

## IX REMARKS ON SOME FORMS OF *DIPSADOMORPHUS*

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Many of the forms now recognised as species in the genus *Dipsadomorphus* exhibit extremely close affinities. A close study of the head shields of many of the species (I have examined no less than thirteen of the twenty-three known) shows a number and disposition so similar, that, with the single exception of the rostral shield in some few species, I can find no means of differentiating between them. The only points made special use of by Mr. Boulenger, viz., the height of the præocular and the size of the posterior sublinguals, with the separation of the fellows of this pair, I find too inconstant to place any reliance upon.

The close similarity of these shields in the different species probably accounts for the frequent confusion among them by various observers. Thus *trigonata* has been mistaken for *gokool* by Ferguson (*Reptil. Fauna Ceylon*, 1877, p. 21), Phipson (*Journ. Bom. Nat. Hist. Soc.*, vol. ii, p. 247) and Traill (*Journ. Bom. Nat. Hist. Soc.*, vol. ix, p. 499). *Gokool* was considered the young of *cynodon* by Cantor (*Cat. Mal. Rept.*, 1847, p. 77).

The *multifasciata* of Günther was confused for a long time with *ceylonensis*. Stoliczka (*Journ. Asiat. Soc. Bengal*, vol. xxxix, p. 199) could not see the justification for considering it a species apart, though Blyth and most herpetologists since his time wholly support Günther's views. Boulenger (*Faun. Bri. Ind.*, Rept. and Batrach., 1890, p. 359) did not separate it from *ceylonensis*, though later (*Cat.*, iii, 1896, p. 69) he too has accepted Günther's opinion.

I have for a long time thought that the species *ceylonensis* and *hexagonotus*, as regarded by Mr. Boulenger in his *Catalogue* (1896), comprise more than one form fit to rank as a species, and I have been accumulating observations for some years which now enable me to speak with conviction.

The separation of the species in this genus is mainly, if not wholly, dependent upon the difference in the number of the scale rows, the degree of enlargement of the vertebrae, and the differences in the ranges of the ventrals and subcaudals. I think more use may be derived from the scale rows by counting them in two situations instead of in midbody alone. I find that at a point two heads-lengths before the anus the rows are fewer than in midbody, and at least in one instance the counts are useful, for in the two species *trigonata* and *gokool*, which are extremely alike, the rows come to 15 in the former and only to 17 in the latter.

*Dipsadomorphus ceylonensis.*

I have arranged all the specimens identified as *ceylonensis* of which I have any knowledge in tabular form. The British Museum examples and the four I quote from Dr. Willey (*ex epistola*) I have not examined.

(1) *D. ceylonensis*; Günther.

Characterised by scales in 19 rows, ventrals 214 to 235, subcaudals 98 to 109. Habitat—Ceylon and Western Hills of Peninsular India.

| No. of specimens. | Scales in midbody. | Ventrals. | Subcaudals. | Habitat.       | Authority.                            |
|-------------------|--------------------|-----------|-------------|----------------|---------------------------------------|
| 1                 | 19                 | 229       | 105         | Mysore ..      | Indian Museum.                        |
| 2                 | 19                 | 227       | 109         | Madras Presdy. | "                                     |
| 3                 | 19                 | 223       | 106         | "              | "                                     |
| 4                 | 19                 | 219       | 100?        | Anamallay      | "                                     |
| 5                 | 19                 | 227       | ..          | "              | "                                     |
| 6                 | 19                 | 234       | 105         | "              | British Museum.                       |
| 7                 | 19                 | 229       | 100         | Nilgiris       | "                                     |
| 8                 | 19                 | 214       | 98          | Malabar        | "                                     |
| 9                 | 19                 | 235       | 111         | Matheran       | "                                     |
| 10                | 19                 | 235       | 107         | Ceylon         | "                                     |
| 11                | 19                 | 229       | ..          | "              | "                                     |
| 12                | 19                 | 231       | ..          | "              | "                                     |
| 13                | 19                 | 232       | 104         | "              | "                                     |
| 14                | 19                 | 219       | 101         | "              | "                                     |
| 15                | 19                 | 222       | 99          | "              | "                                     |
| 16                | 19                 | 226       | 103         | "              | "                                     |
| 17                | 19                 | 220       | 101         | "              | "                                     |
| 18                | 19                 | 234       | 110         | "              | Dr. Willey<br>( <i>ex epistola</i> ). |
| 19                | 19                 | 234       | 106?        | "              | "                                     |
| 20                | 19                 | 233       | 107         | "              | "                                     |
| 21                | 19                 | 224       | 103         | "              | "                                     |

(2) *D. beddomei*, sp. nov.

Characterised by 19 scale rows, ventrals 248 to 266, subcaudals 113 to 127. Habitat—Ceylon and Western Ghats.

| No. of specimens. | Scale rows in midbody. | Ventrals. | Subcaudals. | Habitat.    | Authority.      |
|-------------------|------------------------|-----------|-------------|-------------|-----------------|
| 1                 | 19                     | 257       | 126         | Ceylon      | British Museum. |
| 2                 | 19                     | 262       | 125         | "           | "               |
| 3                 | 19                     | 253       | 113         | "           | "               |
| 4                 | 19                     | 266       | 120         | "           | "               |
| 5                 | 19                     | 253       | 122         | "           | "               |
| 6                 | 19                     | 263       | 127         | Kandy       | F. Wall.        |
| 7                 | 19                     | 248       | 117         | Matheran .. | British Museum. |

(3) *D. nuchalis*, Beddome.

Characterised by 21 scale rows (rarely 23), ventrals 234 to 251, subcaudals 90 to 108. Habitat—Hills of Western Peninsular India and Nepal.

| No. of specimens. | Scale rows in mid-body. | Ventrals. | Subcaudals. | Habitat.        | Authority.      |
|-------------------|-------------------------|-----------|-------------|-----------------|-----------------|
| 1                 | 21                      | 235       | 101         | Chitlong, Nepal | Indian Museum.  |
| 2                 | 21                      | 234?      | 104         | "               | "               |
| 3                 | 21                      | 246       | 100 ?       | Travancore ..   | "               |
| 4                 | 21                      | 251       | 106         | " ..            | "               |
| 5                 | 21                      | 242       | 102         | " ..            | "               |
| 6                 | 21                      | 246       | 107         | " ..            | "               |
| 7                 | 23                      | 238       | 103         | " ..            | "               |
| 8                 | 23                      | 241       | 106         | " ..            | "               |
| 9                 | 21                      | 249       | 108         | " ..            | "               |
| 10                | 21                      | 242       | 107         | " ..            | "               |
| 11                | 21                      | 248       | 90          | Wynaad ..       | British Museum. |
| 12                | 21                      | 242       | 100         | W. India ..     | "               |
| 13                | 21                      | 243       | 104         | " ..            | "               |
| 14                | 21                      | 234       | 94          | " ..            | "               |
| 15                | 21                      | 234       | 102         | " ..            | "               |
| 16                | 21                      | 249       | 101         | " ..            | "               |

(4) *D. andamanensis*, sp. nov.

Characterised by 21 scale rows, ventrals 259 to 267, subcaudals 118 to 133. Habitat—Andamans.

| No. of specimens. | Scales in midbody. | Ventrals. | Subcaudals. | Habitat. | Authority.                |
|-------------------|--------------------|-----------|-------------|----------|---------------------------|
| 1                 | 21                 | 267       | 121         | Andamans | No. 7928, Indian Museum.  |
| 2                 | 21                 | 266       | 118         | "        | No. 7929, Indian Museum.  |
| 3                 | 21                 | 265       | 122         | "        | No. 7930, Indian Museum.  |
| 4                 | 21                 | 264       | 133         | "        | No. 8641, Indian Museum.  |
| 5                 | 21                 | 259       | 121         | "        | No. 15189, Indian Museum. |
| 6                 | 21                 | 264 ?     | 130         | "        | No. 15192, Indian Museum. |

From the above tabulated specimens it appears to me that under the title *ceylonensis* at least four distinct forms have been confused, all of which I consider should rank as species rather than varieties of a single species. For the first of these I would reserve the title *ceylonensis*, for Günther's type specimen with scales 19, ventrals 220, subcaudals 108, habitat Ceylon, clearly is one of this form.

For the second *beddomei* seems to me appropriate, since most of the known specimens are of Colonel Beddome's collecting.

For the third Beddome's name *nuchalis* should be retained.

For the fourth I propose *andamanensis* since all the six known specimens come from this insular group.

The last-named form, *andamanensis*, has perplexed more than one authority. Stoliczka (*J A. S. Bengal*, xxxix, p. 198) referred to four specimens in the Indian Museum from the Andamans which he identified as *hexagonotus* (Blyth). These are the first four specimens in the table above and the identical ones referred later by Sclater to *fusca*.<sup>1</sup> I have examined these, and two others in the Indian Museum acquired since from Mr. C. G. Rogers from the Andamans. The last two were sent by Dr. Annandale to the British Museum, where they were pronounced by Mr. Boulenger to be *ceylonensis*. These I examined two years ago on their return from London, and disagreed with Mr. Boulenger's opinion. I have recently re-examined them beside the other four specimens, with which they completely agree. The recognition of this form as a distinct species removes the Andamans from the sphere of distribution of *ceylonensis* (Annandale, *J A. S. Bengal*, 1905, p. 176).

All of these forms seem to me to agree in the lepidosis of the head, and have the vertebral row of scales about as broad as long at midbody. They are all coloured much alike, and seem to attain a similar growth.

*Dipsadomorphus hexagonotus*, Stoliczka (*non* Blyth).

I have examined the type specimen of Blyth's *hexagonotus* (*Journ. Asiat. Soc. Bengal*, vol. xxiv, p. 360). This is No. 8048 of Sclater's list from Cherrapunji, Khasi Hills, Assam, referred by him to *fusca* (an Australian species!). The scales are in twenty-one rows, the ventrals 247, and the subcaudals 134 (not 126 as given by Blyth<sup>2</sup>). It is now uniform brown in colour. I think there can be no doubt that this is a young *cyaneus* (Dum. & Bibron). The young of this species are known to be brown in colour (Boulenger, *Catalogue*, vol. iii, 1896, p. 72). Further, Blyth says of this specimen that the head is green, and remarks that it probably grows to a large size and may become wholly green.

The next authority to refer to *hexagonotus* was Stoliczka (*Journ. Asiat. Soc. Bengal*, vol. xxxix, p. 198) who refers to five specimens from the Andamans. Four of these I have already alluded to under *ceylonensis* and shown to constitute a definite

<sup>1</sup> The fifth specimen referred by Sclater to *fusca* is in my opinion a young *cyaneus*: see further remarks on *hexagonotus* which follow.

<sup>2</sup> I frequently find that my counts of the ventrals and subcaudals, especially the latter, do not agree with that of other authors, and I often wonder whether they made use of a lens at this time, and if so, whether the lens permitted freedom of both hands. The subcaudals especially are very hard to count in small snakes. I invariably use a watchmaker's lens, and begin counting from the tail-tip. In this way the smallest shields are counted when the eye is fresh to the work, and as it grows tired with the strain, the larger shields come into view. I also pass the fingers of one hand along the shields as I count them, thus assisting the eye and relieving strain.

species, *andamanensis*. The fifth with the scale rows 19 is described too imperfectly to recognise with certainty, but appears to me probably the same form found in Burma in which the scale rows are 19. If my surmise is correct, this specimen, which appears to have been lost, is the true type specimen of *hexagonotus*, and Stoliczka's name should replace Blyth's as the godfather of the species, *hexagonotus* having precedence over Theobald's *ochracea*.

Under the title *hexagonotus* Mr. Boulenger appears to me to include two forms which I consider deserve specific recognition. I have records of fourteen specimens of a form from Burma which agree in having 19 scale rows, the ventrals ranging between 221 and 245, and the subcaudals 89 to 107. Five of these are in the British Museum, the rest are of my own collecting. Two other specimens in the British Museum from Burma collected by Beddome do not conform to this type, but to that known from the Himalayas. In recent papers to the Bombay Natural History Society I have shown that many of Beddome's records of habitat are open to question, but even supposing that these two specimens have been correctly labelled, they do not vitiate the inferences to be drawn from the series under discussion, as they may have come from hills in the west or north of Burma, the fauna of which closely agrees with that of the Eastern Himalayas. I am of opinion that the form represented by these fourteen specimens all from Burma is a distinct species for which the name *hexagonotus* should be retained, as it appears probable that the type specimen is that already referred to from the Andamans by Stoliczka with the scales in 19 rows.

In addition to these I have examined no less than thirty-nine specimens of a form which inhabits the neighbourhood of Darjiling, and which is characterised by having 21 scale rows, ventrals ranging from 218 to 252, and subcaudals from 100 to 119. There are three more examples in the British Museum from the same locality which completely agree. Two others in the same Institution from Burma (?) (the query is mine) also agree. This form appears to me a distinct species for which I propose the name *stoliczkæ*, the first references to it having been made by Stoliczka

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