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FIRST RECORD OF THE POLYODONT SNAKE *SIBYNOPHIS GEMINATUS GEMINATUS* (BOIE, 1826) FROM THE PHILIPPINES, WITH A DISCUSSION OF *SIBYNOPHIS BIVITTATUS* (BOULENGER, 1894)

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Up to now one species of *Sibynophis* was known from the Philippines. It was described in 1894 by Boulenger as *Polyodontophis bivittatus*, from Palawan/Philippines. This rare species is endemic to the Province of Palawan, occuring on Palawan, Culion and Busuanga Islands (Taylor, 1922; Leviton, 1964; Alcala, 1986).

S. geminatus (Boie, 1826) is widely distributed in parts of Indonesia, Malaysia, Singapore and Sabah (Boulenger, 1893, 1896; Leviton, 1964). One subspecies, *S. g. insularis*, was described from Poeloe-Weh/North Sumatra (Mertens, 1927). Only the type is known (SM 22094).

A freshly killed *Sibynophis* was obtained on June 7th 1990 in Languyan/TawiTawi/Sulu-Archipelago/Philippines. It was killed by a local villager in the early afternoon while it was crossing a small trail in a rainforest (lowland forest of the molave type; see Dickerson, 1928), near a rivulet.

Description. Female; total length 530 mm; tail length 210 mm; weight 21 g; maxillary teeth 37; 9 upper labials right, 8 left; upper labials 3, 4, 5 bordering orbit; 2 anterior temporals right, 1 left; 151 ventrals; 116 subcaudals. In other scalation characteristics it agrees with *S. geminatus* and *S. bivittatus*.

Colouration. Reddish-brown above, getting darker towards the tail, colour extending to the outer edges of the ventrals; dorsolaterally a row of dark spots on both sides, which are anteriorly framed with white, and become confluent on the tail, forming dark longitudinal stripes; ventral surface yellowish, a dark spot on each side of each ventral scale; head brown with irregular black markings; upper labials white, bordered above by a black stripe which passes through the eye to the neck; dark nuchal bar, containing two lighter spots.

The colours, especially the reddish tinge of the dorsal side and the yellowish tinge of the ventral side, are fading in alcohol. For the species determination, the described *Sibynophis* was compared with *S. bivittatus* and *S. g. geminatus*.

In Table 1 are listed those characteristics, which are used for the differentiation between *S. bivittatus* and *S. g. geminatus*, and *S. g. geminatus*/*S. g. insularis* respectively (using the data from Boulenger, 1893, 1894, 1896; Taylor, 1922; Mertens, 1927; and Leviton, 1964). The low minimum number of subcaudals given for *S. g. geminatus* should be used with reservation since the tail of *Sibynophis* breaks off easily (Mertens, 1927) and museum specimens often have incomplete tails.

The type of *S. g. insularis* is clearly distinguishable from *S. g. geminatus*, by its lower scale and teeth counts. However, the variability within this subspecies is still unknown.

The variations in scalation between *S. g. geminatus* and *S. bivittatus* are insignificant as the ventral and subcaudal counts of *S. bivittatus* lie within the range of *S. g. geminatus*, and the ranges of the head scalation found in each overlap. Even in the very small collection in the Senckenberg Museum, deviations from the supposedly species-specific upper labial numbers occur in both species (see Table 2). Obviously such deviations are not as rare as Boulenger, Taylor, and Leviton state. Only SM 17106 has the species-specific head scalation, while SM 17105 and SM 17107 both show the characteristics of the other species on one side.

Regarding colouration, the differences between the species are also weak. All *S. bivittatus* are distinctively striped, never spotted, while from *S. g. geminatus* striped, spotted, and combined patterns are known. Boulenger (1893, 1896) recognized five colour forms: one with light stripes (from Java), three with a different combination of stripes and spots (from Singapore, Java, Sumatra, Borneo, the Malay Archi-

	S. bivittatus	*S. g. geminatus*	*S. g. insularis* (1 specimen)
Maxillary teeth	39 - 43	35 - 48	33
Upper labials	8 (rarely 9)	9 (rarely 8)	7/8
Labials bordering orbit	3,4,5 (rarely 4,5 or 4,5,6)	4,5,6 (rarely 3,4,5)	3,4/3,4,5
Ventrals	145 - 155	144 - 183	140
Subcaudals	110 - 112	89 - 145	tail incomplete
Light interocular bar	present	absent	absent
Light nuchal bar	absent	mostly present	absent
Light dorsolateral stripes	distinct	mostly present	slight
Dorsolateral spots	absent	often present	present

TABLE 1. Comparison between *Sibynophis bivittatus*, *Sibynophis geminatus geminatus* and *Sibynophis geminatus insularis*. Data from Boulenger (1893, 1896), Taylor (1922), Mertens (1927) and Leviton (1964).

	S. bivittatus (SM 17107, Culion)	*S. g. geminatus* (SM 17105, Java)	*S. g. geminatus* (SM 17106, Java)
Upper labials	8/9	9/8	9/9
Labials bordering orbit	4,5/4,5,6	4,5,6/3,4,5	4,5,6/4,5,6
Ventrals	147	163	167
Light interocular bar	present	absent	absent
Light nuchal bar	absent	absent	absent
Light dorsolateral stripes	present	present	present
Dark dorsolateral spots	absent	absent	absent

TABLE 2. Characteristics of three *Sibynophis* specimens from the Senckenberg Museum.

pelago), and one without stripes (from Sarawak and Sabah/ north Borneo). A light interoccipital bar is only known from *S. bivittatus*, while most *S. g. geminatus* have a light nuchal bar instead. The unstriped colour form has a dark nuchal collar.

Based on a comparison of scalation characteristics, the specimen from TawiTawi cannot be clearly assigned to one or other of the nominal species. However, its colouration indicates it belongs to the unstriped form of *S. g. geminatus* from northern Borneo, with a dark nuchal collar. This is not unexpected, the distance between eastern Sabah and TawiTawi is less than 100 km. A relationship between the TawiTawi form and the Palawan species is unlikely, as they are separated by the middle Visayan islands and Mindanao where *Sibynophis* is unknown. Also, the TawiTawi specimen shows none of the "*bivittatus*" colour features. It consequently seems that both Philippine *Sibynophis* populations reached their present ranges independently from Borneo. Since *Sibynophis* shows differentiation on Palawan, but not on TawiTawi, the colonization of Palawan may have occured earlier, or/and this island may have been continously separated from Borneo for longer.

It would be interesting to know whether or not striped and spotted specimens occur within single populations of *S. geminatus*, so that the taxonomic value of this feature could be assessed. However, at the moment the sample sizes from the different regions are too small, and localities, especially for the older material, are not specific enough.

The criteria used to distinguish *S. bivittatus* from *S. g. geminatus* are very weak. They have a high interspecific variability in many features and overlap in many of these. If further collections and investigations of *Sibynophis* from Borneo and Palawan do not result in the discovery of more reliable criteria for separating them, *S. bivittatus* should be regarded as a subspecies of *S. geminatus*.

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REFERENCES

Alcala, A. C. (1986). *Guide to Philippine flora and fauna, Volume X, Amphibians and Reptiles*. Quezon City, Philippines: JMC Press, 195 pp.

Boulenger, G. A. (1893). *Catalogue of the snakes in the British Museum (Natural History), I*. London: Taylor and Francis, 448 pp.

Boulenger, G. A. (1894). *Polyodontophis bivittatus*. *Ann. & Mag. Nat. Hist.* (6)14:82.

Boulenger, G. A. (1896). *Catalogue of the snakes in the British Museum (Natural History), III*. London: Taylor and Francis, 727 pp.

Dickerson, R. . (1928). Distribution of life in the Philippines. *Manila: Philip. Bur. Sci.*, **21**, 1-322.

Leviton, A. E. (1964). Contributions to a review of Philippine snakes, II. The snakes of the genera *Liopeltis* and *Sibynophis*. *Philip. J. Sci.*, **92**, 367-381.

Mertens, R. (1927). Neue Amphibien und Reptilien aus dem Indo-Australischen Archipel, gesammelt während der Sunda-Expedition Reusch. *Senckenbergiana*, **9**, 234-242.

Taylor, E. H. (1922). *The snakes of the Philippine Islands*. Manila Bur. of Printing, 312 pp.