



A New Locality for the Elusive and Endemic Yellow-Spotted Wolf Snake (*Lycodon flavomaculatus* Wall 1907), with Notes on Distribution and Habitat

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Seven species of Wolfsnakes (*Lycodon* Boie 1827) occur on the Indian mainland (excluding the northeastern region): Common Wolfsnake (*L. aulicus* Linnaeus 1758), Yellow-collared Wolfsnake (*L. flavicollis* Mukherjee and Bhupathy 2007), Yellow-spotted Wolfsnake (*L. flavomaculatus* Wall 1907), Twin-spotted Wolfsnake (*L. jara* Shaw 1802), Mackinnon's Wolfsnake (*L. mackinmoni* Wall 1906), Northern Wolfsnake (*L. striatus* Shaw 1802), and Travancore Wolfsnake (*L. travancoricus* Beddome 1870). The natural history and geographical distribution of the Yellow-Spotted Wolfsnake (*L. flavomaculatus*) are much in need of further investigation. Since the initial description, no significant study has been undertaken on this species, although Captain (1999) addressed issues related to identification.

Wall (1907) first recognized *Lycodon flavomaculatus* as a distinct species. Previously, Boulenger (1893) had considered it a mere color variant of *L. aulicus*. Wall (1907) himself regarded initially deposited specimens as color variants of *L. jara* until he received a live specimen representing a specific population from “Dharwar” (= Dharwad, Karnataka, India), which is the type locality of *L. flavomaculatus*. Additionally, he mentioned other important localities, which included Sangli, “Kirkee” (= Khadki), “Poona” (= Pune District), “Nasik” (= Nashik District of Maharashtra), and “Fyzabad” (= Faizabad District of Uttar Pradesh). Recently, Wallach et al. (2014) treated Fyzabad as an invalid type locality. Still, this species has been reported with confidence from at least four states (Faizabad, Uttar Pradesh is yet in question), which include the following localities with districts referring to the smallest unit of each locality: Dharwad of Karnataka (Wall 1907), Sangli, Pune, and Nashik (Wall 1907); Buldhana and Vidarbha (Wall 1923); Amravati, including Melghat (Pradhan 2005; Nande and Deshmukh 2007); Raigarh (Walmiki et al. 2011); Satara (Chikane and Bhosale 2012);

Solapur (Srinivasulu et al. 2014) and Nagpur (Deshmukh et al. 2015) of Maharashtra; Bhanvagar and Vadodara (Vyas and Upadhaya 2008) of Gujarat. Srinivasulu et al. (2014) tabulated (p. 28) three additional localities from Madhya Pradesh (Balaghat and Mandla) and Chattisgarh (Sarguja) in a personal communication to Sanjay Thakur. However, in another part of the document (p. 55), the same species was treated as endemic to the Western Ghats and mentioned central Indian localities as unconfirmed. Despite having contradictory information, we list two localities in Madhya Pradesh (Balaghat and Mandla), as they are neighboring regions of documented localities for *L. flavomaculatus*. We express our doubts on the validity of Sarguja, Chattisgarh, which is far from the known distribution and lacks even photographic evidence; S. Thakur (pers. comm.) agreed. Apart from these, Murthy (1991) presented evidence for the presence of *L. flavomaculatus* in the Nilgiri Biosphere Reserve, Tamil Nadu, but these snakes were later shown to be *L. flavicollis* based on the original description by Mukherjee and Bhupathy (2007). Also, one of the early reports of *L. flavomaculatus* from Fyzabad (= Faizabad of Uttar Pradesh) is either disregarded by the majority of subsequent workers or discussed as “Oudi” (= Awadh?), a term used to cover a large geographical area. At this time, we refrain from commenting on the validity of that locality and leave this question to future investigators.

On 6 and 9 September 2013, we captured two live *L. flavomaculatus* within 500 m of one another in the vicinity of the city of Vidisha, Madhya Pradesh, India (23.31°N, 77.49°E, 427 asl). We encountered the first individual at 2100 h on the first floor at a height of 4.2 m in an unused old building. We collected the other individual at 2145 h crossing an open grassy plain with scattered medium-sized rocks adjacent to an agricultural area. We took morphological data from both specimens and released them at the original sites of capture.



Fig. 1. A Yellow-Spotted Wolfsnake (*Lycodon flavomaculatus*) encountered at 2100 h on the first floor at a height of 4.2 m in an unused old building in the outskirts of Vidisha, Madhya Pradesh, India. Photograph by Arpit Jain.

The two unsexed adults (Fig. 1) exhibited the following characters: Length 520 and 410 mm, respectively; head depressed, clearly broader than neck; 9 supralabials, 3rd to 5th in contact with orbit; lower edge of both nasals covered by 1st supralabial; 1 well-defined loreal in contact with internasals on each side; 1 preocular; 2 postoculars; temporals 2 + 3; smooth dorsal scales in 17:17:15 rows; ventrals 168 and 180, respectively; cloacal divided; paired subcaudals 57 and 59, respectively. Head patternless, glossy brownish-black with yellowish-white lips; dorsum glossy brownish-black with a middorsal row of vibrant yellow buttercup-shaped spots extending from neck to tip of tail and aligned with discontinuous crossbands of yellow-white color extending onto flanks; venter glossy white with grayish outer margins on each ventral.

Vidisha is at an average elevation of 424 m in the Vindhya Mountain Range of the Central Indian Highlands. It is located 290 km north of the nearest known locality for *L. flavomaculatus* at Amravati in Maharashtra and about 307 km northwest of another known site in Balaghat in Madhya Pradesh. The land in the area is on a plain of mixed black soil with scattered medium-sized rocks and stones. During most months of the year, this type of soil is dry and develops cracks sufficiently deep to provide refugia for small burrowing rep-

tiles and other animals. The habitat extends throughout the city and into nearby rural and agricultural areas.

By updating our knowledge of the distribution of *L. flavomaculatus*, now known to cover most of the Deccan Plateau (especially the north-central portions), the semi-arid zone of northwestern India (in Gujarat), and parts of the Central Indian Highlands, we can begin to draw some conclusions regarding the habitat of the species. With a total of 15 or 16 acknowledged locations, we see no correlation between the range of the species and the Western Ghats. The localities of Dharwad, Sangli, and Satara are situated at the eastern edge of the Western Ghats, a region laying largely in the rainshadow of the Western Ghats and characterized by low rainfall, a less humid climate, and a largely xeric-adapted flora. Similarly, other localities in Maharashtra (Amravati, Nashik, Pune, Buldhana, Raigarh, Sholapur, and Nagpur) and those in Gujarat, Madhya Pradesh, and even the questionable locality in Chattisgarh are known for a relatively dry climate and semi-scrub or dry-deciduous forest. Consequently, we conclude that the species is most abundant in dry grasslands or on plateaus at low or moderate elevations, as opposed to the higher elevations of the Western Ghats that are subjected to at least seasonally heavy rainfall. Although most references to the



Fig. 2. Habitat of the Yellow-Spotted Wolfsnake (*Lycodon flavomaculatus*) from the outskirts of Vidisha, Madhya Pradesh, India. Photograph by Arpit Jain.

species associate it with the Western Ghats and surroundings, the distribution of this species is largely restricted to the eastern edge of the Western Ghats and extends to a much wider area of north-central India with comparatively little rainfall, low humidity, and generally drier climates. That the species' range extends above the Gangetic Plains and into the Thar Desert seems unlikely.

The macrohabitat of *L. flavomaculatus* appears to consist primarily of rocky terrain within semi-scrub, grasslands, unused agricultural lands, and dry deciduous forests. As is documented for other Indian species of *Lycodon* and clearly indicated by our discovery of a snake in an abandoned building, this species readily exploits urban environments and often is encountered in houses or other human structures. Other aspects of the natural history of *L. flavomaculatus* remain largely unknown and considerable work remains in order to fill remaining gaps in its known range and determine whether its distribution extends farther into northern and eastern India.

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