

**TAXONOMIC STATUS OF THE COLUBRID SNAKE
SIBYNOPHIS SUBPUNCTATUS (DUMÉRIL,
BIBRON & DUMÉRIL, 1854)**

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ABSTRACT.— There is confusion in the literature regarding the taxonomic status of the colubrid snake *Sibynophis subpunctatus* (Duméril, Bibron & Duméril, 1854). Originally described from the Western Ghats of India, occasionally *S. subpunctatus* has been considered a junior synonym of its north-eastern Indian congener *S. sagittarius*. Our preliminary re-examination of material, including type specimens, is consistent with the view that the two species are morphologically distinct. The two species appear to be geographically disjunct, with *S. subpunctatus* occurring in Sri Lanka and western peninsular India, and *S. sagittarius* in North and North East India. A more detailed reassessment is required.

KEYWORDS.— *Sibynophis*, Colubridae, India, Sri Lanka, Western Ghats.

INTRODUCTION

The colubrid snake genus *Sibynophis* Fitzinger, 1843 comprises some nine species (Appendix I) distributed in southern and south-eastern Asia. Up to three species are known from mainland India, *S. collaris*, *S. subpunctatus*, and *S. sagittarius* (Das, 1994, 1997), though the taxonomy of the latter two is confused. *Sibynophis subpunctatus* (sensu Smith, 1943) was first referred to and figured by Seba (1734: plate XI). Jerdon's (1853: 528) mention of "*Calamaria sagittaria*" in peninsular India probably also corresponds to *S. subpunctatus* (see Wall 1921: 84). Duméril et al. (1854) described *Oligodon subpunctatum* based on a single specimen from "Malabar" in the Western Ghats region of peninsular India. Boulenger (1890) transferred the species to his new genus *Polyodontophis*, and this was followed by Wall (1907, 1921 and 1923), Prater (1924) and Fraser (1936-7). Schmidt (1926) may have first used the combination *Sibynophis subpunctatus*, and later workers,

including Smith (1943) and Taylor (1950) followed this.

In a revision of *sibynophiines*, Morgan (1973) considered *Sibynophis subpunctatus* a synonym of *Sibynophis sagittarius* (Cantor, 1839), a species originally described from Bengal, NE India. Morgan (1973: 71) wrote, "Although Wall (1907) suggested that *Polyodontophis subpunctatus* (= *S. subpunctatus*), the name applied to specimens from southern India and Ceylon, should be considered a synonym of *P. sagittarius* (= *S. sagittarius*), most workers have continued to follow Boulenger's arrangement recognizing 2 species (e.g. Bourret, 1936; Taylor, 1950). In view of the clinal variation exhibited in ventral numbers and dorsal coloration, I feel that the recognition of only 1 species is warranted."

Wall's (1907: 824) proposed suppression of *S. subpunctatus* was based on a single specimen with eight supralabials on the left side (with the fourth and fifth contacting the eye) and nine supralabials on the right (with the fourth, fifth

and sixth contacting the eye). Boulenger (1890) had considered the number of supralabials to be a key character for distinguishing *Polyodontophis* (now *Sibynophis*) *subpunctatus* from *P.* (= *S.*) *sagittarius*. After sending his specimen to London for examination, Wall (1907: 824) followed Boulenger's advice and united the two taxa. However, Wall (1923: 599) later changed his view: "Note.- In the Bombay Natural History Journal (Vol. XVII, p 823) I referred to a specimen, that appeared to unite the characters of *subpunctatus* and *sagittarius*, and which suggested the union of the two species under the latter and older name. I am now in a position to show that the two species previously held as such are both valid, and that the specimen referred to is an aberrant *subpunctatus*. This view is based on skulls in my collection. The dentition is as follows:- *subpunctatus*. Maxillary 44 to 45. Palatine 23 to 24. Pterygoid 21. Mandibular 40. - *sagittarius*. Maxillary 32. Palatine 14 to 16. Pterygoid 13. Mandibular 30. The specimen referred to was probably from the Northern part of the Western Ghats as it was preserved in the same bottle as a *Lycodon flavomaculatus*, which has a very limited distribution. (q. v.)" Morgan (1973) neither referred to Wall's (1923) revalidation nor otherwise cited this publication.

Wall's (1907) earlier proposed synonymy and later (1923) revalidation may have caused some taxonomic instability. For example, Daniel & Shull (1964: 740) noted that "There appears to be confusion in collection records between this species and *S. sagittarius*." Morgan's proposed synonymy has received a varying reception, being both ignored/rejected (though not explicitly by e.g. Whitaker, 1978; P. De Silva, 1980; Deoras, 1981; Mahendra, 1984; Murthy, 1985, 1986, 1990; Welch, 1988; A. De Silva, 1990, 1996, 1998; Das, 1994, 1996; Sharma, 1998, 2002, 2003; Schleich & Kästle, 2002) and followed (e.g., implicitly by Murthy and Sharma, 1978; Das, 1997; Vyas, 2000).

REASSESSMENT

We briefly reassessed Morgan's proposed synonymy by examining material of *S. subpunctatus* and *S. sagittarius*, including the types stored in

the Museum National d'Histoire Naturelle, Paris (MNHN) and The Natural History Museum, London (NHM), respectively. Tooth counts for seven specimens are presented in Table 1. Where observations overlap, our counts essentially match those given by Wall (1923). Morgan (1973: table 33) also presented data on the variation in the number of maxillary teeth (32 to 48) in 22 specimens matching his concept of *S. sagittarius*. The majority (18) of these specimens had counts of 42 or greater, while two (32 and 35 maxillary teeth) match Wall's counts for his concept of *S. sagittarius*. Only two specimens (37 and 39 maxillary teeth) fall between these values. Morgan did not explicitly link maxillary tooth counts with locality, but there is nothing to suggest that the specimens with low tooth counts comprised anything other than the few available northern Indian specimens, that can be putatively identified as *S. sagittarius*.

Morgan (1973) also considered variation in putative *S. subpunctatus* and *S. sagittarius* in terms of scalation (numbers of supralabials, infralabials, temporals, ventrals, and subcaudals) and coloration, and concluded that only a single species should be recognized. The majority (37 of 48) of the specimens examined by Morgan (1973: table 9) are from Sri Lanka and peninsular India, and no substantial differences in mean ventral scale counts was detected between the samples from these two areas (contrary to De Silva, 1969, who proposed Sri Lankan *S. subpunctatus* to comprise a distinct subspecies, *S. s. ceylanicus*). Thus, the supposed clinal variation in *S. sagittarius* (*sensu* Morgan) is unevenly distributed across its range, being absent across Sri Lanka and peninsular India, but present between these areas and North/North East India. Importantly, Morgan (1973: 66) noted that "Analysis of geographic variation in *S. sagittarius* is impeded by a low number of specimens from the northern areas of the range."

Morgan (1973) discussed only maxillary tooth counts, but there are also substantial differences in tooth counts for the palatal and mandibular elements between putative *S. subpunctatus* and *S. sagittarius* (Table 1). Sample sizes remain small, but we consider these differences to be

TABLE 1: Left/right tooth counts (made by DJG and PD) for *Sibynophis subpunctatus* and *S. sagittarius*. Counting was difficult for wet, whole specimens, so that values represent estimates based on repeated counts. The three dried skulls are part of Wall's collection. Abbreviations: - = count not made; ? = element missing or incomplete; * = holotype, † = lectotype (see Kramer, 1977: 747).

| Species | Specimen | Locality | Preparation | Tooth Counts (left/right) | | | | |
|------------------------|-----------------------|------------------------|---------------------|---------------------------|----------|-----------|----------------------|----------|
| | | | | Maxilla | Palatine | Pterygoid | Palatine + Pterygoid | Mandible |
| <i>S. subpunctatus</i> | MNHN 3240* | "Malabar" | wet, whole specimen | 42/>42? | -/- | -/- | 44/42 | 37/38 |
| <i>S. subpunctatus</i> | MNHN 1885.628 | "Ceylon" | wet, whole specimen | 44/45 | -/- | -/- | 47/46 | 38/39 |
| <i>S. subpunctatus</i> | MNHN 7503 | no data | wet, whole specimen | 44/47 | -/- | -/- | 45/44 | 41/40 |
| <i>S. subpunctatus</i> | BMNH 1930.5.8.163 | Galle, Sri Lanka | dried skull | 46/44 | 24/23 | 21/21 | 45/44 | ?/40 |
| <i>S. sagittarius</i> | BMNH 60.3.19.12.68† | Bengal | wet, whole specimen | ~32/32 | -/- | -/- | <30/27 | 29/>26 |
| <i>S. sagittarius</i> | BMNH 1930.5.8.161-162 | Uttar Pradesh, N India | dried skull | 35/? | 16/16 | 18/15 | 34/31 | ?/? |
| <i>S. sagittarius</i> | BMNH 1930.5.8.161-162 | Uttar Pradesh, N India | dried skull | ?/? | 16/16 | 15/13 | 31/29 | ?/30 |

substantial and taxonomically significant. Wall was an avid and insightful counter of teeth, and he considered the differences he observed between putative *S. subpunctatus* and *S. sagittarius* to be indicative of separate species.

Smith (1943) listed some other differences in the external morphology of these two species, most notably the number of supralabials (seven or eight in *S. sagittarius*, nine or rarely eight in *S. subpunctatus*) and anterior temporals (usually one in *S. sagittarius*, two in *S. subpunctatus* - where the lower 'anterior temporal' is not in contact with a postocular). These differences hold true for the type specimens of *S. sagittarius* and *S. subpunctatus*, which have seven and nine supralabials, and one and two anterior (and posterior) temporals, respectively, on each side (PD, DJG, pers. obs.).

In conclusion, we do not find Morgan's (1973) evidence to be sufficient basis for the suppression of *Sibynophis subpunctatus*, and thus we recognise this species as valid pending a more detailed reassessment. *Sibynophis subpunctatus* and *S. sagittarius* appear to be geographically disjunct, with the former species occurring in Sri Lanka and western peninsular India, and the latter in central and northeastern India and neighbouring countries. Abdulali (1948) reported a specimen from Ambarnath, near Bombay (Mumbai) at the northern end of the Western Ghats of peninsular India as *S. sagittarius*. However, examination (by AC and Varad Giri) of the only Ambarnath specimen of *Sibynophis* in the collections of the Bombay Natural History Society (BNHS S.1312, deposited by Abdulali in 1956), found its supralabial and temporal scalation to agree with that of the holotype of *S. subpunctatus*. Other Western Ghats specimens catalogued in collections as "*S. sagittarius*" will need to be reassessed in future. Smith (1943: 279) understood the distribution of *S. subpunctatus* to occur in two major zones, North of 18° and South of 14°, with differing, though overlapping ranges of numbers of ventral scales. Assessment of intraspecific variation and possible geographic disjunction within *S. subpunctatus* should also be subject to future evaluations.

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APPENDIX I

CURRENTLY RECOGNISED SPECIES OF THE GENUS

SIBYNOPHIS FITZINGER, 1843

Sibynophis bistrigatus (Günther, 1868)

Sibynophis bivittatus (Boulenger, 1894)

Sibynophis chinensis (Günther, 1889)

Sibynophis collaris (Gray, 1835)

Sibynophis geminatus (Boie, 1826)

Sibynophis melanocephalus (Gray, 1853)

Sibynophis sagittarius (Cantor, 1839)

Sibynophis subpunctatus (Duméril, Bibron
& Duméril, 1854)

Sibynophis triangularis Taylor & Elbel, 1958