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ON A RARE, SOUTH INDIAN BURROWING SNAKE *Platyplectrurus trilineatus* (BEDDOME, 1867)

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Abstract
Examination of five juvenile preserved specimens of *Platyplectrurus trilineatus*, an endemic, poorly-known Uropeltid snake species from the Western Ghats Mountains of Southwestern India provided further insights into its taxonomy. The sample examined here agreed well with the existing descriptions in literature in colouration and most aspects of scalation but had larger range of ventral scale count and smaller supraocular relative to prefrontal. Character definition (in the case of ventrals) and ontogenic variation (in the case of supraocular size) might have possibly created these discrepancies. These differences indicate that a better sampling of both specimens and characters would throw more light on this species.

Keywords: morphology, characterization, lepidosis, habitus, colouration

Introduction

The snake family Uropeltidae Müller, 1832 is one of the most poorly-understood families of small, burrowing snakes restricted to the Ceylonese-Malabar subregion of south Asia (Rajendran, 1985). *Platyplectrurus* Günther, 1868 is a species-poor genus endemic to the Western Ghats Mountains of southwestern India, containing two valid species viz. *P. trilineatus* (Beddome, 1867) and *P. madurensis* Beddome, 1877 (Smith, 1943). Beddome (1867) described *Plectrurus trilineatus* based on a specimen from "Anamallay forests; elevation 4000 feet". He doubted its generic allocation by writing "*Plectrurus?*" and "…..will perhaps have to be placed in a new genus." A year later, Günther (1868) erected the new genus *Platyplectrurus* for this species, thus giving it the currently-valid name combination *Platyplectrurus trilineatus*. Subsequently, Beddome (1886) procured six more specimens from the same general locality and reported a range of variation in ventral and subcaudal counts for four females and three males (including the holotype). In the same work, i.e. Beddome (1886), *Platyplectrurus bilineatus* was described as a new species, based on two syntypes (fide Boulenger, 1893: 166) that were "probably not

adults", collected from "Madura Hills". Later, *P. bilineatus* was synonymized with *P. trilineatus*, as Beddome's purported specifically-distinct characters were considered as intraspecific variations (Boulenger, 1890). This view is still being followed (see Smith, 1943; Whitaker, 1978; Rajendran, 1985; Das, 2002; Whitaker and Captain, 2004).

Platyplectrurus trilineatus has seldom been reportedly sighted / collected since then, as several surveys in southern Western Ghats did not yield this species (Ferguson, 1895; Hutton, 1949; Hutton and David, 2009; Inger *et al.*, 1984; Ishwar *et al.*, 2001; Malhotra and Davis, 1991; Wall, 1919, 1920). However, Rajendran (1985) collected this species and provided further morphological characterization based on his specimens. In spite of this, *P. trilineatus* still remains to be a little-known species, as the latest treatises on Indian snakes did not deal with this species (Daniel, 2002; Das, 2002; Whitaker and Captain, 2004). I discovered five specimens labeled as "*Platyplectrurus madurensis*", which I identified as *P. trilineatus* (see Kalaiarasan *et al.*, 1995; Ganesh, 2010), with unknown collection locality, in the museum of the Chennai Snake Park. Owing to the paucity of published accounts on this poorly-known species, this paper is presented to further improve its morphological characterization based on character-state data obtained from these apparently unpublished specimens.

Materials and Methods

Five, formalin-preserved, juvenile specimens were examined and their scale counts, measurements and colour pattern were recorded. Scalerows were counted around midbody. Scales from the mental up to the scale before the anal scale were counted as ventrals (Gower and Ablett, 2006). The terminal scale is excluded from the subcaudal scale count. Scales between rostral and the final scale bordering jaw angle were counted as supralabials, those touching eye given within parenthesis. Scales between mental and scale bordering last supralabial were counted as infralabials, those touching genials given within parenthesis. Scales surrounded by supralabials, postoculars and parietals were counted as temporals. Symmetrical head scalation character values were given in left / right order. Morphological data included colouration and pattern in formalin. Measurements were recorded using vernier callipers, except snout-vent and total lengths, which were measured with a standard measuring tape to the nearest millimeter. Head length, width and depth were measured keeping the posteriormost corner of the mouth as the reference point. Body width was measured at the point at which the trunk appeared broadest (most often near the midbody), although some specimens appear a bit flattened due to preservation artifact.

Taxonomy

***Platyplectrurus trilineatus* (Beddome, 1867)**

Lepidosis: Rostral triangular, visible from above, not completely dividing the nasal; nasal five-sided, pierced by nostril; nasal smaller than prefrontal but as large as supraocular; supraocular smaller than prefrontal; frontal as large as distance between it and rostral; parietal subequal in size to that of frontal and prefrontal together; postocular pentagonal, small, smaller than the eye; supralabials 4/4; first supralabial triangular, smallest, in contact with nasal; second supralabial pentagonal, higher than broad, also in contact with nasal; third supralabial six-sided, twice as broad as high, completely bordering the lower rim of eye, in contact with postocular; fourth supralabial largest, a little broader than third, posteriorly twice as high as that of anterior side, not extending backward beyond parietal, but larger than temporal; temporal scale one, rectangular, horizontally elongate, not extending backward beyond the parietal and / or the fourth supralabial; infralabials 4/3-4; all horizontally elongate, first one more or less curved; mental small, subequal to infralabials; no mental groove; gular scales larger than infralabials, rhomboid, the median row of which progressively widens to appear like the proper ventral scales; ventrals 159-183, those in the first one-fifth of the body much less wider than those posteriorly, twice as broad as the adjacent row of costal scales; anal scales bifid; subcaudals 11-16, paired; tail tip bilaterally compressed, covered by somewhat larger scales, ending in a small transverse spur-like structure; overall scalation smooth, scales lacking apical pits, with slight overlap / imbrication, especially ventrally.

Habitus: Snout rounded, not depressed, snout length (2.10) more than twice the eye-diameter (0.93); nostril closer to snout tip (0.34) than to eye (2.10); neck not distinct; head-width (3.57) smaller than body width (4.12), but greater than head depth (2.56); head long, 4.7% of total body length; body slender, its width 3.5% the length, subcylindrical, slightly flattened dorso-ventrally, especially in the posterior part; tail short, 6.54 % of total body length, sometimes evident even when viewed dorsally.

Colouration in formalin: Dorsum light yellowish to brown with one dorsal and two lateral series of darker stripes extending from parietal region on to the tail tip; each series consisting of three lines, that is, a series of dots present on each consecutive scale, forming a dotted line / stripe; stripes feeble in some individuals; venter paler, unpatterned, extending on to supralabials; dark brown along the edge of most ventral scales, especially in those places where scales overlap; a pair of crescent-shaped spots on nuchal region, bordering the parietals; eyes dark grayish black, pupil mildly visible.

Table 1: Summary of morphological characters of the five examined (preserved) specimens. Measurements in mm.

Characters	CSPT-S2a.1	CSPT-Sa.2	CSPT-Sa.3	CSPT-Sa.4	CSPT-Sa.5	Mean
Total length	103.50	111.20	144.00	107.50	111.00	115.44
Snout-vent length	97.00	106.00	136.00	100.50	105.00	108.9
Tail length	6.50	5.20	8.00	7.00	6.00	6.54
Relative tail length	0.062	0.046	0.055	0.065	0.054	0.056
Head length	5.24	5.27	6.41	5.24	5.28	5.48
Head width	3.47	3.55	3.76	3.52	3.55	3.57
Head depth	2.43	2.45	2.69	2.93*	2.34	2.56
Head length: total length	0.050	0.047	0.044	0.048	0.047	0.047
Head length: snout-vent length	0.054	0.049	0.047	0.052	0.050	0.050
Body width	4.01	3.91	4.51	4.06	4.12	4.12
Body width: total length	0.038	0.035	0.031	0.037	0.037	0.035
Body width: snout-vent length	0.041	0.036	0.033	0.040	0.039	0.037
Eye diameter	0.92	0.95	0.99	0.90	0.92	0.93
Eye-lip distance	0.69	0.74	0.79	0.69	0.70	0.72
Eye-rostrum distance	2.05	2.16	2.21	2.12	1.99	2.10
Eye-nostril distance	1.73	1.75	1.93	1.63	1.77	1.76
Inter-ocular distance	2.15	2.32	2.70	2.59	2.42	2.43
Inter-narial distance	1.27	1.52	1.66	1.40	1.54	1.47
Prefrontal length	1.52	1.49	1.58	1.69	1.30	1.51
Supraocular length	1.40	1.40	1.47	1.49	1.19	1.39
Midbody Scalerows	15	15	15	15	15	15
Supralabial scales	4/4	4/4	4/4	4/4	4/4	4/4
Infralabial scales	4/4	4/4	4/4	4/3	4/4	4/3-5
Postocular scale	1	1	1	1	1	1
Temporal scale	1	1	1	1	1	1
Ventral scales (angulate)	162	159	183	174	170	170
Anal scales	2	2	2	2	2	2
Subcaudal scales (pairs)	11	11	16	16	13	13

Discussion

This sample (n=5) has a ventral scale count range of 159-183 (vs. 163-175 in Smith, 1943; 173-177 in Rajendran, 1985 [n=7]). The fact that this sample, consisting of five specimens yielded the largest variation in the ventral count value is remarkable. This can be attributed possibly to the sex of the specimens, but sadly, since these specimens are juveniles, their sex could not be precisely determined. The revised scalation value presented here is largely a result of differences in character definitions in the method of counting ventral scales, which varied in previous works and mine (i.e., Gower & Ablett, 2006). Other characters like midbody scalerows, labials, anal scales and tail-shield are consistent with previously reported features for this species (see Boulenger, 1890, 1893; Smith, 1943; Rajendran, 1985). However, the size of supraocular relative to prefrontal differed from literature (Boulenger, 1890; Smith, 1943; Rajendran, 1985). Although our specimens agree well with literature descriptions of *P. trilineatus*, in our specimens the supraocular was not longer than the prefrontal (vs. supraocular longer than prefrontal according to Boulenger, 1890; Smith, 1943; Rajendran, 1985). Boulenger (1890) was the first to synonymize *P. bilineatus with P. trilineatus* and also the first to distinguish *Platyplectrurus* species based on ratio of prefrontal and supraocular lengths. But, Beddome (1886) in his original

description of *P. bilineatus* mentioned "suprtaorbital (=supraocular) as in *madurensis.*" *P. madurensis* is a species having supraocular shorter than prefrontal, which is the also case with our specimens; but *P. madurensis* has a uniform unpatterned dorsum that is very different from the striped dorsum of our specimens. To add further to the confusion, Smith (1943) in his text on *P. trilineatus* has given figures showing head scalation of *P. madurensis* although with correct figure-captions. Obviously collection of fresh material and additional data on biology, distribution and species boundaries are needed for a better understanding of this taxon.

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PLATE 01

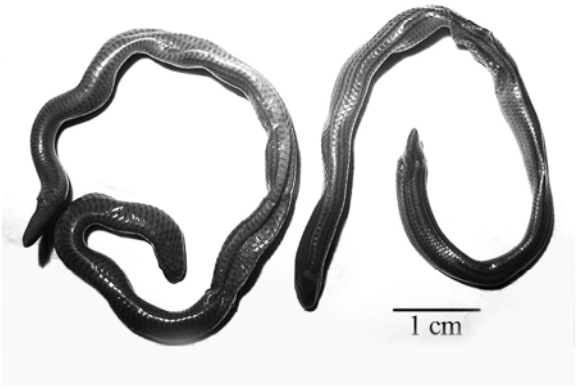

Fig. 01: Dorsal and ventral views of two specimens of *Platyplectrurus trilineatus* in Chennai Snake Park (CSP)

Fig. 02: Striped dorsum of one specimen

Fig. 03: Lateral view of the head of *Platyplectrurus trilineatus*

Fig 04: Dorsal view of the head of *Platyplectrurus trilineatus*

Madras Quart: Journ: of Med: Science. N° XXI.

PLATE I.

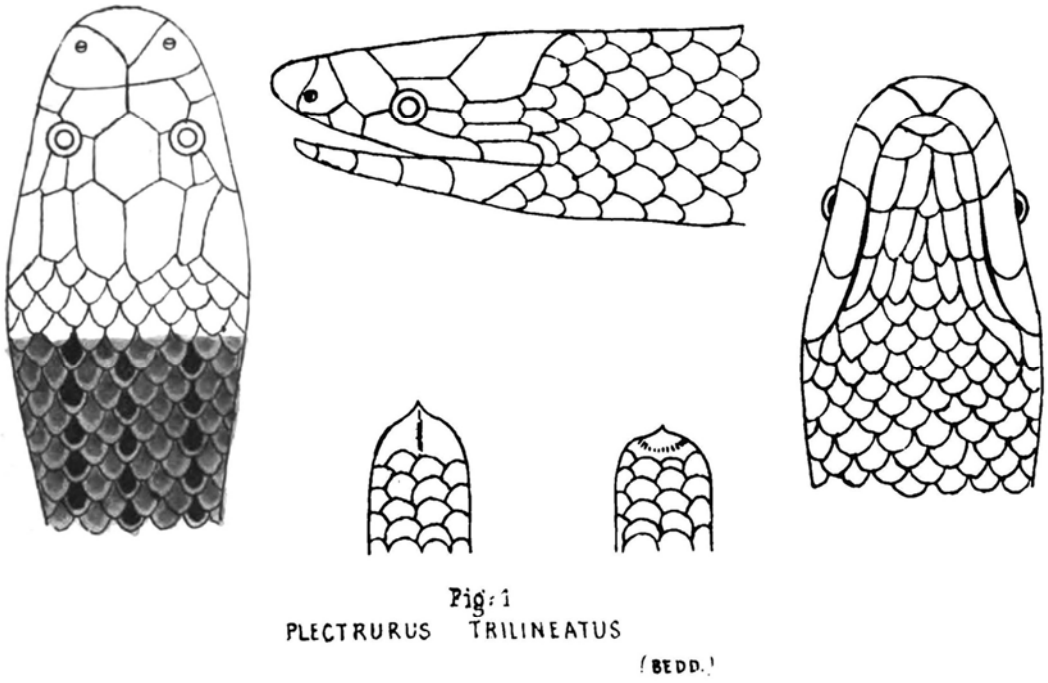

Fig: 1
PLECTRURUS TRILINEATUS
(BEDD.)

Fig. 05: Reprinted from Beddome (1867). Madras Quarterly Journal of Medical Science: vol. 21, plate 1, fig. 1.