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The tadpole of *Ramanella palmata* (Anura: Microhylidae), a frog endemic to Sri Lanka

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Of the 107 species of amphibians known from Sri Lanka (Megaskumbura *et al*. 2009), the family Microhylidae is represented by 10 species (Pethiyagoda *et al*. 2006). The genus *Ramanella* Rao and Ramanna, 1925 is represented by four species in Sri Lanka (Pethyagoda *et al*. 2006). Except for *R. variegata* (Stoliczka, 1872), which is also found in neighboring India, the other three species are endemic to Sri Lanka. Larval stages and the breeding ethology of *R. obscura* (Guenther, 1864) and *R. nagaoi* Manamendraarachchi and Pethiyagoda, 2001 are well known (Morgan-Davis 1953; Meegaskumbura 2001; Manamendraarachchi & Pethyagoda 2001). Kirtisinghe (1958) briefly outlined the general morphology of the *R. palmata* tadpoles. Here we re-describe tadpoles of *R. palmata* highlighting some important characters that were initially not described by Kirtisinghe (1958), provide standard morphometric measurements of the tadpoles and also a photograph.

Tadpoles described in this account were collected from two small rock pools, adjacent to a stream, flowing close to a tropical montane forest in Seetha Eliya (elevation-1995m asl, Nuwara Eliya District) Sri Lanka on 19th May, 2008. The tadpoles were reared until metamorphosis and the metamorphs were identified using Manamendraarachcchi and Pethiyagoda (2001). *R. palmata* adults closely resemble *R. obscura* and the species differs from the latter from the following characters: fourth toe webbing to distal subarticular tubercle on the outerside in *R. palamata* vs fourth toe webbing to penultimate subarticular tubercle, antepenultimate subarticular tubercle, or between them on the outside in *R. obscura*. Furthermore, given that the tadpoles were collected at an elevation of 1995m asl verifies that the tadpoles in fact are *R. palmata* since *R. obscura* is never found in elevations above 1220m asl. They were fed with hard-boiled chicken egg yolk and dissolved powdered milk. The tadpoles were staged following Gosner (1960). Seven specimens from different larval stages were preserved in 10% Formalin solution as voucher specimens and were subsequently deposited in the Zoological section in the National Museum of Sri Lanka, Colombo (Gosner stage GS-25[n=3] : NH2007.11.01, GS-33,37,39: NH2007.11.02 and GS 43: NH.2007.11.03). The measurements and morphological characters were taken following Altig and McDiarmid (1999). Measurements were taken using a digital Vernier caliper to the nearest 0.01mm and rounded to the nearest 0.1 mm.

Definitions of the measurements: BL—body length, IOD—interorbital distance, MTH—maximum tail height, TAL—tail length, TL— total length, TMH—tail muscle height, TMW—tail muscle width.

Description of tadpole stages 33-39: Head-body region is wide, dorsally flattened and ventrally rounded. The maximum body-width is just posterior to the eyes. The nares are dorsal, without a raised rim and are closer to the tip of the snout than to the eyes. Eyes are lateral and visible from above but not from below. Interorbital distance is greater than inter-narial distance and IOD is 0.39 times the body length. The vent tube is positioned ventro-medially at the last third of the body length and oriented in posterior direction and entirely attached to the body. Spiracular opening is medial and opens at end of the body (Fig. 1[C]). The intestine is visible in living specimens as well as in the preserved specimens. The gut is arranged in two spirals, one longer thinner one on the left side and a shorter thicker one on the right. The mouth is dorso-terminal and lacks marginal papillae, labial teeth or hard beaks (Fig. 1[D]). The body is oval in shape in dorsal view (Fig. 1[B]). There are few lateral line pores present on the pre and post orbital area and also on sides of the body above the belly region. According to the classification of Altig & Johnston (1989) the tadpole has the body type of a lentic-suspension feeder.

The tail is equally thick as the body and the margins are gradually and convexly tapering in the distal third to a blunt tip. The origin of the dorsal fin is behind the end of the body at a distance roughly equal to one half of the inter-orbital distance. The dorsal fin is as deep as the caudal muscle only in the distal 4th of the tail. The origin of the dorsal fin is at the end of the body and is slightly deeper than the ventral fin. The myotomes of the tail musculature are moderately visible and V-shaped. The tail musculature gradually tapers from its proximal end to its distal end, reaching the tip of the tail. (Fig. 1[A])

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