

FIRST REPORT OF PRESPAWNING AND SPAWNING BEHAVIOUR IN *Ichthyophis* cf. *MALABARENSIS* (AMPHIBIA: GYMNOPTIONA)

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Gymnophiona, one of the three extant orders of class Amphibia, comprises a group of limbless, girdleless, burrowing amphibians with an elongated body (Pillai & Ravichandran, 1999). Their subterranean habits make them difficult to find and as a result, general information like the reproductive mode remains unknown for many caecilian species (Gower & Wilkinson, 2005). Information on caecilian life history is important not only for improving understanding of amphibian life history evolution, but also for developing management strategies for conservation. Caecilians have a variety of reproductive modes including oviparity with aquatic larvae, oviparity with direct development, and viviparity (Wilkinson & Nussbaum, 1998). In India, all caecilian species known till date are oviparous no viviparous species are known (Ravichandran, 2004).

In India the genus *Ichthyophis* is represented by 10 species (Pillai & Ravichandran, 1999; Ravichandran, 2004). Landmark studies that describe life history trends in *I. glutinosus* (Seshachar, 1933), *I. beddomei* (Bhatta, 1999) and *I. malabarensis* (Seshachar *et al.*, 1982; Balakrishna *et al.*, 1983; Bhatta, 1999) have provided information regarding mate recognition, courtship, copulation, egg clutch size, parental care and egg hatching. However, all these studies report their observations based on collected females with eggs and not of spawning. In this report we have described the spawning behaviour of *Ichthyophis* species. This species, collected from Patan, Koyana region, Satara district, Maharashtra (17°23'N-73°53'E), northern Western Ghats, India, superficially resembles *I. malabarensis* (Taylor).

On 20 July 2005 five individuals of *Ichthyophis* cf. *malabarensis* species were collected from Patan between 2200 to 2300hr and were transported to the laboratory. Out of these one female was found to be sluggish in comparison to the rest. We suspected that this might be a gravid female. This female was isolated and kept separately. On 21 July this female showed marked abdominal swelling in the middle section of the body. The female lay idle and upon disturbance showed very little movement. The swelling revealed lines like scratch marks on the body and reddening of the ventral body surface (Image 1^w). This female made repeated trips to the surface. On the

morning of 22 July the female showed extraordinary swelling of the tail and was completely still. On the same day at 1700hr, a transparent membrane emerged out of the vent (Image 1^w), through which the cloaca of the female could be seen. Eggs were laid between 2300 to 0600hr on the night of 23. The female was found coiled around the eggs. There were about 30 to 40 eggs (the clutch was not disturbed to count the exact number of eggs). Further observations on egg morphology, hatching of eggs and embryo development are discussed in another manuscript under preparation.

To our knowledge this is the first report on prespawning behaviour in Indian caecilians. Bhatta (1999) has mentioned egg laying in *I. beddomei* where the female *I. beddomei* took nearly 36 hours for the complete release of 23 eggs. On the other hand *I. cf. malabarensis* took eight hours for the release of 30 to 40 eggs. This suggests variation in life history within the genus *Ichthyophis*.

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^w See Image 1^w in the web supplement at www.zoosprint.org