-edged chevron with its point on the frontal and the arms passing obliquely over the temporal region. A pale, black-edged sagitta on the nape with its point directed forwards.

FOOD AND BREEDING.—Nothing known.

GROWTH.—*Maximum Length.* 513 mm. (1 foot, 8¼ inches). Tail 83 mm. (3⅜ inches).

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis. In one specimen there are seven supralabials on the left side. A cuneate 6th is suggested on both sides in one example, which appears to be confluent with the 5th. The same may be said of the right side in the other specimen.

DISTRIBUTION.—*Assam.* Upper Rotung Valley, Abor Hills, at about 2,000 feet elevation.

Oligodon erythrogaster Boulenger.

Simotes octolineatus, Günther, *P. Z. S.* 1861, p. 216. *Rept. Brit. Ind.*, 1864, p. 206 (footnote).
Oligodon erythrogaster, Boulenger, *Rec. Ind. Mus.*, 1907, p. 216. Wall, *Bomb. N. H. J.*, XIX, p. 1000; *l.c.* XXII, p. 639.

TYPE.—In the Indian Museum (No. 16108).

COLOUR.—Dorsally brown, lighter in the flanks. A light vertebral stripe with a median dark line passes from the nape on to the tail, involving the vertebral and half the next row of scales. A blackish stripe passes from the nape to the tail tip involving the contiguous halves of the seventh and eighth rows above the ventrals, confluent on the neck with its fellow and passing forwards to the frontal, and similarly confluent on the tail. Three light stripes pass down each side of the body to the vent which are separated by narrow black stripes. Belly coral red in the median line to the end of the tail, with white, black-edged spots laterally, the edges of the ventrals light brown. Head with a dark præfrontal band reappearing below the eye, a dark oblique temporal stripe from the supraocular to behind the gape. A dark sagitta on the nape, its point (sometimes detached) on the frontal, confluent posteriorly with the uppermost dark body stripe.

FOOD.—Nothing known.

BREEDING.—An egg-bound female was killed on the 11th of June 1911, which contained four elongate eggs 27 × 5 mm. ($1\frac{1}{16} \times \frac{1}{5}$ of an inch). This specimen measured 455 mm. (1 foot $5\frac{3}{4}$ inches). Tail 75 mm. (3 inches).

GROWTH.—*Maximum Length.* The female just referred to is the largest of four specimens examined by me.

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis. The sixth supralabial is cuneate, and fails to reach the edge of the lip. In one example on one side the sixth supralabial has a small detached fragment which comes to the edge of the lip. The costals sometimes reduce posteriorly to 13 rows.

DENTITION.—From one skull in my collection. *Maxillary.* An edentulous space anteriorly that would take 2 to 3 teeth, followed by 7 to 8 teeth. *Palatine.* An edentulous space anteriorly that

would take 2 to 3 teeth, followed by 2 to 3 teeth. An edentulous space posteriorly that would take 5 to 6 teeth. *Pterygoid.* An edentulous space anteriorly that would take about 6 teeth, followed by 4 teeth. *Mandibular.* An edentulous space anteriorly that would take 1 to 2 teeth, followed by 5 to 6 teeth. An edentulous space posteriorly that would take about 5 teeth.

DISTRIBUTION.—*Eastern Himalayas.* Nepal to Sikkim. Tindharia (F.W.).

Oligodon theobaldi (Günther.)

Simotes beddomii, Boulenger, *Cat.* II, 1894, p. 229. Sarasin, *Zool. Jahr. Jena*, 1910, p. 138. Wall, *Bomb. N. H. J.* XXIII, p. 170.

Simotes theobaldi, Boulenger, *Cat.* II, 1894, p. 230. Sclater, *List. Sn. Ind. Mus.* 1891, p. 24. Wall and Evans, *Bomb. N. H. J.* XIII, pp. 350 and 618. Wall, *Bomb. N. H. J.* XVIII, p. 783; *l.c.* XXIII, p. 170.

COLOUR.—Dorsally brown of various shades, the anterior inferior borders of many scales edged lighter and darker to form a variegation. A pale vertebral line from the nape on to the tail. A dark stripe from the nape to the tail tip involving the edge of the vertebral and the next three rows. A dark stripe passes from the neck to the vent on the confines of the 3rd and 4th rows above the ventrals where the scales are 17, and on the 2nd and 3rd where 15. Ventrally yellow, immaculate, or with a few scattered dark spots posteriorly. Head with a dark præfrontal bar reappearing below the eye, an oblique dark temporal stripe from behind the gape meeting its fellow on the frontal to form a chevron. A dark chevron on the nape, its point (sometimes detached) passing to the posterior angle of the frontal and its arms to the side of the neck. Chin and throat immaculate.

FOOD.—Nothing known.

BREEDING.—I have seen a gravid female with three eggs measuring 18 mm. ($\frac{3}{4}$ of an inch) in length. The dam was 295 mm. ($11\frac{1}{2}$ inches) long. The date of capture is not on record. Judging from these eggs it is probably oviparous.

GROWTH.—*The Young.* My smallest specimen was 115 mm. ($4\frac{5}{8}$ inches) long, but it is fairly certain the young when hatched or born are appreciably less than this.

(*b*) *Maximum Length.* 380 mm. (1 foot, 3 inches). Tail 30 mm. ($1\frac{1}{5}$ inches.)

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Supralabials.* I have seen the 5th confluent with the lower postocular. *Infralabials.* In some specimens the 5th only touches the posterior sublinguals. *Subcaudals.* I have seen the last two entire in one example.

DENTITION.—From two skulls in my collection. *Maxillary.* 15 to 16 teeth; no edentulous space anteriorly. *Palatine.* 9 teeth; no edentulous space anteriorly or posteriorly. *Pterygoid.* 16 to 18 teeth; no edentulous space anteriorly. *Mandibular.* 16 to 17 teeth; no edentulous space anteriorly or posteriorly.

DISTRIBUTION.—*Assam.* Tuia, Garo Hills (Bombay colln.). *Burma.* As far north as Myitkyina (Bombay colln.) and south to Tenasserim (Ind. Mus.).

NOTE.—The locality of specimen No. 11712 in the Indian Museum labelled Karachi is obviously a mistake. Its identity is correct. Wynad, on the authority of Beddome (types of *beddomei* in the British Museum), must also be discredited.

Oligodon affinis Günther.

O. affinis, Boulenger, *Cat.* II, 1894, p. 236. Ferguson, *Bomb. N. H. J.*, X, p. 70. Sarasin, *Zool. Jahr. Jena*, 1910, p. 138. Wall, *Bomb. N. H. J.* XXVI, p. 568.

COLOUR.—Brown dorsally, the anterior inferior borders of many scales edged darker to form a sparse variegation. A series of from 31 to 41 dark, light edged, linear cross bars over the body becoming indistinct or obsolescent on the tail. These bars involve about 5 to 7 scale rows in the breadth of the snake. Ventrally boldly dappled with squarish black and yellow spots, from throat to tail tip, many of which may be confluent across the belly. Head with a dark præfronto-frontal bar reappearing below the eye, a dark oblique temporal streak from the gape meeting its fellow across the parietals to form a chevron, and usually confluent with the præfrontal bar in the median line. A thin chevron on the nape, its point confluent with the preceding chevron, and the arms passing to the sides of the neck. Chin white with black sutures.

FOOD.—I have found the soft shelled eggs of a lizard (or snake ?) in the stomach.

BREEDING.—A specimen 100 mm. (4 inches) in length captured in July indicates that the season for the appearance of the young is somewhat earlier in the year.

GROWTH.—(*a*) *The Young.* My smallest specimen was 100 mm. (4 inches), but from what we know of other species it is almost certain that the young are even smaller than this when hatched or born.

(*b*) *Maximum Length.* 342 mm. (1 foot $1\frac{1}{2}$ inches.) Tail 44 mm. ($1\frac{3}{4}$ inches).

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Parietals.* Sometimes a detached fragment forms a spurious upper anterior temporal. *Loreal.* Rarely present. *Supralabials.* The 2nd in one specimen on one side was cuneate, and failed to reach the edge of the lip.

DENTITION.—From one skull in my collection. *Maxillary.* An edentulous space anteriorly that would take 2 teeth, followed by 7 teeth. *Palatine.* With a single tooth near its middle. *Pterygoid.* An edentulous space anteriorly that would take 5 to 6 teeth, followed by 4 teeth. *Mandibular.* An edentulous space anteriorly that would take 1 tooth, followed by 8 teeth. An edentulous space posteriorly that would take 3 teeth.

DISTRIBUTION.—*Western Ghats. South of the Goa gap.* Wynad to Travancore.

Oligodon arnensis (Shaw).

Simotes arnensis, Abercromby, *Sn. of Ceylon*, 1910, p. 72. Boulenger, *Cat.* II, 1894, pp. 229 and 359. Ferguson, *Bomb. N. H. J.*, X, p. 71. Sarasin, *Zool. Jahr. Jena*, 1910, p. 130. Sclater, *List Sn. Ind. Mus.*, 1891, p. 24. Wall, *Bomb. N. H. J.*, XVIII, p. 115; *l.c.* XIX, p. 532; *l.c.* XXII, p. 749. Willey, *Spol. Zeylan.* 1906, p. 233.

Colour.—Dorsally brown of various shades, with sometimes a purplish or ruddy tinge. The whole body and tail are crossed by black bars edged with yellow or buff. These bars vary considerably in number according to locality. In Ceylon specimens there are from 13 to 18 on the body and 3 to 6 on the tail. In Indian specimens south of the Nerbudda and the Ganges Valley, they usually number from 19 to 30 (15 and 16 in two Travancore examples) on the body, and 4 to 16 on the tail. In specimens north of the Nerbudda and in the Ganges Valley they are usually from 28 to 40 on the body (47 in a specimen from Bihar), and 7 to 20 on the tail. Where the number is small the bars involve from 4 to 5 scales vertebrally in the fore body, 2 to 3 behind; but where it is large they involve from 1 to 2 scales vertebrally. These bars usually break up in the flanks, and in some specimens there is a darker variegation to be seen in the flanks intermediate to the bars. In some specimens the bars are replaced by twin, or quadrimaculate transversely-placed spots as one sees in variety *fasciatus* of *taeniolatus*. The belly is partly white and usually immaculate, but some specimens show a series of dark spots placed laterally and with a tendencey to be disposed on alternate ventrals, and alternate sides. The head has a dark præfronto-frontal bar, which reappears below the eye, a dark oblique temporal streak from behind the gape, which usually meets its fellow on the frontal to form a chev.on. A short dark oblique streak is frequently seen in the suture between the 5th and 6th supralabials. A dark chevron is placed on the nape with its point in the interparietal suture, and its arms pass to the side of the neck. Where there are few cross bars on the body this chevron involves from 8 to 10 or more scales vertebrally, but where the cross bars are numerous it involves from 3 to 4 scales vertebrally. All the head markings are almost always discrete, very distinct, and usually edged with buff or yellow.

Food.—On two occasions I have found the soft shelled eggs of a lizard (or snake?) in the stomach. A plug of hair in the cloaca of one example indicates that it will eat small mammals.

Breeding.—(*a*) *Method of Reproduction.* Eggs I have taken from the abdomen were of such a size and character as to leave little doubt that it is oviparous in habit.

(*b*) *Season.* I had a female in Fyzabad with eggs seemingly fit for discharge in August, and another with less advanced eggs in the same month.

(*c*) *The Eggs.* I have seen half a dozen or more egg-bound females and find that the clutch numbers from two to five. The most advanced eggs measured 36 by 10 mm. ($1\frac{4}{10}$ by $\frac{7}{20}$) of an inch. No embryo could be discovered within.

Growth.—(*a*) *The hatchling.* I have had three young which appeared to be hatchlings and which measured from 165 to 170 mm. ($6\frac{1}{2}$ to $6\frac{3}{4}$ inches).

(*b*) *Maturity.* The smallest egg-bound female I have seen measured 442 mm. (1 foot, 5½ inches).

(*c*) *Maximum Length.* 635 mm. (2 feet, 1 inch) is the largest measurement I know.

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Rostral.* I have once seen this entirely separating the nasals. *Parietals.* Sometimes a small fragment is detached to form a spurious upper anterior temporal. *Loreal.* Not infrequently absent, being confluent with either the præfrontal or the posterior nasal. *Præoculars.* Rarely two. *Supralabials.* Two are sometimes confluent, the series counting six in consequence. The 2nd is rarely divided and the series then counts eight. The 6th is sometimes cuneate, and fails to reach the edge of the lip. The 6th and 7th are rarely confluent. *Infralabials.* Occasionally there are five. *Anal.* I have twice seen this entire. *Subcaudals.* Rarely a few at the base of the tail are divided.

DENTITION.—From three skulls in my collection. *Maxillary.* An edentulous space anteriorly that would take about 3 teeth, followed by from 8 to 11 teeth. *Palatine.* An edentulous space anteriorly that would take about 2 teeth, followed by from 3 to 6 teeth. An edentulous space posteriorly that would take about 4 teeth. *Pterygoid.* An edentulous space anteriorly that would take about 4 to 6 teeth, followed by 10 to 17 (?18) teeth. *Mandibular.* No edentulous space anteriorly, 13 to 14 teeth.

DISTRIBUTION.—*Ceylon. Peninsular India.* To Sind and Baluchistan in the North-West. North-West Frontier, Western Himalayas to 5,500 feet. To Bihar and Lower Bengal in the North-East. (Calcutta. Kaliganj, Rangpur District.)

Oligodon woodmasoni (Sclater).

Simotes woodmasoni, Annandale, *J. A. S. Beng.* 1905, pp. 173 and 175. Boulenger, *Cat.* II, 1894, p. 223.

TYPES.—In the Indian Museum (Nos. 8459 and 12547).

COLOUR.—Dorsally brown with a ruddy tinge. A light vertebral stripe from the nape well on to the tail. Three other narrower light stripes pass down each side of the body from the neck to the vent. These are separated by blackish stripes. As age advances the blackish stripes tend to fade so that the larger of the two specimens seen by me is nearly uniform in colour. Belly dusky reddish beneath, the edges of the ventrals lighter. Head with a dark præfrontal bar reappearing below the eye. A dark streak on the first three supralabials to the anterior nasal. An oblique temporal streak from behind the gape to the parietals. A dark sagitta on the nape projected forwards to the frontal shield.

FOOD AND BREEDING.—Nothing known.

GROWTH.—(*a*) *Early Life.* A specimen measuring 177 mm. (6½ inches) appears to be a hatchling.

(*b*) *Maximum Length.* 600 mm. (1 foot, 11⅝ inches). Tail slightly deficient.

LEPIDOSIS.—(*a*) *Typical.* As detailed in the synopsis.

(*b*) *Anomalies. Loreal.* Absent on one side in one specimen.

DISTRIBUTION.—*Andamans. Nicobars.*

Oligodon albocinctus (Cantor).

Simotes albocinctus, Annandale, *Rec. Ind. Mus.*, 1912, pp. 37, 48 and 53, Boulenger, part. *Cat.* II, 1894, p. 220; *Rec. Ind. Mus.* 1913, p. 338. Evans, *Bomb. N. H. J.*, XVI, p. 169. Sclater, *List Sn. Ind. Mus.*, 1891, p. 23. Venning, *Bomb. N. H. J.*, XX, p. 338. Wall, *Bomb. N. H. J.*, XIX, pp. 348, 757a, 830 and 898; *l.c.* XXII, p. 756.

COLOUR.—Variety (A) *O. albocinctus* (Cantor). Dorsally brown of various shades from the very lightest to the deepest hue, even to blackish brown. Many specimens exhibit a ruddy tinge which may be pronounced especially in the flanks. More rarely the prevailing hue is salmon pink. The back bears a series of whitish, greyish, buff, yellow or dusky brown cross-bars. These bars are well defined with black outside and have often a thin edging of buff or yellow. In ruddy specimens they are yellow. They are very well defined and conspicuous in light specimens, but in very dark specimens they may be very obscure. They number from 19 to 27 on the body and 4 to 8 on the tail. Frequently some intermediate scales in the flanks are edged with black and form a patch of variegation. In the space preceding the first bar there are usually two dark lines, parallel or curved so as to form an incomplete ellipse. In some specimens two more or less distinct, but ill-defined darker stripes pass down the body. The upper and broader passes from the neck well on to the tail and involves the edge of the vertebrals, and the next two rows. The lower passes from neck to vent, and involves the contiguous halves of the 3rd and 4th rows above the ventrals. The belly is whitish, yellowish or brownish (pinkish in the ruddy tinged specimens) with squarish, brown or blackish, lateral spots or mottling, the black in dark specimens often predominating. The head has a dark præfronto-frontal bar which reappears below the eye, and a dark oblique temporal bar from behind the gape to the parietals. The brown on the neck sends forwards a projection to the frontal shield, the tip of which is often detached. These head marks are usually well defined with blackish outside with a narrow edging of buff or yellow. In ruddy specimens they are yellow. The chin and throat are usually immaculate or there may be a dusky mark in the suture between the 4th and 5th infralabials.

Variety (B) *amabilis* (Günther). Differs from the preceding in having an intermediate and less conspicuous series of cross-bars. These specimens very closely resembles variety *multifasciatus* of *violaceus*, and I have found several in museums wrongly identified as *violaceus*.

FOOD.—I have only three records that reveal the nature of the diet. One contained a mouse, another a newly born mouse, and a third the tail of a mouse.

BREEDING.—My only record of a gravid female is one killed at Dibrugarh in July. Only three follicles were impregnated. I have records of well over one hundred specimens and the dearth of egg-bound females is therefore remarkable.

GROWTH.—(*a*) *The Young.*—The smallest I have seen and which appeared to be recently hatched or born was 200 mm. (8 inches) long.

(*b*) *Maturity.*—My only gravid female was 742 mm. (2 feet, 5¼ inches) long.

(*c*) *Maximum Length.*—915 mm (3 feet). Tail (imperfect) 100 mm. (4 inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalics.—Loreal.* Rarely absent, being confluent with the præfrontal. *Temporals.* The anterior is rarely confluent with the posterior superior shield. *Supralabials.* I have seen the 1st divided into an upper and a lower part in one example on both sides. The 2nd or 3rd are rarely divided vertically, thus making 8 shields in the series. The 5th and 6th, or the 6th and 7th are rarely confluent making the series 6. The 6th is rarely confluent with the anterior temporal. *Costals.* I have once seen 21 rows. The rows rarely reduce to 17 two heads-lengths before the vent. *Subcaudals.* Some at the base of the tail are rarely entire.

DENTITION.—From three skulls in my collection. *Maxillary.* 10 to 12, no edentulous space anteriorly. *Palatine.* No edentulous space anteriorly, 8 to 10 teeth, followed by an edentulous space that would take 1 to 2 teeth. *Pterygoid.* An edentulous space anteriorly that would take 1 tooth, followed by 18 to 23 teeth. *Mandibular.* 15 to 18 teeth. No edentulous space anteriorly or posteriorly.

DISTRIBUTION.—Variety (A) *Eastern Himalayas.* Buxa Dooars to Sikkim. *Assam.* Hills and plains as far north as the Abor Hills and south to Chittagong in Eastern Bengal. *Burma.* Kachin Hills. (Sadon. Lat. 25°·4. Long. 98°. Sima. Lat. 25°·2. Long. 97°.) Manipur (Assam). Chin Hills.

Variety (B) *Assam.* Plains and hills. *Burma.* Arakan Hills.

Oligodon juglandifer (Wall).

Simotes albocinctus, part. Boulenger, *Cat.* II, 1894, p. 220. Wall, part. *Bomb. N. H. J.*, XIX, p. 348.
Simotes juglandifer, Wall, *Bomb. N. H. J.*, XX, p. 1162.

TYPE.—In the Bombay Natural History Society's Collection (No. 210) from Tindharia, Darjiling District.

COLOUR.—Dorsally brown of various shades from deep brown to blackish brown. Many scales edged buff and black to form a variegation which is most pronounced in the flanks. A series of from 22 to 28 large dark brown or black spots on the body, and 6 to 8 on the tail. These spots are shaped like walnut kernels, having an indentation anteriorly and posteriorly, but are sometimes completely bisected. In some specimens a smaller spot is to be seen outside and close to the median spots. In some specimens there is an intermediate series of less distinct and smaller spots arranged transversely. In some specimens four dark stripes may be seen, the upper and broader passing from the neck to tail tip and involving the edge of the vertebrals and next two rows, sometimes confluent with that of the opposite side. A narrow dark stripe passes from the neck to the vent on the edges of the 3rd and 4th rows above the ventrals. Belly whitish, buff or brownish with a series of squarish, deep brown or black lateral spots, usually disposed on alternate ventral shields, those of one side usually alternating with those on the other. Head with a dark præfronto-frontal bar reappearing below the eye. A dark oblique black-edged bar from behind the gape to the parietals. A dark black-edged mark on the nape sends forward a projection to the frontal, the point of which is often detached. Chin and throat immaculate, or with a dark mark in the suture between

the 4th and 5th infralabials. I have seen specimens the colour of a boiled lobster.

Food and Breeding.—Nothing known.

Growth.—(*a*) *The Hatchling.*—My smallest specimen possibly a hatchling measured 233 mm. (9¼ inches).

(*b*) *Maximum Length.*—853 mm. (2 feet, 9¾ inches).

Lepidosis.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies.*—*Supralabials.* The 5th and 6th are rarely confluent reducing the series to six. *Costals.* In one specimen the 4th or 5th row above the ventrals divided and re-united several times so that they counted 21 in places.

Dentition.—From four skulls in my collection. *Maxillary.*—No edentulous space anteriorly, 10 to 12 teeth. *Palatine.* An edentulous space anteriorly that would take 1 or 2 teeth followed by 6 to 8 teeth. An edentulous space posteriorly that would take 2 or 3 teeth. *Pterygoid.* An edentulous space anteriorly that would take one tooth, followed by from 16 to 18 teeth. *Mandibular.* No edentulous space anteriorly or posteriorly, 13 to 17 teeth.

Distribution.—*Eastern Himalayas.* Sikkim. *Assam.*

Oligodon purpurascens[1] (Schlegel.)

Simotes purpurascens, Boulenger, *Cat.* II, 1894, p. 219. *Faun. Mal. Pen. Rept.*, 1912, p. 148. Flower, *P. Z. S.*, 1896, p. 884 ; *l.c.* 1899, p. 671, Malcolm-Smith, *Jourl. N. H. Siam,* 1915, p. 213. Mocquard, *Rept. L'Indo-Chine,* 1907, p. 46.

Simotes cyclurus, Boulenger, *Cat.* II, 1894, p. 219. *Faun. Mal. Pen. Rept.* 1912, p. 149. Flower, *P. Z. S.*, 1896, p. 884 ; 1899, p. 671. Malcolm-Smith, *Jourl. N. H. Siam,* 1914, p. 97 ; *l.c.* 1915, pp. 213 and 245. Mocquard, *Rept. L. Indo-Chine,* 1907, p. 46. Wall and Evans, *Bomb. N. H. J.* XIII, pp. 350 and 617 Wall, *P. Z. S.*, 1903, p 92. *Bomb. N. H. J.*, XVIII, p. 781 ; *l.c.* XIX, p. 348. Werner, *Abh. Akad. der. Wiss.*, 1903, p. 365.

Colour.—This, like *taeniolatus,* is an extremely variable species. There are two main types of colouration. (A) *Oligodon purpurascens cyclurus* (Cantor). Dorsally the prevailing hue varies between a pale brown, and blackish brown. Usually some of the scales are narrowly edged with blackish, and others with buff thus producing a variegation. The darker variegation tends to form narrow cross-bars involving one or two scale rows in the length of the snake. In many specimens these cross-bars are conspicuous on the body and tail, and most of these exhibit a less conspicuous series of intermediate bars. Many specimens also exhibit four more or less conspicuous, darker, longitudinal stripes. The upper and broader of these passes from the neck to the tail tip, involving the edge of the vertebral and the next one and a half rows, leaving a pale linear stripe between them, but in many specimens these stripes are confluent vertebrally. The lower and narrower stripe passes from the

[1] I have for some years suspected that *purpurascens* (Schlegel) and *cyclurus* (Cantor) would prove to be one and the same species. My last visit to England this year (1922) gave me an opportunity of examining all the species labelled *purpurascens* and *cyclurus* in the British Museum. I examined the two supposed species side by side, and made most careful measurements of head shields and tried in vain to find some difference by which the two could be separated. The scale rows and ventrals and subcaudals agree in their ranges, and one is forced to the conclusion that they should be regarded as a single species. Schlegel's *purpurascens* (1837) has precedence over Cantor's *cyclurus* (1839.) I have also examined equally carefully a large series of both *cyclurus* and *purpurascens* in the Indian Museum, and Bombay Natural History Society's collections.

neck to the vent, and involves the contiguous halves of the 3rd and 4th rows above the ventrals. These stripes, in the young especially, are sometimes well defined and conspicuous; in many specimens however they are ill-defined, inconspicuous, or even absent. The belly is whitish or yellowish, sometimes immaculate, sometimes with a few scattered brownish, squarish, lateral spots especially posteriorly, and sometimes so heavily spotted that blackish brown is the predominant colour. The head has a dark praefronto-frontal bar which re-appears below the eye, and a dark oblique temporal stripe from behind the gape to the parietal shields. A dark sagitta on the nape sends forwards a process to the frontal shield, the point of which may be detached. In some specimens this is more or less confluent with the oblique temporal stripe. The chin and throat are usually immaculate or there may be some dusky marks in some of the sutures.

Specimens may be grouped as follows :—

A (*a*). Very pale brown. Variegations absent or faint. Stripes absent or faint. Belly immaculate.

A (*b*). Brown. Variegations (and consequently the cross-bars) more or less conspicuous. These number from 9 to 17 on the body, 3 to 4 on the tail, or twice this number if the narrower intermediate series are counted. Stripes absent or faintly suggested. Belly with a few dark spots mostly posteriorly.

A (*c*). Dark Brown. Variegations forming conspicuous narrow dark bars. Stripes conspicuous. Belly heavily spotted. These sub-varieties are all completely connected by intermediate forms.

(B) *O. purpurascens maculatus.* Differs from A in having a series of large dark spots across the back, involving four or more scale rows vertebrally in the length of the snake, and reminding one of the ornamentation seen in *venustus*, *splendidus* and variety *spilonotus* of *taeniolatus*. There are from 9 to 13 (16 Malcolm-Smith) on the body, and 2 to 4 on the tail. Sometimes these are indented mesially or even completely bisected, especially in the fore body and on the tail. Sometimes they are more or less confluent with a smaller spot placed outside them. Some of these specimens exhibit some variegation as in variety A (*b*) and a series of cross-bars between the large dark spots. Some have stripes similar to variety A (*c*). The belly is immaculate. Head marks as in A. This variety is rare within Indian limits, but the common one in Siam.

Variety (C). *O. purpurascens purpurascens* (Schlegel). This differs from A in having the narrow cross-bars light instead of dark. In the British Museum specimen from Borneo there are 12 such bars on the body and 3 on the tail. A somewhat similar specimen in the same museum I would label *albocinctus* were it not for the locality, *viz.*, Java. I count the ventrals 182 and subcaudals 41. This differs from all the other specimens (labelled *purpurascens*) in the British Museum in that the third supralabial is not divided into an upper and lower part, and does not touch the eye. In this respect as in others it agrees with *albocinctus*.

Variety (D). An unusual specimen in the British Museum from Borneo, donor Mr. Shortridge, has 11 broad cross-bars on the body and 3 on the tail. These cross-bars are not indented mesially, are bordered with black posteriorly, and by double black lines anteriorly enclosing a

whitish zone. There are also black bordered light annular spots dorso-laterally in the bars.

FOOD.—In one instance a toad had furnished the meal. In two specimens I have found the soft-shelled eggs of a lizard (or snake ?) in the stomach. On one occasion Mr. Jacob, I. F. S., sent me four soft shelled eggs, which he suspected had been laid by a *cyclurus* which he found in close proximity. On investigating the eggs which measured 27 × 16 mm. ($1\frac{1}{16} \times \frac{3}{5}$ of an inch) 1 extracted embryos that were about 62 mm. ($2\frac{1}{2}$ inches) long. Large ventral shields were evident, but there were no longitudinal series of costals, and the head shields were not of an ophidian character. I very much suspect these were lizards' eggs, and that the snake intended to make a meal of them.

BREEDING.—Nothing known.

GROWTH.—(*a*) *The Young.*—The smallest example of *cyclurus* I have examined, apparently newly hatched or born, measured 175 mm. (7 inches). A *purpurascens* in the British Museum is 207 mm. ($8\frac{1}{8}$ inches).

(*b*) *Maximum length.*—The largest variety *cyclurus* of which I have any knowledge is one in the Indian Museum [No 7163 type of *O. crassus* (Theobald)] which measures 946 mm. (3 feet, $1\frac{1}{4}$ inches). Flower records a *purpurascens* 950 mm. (3 feet, $1\frac{1}{2}$ inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis. The 4th supralabial is normally divided into an upper and a lower part both of which touch the eye.

(*b*) *Anomalies.—Supralabials.* Sometimes the 2nd and 3rd, 3rd and 4th, or 4th and 5th are confluent, thus reducing the series to 7. Rarely the 3rd or the 7th (in one specimen both) are cuneate, and fail to reach the edge of the lip. Sometimes the 4th is an entire shield. Sometimes both the 3rd and 4th are divided. Rarely the 3rd only is divided and the 3rd, 4th and 5th touch the eye. *Infralabials.* Sometimes the 3rd and 4th are confluent. *Costals.* Rarely the 4th or 5th row above the ventrals divides and may re-unite and redivide repeatedly so as to make 21 rows in places. Rarely the rows are 17 at a spot two heads-lengths behind the head becoming 19 shortly after. Rarely again the 4th and 5th rows unite and redivide anteriorly so as to reduce the rows in places to 17.

DENTITION.—From four skulls of *cyclurus* and two of *purpurascens* in my collection. *Maxillary.* 9 to 10 teeth in *cyclurus*, 9 to 10 in *purpurascens.* No edentulous space anteriorly ; 6 to 8 teeth in *cyclurus*, 9 in *purpurascens*, an edentulous space posteriorly that would take 1 or 2 teeth. *Pterygoid.* An edentulous space anteriorly that would take 1or 2 teeth, followed by 11 to 16 teeth in *cyclurus*, 13 to 18 in *purpurascens. Mandibular.* 13 to 16 teeth in *cyclurus*, 15 to 16 in *purpurascens.* No edentulous space anteriorly or posteriorly.

DISTRIBUTION.—*Bengal, Eastern Himalayas, Assam, Burma, Malay Peninsula, Siam, Cochin-China, South China.*

Variety A (*a*). *Bengal.* Calcutta, Jessore, Purnea District. *Burma.* Pegu, Rangoon. *Siam.* Bangkok.

Variety A (*b*). *Bengal,* Calcutta, Rangpur District, Purnea District, Jalpaiguri District. *Eastern Himalayas.* Sikkim. *Assam,*

Garo Hills, Khasi Hills, North Cachar. *Burma.* Rangoon, Diamond Island, Amherst, Tavoy.

Variety A (*c*). *Bengal.* Jalpaiguri District. *Eastern Himalayas.* Sikkim. *Assam.* Garo Hills, Khasi Hills. *Burma. Siam.*

Variety B. Burma. Toungoo, Karen Hills, Kalaw, S. Shan States, Tavoy. *Siam.* (The common form.)

Variety C.—Borneo. Java ?

Variety D.—Borneo.

Oligodon splendidus (Günther.)

Simotes splendidus, Boulenger, *Cat.* II, 1894, p. 217. Evans, *Bomb. N. H. J.,* XVI, p. 362. Sarasin, *Zool. Jahr. Jena,* 1910, p. 142. Venning, *Bomb. N. H. J.,* XXIII, p. 164. Wall and Evans, *Bomb. N. H. J.,* XIII, p 537. Wall *Bomb. N. H. J.,* XVIII, p. 781. *Rec. Ind. Mus.,* II, p. 105.

COLOUR.—Pale brown dorsally, each scale with a dark centre. A series of very large, dark, median spots shaped like walnut kernels, with smaller lateral spots below. These spots have an outer zone of dark brown which is edged with buff. There are from 14 to 17 of these spots on the body, and from 3 to 5 on the tail. Belly whitish or yellowish, with squarish, dark brown, lateral spots, usually on alternate ventrals and alternate sides. Head with an indistinct, dark, praefronto-frontal bar reappearing below the eye, and an indistinct dark oblique streak from behind the gape to the parietal. A large dark, mark on the nape, indented mesially behind, is projected forward to the frontal shield.

FOOD.—Nothing known.

BREEDING.—(*a*) *Method of Reproduction.*—I have seen eggs of such a size and character as to make it tolerably certain that this species is oviparous.

(*b*) *Season.*—Venning acquired a female in an advanced state of egg bearing on the 14th of February.

(*c*) *The Eggs.*—I have seen two egg-bound females which contained three and six eggs, respectively. The largest eggs measured 457 × 152 mm. ($1\frac{1}{2} \times \frac{1}{2}$ an inch). No trace of an embryo could be discovered.

GROWTH.—(*a*) *The Hatchling.*—The smallest I have seen and apparently a hatchling measured 155 mm. ($6\frac{1}{8}$ inches).

(*b*) *Maturity.*—The smaller of two egg-bound females measured 465 mm. (1 foot, $9\frac{3}{4}$ inches).

(*c*) *Maximum Length.*—730 mm. (2 feet, $4\frac{3}{4}$ inches). Tail 100 mm. (4 inches).

LEPIDOSIS.—(*a*) *Typical.*—As detailed in the synopsis.

(*b*) *Anomalies.—Praefrontals.* Rarely four in a transverse series. *Postoculars.* Rarely three. *Supralabials.* The 4th is sometimes divided into two upper and one lower part.

DENTITION.—From one skull in my collection. *Maxillary.* No edentulous space anteriorly ; 11 teeth. *Palatine.* No edentulous space anteriorly or posteriorly ; 9 teeth. *Pterygoid.* No edentulous space anteriorly ; 14 to 15 teeth. *Mandibular.* No edentulous space anteriorly or posteriorly ; 13 to 14 teeth.

DISTRIBUTION.—*Burma.*—Between Lat. 20° and 23°, and Long. 94° and 98° Yamethin, Sagaing, Pyawbwe, Shwebo, Monywa, Mandalay, N. Shan States (Ruby Mines), S. Shan States (Kyaukse, Pakokku).

Synopsis of the salient features of lepidosis and dentition differentiating the species of Oligodon.

Costals.			Ventrals.			Anal.	Subcaudals.	Rostral shields in contact.	Internasals.	Nasals.			Loreal.	Postocular.	Anterior temporal.	Supralabials.			Infralabials.		Maxilla.		Palatine.			Pterygoid.		Mandible.			Parietal contributing to orbital ring.	
Two heads-lengths behind head.	Midbody.	Two heads-lengths before vent.	Number.	Angulate.	Rounded.					Entire.	Semidivided.	Divided.				Number.	Touching the eye.	Touching ant temporals.	Number.	Touching post sublinguals.	No. of teeth.	Edentulous space anteriorly.	No. of teeth.	Edentulous space anteriorly.	Edentulous space posteriorly.	No. of teeth.	Edentulous space anteriorly.	No. of teeth.	Edentulous space anteriorly.	Edentulous space posteriorly.		
13	13	13	132 to 142.	..	+?	2	22 to 27	8	2	+	..	..	1	2	1	4 or 5	3rd	4th	4	4th											planiceps.
13	13	13	186 to 208	..	+?	2	37 to 40	6	0	+	..	..	0	1	1	6	3rd & 4th	4th & 5th	4	4th											herberti.
13	13	13	200	..	+	2	39	6	2	+	..	..	0	1	1	7	3rd & 4th	5th & 6th	4	4th											mcdougalli.
15	15	13	144 to 159	..	+?	2	27 to 34	6	2	+	..	..	1	2	1	7	3rd & 4th	5th & 6th	4	4th	15 to 16	0	8 to 10	0	+	13 to 16	+	20	0	0	Yes	torquatus.
15	15	13	154	..	+	2	46 to 64 ?	6	2	+	..	..	0	2	1	7	3rd & 4th	5th & 6th	4	4th											erythrorhachis.
15	15	13	162 to 188	..	+	2	27 to 51	6	2	+	..	..	1	1	1	7	3rd & 4th	5th & 6th	4	4th	6 to 7	+	0 ?	..	..	1 to 2	+	6 to 9	+	+	No	dorsalis.
15	15	15	158 to 173	..	+?	2	25 to 29	6	0	..	..	+	0	2	1	7	3rd & 4th	5th & 6th	4	4th											brevicauda.
15	15	15	158 to 218	+	..	2	29 to 56	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th	6 to 7	+	1 ?	+	+	5 to 9	+	9 to 12	+	+	No	taeniolatus.

15	15	15	149 to 152	+	..	2	29 to 31	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th												*ellioti.*
15	15	15	134 to 161	..	+	2	23 to 37	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th	6 to 8	+	0?	..	..	4 to 4	+	9 to 10	+	+	No	*sublineatus.*
15	15	15	127 to 152		+?	2	20 to 34	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th	7	+	0?	..	..	0?	..	8 to 9	+	+	No	*templetoni.*
15	15	15	152 to 159	..	+	2	40 to 42	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th												*melaneus.*
17	17	15	145 to 155		+?	2	34 to 37	6	2	..	..	+	0	2	1	7	3rd & 4th	5th & 6th	4	4th	7	+	0?	..	..	12	+	8	+	+	No	*travancoricus.*
17	17	15	148 to 173		+?	2	27 to 40	6	2	..	..	+	1	2	1	8	4th & 5th	6th & 7th	5	4th & 5th	14 to 16	0	8 to 10	0	0	14 to 18	0	17 to 18	0	0	Yes	*cruentatus.*
17	17	15	157 to 182	+	..	1	29 to 42	6	2	..	..	+	1	2	1	8	4th & 5th	6th & 7th	5	4th & 5th	10 to 11	0	8	0	0	11 to 13	0	15 to 16	0	0	Yes	*violaceus.*
17	17	15	138 to 165	..	+	2	27 to 36	6	2	..	+	..	1	2	1	7	3rd & 4th	5th & 6th	4	4th	8	+	1 to 3	+	+	4 to 8	+	9 to 11	0	+	Yes	*venustus.*
17	17	15	171 to 173		+?	2	42 to 45	6	2	..	..	+?	0	2	1	6	3rd & 4th	5th	4	4th												*melanozonatus.*
17	17	13 15	163 to 186		+?	2	42 to 59	6	2	+	..	..	0	2	1	7	3rd & 4th	5th & 6th	4	4th	7 to 8	+	2 to 3	+	+	4	+	5 to 6	+	+	No	*erythrogaster.*
17	17	15	164 to 180	+	..	2	30 to 42	6	2	..	..	+	1	2	1	8	4th & 5th	6th & 7th	5	4th & 5th	15 to 16	0	9	0	0	16 to 18	0	16 to 17	0	0	Yes	*theobaldi.*
17	17	15	129 to 142	..	+	2	23 to 36	6	2	..	..	+	0	2	1	7	3rd & 4th	5th & 6th	4	4th	7	+	0?	..	..	3? to 4?	+	8	+	+	No	*affinis.*
17	17	15	164 to 202	+	..	2	41 to 59	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	4	4th	8 to 11	+	3 to 6	+	+	10 to 11	+	13 to 14	0	0	Yes	*arnensis.*

Synopsis of the salient features of lepidosis and dentition differentiating the species of Oligodon—contd.

Costals.			Ventrals.			Anal.	Subcaudals.	Rostral shields in contact.	Internasals.	Nasals.			Loreal.	Postocular.	Anterior temporal.	Supbalabials.			Infralabials.		Maxilla.		Palatine.			Pterygoid.		Mandible.			Parietal contributing to orbital ring.	
Two heads-lengths behind head.	Midbody.	Two heads-lengths before vent.	Number.	Angulate.	Rounded.					Entire.	Semidivided.	Divided.				Number.	Touching the eye.	Touching ant temporal.	Number.	Touching post sublinguals.	No. of teeth.	Edentulous space anteriorly.	No. of teeth.	Edentulous space anteriorly.	Edentulous space posteriorly.	No. of teeth.	Edentulous space anteriorly.	No. of teeth.	Edentulous space anteriorly.	Edentulous space posteriorly.		
17	17	17	180 to 190	+	..	1	46 to 57	6	2	..	..	+	1	2	1	6	3rd & 4th	5th	4	4th											woodmasoni.
19 21	19 21	15 15	177 to 208	+	..	1	47 to 69	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th	5	4th & 5th	10 to 12	0	8 to 10	0	+	18 to 23	+	15 to 18	0	0	No	albocinctus.
19	19	15	162 to 208	+	..	1	53 to 68	6	2	..	..	+	1	2	1	7	3rd & 4th	5th & 6th		4th & 5th	10 to 12	0	6 to 8	+	+	16 to 18	+	13 to 17	0	0	Yes	juglandifer.
19 21	19 21	15 17	165 to 190	+	..	1	40 to 60	6	2	..	..	+	1	2	1	8	3rd, 4th & 5th or 3rd, 4th & 5th	6th & 7th	5	4th & 5th	9 to 10	0	9	0	+	18	+	15 to 16	0	0	Yes	purpurascens.
19 21	19 21	15 17	189 to 195	+	..	1	29 to 50	6	2	..	..	+	1	2	1	8	3rd, 4th & 5th or 3rd. 4th & 5th	6th & 7th	5	4th & 5th	9 to 10	0	6 to 8	0	+	11 to 16	+	13 to 16	0	0	No	cyclurus.
21	21	17	169 to 193	+	..	1	35 to 47	8	4	..	..	+	1	2	2	8	4th & 5th	6th & 7th	5	4th & 5th	11	0	9	0	0	14 to 15	0	13 to 14	0	0	Yes	splendidus.