

**FIRST RECORD OF *XENOCHROPHIS PUNCTULATUS*  
(GÜNTHER, 1858) (SERPENTES: COLUBRIDAE: NATRICINAE)  
FROM THAILAND**

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(with four text-figures)

**ABSTRACT.**– The rare natricine snake *Xenochrophis punctulatus* (Günther, 1858), previously known only from Myanmar and perhaps eastern India, is added to the herpetofauna of Thailand on the basis of an adult specimen collected in Muang District, Mae Hong Son Province. The specimen is described in detail and compared with voucher material. The species is for the first time depicted by photographs. A brief discussion on biogeographical implications is given.

**KEY WORDS.**– Colubridae, *Xenochrophis punctulatus*, Mae Hong Son Province, Thailand.

INTRODUCTION

The diversity of aquatic or riparian natricine snakes is especially high in south-east Asia. Since Malnate (1960), these taxa, formerly placed in the genus *Natrix* Laurenti, 1768, have been reallocated to several genera. The genus *Xenochrophis* Günther, 1864 (type species: *Psammodphis cerasogaster* Cantor, 1839, by monotypy) was resurrected to accommodate aquatic species. Following Malnate (1960), Malnate and Minton (1965), Malnate and Underwood (1988), Das (1996) and De Silva (1998), this genus currently includes 10 or 11 species, namely *X. asperrimus* (Boulenger, 1891), *X. bellulus* (Stoliczka, 1871), *X. cerasogaster* (Cantor, 1839), *X. flavipunctatus* (Hallowell, 1861), *X. maculatus* (Edeling, 1864), *X. piscator* (Schneider, 1799), *X. punctulatus* (Günther, 1858), *X. sanctijohannis* (Boulenger, 1890), *X. trianguligerus* (Boie, 1827) and *X. vittatus* (Linnaeus, 1758). To this list, Das (1996) added *X. melanzostus* (Gravenhorst, 1807), previously regarded as a subspecies of *X. piscator*. The sys-

tematics of the informal *X. piscator* group is highly controversial. We regard *X. flavipunctatus* as a valid species, distinct from *X. piscator*. The status of the taxon *melanzostus*, from Indonesia and the Andaman and Nicobar Archipelago, needs to be re-evaluated. Although its relationships are by all available evidence with *X. flavipunctatus*, its status, namely a subspecies of the latter (as proposed in a new combination by Manthey and Grossmann, 1997: 397, causing a nomenclatural problem, since *melanzostus* has priority over the widely used specific nomen *flavipunctatus*) or a distinct species (Das, 1996; pers. comm.), remains unresolved.

Among these species, one of the lesser known forms from the Asian mainland is *X. punctulatus*, described as *Tropidonotus punctulatus* by Günther (1858: 247, type locality unknown). This species is known from Myanmar and perhaps north-eastern India (see below in Discussion). However, in the early 1980s, one of us (W.N.) collected a natricine snake in Mae Hong

Son Province in north-western Thailand, that we unambiguously identified as *Xenochrophis punctulatus*, a species not yet recorded from the country. This specimen is described in detail and compared with the original description and other material. Its occurrence in Thailand is discussed.

#### ABBREVIATIONS

Measurements.- SVL: snout-vent length; TaL: tail length; TaL/TL: ratio tail length/total length;

Museums.- BMNH: British Museum (Natural History), now the Natural History Museum, London ; IRSNB: Institut Royal des Sciences naturelles de Belgique, Brussels.

#### DESCRIPTION OF THE SPECIMEN (FIGS. 1 – 4)

IRSNB 15493, adult female (sex verified by tail dissection) from Muang District, Mae Hong Son Province, Thailand.

Habitus: Body stout, cylindrical but slightly depressed; SVL 642 mm; TaL > 53 mm (cut and healed). Head rounded, distinct from the neck, strongly depressed; snout rather short; head length 30.2 mm. Eye rather small; its horizontal diameter about 15.4% head length, greater than distance eye-border of lip; pupil rounded.

Body scalation: 2 preventrals (namely the ventral scales wider than long but not contacting the first row of dorsals) + 148 ventrals (counted after Dowling, 1951), all smooth; anal divided; > 16 paired subcaudals. Dorsal scales in 17-17-13 rows, very slightly keeled in the posterior part of the body; no apical pits; complete body dorsal scale row reduction formula from 19 to 14 (ventral numbers at which reductions or additions occur are indicated left/right): 19 2+3?2 (6/6) 17 4+5?4 (85/84) 15 1+2?1 (140/140) 13 2?2+3 (146/) 14.

Head scalation: Rostral about 1.5 times wider than high, its upper tip visible from above; nasal divided, rectangular; nostril vertically elongate, linked to the first supralabial by a suture, and to the internasal by a weak crease; internasals much narrowed anteriorly, distinctly smaller and slightly shorter than the prefrontals; frontal 1.7 times longer than wide (7.4 mm long, 4.4 mm wide), straight anteriorly, shorter than parietals,

longer than suture between parietals, longer than its distance to snout tip; 1/1 subrectangular loreal; 9/9 supralabials, 2<sup>nd</sup> and 3<sup>rd</sup> in contact with the loreal, and 4<sup>th</sup> and 5<sup>th</sup> entering orbit on each side, 6<sup>th</sup> separated from the orbit by the lower postocular, 7<sup>th</sup> largest; no subocular; 1/1 preocular; 3/3 postoculars; 1/1 supraocular; 2/2 anterior temporals; 10/10 infralabials, 5/5 first contacting the anterior chin shields; two pairs of chin shields, the anterior slightly shorter than the posterior, the scales of the posterior pair not in contact with each other; mental about 1.9 times wider than deep, narrower than rostral; first pair of infralabials widely in contact behind mental.

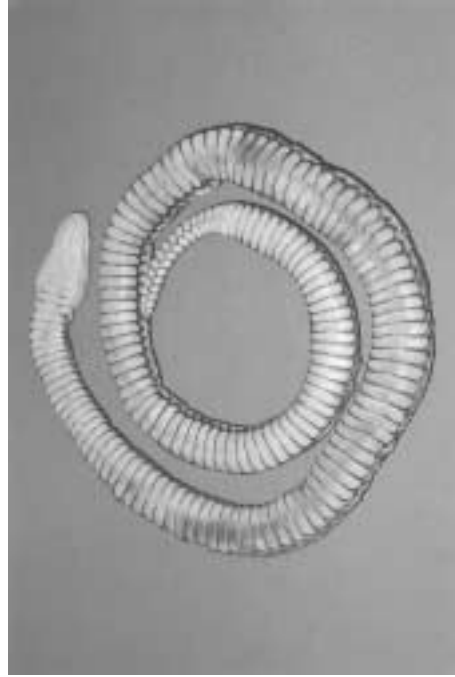
Colouration in alcohol: Upper surface of body and tail dark brown, with small whitish yellow dots on back, mainly on scale rows 4-5 on forebody, on rows 5 to 7 behind; dorsal scales of the 1<sup>st</sup> and 2<sup>nd</sup> rows whitish yellow, those of the 1<sup>st</sup> row edged with dark brown on their anterior and lower margins, those of the 2<sup>nd</sup> row edged with the same colour on their upper and posterior margins, giving the appearance of a succession of large whitish yellow spots on rows 1-2 forming a continuous lateral line from immediately behind the neck to the vent and on tail; lateral sides of the neck whitish yellow, contrasting with the dark brown colour of the body. Upper head surface dark brown like the body, paler on lateral sides of the snout; supralabials 1-6 whitish yellow, supralabials 8 and 9 of the same colour but marked with dark brown on their upper margin; underside of head cream; ventrals and subcaudals cream, anteriorly and laterally edged with dark brown margins.

#### DISCUSSION

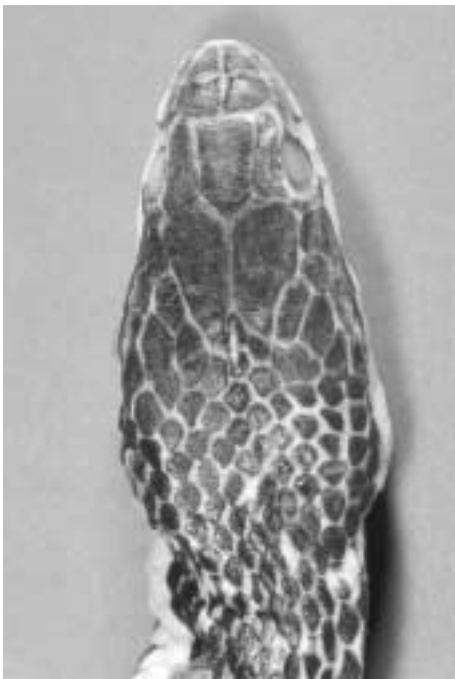
Our specimen agrees with the original description of the species provided by Günther (1858: 247-248), as well as with the morphological accounts provided by Boulenger (1893: 228-229) and Smith (1943: 292), and is readily referable to *Xenochrophis punctulatus* both on the basis of scalation and its characteristic colour pattern. The colouration of its head and forebody (see Figs) perfectly agrees with the sole existing illustration of this species, which appeared in Boulenger (1893: pl. XIV). As far as we know,



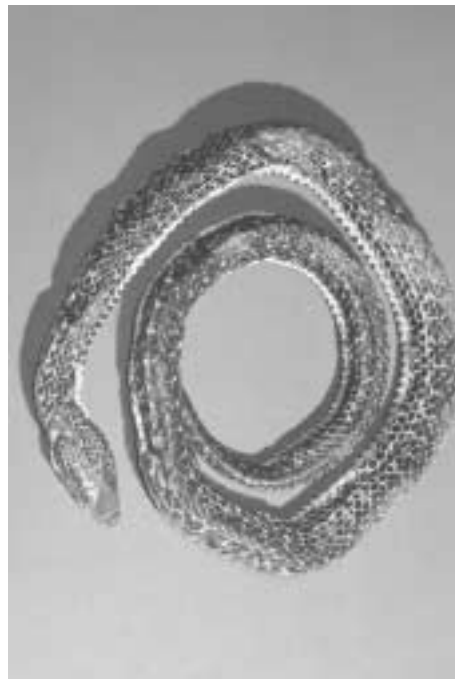
**FIGURE 2:** *Xenochrophis punctulatus* (Günther, 1858). IRSNB 15493. Ventral view of the head.



**FIGURE 4:** *Xenochrophis punctulatus* (Günther, 1858). IRSNB 15493. General ventral view of the body.



**FIGURE 1:** *Xenochrophis punctulatus* (Günther, 1858). IRSNB 15493. Dorsal view of the head.



**FIGURE 3:** *Xenochrophis punctulatus* (Günther, 1858). IRSNB 15493. General dorsal view of the body.

this species has never been illustrated by a photograph before the present paper. No description of a living specimen has ever been published.

We compared our specimen with another (BMNH 68.4.3.19, male, from 'Pegu, Burma'), with which it is obviously conspecific. The morphology, colouration and pattern of this latter specimen are nearly identical with the present Thai one, and are not repeated here. Its main morphological characters are: SVL 398 mm; TaL 143 mm; TaL/TL 0.26; 2 precentrals + 150 ventrals; anal divided; 67 paired subcaudals plus one terminal scale; dorsal scales in 17-17-13 rows; 10/10 supralabials; 1/1 preocular; 3/3 postoculars; 2/2 anterior temporals.

According to Smith (1943), Mahendra (1984) and the present data, variations for main scale characters in this species are: 134-154 ventrals (Smith's data include precentrals), subcaudals 62-84, 17 dorsal scale rows at midbody, 9-10 supralabials, 2 anterior temporals.

It should be noted that, with a SVL of 642 mm, the Thai specimen is by far the longest recorded. Its tail is unfortunately cut shortly after the vent. Smith (1943) cited a female with a TL of 630 mm, including a tail of 160 mm long. Such a ratio would give our specimen a TL of about 860 mm.

Günther did not know the geographical origin of the holotype. Since the original description, *X. punctulatus* has been recorded from several localities of southern and south-western Myanmar, namely 'Rangoon' (now Yangon), 'Pegu' (now Bago), 'Watiya' (now Wataya, a locality just northwest of Yangon in the Yangon Division), 'Amherst' (now Kyaikkami, in Mon State), and 'Mergui, Tenasserim' (now Beik or Myeik, in the Taninthayi State) (Wall, 1923; Smith, 1943; Malnate, 1960: 54; Hundley, 1964; Dowling & Jenner, 1988: 9; Welch, 1988: 107). All these localities are in the lowlands of lower Myanmar, relatively close to the Myanmar-Thailand border. Mae Hong Son Province, the north-westernmost province of Thailand, largely borders Myanmar at the level of the Burmese Kayah and Kayin States. Muang District, namely the district around the head city of the province, although lo-

cated in its northern part, is at only about 265 airline km from Bago.

Recently, the species has been added to the fauna of India, on the basis of a male specimen collected in Lamphal, State of Manipur, in north-eastern India (Singh, 1995: 137). This record would represent a rather surprising major extension towards north-east of at least 850 km across the whole of Myanmar, in an ecologically rather different area. Unfortunately, the author did not provide any description of his sole specimen, except that it had a SVL of 450 mm, a TaL of 210 mm (TaL/TL 0.32), and 19-19-17 scale rows. Although the pattern of this species makes it quite easy to recognize, and although we could not examine the involved Indian specimen, we however prefer to regard its identification as dubious on the basis of both the number of dorsal rows and the geography. This species was nevertheless included in recent lists of Indian snakes (Das, 1996, 1997).

Virtually nothing is known on the biology of *Xenochrophis punctulatus*. Smith (1943) stated that it is largely aquatic. There was a report of one specimen observed swimming in salt water (Keswal, 1886). However, this is obviously a confusion, or a lapsus calami of the author, for *Tropidonotus quincunciatus* Schlegel, 1837, now *X. piscator*. Chatterji (1940) reported a specimen from Myanmar infected by parasite worms. Unfortunately, no ecological data were recorded for the Thai specimen.

The present record brings to four the number of representatives of the genus *Xenochrophis* in Thailand. The wide ranging *X. flavipunctatus* is ubiquitous and one of the most often encountered Thai snakes, whereas *X. piscator* is currently known only from some localities in the north and north-east of the country. *X. piscator* (see Chérot et al., 1998) and *X. flavipunctatus* (C.C. & O.P., pers. obs., September 1997) also occur in Mae Hong Son Province. To the contrary, *X. trianguligerus* is currently known within Thailand only from the south according to Cox (1991: 249), in spite of the fact that it has also been reported from Laos, Cambodia and Vietnam (Welch, 1988; Manthey and Grossmann, 1997). In view of its wide distribution in south-eastern

Myanmar, *X. punctulatus* should also occur in the western Thai provinces of Tak and Kanchanaburi, in following the western mountain range of the country, and, on the basis of its occurrence in the Tenasserim as far south as Beik (Mergui), might also be expected in Phetchaburi and Prachuap Khiri Khan provinces.

The herpetology of the hilly or mountainous areas of Western Thailand is largely unprospected. However, recent investigations in the regions of Kanchanaburi and Chiang Mai suggest that the long mountain range bordering western Thailand is of major biogeographical importance in allowing northern taxa occurring in the elevated areas of southern China, northern Vietnam and Myanmar to extend their range at considerable distance towards the south. This part of western Thailand will undoubtedly reveal taxa new for the country, notably among the colubrid fauna. A recent and interesting example, which sheds light on the zoogeographical affinities of the area, can be found in the discovery of the typical Indo-Himalayan taxon, *Amphiesma bitaeniatum* (Wall, 1925) in Doi Inthanon National Park, Chiang Mai Province (David and Pauwels, 2000: 89).

In conclusion, we would like to emphasize again the fact that, in spite of numerous contributions by notable herpetologists such as M. A. Smith and E. H. Taylor, the herpetofauna of Thailand, with the exception of rather limited areas, remains very poorly known. Additional herpetological surveys must obtain adequate local samples and deposit these vouchers in research/museum collections that are accessible to researchers.

#### ACKNOWLEDGEMENTS

We warmly thank Colin McCarthy (BMNH) for the loan of specimens, Georges Lenglet (IRSNB) for working facilities and critical review of the manuscript, and Frédéric Chérot (Université Libre de Bruxelles) and Van Wallach (Cambridge, MA), for constructive discussions. Renaud Boistel (Paris) kindly photographed the specimen.

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*Received: 3 April 2001.*

*Accepted: 30 June 2001.*