

**ATTEMPTED PREDATION ON A TADPOLE BY A PAINTED BRONZEBACK,
DENDRELAPHIS PICTUS (REPTILIA: SQUAMATA: COLUBRIDAE)**

T. M. Leong^{1*}, C. Yeong² and R. Subaraj³

¹Central Nature Reserve, National Parks Board,

601 Island Club Road, Singapore 578775, Republic of Singapore

²Singapore Zoo, 80 Mandai Lake Road, Singapore 729826, Republic of Singapore

³Blk 127 Tampines St 11, #09–444, Singapore 521127, Republic of Singapore

(*Corresponding author: leong_tzi_ming@nparks.gov.sg, banjarana@gmail.com)

INTRODUCTION

The painted bronzeback, *Dendrelaphis pictus* (Gmelin) is regarded as the most common and widespread of the bronzebacks (genus *Dendrelaphis*) in the Southeast Asian region (Cox et al., 1998). It has been recorded from Thailand, Cambodia, Vietnam, Southern China, Peninsular Malaysia, Borneo, Sumatra (including Pulau Bangka), Java, Bali, Lombok, Flores, Ambon, Timor, Sulawesi and the Philippines (Manthey & Grossmann, 1997). This diurnal species is known to prey upon lizards and frogs primarily, and full-grown adults may attain a total length of ca. 1 m (Baker & Lim, 2008). Here, we present convincing evidence of an unsuccessful attempt by a sub-adult snake in its efforts to swallow a comparatively large tadpole prey.

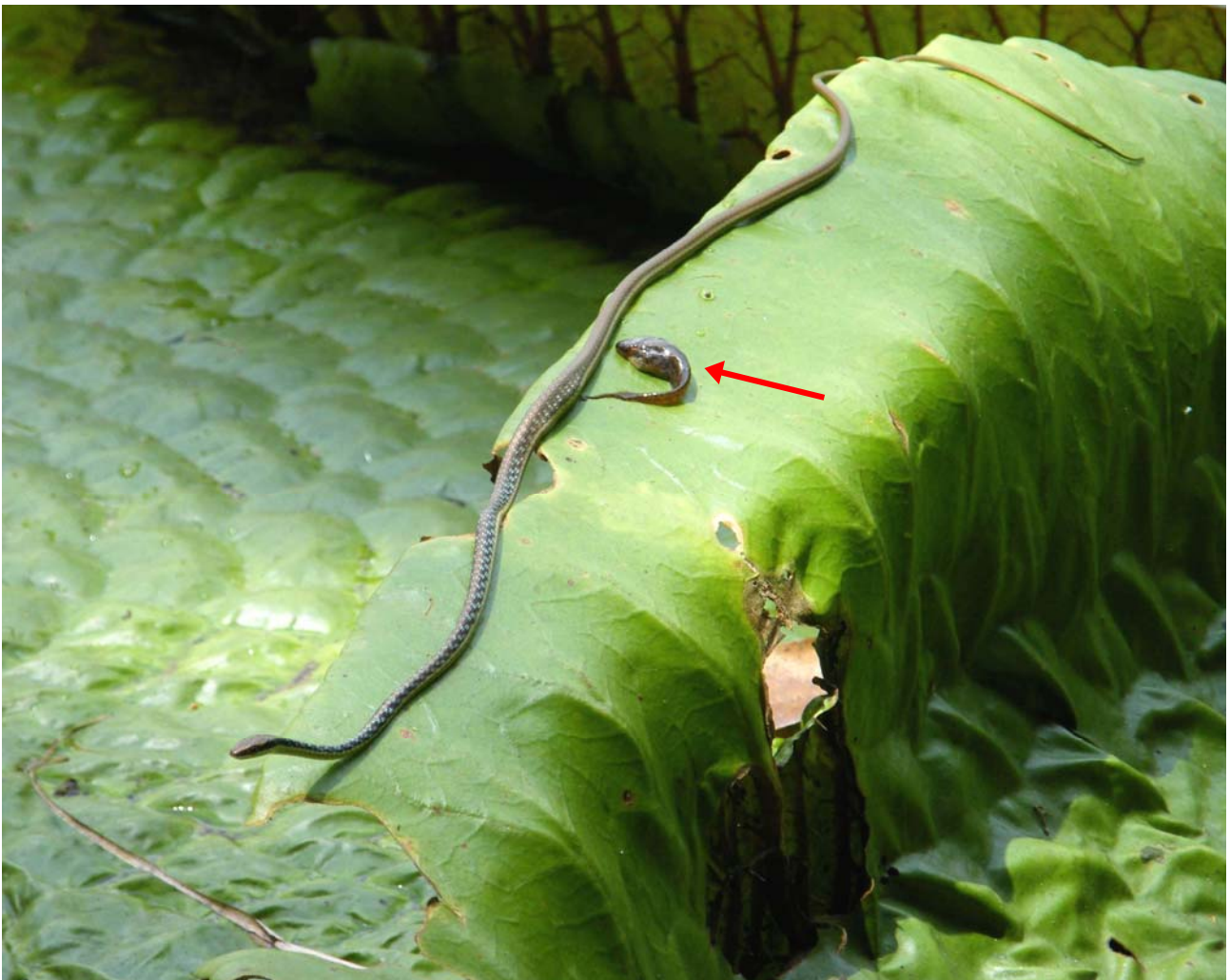


Fig. 1. A sub-adult painted bronzeback, *Dendrelaphis pictus* (total length ca. 50 cm) resting on an Amazon waterlily (*Victoria amazonica*) at a small pond within the Singapore Zoo, encountered on 16 Jul.2009 (ca. 1305 hours). Note the abandoned tadpole (arrowed) by its left flank, which must have been a recently targeted prey item. (Photograph by: Charlene Yeong).

OBSERVATIONS

While conducting a diurnal survey on the native, resident fauna within and around the compounds of the Singapore Zoo on 16 Jul.2009, a sub-adult painted bronzeback was sighted at the small, freshwater pond adjacent to the tropical crops area. The Singapore Zoo is situated amidst the forested Mandai area and is bordered by the Upper Seletar Reservoir. At the time of sighting (ca. 1305 hours), the snake was calmly outstretched upon a broad leaf of the Amazon Lily growing in the circular pond (diameter ca. 3 m) and basking in the afternoon sun (Figs. 1, 2). We immediately noticed a tadpole adjacent to the snake, at its left flank. This aroused our curiosity, as we wondered how this tadpole, with its aquatic habit, would have ended up on the leaf, only to be scorched by the sun!

The tadpole was identified as belonging to the common greenback, *Hylarana erythraea* (Schlegel) (Amphibia: Anura: Ranidae) and agreed with earlier larval descriptions and illustrations of this species (Leong & Chou, 1999: Fig. 11). Upon closer examination of this tadpole, we perceived clear signs that it had been a victim of a potential predator that had attacked it head-first. Firstly, the anterior portion of the tadpole was noticeably compressed and secondly, there was a clean, dorsal skin tear, which matched the outline of the snake's upper jaw (Fig. 3). By virtue of the available circumstantial evidence, we concluded, with reasonable confidence, that the adjacent painted bronzeback was the most likely predator suspect.

At the time of encounter, the tadpole's body was still slightly moist but was beginning to desiccate quickly. We estimated that the attempted predation might have occurred ca. 20–30 minutes prior to our arrival at the scene. After the supposed struggle to swallow the tadpole, the snake must have aborted its attempt and simply abandoned the injured prey by its side, then remained where it was to recuperate. Upon subsequent inspection of the snake, we estimated its total length to be ca. 50 cm (half of maximum attainable size) and its head width to be ca. 5–6 mm.

Not long after, yet another painted bronzeback was spotted crawling across another lily adjacent to the edge of the pond. However, this individual was significantly smaller and more slender (total length: ca. 20 cm) and when picked up, was found to have its umbilical scar still present on its posterior abdominal scales. This snake was determined to be a recent hatchling and possibly not more than a week old. It may have been drawn to the pond to drink, in the heat of the afternoon. Young snakes, such as this, provide us with a clear indication of the relative reproductive vigour and population health of this snake species.



Fig. 2. Lateral close-up of the sub-adult painted bronzeback (as in Fig. 1). (Photograph by: Subaraj Rajathurai).

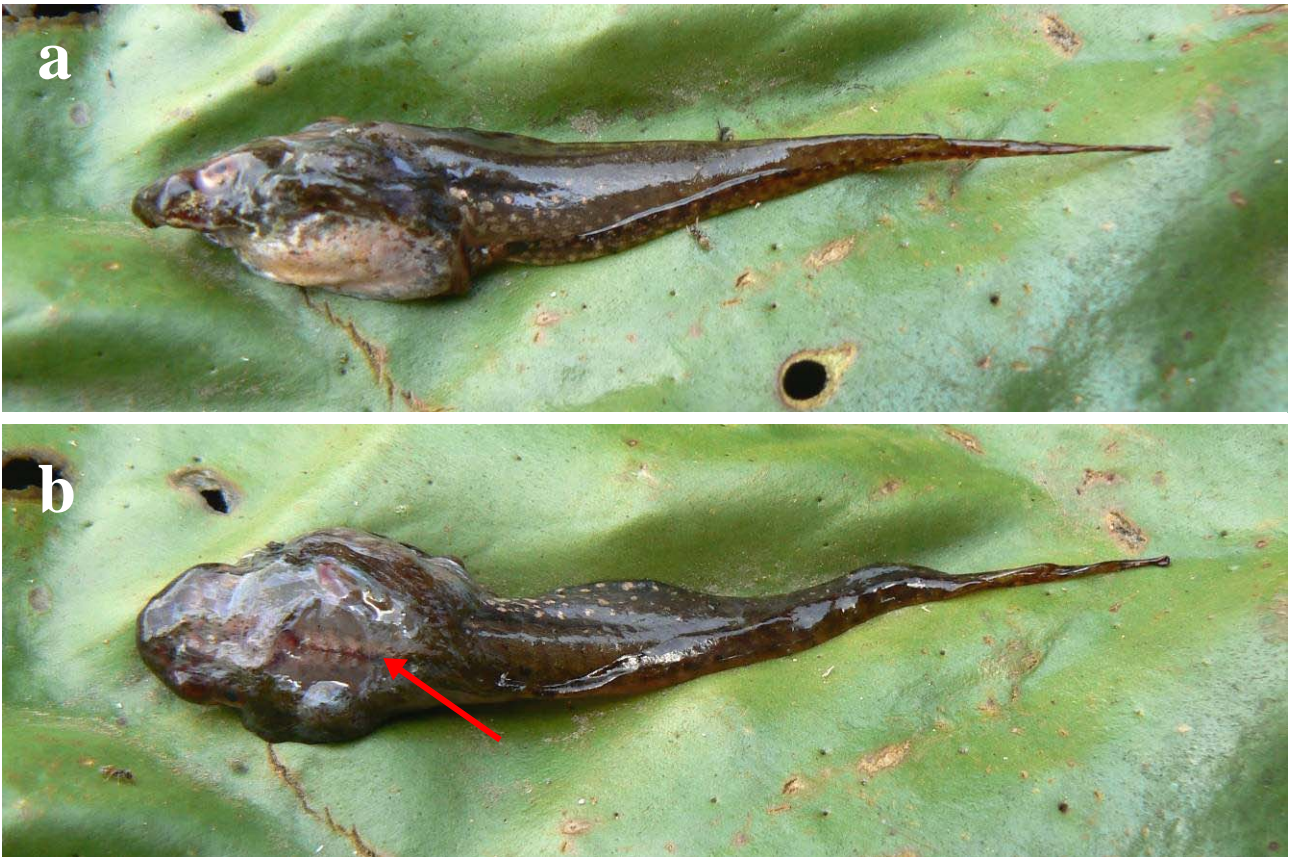


Fig. 3. Lateral (a) and dorsal (b) perspectives of the fatally wounded tadpole of a common greenback, *Hylarana erythraea* (ZRC.1.12430, Gosner Stage 38, total length: 54.3 mm). Note: (i) severely compressed head region and; (ii) shape of skin tear on dorsum (arrowed), which corresponded to the outline of the snake's upper jaw; clear evidence of a recent predation attempt. (Photograph by: Subaraj Rajathurai).



Fig. 4. An adult (left) and an emerging froglet (right) of the common greenback at the same pond in the Singapore Zoo, encountered on 26 Jul.2009 at 1305 hours. (Photograph by: Leong Tzi Ming).

The fatally injured tadpole was subsequently preserved as a voucher specimen at the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research (RMBR), National University of Singapore and catalogued accordingly (ZRC.1.12430). Under microscopic examination, the tadpole was determined to be at developmental stage 38 (according to Gosner, 1960). Measurements of the tadpole included its total length: 54.3 mm; body length: 18.3 mm; body width: 12.7 mm; body circumference: 29.5 mm. Hence, at its widest cross-sectional point, the mid-belly of the tadpole would have proved to be an impasse for the maximum attainable gape size of the sub-adult bronzeback predator. Nevertheless, it would certainly be possible for a full-grown painted bronzeback to consume a relatively mature common greenback tadpole. While tadpoles do not frequently feature on the menu of many snakes, there have been occasional reports of hunting for them when the opportunity arises (e.g., Tanaka, 2002).

During a subsequent nocturnal survey within the Singapore Zoo on 18 Jul.2009 (ca. 2100 hours), yet another sub-adult painted bronzeback (total length ca. 70 cm) was found sleeping on a treelet, ca. 2.5 m above the ground near the meerkats exhibit. Both diurnal and nocturnal sightings of this snake, and other indigenous, vertebrate wildlife within the zoo are encouraging signs that there are available habitats and ecological niches in a public attraction with extensive vegetation cover. Even the creation and maintenance of ponds of modest proportions have been immensely successful in sustaining resident species of frogs, such as the common greenback (Fig. 4), which also shares this space with other anuran species, such as *Limnonectes blythii* (Dicroglossidae), *Polypedates leucomystax* (Rhacophoridae), *Microhyla butleri*, *Microhyla heymonsi* (Microhylidae) and *Bufo melanostictus* (Bufonidae), as previously observed by the authors. Hence, the potential role of such manageable aquatic habitats as 'oases' for the native biodiversity and ecology should never be underestimated.

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