

AN OBSERVATION OF CRAB PREDATION BY A GERARD'S WATER SNAKE, *GERARDA PREVOSTIANA* (REPTILIA: SQUAMATA: HOMALOPSIDAE) IN THE WILD AT SUNGEI BULOH, SINGAPORE

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INTRODUCTION

Gerard's water snake, *Gerarda prevostiana* (Eydoux & Gervais), is a semi-aquatic reptile that occurs in the mangrove forests of the Indo-Pacific, from the west coast of India eastwards to the Philippine islands (Murphy, 2007). It is uniformly olive-gray on the dorsum, and yellow on the sides and on the upper lips. The underside is pale brown with a blackish stripe along the middle. The maximum known total length of this species is 53 cm. In Singapore, it is uncommonly seen, and has been recorded along the northern coastline at Sungei Buloh and Pasir Ris (Baker & Lim, 2008). It is one of three locally occurring species of mangrove-dwelling snakes in the family Homalopsidae that eat crustaceans. The other two are Cantor's water snake, *Cantoria violacea*, and the crab-eating water snake, *Fordonia leucobalia* (see Karns et al., 2002).

The ecology and behaviour of these crustacean-eating snakes have been recently studied (Jayne et al., 2002; Karns et al., 2002). They were found to be strongly nocturnal and *Gerarda prevostiana* was never recorded to be active in the day (Karns et al., 2002). Gut analyses and observations in the laboratory of these three species revealed that *Cantoria violacea* feeds on snapping shrimps, *Fordonia leucobalia* on mangrove crabs in the inter-moult (hard-shelled) stage, and *Gerarda prevostiana*, exclusively on freshly moulted (soft-shelled) mangrove crabs (Jayne et al., 2002).

An individual of *Gerarda prevostiana* was recently observed feeding on a crab during the day at the Sungei Buloh Wetland Reserve, at the north-western corner of Singapore Island. This event was recorded on video, and reported herein. The two photographs (Figs. 1, 2) in this article are extracted from the video footage.

DETAILS OF SIGHTING

On 1 Jul.2010, at around 0945 hours, an individual of the Gerard's Water Snake, *Gerarda prevostiana*, of about 40 cm total length, was observed off the boardwalk that meanders through a patch of mangrove forest behind the Visitors' Centre of the Sungei Buloh Wetland Reserve. The snake was found out of the water, on the mangrove mud just beyond the boardwalk near Shelter MB1. It had struck a mangrove crab, apparently a *Perisesarma eumolpe*. The identity of the crab could not be confirmed as its body was covered in mud and blocked by the snake.

The body of the snake was more or less extended after capturing the crab (Fig. 1), but began coiling around the crab before ingesting it (Fig. 2). The coil appeared to hold the prey in place while the snake manoeuvred itself into a better position and proceeded to work its jaws over the victim. As the crab was being swallowed, the trachea of the snake was seen extended to the right, outside of its mouth for a few seconds. The trachea was probably extended to enable the snake to breathe while the crab was being consumed. It took the snake about 1 minute to completely swallow the crab.

Shortly after the snake had consumed its prey, another *Perisesarma eumolpe* was seen approaching it. The snake initially ignored the crab, but subsequently moved away to avoid it. A few *Perisesarma eumolpe* individuals were also feeding in the vicinity, but the snake did not respond to them, nor were the crabs disturbed by its presence. The snake was last seen moving into a nearby burrow situated at the base of a mud-lobster mound.

DISCUSSION

The feeding behaviour of *Gerarda prevostiana* has been observed and filmed in captivity under controlled conditions. These snakes are known to readily attack and consume freshly-moulted crabs, but pay no attention to hard-shelled individuals (Jayne et al., 2002). Thus it is likely that the crab victim was a freshly moulted individual whose shell was



Fig. 1. *Gerarda prevostiana* striking and capturing a mangrove crab.

still soft. The other crabs in the vicinity ignored by the snake are assumed to be hard-shelled individuals. This appears to be the first reported in-situ observation of a *Gerarda prevostiana* feeding under natural conditions.

Gerarda prevostiana seems to be the only snake known to tear its food into pieces small enough to be swallowed. It does so by forming a loop of its body around the prey, and pulling the prey with its mouth through the loop (Jayne et al., 2002). The crab in the present observation could fit comfortably in the mouth of the snake, and was thus swallowed intact.

The other point of interest is that the feeding activity occurred in the day and out in the open. On 7 Aug.2010, another *Gerarda prevostiana* was found exposed in the morning, at the nearby Lim Chu Kang mangrove forest (N. Sivasothi, pers. comm.). Until the present observations, *Gerarda prevostiana* individuals in the wild were encountered in the open on mud-lobster mounds only at night, and thus believed to be strictly nocturnal.

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Fig. 2. The crab is firmly held within a coil of the snake's body while the snake proceeded to swallow it.