



Notes on Copulation in Banded Kraits, *Bungarus fasciatus* (Schneider 1801)

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Although the diverse breeding tactics of snakes have garnered considerable research attention (Shine 2003), details have yet to be elaborated in many species. So far, many aspects of reproductive biology have been described among elapids (e.g., Tam et al. 1969; Lance 1976; Shine 1977; Shine and Keogh 1996; Shine et al. 2007; Marques et al. 2013). However, reproductive data on snakes in the genus *Bungarus* focuses almost entirely on post-mating aspects such as nesting, oviposition, and morphometrics of eggs and neonates (e.g., Evans 1905; Webb-Peploe 1946; Soderberg 1973; Whitaker 1978; Daniel 2002; Chanhom 2013; Knierim et al. 2019; Ray et al. 2020; Biakzuala et al. 2023), leaving many behavioral aspects of mating unrepresented. Herein we report copulation in the Banded Krait (*Bungarus fasciatus*), based on a single observation from northern West Bengal, India, supplemented by crowdsourced observational data. Despite a wide distribution throughout most of southern and south-eastern Asia (Biakzuala et al. 2023), this species is nowhere abundant (Stuart et al. 2013), which perhaps explains the lack of qualitative data on reproduction. All relevant photographs were submitted as photographic vouchers to the Zoological

Reference Collection, Lee Kong Chian Natural History Museum, National University of Singapore.

At 1747 h on 19 September 2023, SD was called to relocate a pair of snakes from a residence on Babupara Road, Haldibari, Coochbehar District, West Bengal (26.33507, 88.77780). The snakes turned out to be a mating pair of *Bungarus fasciatus*. The snakes differed substantially in size, total length of the female ~0.9–1 m and that of the male >1.5 m. The pair was in a secure refuge with no contact or entanglement of bodies (Fig. 1; ZRC(IMG) 2.627). The female’s tail was elevated, possibly to assist with cloacal gaping. Courtship rituals (see Carpenter 1977) could not be observed. Mating reportedly began around 1700 h and ended at ca. 2000 h with visible separation of the genitalia. The pair remained immobile until 2218 h before being captured and relocated.

On the same date, we crowdsourced a photograph taken by Mr. Sunam Barua in Raujan, Chattogram, Bangladesh (22.45096, 91.97550) that depicted the juxtaposed tails of two Banded Kraits (Fig. 2; ZRC(IMG) 2.628). The two snakes of approximately equal size were well-hidden between



Figure 1. A pair of Banded Kraits (*Bungarus fasciatus*) copulating under a makeshift platform for holding wooden planks in Coochbehar, West Bengal, India. Photograph by Suman Das.



Figure 2. Juxtaposed tails of two Banded Kraits (*Bungarus fasciatus*) in a dwelling in Chattogram, Bangladesh. Photograph by Sunam Barua.



Figure 3. A pair of Banded Kraits (*Bungarus fasciatus*) copulating in an open courtyard in Alipurduar District, West Bengal, India. Photograph by Manobendro Guha.

some old furniture and garbage in the kitchen of a village house at ca. 0730 h. One moved away at ~0900 h and the other emerged from the refuge 12 minutes later. Despite the apparent caudal attachment, we could not confirm that this observation was copulation. Instead, a recently mated pair taking refuge or resting together (as in the previous observation) is a more plausible explanation.

In October 2013, we crowdsourced an undated observation recorded by Mr. Manobendro Guha in Alipurduar District, West Bengal, India (GPS waypoints unavailable). While responding to a rescue call at ~2000 h, he encountered a mating pair of *B. fasciatus* (Fig. 3; ZRC(IMG) 2.673) and a single male in an open courtyard surrounded by rooms. Copulation between the two snakes of about equal size lasted nearly four hours. The single male allegedly attempted copulation but did not succeed. After the pair separated, all three snakes were relocated into suitable habitat.

These observations indicate that mating in *B. fasciatus*, at least in northern West Bengal and the Indo-Burmese region of Bangladesh, occurs in the early winter months.

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