

## XVII. REMARKS ON THE INDIAN SPECIES OF *DENDROPHIS* AND *DENDRELAPHIS*.

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There has been so much confusion in the past over the identification of many of the species of *Dendrophis* and *Dendrelaphis* that I appealed to Dr. Annandale lately to allow me to examine all the specimens of these genera in the Indian Museum, and to Mr. Spence to send me all the available specimens in the Bombay Natural History Society's collection.

When the Fauna of British India, Reptilia and Batrachia, appeared in 1890 the snake now known as *Dendrelaphis tristis* was not recognised as a separate species but included under the species *Dendrophis pictus*. Later when the second volume of Boulenger's Catalogue appeared in 1893 a clear distinction was made between the two, but the available specimens in the Indian Museum and Bombay collections had not been re-examined until I did so recently. As a result of my examination of this material I have acquired a great deal of information, and been able to correct the mistakes of earlier herpetologists. Among specimens labelled *pictus* in the Indian Museum I discovered many specimens of *Dendrophis gorei* described by me (*Bombay N. H. Journ.* 1910, p. 829), and also of *Dendrophis proarchus* described by me (*Bombay N. H. Journ.* 1910, p. 827).

In addition to the information derived from the above collections I have revised all my own notes, and incorporated my observations during the last 26 years, and I hope in the succeeding remarks to bring the subject so far as the Indian species are concerned up to date, and make the identification of these easily confused species easier for other workers in this field.

Boulenger (*Cat. Snakes, Brit. Mus.*, Vol. II, 1893, pp. 77 and 87) separates the two genera on the posterior maxillary teeth. In *Dendrophis* the last 3 or 4 are distinctly enlarged, and compressed. In *Dendrelaphis* the posterior maxillary teeth though slightly more trenchant are not enlarged, but if anything rather shorter than the preceding teeth in the series. I have made a very critical comparison of all my skulls bone for bone, and can find no characteristic other than the posterior maxillary teeth that distinguishes the two genera.

### Genus *Dendrophis*.

#### *Dendrophis caudolineolatus* Gunther.

#### Gunther's *Dendrophis* (or Bronze Back).

*Dendrophis caudolineolatus*, Boulenger, *Cat.*, Vol. II, p. 85; Ferguson, *Bomb. N.H.F.*, 1895, p. 72; Sarasin, *Zool. Fahr.*, *Fena*, 1910, p. 128.



*Dendrophis caudolineatus*, Willey, *Spol. Zeylan.*, 1903, p. 86; *l.c.*, 1906, p. 233.

*Colour*.—Dorsally bronze. No buff anterior vertebral stripe. A series of blackish, equidistant, oblique, lateral stripes anteriorly. No buff flank stripe or black lines. Ventrally greenish, lighter anteriorly. Tail with two black lines on each side, the lower on the edges of the subcaudals and ultimate row of supracaudals. Head bronze above. No buff interparietal spot. A well defined black postocular stripe.

One erythritic specimen has passed through my hands. It was a uniform chocolate colour dorsally, and ventrally unrelieved by any markings. The upper lip, chin and throat were a dirty yellow.

*Length*.—My largest measured 876 mm. (2 feet 10½ inches). A juvenile specimen apparently recently hatched measured 305 mm. (12 inches).

*Food*.—I have found a frog in the stomach.

*Breeding*.—A gravid female was killed in the month of May on Hopewell Estate, Balangoda, measuring 870 mm. (2 feet 10¼ inches). It contained three very elongate eggs measuring 41 × 8 mm. (1½ × ¾ of an inch).

*Lepidosis*.—The scales are in 13 rows to behind midbody, and reduce to 9 before the vent. Ventrals, 149 to 164. Anal, divided. Subcaudals 119 to 128. Loreal, one. Temporals, 1 + 2 + 2 or 2 + 2 + 2. Supralabials, 8 (rarely 9), the 4th and 5th (5th and 6th when there are 9) touching the eye.

*Dentition*.—From one skull in my collection. Maxillary, 28 coryphodont. Palatine, 18 to 21. Pterygoid, 32 to 34. Mandibular, 27 to 30.

*Distribution*.—Ceylon; S. India.

*Ceylon*. Confined to the hills. Apparently uncommon and local. Sab'wa Prov. Balangoda, Udugama, (Haly); Hopewell Estate, Balangoda (F. W.); Illagalla (Haly).

*S. India*. Ramnad (Ind. Mus.), Travancore (Ferguson).

*Note*.—I have examined five specimens.

### ***Dendrophis effrenis* Werner.**

Werner's bronze-back.

*D. effrenis*, Werner, *Rept. Nat. Hist. Mus. Hamburg*, 1909, p. 221.

*Colour*.—As in the last species.

*Length*.—884 mm. (2 feet 11 inches).

*Lepidosis*.—The scales are in 13 rows at midbody. Ventrals, 175. Subcaudals, 129. Loreal, none.

*Distribution*.—Ceylon. Said to be from Colombo.

*Note*.—May prove to be an aberrant example of *caudolineolatus*. In one specimen seen by me I have noted that the prefrontal is confluent with the loreal on one side.



***Dendrophis gorei* Wall.****Gore's *Dendrophis* (or Bronze Back).**

*Dendrophis pictus*, Sclater, *List. Sn. Ind. Mus.*, 1891, p. 34 (part). Nos. 3945, 4042, 5703, 7705, 7707 and 7736.

*Dendrophis gorei*, Annandale, *Rec. Ind. Mus.*, 1912, pp. 37, 48 and 53 (part). (No. 16871 from Kobo); Wall, *Bomb. N.H. J.*, 1910, p. 829; *l.c.*, 1913, p. 639.

*Colour*.—Very like *D. pictus* variety *cyanochloris*. Dorsally bronze, blue-grey when the epidermis is shed, the bases and overlapped parts of the scales black, the latter enclosing turquoise-blue patches. No buff anterior vertebral stripe. A series of black equidistant, lateral, anterior bars. An ill-defined buff flank stripe ending at the vent, with no black lines above or below. No caudal stripes. Ventrally greenish or greyish. Head bronze above. No buff interparietal spot. No black-bordered, anterior supralabials. Loreal shield entirely or partially black. A well-defined black postocular stripe occupying the full depth of the temporal region.

*Lepidosis*.—Scales in 13 rows to behind midbody reducing to 11 or 9 before the vent. Ventrals 187 to 199. Anal, divided (entire in a specimen from Tounggyi, S. Shan States). Subcaudals, 139 to 153. Loreal as long as the nasals, its depth about two-fifths its length. Temporals, 1+1+2. Supralabials, 8 (9 in one example), usually the 2nd and 3rd touching the loreal, and 4th and 5th touching the eye.

*Dentition*.—From one skull in my collection. Maxillary, 24 to 25 coryphodont. Palatine, 13? to 15. Pterygoid, 21. Mandibular, 24? to 25.

*Distribution*.—Eastern Himalayas; Assam; Burma.

*E. Himalayas*. Darjeeling District (Nos. 7703, 7705, 7736).

*Assam*. Kobo, Abor Expedition (No. 16871, Ind. Mus.); near Dibrugarh (F. W.); Sibsagar (No. 4042, Ind. Mus.); Garo Hills (No. 3945, Ind. Mus.); Naga Hills, Jaipur (F. W.); Samaguting (No. 7707, Ind. Mus.).

*Burma*. S. Shan States (Tounggyi, Bombay colln.).

***Dendrophis pictus* (Gmelin).****Gmelin's *Dendrophis* (or Bronze Back).**

*Dendrophis pictus*, Annandale, *J. A. S. Beng.*, 1905, pp. 174 and 175; Blyth, *Andaman Islanders*, pp. 365 and 366; Boulenger, *Cat.*, Vol. II, 1893, p. 78; Sarasin, *Zool. Fahr.*, *Fena*, 1910, p. 131; Sclater, *List Sn. Ind. Mus.*, 1891, p. 34 (part). (Nos. 4074, 4483, 4484, 4485, 4486, 4487, 4489, 4490, 4491, 4492, 4493, 4494, 7682, 7683, 7686, 7687, 7691, 7692, 7696, 7698, 7700, 7701, 7704, 7706, 7709, 7710, 7711, 7712, 7714, 7718, 7734, 7735, 7886, 8614, 8615, 8894, 8897, 8898, 12542); Wall and Evans, *Bomb. N.H. J.*, 1900, p. 345; *l.c.*, 1901, p. 615; Wall *Bomb. N.H. J.*, 1909, p. 347; *l.c.*, 1910, pp. 787 and 827; ? *l.c.*, 1918, p. 509.

*Dendrophis gorei*, Annandale, *Rec. Ind. Mus.*, 1912, pp. 37, 48 and 53 (part), (Nos. 16836 and 16993).



Specimens of *pictus* present three distinct colour varieties.

Variety A. *typicus*.—Dorsally bronze. The bases of all scales black and the lateral borders of the vertebrae and lower borders of the costals black, enclosing a turquoise-blue patch. Ventrally uniform buff, greyish, or greenish-buff merging to buff anteriorly. No buff vertebral stripe anteriorly. A series of more or less distinct, equidistant, lateral, black, oblique bars anteriorly. A buff flank stripe with a well-defined black line below on the edges of the ventrals and ultimate row of scales. Sometimes a thinner black line above the buff on the upper half of the penultimate row. Tail with no black lines. Head bronze, the lore dusky not black. No anterior labials with black posterior borders though these may be dusky. A deep well-defined, black postocular stripe from the edge of the parietals to the edge of the supralabials. No buff interparietal spot.

In all the five South Indian specimens I have seen, the buff flank stripe is but faintly indicated or absent, and there are no black lines above or below this.

*Food*.—I have no records on this point.

*Breeding*.—I have seen no gravid specimen.

*Length*.—My largest specimen measured about 915 mm. (3 feet). I have seen juvenile examples apparently recently hatched measuring 298 and 330 mm. ( $11\frac{3}{4}$  and  $12\frac{1}{2}$  inches).

*Lepidosis*.—The scales are in 15 rows to behind midbody and reduce to 11 or 9 before the vent. Ventrals, 173 to 194. Anal, divided. Subcaudals, 131 to 160. The loreal is rather shorter than the nasals, and its depth about two-fifths its length. Temporals, normally 2+2+2. Supralabials, usually 9, the 2nd, 3rd and 4th touching the loreal, and the 4th, 5th and 6th the eye.

*Dentition*.—From one skull in my collection. Maxillary, 25. Palatine, 14. Pterygoid, 28. Mandibular, 22.

*Distribution*.—Hills of S. India; Bengal; Assam; Burma; Nicobars.

*S. India*. Uncommon, Ponmudi, Travancore (F. W.); Castle Rock, Mercara, Coorg, Thana (Bomb. N.H. colln.).

*Bengal*. Calcutta (No. 16661, Ind. Mus.).

*Assam*. Nasira (No. 7701, Ind. Mus.); Samaguting, Naga Hills (No. 7709, Ind. Mus.); Cachar (No. 14736, Ind. Mus.); Chittagong (No. 7886, Ind. Mus.); No loc. (No. 7686, Ind. Mus.).

*Burma*. Bhamo (No. 7696, Ind. Mus.); Upper Burma (No. 7698, Ind. Mus.); Tenasserim (Nos. 4074, 8614 and 8615 Ind. Mus.); S. Shan States (Taounggyi, No. 142-6, Bombay colln.) Common in Lower Burma (F. W.).

*Nicobars*. (No. 8894, Ind. Mus.); No loc. (No. 14575, Ind. Mus.).

*Note*.—No. 7698, Ind. Mus., from Upper Burma with 154 ventrals, anal divided, and 118 subcaudals (tail complete) and the praeocular touching the frontal on both sides, though coloured as above, suggests a distinct species.



Variety *B. cyanochloris*.—Differs from A in the ground colour which is blue-green, sometimes of a peculiarly vivid hue. The scales are more conspicuously outlined with black. There is no light flank stripe or a very obscure and ill-defined one, with no black lines above or below. The belly is eau-de-Nil or yellowish-green between the ventral keels.

*Length*.—I have examined two juvenile erythritic specimens, apparently hatchlings from the Nicobars, captured on the 27th of October, 1880, that measured 254 and 263 mm. (10 and 10 $\frac{3}{4}$  inches). The largest example measured by me was 1220 mm. (4 feet).

*Food*.—A gecko provided the meal on one occasion, a frog on another.

*Breeding*.—One gravid female has passed through my hands killed in July. It measured 1087 mm. (3 feet 6 $\frac{3}{4}$  inches).

*Lepidosis*.—As in A. The ventrals, 175 to 207. Subcaudals, 129 to 153.

*Dentition*.—From five skulls in my collection. Maxillary, 20 to 21, coryphodont. Palatine, 13 to 14. Pterygoid, 18 to 26. Mandibular, 20 to 23.

*Distribution*.—Eastern Himalayas; Assam; Burma; Nicobars.

*Eastern Himalayas*. Fairly common (F. W.), Darjiling District. (Nos. 7704, 7734 and 7735, Ind. Mus.).

*Assam*. Abor Expedition (Nos. 16836 and 16993, Ind. Mus.); Jaipur (F. W.); Sibsagar (No. 7718, Ind. Mus.); Garo Hills (Tura, Nos. 18541 and 18542, Ind. Mus.); Khasi Hills (Cherrapunji, Nos. 7700 and 14883, Ind. Mus.); Naga Hills (Samaguting, Nos. 7706 and 7710, Ind. Mus.).

*Burma*, Sima (No. 142-15, Bombay coll.); Thandung Hills (No. 142-16, Bombay coll.).

*Nicobars* (Nos. 7711, 7712, 8886, 12542, 13516, 13517 and 17568, Ind. Mus.).

*Note*.—I have seen about thirty examples, four of which were erythritic specimens. These latter are brown dorsally and ventrally. The lore, the postocular stripe, the oblique anterior lateral bars and the edges of the scales are darker brown instead of black. Nos. 8897 and 8898 in the Indian Museum both apparently hatchlings from the Nicobars are examples. A third specimen of mine is also from the Nicobars. An adult in the Indian Museum with no number and no recorded locality is another example. In this the hue is cigar-brown dorsally and ventrally, rather lighter in hue between the ventral keels. Like the juvenile examples a still darker brown replaces the black marks of the usual blue-green specimens.

Variety *C. andamanensis*.—In this the prevailing hue is much like the last, being a bright blue-green. The scales are still more conspicuously outlined with black. The posterior two-fifths of the vertebrals are black. Oblique black lateral bars are more or less in evidence. There is no light flank stripe, and no black lines on the flanks, or on the tail. The belly is yellowish-green.



The loreal shield is black. The postocular black stripe is shallow and ill-defined above, and runs along the lower temporals, instead of occupying the whole depth of the temporal region.

*Length*.—The largest measurement in my notes is 1010 mm. (3 feet  $3\frac{3}{4}$  inches).

*Food*.—I have taken a terrestrial frog from the stomach of one.

*Breeding*.—Two gravid females contained respectively four and eight eggs. These in one instance were remarkably elongate, measuring  $38 \times 9$  mm. ( $1\frac{1}{2} \times \frac{3}{8}$  of an inch). The smallest example was 1010 mm. (3 feet  $3\frac{3}{4}$  inches). No dates were on record in either case.

*Lepidosis*.—As in *typicus*, except that the loreal is as long as the nasals, and its depth one-third, or less than one-third its length. Usually only the 5th and 6th supralabials touch the eye. Ventrals, 182 to 194. Subcaudals, 126 to 148.

*Dentition*.—From three skulls in my collection. Maxillary, 21 to 23, coryphodont. Palatine, 13 to 14. Pterygoid, 26 to 28. Mandibular, 23 to 25.

*Distribution*.—This appears to be quite peculiar to the Andamans. I have examined at least 25 specimens.

*Note*.—I have seen one melanotic specimen (No. 16396, Ind. Mus.). This is uniform bluish-black dorsally, a still deeper bluish-black replacing the black of normal specimens, i.e. on the lore, the postocular stripe, the oblique lateral anterior bars, and the edges of the scales. Ventrally it is uniform bluish-black merging to yellow on the throat and chin.

I acquired an erythritic example from the Indian Museum, No. 14498 from the Andamans. This was cigar-brown. The lore, postocular stripe, oblique lateral anterior bars, and the edges of the scales, and the posterior two-fifths of the vertebrals darker brown. The skull agrees in its dentition with the normal blue-green specimens, and is included among the three skulls already referred to.

### ***Dendrophis grandoculis* Boulenger.**

Beddome's *Dendrophis* (or Bronze Back).

*D. grandoculis*, Boulenger, *Cat.*, Vol. II, 1893, p. 84; Ferguson, *Bomb. N.H.F.*, 1895, p. 72; Sarasin, *Zool. Fahr.*, *Fena*, 1910, p. 138.

*Colour*.—Dorsally brown (chocolate in a juvenile specimen 330 mm. in length). A series of lighter, oblique, lateral stripes forming saggitate marks with those of the opposite side, the points directed forwards. No light anterior vertebral stripe. No light flank stripe, and no dark flank lines. Ventrally light brown, the shade deepening posteriorly and merging to buff on the throat and chin. Three more or less distinct caudal stripes, the median along the middle of the subcaudals. Head brown. No light interparietal spot. No anterior supralabials with dark borders. No dark postocular stripe.

*Lepidosis*.—The scales are in 15 rows to behind midbody, reducing to 11 or 9 before the vent. Ventrals, 167 to 188. Anal,



divided. Subcaudals, 117 to 124. Loreal, rather shorter than the nasals, its depth half to less than half its length. Temporals, 2+2+2. Supralabials 9, the 2nd, 3rd and 4th touching the loreal, the 4th, 5th and 6th touching the eye.

*Dentition*.—Maxillary 29?, coryphodont. I have no skull.

*Distribution*.—Western Ghats, south of the Goa Gap; Travancore and Tinnevely (Brit. Mus.); Nilgiris (Kollengode, Bombay colln.); Wynad (Brit. Mus.).

### *Dendrophis proarchus* Wall.

Wall's *Dendrophis* (or Bronze Back).

*Dendrophis pictus*, Sclater, *List Sn. Ind. Mus.*, 1891, p. 34 (part) (Nos. 3998, 4046, 6909, 7680, 7713, 7717, 11368); Wall, *Bomb. N.H. J.*, 1907 p. 189.

*D. proarchos*, Wall, *Bomb. N.H. J.*, 1910, pp. 827 and 898.

*Colour*.—Very like variety *typicus* of *pictus*. Dorsally bronze, the bases and the overlapped edges of the scales black, the latter enclosing turquoise-blue patches. No buff anterior vertebral stripe. Blackish, equidistant, anterior, lateral bars more or less distinct. A conspicuous buff flank stripe ending at the vent with a thick black line below on the edges of the ventrals and ultimate row. A more or less distinct finer black line above on the upper half of the penultimate row. No caudal stripes. Ventrally greenish-grey or yellowish, lighter anteriorly. Head with no interparietal buff spot. The lore is dusky, not black, and none of the anterior supralabials have black borders. A well-defined, black, postocular stripe occupying the full depth of the temporal region.

There is a melanotic specimen in the Bombay collection from Tura, Garo Hills. This is deep blackish dorsally, with a narrow ill-defined lightish flank stripe posteriorly. Ventrally uniform bluish-clay coloured, merging to buff on throat and chin. Head blackish except the 5th and 6th supralabials which are buff. This strikingly resembles the melanotic specimens of *pictus* and *tristis* herein referred to.

*Food*.—I have found a gecko in one, and a tree-frog in another.

*Breeding*.—I have found seven eggs in two gravid females and eight in another. The eggs are very elongate as in other species of this genus. In one they measured  $41 \times 12$  mm. ( $1\frac{2}{3} \times \frac{1}{2}$  an inch). Specimens in which the eggs appeared fit for discharge were killed in May and June in Assam. The smallest prospective dam measured 1137 mm. (3 feet  $8\frac{3}{4}$  inches).

*Length*.—My largest specimen measured 1296 mm. (4 feet 3 inches).

*Lepidosis*.—The costals are in 15 rows to behind midbody, and reduce to 9 before the vent. Ventrals, 181 to 196. Anal entire. Subcaudals, 141 to 157. The loreal is as long as the nasals, and its depth about two-fifths its length. Temporals, normally 2+2+2. Supralabials 9, the 2nd, 3rd and 4th touching the loreal, the 4th, 5th and 6th the eye.



*Dentition*.—From four skulls in my collection. Maxillary, 26 to 28, coryphodont. Palatine, 15 to 18. Pterygoid, 24 to 29. Mandibular, 25 to 29.

*Distribution*.—S. India; Bengal; Eastern Himalayas; Assam; Burma.

*S. India*. Upper Godavery District (No. 6909, Ind. Mus.).

*Bengal*. Jalpaiguri District (F. W.).

*Eastern Himalayas*. Darjiling District (F. W.).

*Assam*. As far north as Sadiya (F. W.); Sibsagar (No. 4046, Ind. Mus.); Narainpur (No. 3998, Ind. Mus.); N. Cachar (No. 11368, Ind. Mus.); Silchar (F. W.); Garo Hills (No. 7713, Ind. Mus.); Tura (Bombay coll.); Naga Hills (No. 7717, Ind. Mus.); Chittagong (F. W.).

*Burma*. Ramri Island, Arrakan (No. 7680, Ind. Mus.); Upper Burma (F. W.).

### ***Dendrophis bifrenalis* Boulenger.**

Boulenger's *Dendrophis* (or Bronze Back).

*Dendrophis bifrenalis*, Abercromby, *Spol. Zeylan.*, 1911, pp. 205 and 207; Boulenger, *Cat.*, Vol. II, 1893, p. 80; Ferguson, *Bomb. N.H.F.*, 1895, p. 72; Sarasin, *Zool. Fahr.*, *Fena* 1910, p. 128; Wall, *Bomb. N.H.F.*, 1913, p. 639; Werner, *Rept. Nat. Hist. Mus. Hamburg*, 1909, p. 246; Willey, *Spol. Zeylan.*, 1904, p. 116.

*Colour*.—Dorsally bronze, the bases and the edges of the scales black. The lower borders of the vertebrae and costals enclose a turquoise-blue patch. No buff anterior vertebral stripe. Usually a series of more or less distinct black, lateral, anterior, oblique bars. A light flank stripe sometimes faintly indicated with no black lines above or below, more usually absent. Ventrally above the keels dark olive, between the keels buff or greenish-yellow merging to buff anteriorly. No black lines on the tail. Head bronze above. No buff interparietal spot. Lore dusky sometimes black. A well-defined black posterior stripe. No anterior supralabials with black posterior edges.

*Food*.—I have twice found an arboreal frog in the stomach.

*Breeding*.—A Travancore specimen contained five large eggs, but the date of its capture is not on record.

*Length*.—Boulenger gives 1030 mm. (3 feet 4 inches). I have seen nothing larger.

*Lepidosis*.—The scales are in 15 rows to behind midbody, reducing to 11 or 9 before the vent. Ventrals, 154 to 176. Anal, divided. Subcaudals, 144 to 165. Loreals, two (1+1), taken together longer than the nasals. Temporals 1+1+2 or 2+2+2. Supralabials 9, the 2nd, 3rd and 4th touching the loreals, the 5th and 6th the eye.

*Dentition*.—From three skulls in my collection, one from Travancore and two from Ceylon. Maxillary, 22 to 25, coryphodont. Palatine, 12 to 14. Pterygoid, 21 to 27 (both extremes from Galle.) Mandibular, 23 to 27.

*Distribution*.—S. India, Ceylon.



S. India. Trivandrum (F. W.); Travancore (No. 13504, Ind. Mus.).

Ceylon. North Prov. (Vavuniya, Mullaitivu, Colombo Mus.); Sab'wa Prov. (Yatiantota, Colombo Mus.); South Prov. (Galle, F. W.).

Note.—I have seen over twenty-five specimens.

### Genus *Dendrelaphis*.

#### *Dendrelaphis biloreatus* Wall.

Wall, *Bomb. N.H. J.*, 1907, p. 273, *l.c.*, 1910, p. 830.

*Colour*.—Dorsally bronze, the bases and overlapped portions of the scales black, the lower borders enclosing a turquoise-blue patch. No buff anterior vertebral stripe. A buff flank stripe on the lower half of the penultimate, and the whole of the ultimate row, ending at the vent. Head bronze above. A black loreal stripe. A deep postocular stripe. No buff interparietal spot. Lips buff, the anterior labials are edged with black posteriorly.

*Length*.—699 mm. (2 feet  $3\frac{1}{2}$  inches).

*Lepidosis*.—Costals in 13 rows to behind midbody, reducing to 9 before the vent. Ventrals, 192. Anal, divided. Subcaudals, 147.

*Distribution*.—Assam, Sadiya.

#### *Dendrelaphis subocularis* (Boulenger).

Fea's *Dendrelaphis* (or Bronze Back).

*Dendrelaphis subocularis*, Boulenger, *Cat.*, Vol. II, p. 89; Malcolm-Smith, *Bomb. N.H. J.*, 1915, p. 785.

*Dendrophis subocularis*, Slater, *List Sn. Ind. Mus.*, 1891, p. 35.

*Colour*.—Extremely like *Dendrelaphis tristis*. Dorsally bronze, the bases and overlapped portions of the scales black. A buff anterior vertebral stripe. A series of more or less distinct blackish equidistant, anterior, lateral bars. A buff flank stripe to the vent on the upper half of the ultimate and lower half of the penultimate rows. No black lines above or below the flank stripe. No caudal lines or stripes. Belly yellowish or greenish-yellow. Head bronze above. No buff interparietal spot. Loreal more or less black. The first four supralabials with narrow black posterior borders. A black postocular stripe occupying the full depth of the temporal region.

*Length*.—820 mm. (2 feet  $8\frac{1}{4}$  inches).

*Lepidosis*.—The scales are in 15 rows to behind midbody, reducing to 11 or 9 before the vent. Ventrals, 158 to 188. Anal, divided. Subcaudals, 74 to 104. Loreal, rather shorter than the nasals, its depth about two-fifths its length. Temporals, 2+2+2. Supralabials 8, the 2nd and 3rd touching the loreal, 5th (apparently a confluence of two shields) touching the eye.

*Dentition*.—Maxillary 18?, isodont or subisodont, not coryphodont. I have no skull.



*Distribution*.—Burma; Siam; Indo-China.

*Burma*. Bhamo (Brit. Mus., No. 7697, Ind. Mus.).

*Siam*. Bangkok, and Fat Bua Kao (Bombay colln.); Deu Chai, Sriracha Koh Lam and Bangtophon (Malcolm-Smith).

*Indo-China*. Pavie Mission.

### *Dendrelaphis tristis* (Daudin).

Seba's *Dendrelaphis* (or Bronze Back).

*Dendrophis pictus*, Abercromby, *Spol. Zeylan.*, Vol. IX, p. 146; *Sn. of Ceylon*, 1910, pp. 45, 48 and 75; Annandale, *Mem. A.S. Beng.*, Vol. I, p. 194; Boulenger, *Cat.*, Vol. II, 1893, p. 337 (part); D'Abreu, *Bomb. N.H. J.*, 1917, p. 306; Ferguson, *Bomb. N.H. J.*, 1895, p. 73; Green, *Spol. Zeylan.*, 1906, p. 220; Sclater, *List Sn. Ind. Mus.*, 1891, p. 34 (part). (Nos. 7684, 7685, 7715, 7716, 7720, 7721 and 12952); Wall, *Bomb. N.H. J.*, 1905, p. 301; Willey, *Spol. Zeylan.*, Vol. I, p. 117; *l.c.*, 1906, p. 233.

*Dendrelaphis tristis*, Boulenger, *Cat.*, Vol. II, 1893, p. 88; Luard, *Bomb. N.H. J.*, 1917, p. 306; Sarasin, *Zool. Fahr.*, *Fena.* 1910, p. 131; Wall, *Bomb. N.H. J.*, 1909, pp. 347 and 757; *l.c.*, 1910, pp. 35 and 776; *l.c.*, 1919, p. 567.

*Colour*.—Dorsally bronze, the bases and overlapped portions of the scales narrowly edged with black. The lower black borders enclosing patches of turquoise blue. A buff anterior vertebral stripe. More or less distinct, black, paired, lateral, anterior bars. A buff flank stripe ending at the vent with a black line above on the upper half of the penultimate row of scales. Sometimes an indistinct indication of a black line below the flank stripe. No caudal lines or stripes. Ventrally greyish, greenish, or yellowish, lighter anteriorly. Head bronze above. A small round buff spot in the middle of the interparietal suture, tending to effacement in some old specimens. Lore dusky not black. The 2nd, 3rd and 4th (sometimes 1st also) supralabials with thin posterior black borders. A thin black postocular stripe just above the supralabials, ill-defined above.

A specimen in the Bombay collection (No. 146-8) from Nilambur is melanotic. It is a deep bluish-black dorsally with an ill-defined light flank stripe between the ultimate and penultimate rows. Ventrally bluish-clay-coloured, merging to buff on the throat and chin.

*Food*.—In its natural haunts it feeds upon lizards of the families Agamidae, Geckonidae, and Scincidae, and frogs of both arboreal and terrestrial genera. It has been seen to attack a snake of the genus *Typhlops*. Young specimens, I am told, by Mr. Green, feed on grasshoppers, and Dr. Annandale told me one of his assistants once saw one eating a butterfly. In captivity in the Madras Museum it takes frogs and toads with avidity.

*Breeding*.—From 4 to 10 eggs are produced at a time. These are unusually elongate. Eggs deposited in Mr. Green's vivarium in Peradeniya, Ceylon, measured  $28 \times 9$  mm. ( $1\frac{1}{8} \times \frac{3}{8}$  of an inch). I have found them even larger before deposition, one measuring



32 × 11 mm. ( $1\frac{1}{4} \times \frac{7}{16}$  of an inch). I have had a gravid female with the ovarian follicles impregnated in September, and others in which the eggs were nearly mature in December and February. Mr. Green's eggs were deposited in January. Abercromby says the period of gestation is from 4 to 5 months, and the period of incubation from 4 to 6 months. My smallest gravid female was 1028 mm. (3 feet 4½ inches).

*Length*.—This varies from about 266 mm. (10½ inches) at the time of hatching to 1320 mm. (4 feet 4 inches).

*Lepidosis*.—The scales are in 15 rows to behind midbody, reducing to 11 or 9 before the vent. Ventrals, 163 to 197 (163 to 187 in S. Indian examples, 190 to 197 in Bengal, Himalayan, and Burma examples). Anal, divided. Subcaudals, 120 to 140 (112 to 146 in S. Indian examples, 128 to 131 in Bengal, Himalayan and Burma examples). *Loreal*, shorter than the nasals, its depth about two-fifths its length. Temporals, 2+2+2. Supralabials 9, the 2nd and 3rd touching the loreal, and the 5th and 6th the eye.

*Dentition*.—From eleven skulls in my collection. Maxillary, 17 to 22, isodont or scaphiodont. Palatine usually 11 to 13 (14 in a Nilgiri specimen). Pterygoid usually 19 to 26 (28 to 29 in a Nilgiri specimen, 29 to 30 in a Ceylon specimen). Mandibular usually 20 to 24 (24 to 25 in a Ceylon specimen, 24 to 26 in a Nilgiri specimen).

*Distribution*.—Peninsular India; Eastern Himalayas; Burma.

*Peninsular India*. As far north as Sind (Brit. Mus.).

*Bengal*. Jalpaiguri Dist. (Kalna. F. W.).

*Eastern Himalayas*. Darjiling Dist. not uncommon (F. W.). (Brit. Mus., No. 18666, Ind. Mus., Nos. 146-10 and 142-8, Bombay colln.).

*Burma*. Mergui (Nos. 7684 and 7685, Ind. Mus.).

### *Dendrelaphis caudolineatus* (Gray).

Gray's *Dendrelaphis* (or Bronze Back).

*Note*.—The occurrence of this species in India rests on the authority of Beddome. Two specimens in the British Museum are labelled. "Wynad" donor Colonel Beddome. I discredit this locality, as many of Beddome's localities are open to the strongest doubts.

#### SYNOPSIS OF DENTITION.

	Max.	Pal.	Ptergd.	Mand.
<i>pictus</i> A	25	14	28	22
„ B	20—21	11—14	18—26	20—23
„ C	21—23	13—14	26—29	23—24
<i>gorei</i>	24—25	13—15	21	24?—25
<i>proarchus</i>	26—28	15—18	25—29	25—29
<i>bifrenalis</i>	22—25	12—14	21—27	24—27
<i>caudolineolatus</i>	28—29?	18—21	31—34	27—30



		Max.	Pal.	Ptergd.	Mand.
<i>tristis</i>	Ceylon	21	13	29—30	24—25
„	S. India	19—22	11—14	21—29	21—26
„	N. India	17—21	11—13	19—24	20—23







Wall, Frank. 1921. "Remarks on the Indian species of Dendrophis and Dendrelaphis." *Records of the Indian Museum* 22, 151–162.

<https://doi.org/10.5962/bhl.part.1472>.

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