

First record of a sea snake (*Lapemis curtus*) feeding on a Gastropod

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Lapemis curtus (Shaw, 1802) is a moderate sized (up to 900 mm) venomous sea snake (Elapidae: Hydrophiinae: Hydrophiini) distributed from the Southwest Pacific to the Persian Gulf (Heatwole 1999). This species is unusual among sea snakes in having a very broad diet and habitat utilization throughout its range. McCosker (1975) recorded nine families of fishes in the diet of *L. curtus* collected in Western Australia. In the Malaysian Peninsula, researchers examined 139 stomach contents and recorded 31 fish families of diverse body forms, in addition to occasional cephalopods (cuttlefish and squid) and an amphipod (Crustacea) (Voris, 1972; Glodek and Voris, 1982; Voris and Voris, 1983) in the diet. Lobo, Vasudevan and Pandav.(2005) examined 59 stomach contents from *L. curtus* collected in Goa (west Indian coast) and identified these as belonging to the fish families Clupeidae, Cynoglossidae, Terapontidae, Trichiuridae, and Sciaenidae. Another study in the same region reported a fish from the family Clupeidae in the gut of *L. curtus* (Padate, Baragi and Rivonker, 2009). In Sri Lanka, Sivaruban and Kuganathan (2008) examined the stomach contents of 39 individuals of *L. curtus* from Jaffna, the same region from which our specimen was collected; these contained fish from 5 families: Clupeidae, Carangidae, Engraulidae, Monodactylidae and Platycephalidae. These findings suggest that the diet of *L. curtus* spans that of hydrophiine sea snakes in general, with the exception of fish eggs, which are fed on by a few *Aipysurus* group species. Several rear-fanged aquatic snakes (Homalopsidae) are known to feed on crustaceans (Murphy, 2007), but we can find few records of durophagy in hydrophiine sea snakes:

Minton (1966) reported 'several large prawns' in the stomach of a single *Enhydrina schistosa* specimen from Pakistan; McCosker (1975) recorded a bivalve (*Lima* species) and a reef shrimp in the gut contents of *Aipysurus laevis* from Western Australia; and Voris recorded an amphipod of unspecified size in the gut of a *Lapemis hardwicki* (now *curtus*) (Voris, 1972). In this short communication, we report the first observation of a gastropod in the diet of a hydrophiine sea snake, *L. curtus*.

During an ongoing island wide survey on the marine snakes of Sri Lanka, we observed a gastropod (*Babylonia spirata* Linnaeus, 1758; Family: Buccinidae) measuring 51 mm shell height and 32 mm shell width in the stomach (Figure 1[B]) of a male *L. curtus* (Figure 1[A]) of a total length of 804 mm (Snout to vent length – 721 mm, Tail length – 83 mm). This specimen was trapped in a fishing net (gill net) at Valvettithurai (North Jaffna peninsular, Jaffna District, Sri Lanka) on the 12th of March 2010. The specimen bearing field tag number KLS 0048, is temporarily kept in the private collection of the first author and will be deposited in the Zoology Museum of the Wildlife Training Center in Girithale, Sri Lanka upon completion of our study. The stomach of the snake was empty with the exception of the gastropod, the flesh and shell of which was only partially digested (Figure 1[B]). We interpret this to mean that the gastropod was not a secondary prey item (i.e. that was present in the gut of a fish that had been eaten by the snake), thus was deliberately ingested by the sea snake. The gastropod had been swallowed the apex first (Figure 1[C]). We examined 21 other *L. curtus* specimens from different localities around Sri Lanka. Of these, 17 (80.95%) contained stomach contents. In eight (47.06%) specimens the contents were unidentifiable due to complete digestion; eight more specimens (47.06%) had partially digested gut contents and all of these contained fish remains.

Understanding the ecological aspects of the mollusk will provide some insight into the feeding habitat of the particular sea snake. The gastropod was identified as the Spiral Babylon (*Babylonia spirata* Linnaeus,

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Figure 1. [A] *Lapemis curtus* KLS 0048 from Valvettithurai, Sri Lanka ; [B] the injected gastropod (*B. spirata*) ex-situ; [C] The injected gastropod (*B. spirata*) in-situ in *L. curtus* stomach (Photo: A. de Silva).

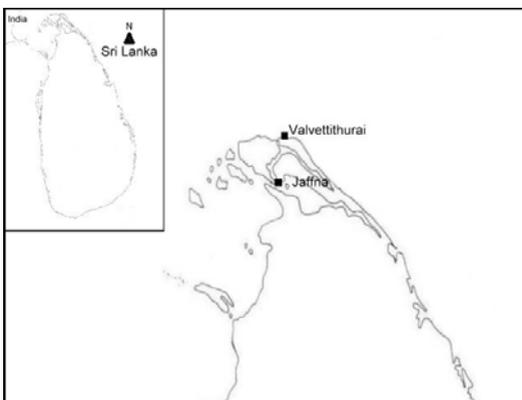


Figure 2. Valvettithurai, Sri Lanka: collection locality of the *Lapemis curtus* specimen with a gastropod in the stomach.

1758; Family; Buccinidae) and is a carnivorous benthic scavenger, feeding on worms, other mollusks, dead fishes and crabs (Siddiqui *et al.*, 2007). This gastropod is known to occur on muddy bottoms down to 60 m and coral bottoms of the infralittoral zone (Siddiqui *et al.*, 2007, Abbott and Dance, 1982). Fernando (personal communication, 2010) has collected *B. spirata* as bottom-set net by-catch at Kalpitiya (Puttlam District, Sri Lanka) and Beruwela (Kalutara District, Sri Lanka).

Feeding on gastropods has not been previously reported for hydrophiine sea snakes despite detailed dietary analyses for many species, including *Lapemis curtus* (e.g. Voris and Voris, 1983; Lobo, 2006). Given the size of the gastropod, its largely undigested state,

and the absence of other stomach contents, it is likely that it was deliberately ingested by the snake. It is unlikely that gastropods form a significant component of the diet of *L. curtus*. However, further examination of more specimens is needed to determine whether gastropod-feeding is a recurring behaviour for *Lapemis* in the Jaffna area.

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