



## New site record of *Ichthyophis kodaguensis* Wilkinson et al., 2007 (Amphibia: Ichthyophiidae) in the Western Ghats, India

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The Caecilian amphibian *Ichthyophis kodaguensis* was recently described by Wilkinson, Gower, Govindappa and Venkatachalaiah (2007) on the basis of seven specimens in the collection of the Bombay Natural History Society (BNHS), Mumbai. Out of seven, six of the type specimens were collected from Venkidds Valley Estate (12.26193°N & 75.689246°E), Kodagu, Karnataka State, India in 2002 and for the other type material the collection locality is not precise, but mentioned was the Western Ghats region

of Karnataka and Kerala between 2001 and 2003 (Wilkinson et al. 2007). Based on a single collection of *I. kodaguensis* in 2006 February Molur & Molur (2011) reported this species from Rainforest Retreat, Coorg, which is 30km north of type locality. The description of *I. kodaguensis* increased the striped species of *Ichthyophis* in the Western Ghats to four in number with *I. beddomei* (Peters), *I. tricolor* (Annandale) and *I. longicephalus* (Pillai) being the others. Availability of specimens in the museum for the study of caecilians is always challenging for the researchers (Gower et al. 2011). All the striped forms of *Ichthyophis* available in the Western Ghats are known by a good number of specimens except for *I. longicephalus* which has only two specimens in the museum and that too in a poor state of preservation (Pillai & Ravichandran 2005; Wilkinson et al. 2007).

For any further taxonomic and distributional details of these striped forms of *Ichthyophis* we suggest to refer to Bhatta (1998), Pillai & Ravichandran (2005) and Wilkinson et al. (2007). Against this backdrop a new report of the described species from new geographical locations adds more into the extended precise range and gives a better understanding of metric and meristic variability within the species.

On 18 June 2006, during the search for the secretive limbless amphibians on a good rainy day in the abandoned mixed orchard, predominantly with coffee plantations at Basarekattae (13.34602°N & 75.356092°E) (Fig. 1), Koppa Taluk, Chickmagalur District, Karnataka State, we encountered three egg clutches of which one was with a striped mother. In the nearby area we got two more striped forms which were identified as *Ichthyophis beddomei* and one individual of *Gegeneophis carnosus*. The external appearance and the colour pattern of the caring parent superficially resembled *I. beddomei* but with traceable differences.

We made further samplings on 25<sup>th</sup> June 2006, a rainy day, for detailed studies from the adjacent coffee plantation which was 200m from our earlier study site. During this search we encountered four *Gegeneophis carnosus*, one striped form of *Ichthyophis* and an egg clutch without a caring parent. The striped form of *Ichthyophis* was collected for further studies.

Both collection habitats were from less attended

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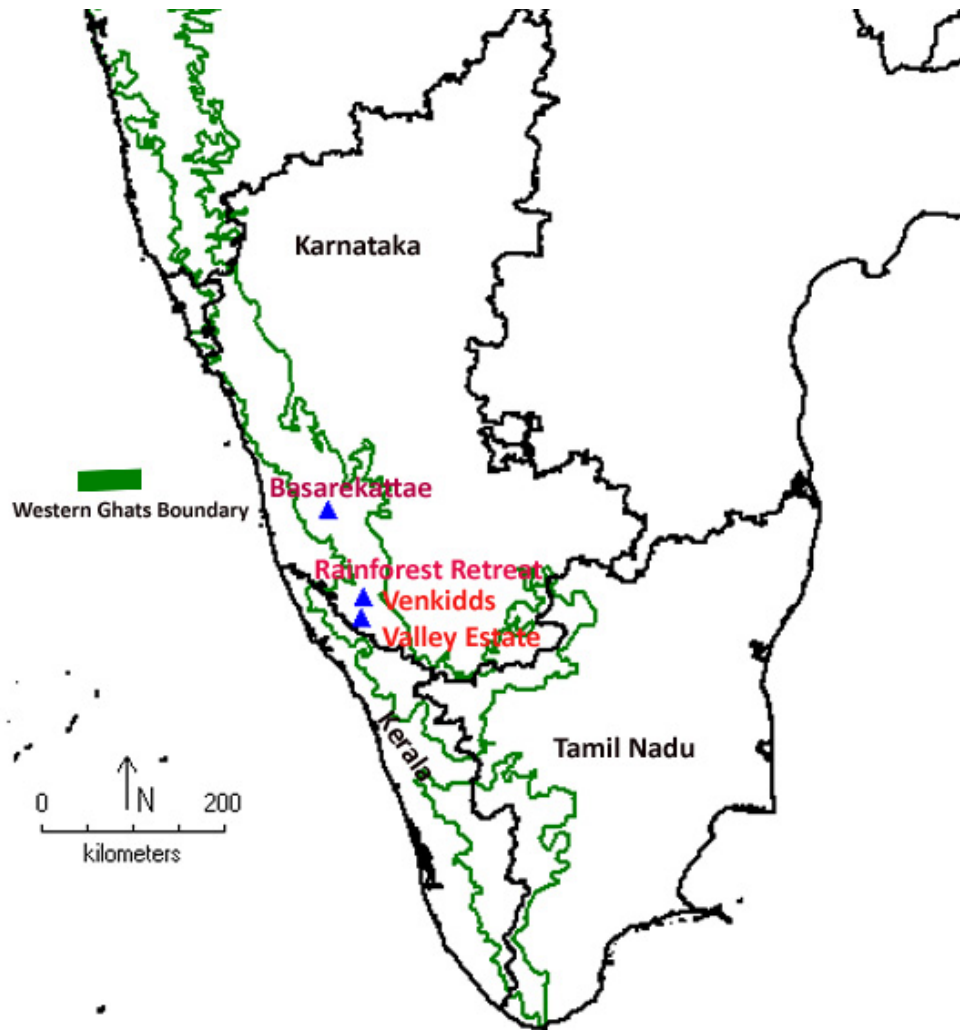


Figure 1. Distribution details of *Ichthyophis kodaguensis* in Western Ghats

coffee plantations with good canopy and perennial source of water with humus rich black soil supporting a good earthworm population.

Meristic and metric data of the two above specimens collected did not fit into the key provided by Pillai & Ravichandran (2005); but matched the recent key provided by Wilkinson et al. (2007) for *I. kodaguensis* (Image 1). Hence we confirmed the identity as *I. kodaguensis*, with the following diagnostic characters of Wilkinson et al. (2007); an *Ichthyophis* having a total length ranging from 232 to 265 mm (Table 1), with narrow lateral yellow stripes extending from close to eye to level of vent, broken across collars, weakly indicated on lower jaw; body uniformly dark chestnut brown above and paler lilac grey-brown below; body sub-cylindrical, dorsolaterally compressed, tapering towards the vent with a small terminal cap; sub

terminal snout projecting slightly beyond the mouth; eyes surrounded by a narrow whitish rim; tentacular aperture close to eye (1.6–2.0 mm) than naris (2.8–3.0 mm), visible dorsally and more clear in lateral view; teeth small, bicuspid with strongly recurved apices and the dentaries are slightly larger than others; annular counts range 307 and 309; in life dorsally uniform dark chestnut brown, snout anterior to eyes are slightly paler in colour (Image 1), ventrally fleshy brown, in lateral position narrow longitudinal stripes of metallic yellow with irregular wavy margins, width of the stripe narrow down both anteriorly towards head and posteriorly at the vent; anteriorly yellow lateral stripe appears as a distinct spot on the first collar and latter tapers along the upper jaw fading out at the level of eye, but weakly indicated in the lower jaw merging with the whitish lip border; posteriorly, stripes terminate quite abruptly



Image 1. *Ichthyophis kodaguensis* in life from Basarekattae, Western Ghats

Table 1. Morphometric and meristic details of *Ichthyophis kodaguensis* from new locality and type locality, Western Ghats.

Reg No.	ZSI/WGRC/ VIA/645A	ZSI/WGRC/ VIA/645B	4179*	4180*	4181*	4182*	4183*	4184*	4185*
Total length	265	232	267	269	247	262	274	268	158
Head length	8.0	7.0	5.3	8.3	8.0	8.4	9.0	-	5.9
Head width at jaw angle	7.8	6.4	7.5	7.4	7.3	6.7	7.8	-	5.3
Distance between nostrils	2.0	1.6	2.1	2.1	2.1	2.1	2.1	-	1.6
Distance between tentacles	6.0	5.0	5.7	5.2	5.2	5.0	5.3	-	3.9
Distance between tentacle and snout tip	4.5	4.0	4.5	3.3	3.6	3.5	4.3	-	3.2
Distance between tentacle and jaw angle	4.0	3.6	4.7	4.5	4.6	4.6	5.1	-	3.5
Distance between tentacle and nostril	3.0	2.8	2.9	2.6	2.5	2.7	2.5	-	1.9
Distance from eye to tentacle	2.0	1.6	1.9	2.0	1.7	1.7	2.0	-	1.3
Total number of primary annuli	307	309	295	278	292	306	305	299	284
Tail folds	7	7	5	5	5	5	5	5	5
Number of premaxillary-maxillary teeth	48	46	48	43	45	42	49	48	38
Number of vomeropalatine teeth	47	48	50	43	47	44	50	52	41
Number of dentary teeth	44	43	40	42	38	39	43	44	33
Number of splenial teeth	28	27	26	25	26	28	31	30	-

\* data from Wilkinson et al. 2007

on anterior margin of first complete annulus anterior to vent.

The morphological and morphometric data provided from the new locality for *I. kodaguensis* adds more into the variability in meristic and metric data within the species. Wilkinson et al. (2007) collected several specimens of the species from an agricultural habitat in a single day; Molur & Molur (2011) reported this species from organic cardamom and coffee plantations in Coorg; notably for our collection habitat preference was in areca orchard/coffee plantations, which further aid in understanding the biology of the species. Also our observation for *I. kodaguensis* extends the range of distribution to about 125km aerially north of type locality without much difference in elevation. The materials studied are deposited in the collection of the Zoological Survey of India, WGRC, Kozhikode.

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