

THE TADPOLE OF THE AUSTRALOPAPUAN FROG *RANA DAEMELI*. *Memoirs of the Queensland Museum* 32(1): 138. 1992:- The ranid frog *Rana daemeli* (Steindachner) is widespread in New Guinea and, in Australia, occurs in northern Queensland north of Townsville (Menzies, 1987; pers. obs.).

Little is known of the biology of this species. Zweifel (1980) and Menzies (1987) analysed calls of *R. daemeli* from Papua New Guinea, and Menzies (1987) described the form of the spawn. In this note I describe the tadpole of *R. daemeli* from northern Queensland.

Tadpoles were collected with a dip net and preserved immediately in 10% formalin, or returned to the laboratory where they were kept in glass aquaria and fed fresh algae. Measurements of preserved specimens were made using a dissecting microscope with an eyepiece micrometer. All measurements are in millimetres; those involving apertures were taken from the centre of the aperture. Terminology follows Altig (1970), and the staging system is that of Gosner (1960).

Tadpoles were collected in Melaleuca swamps and temporary and permanent streams between Ollera Creek, 63 km north of Townsville, and Cape Tribulation. Specimens were found primarily among debris and algae in the deepest sections of these habitats. Tadpoles and metamorphs have been collected during March, May and September, indicating that this species has an extended breeding season, or that larval development is extended.

A stage 36 tadpole is illustrated in Figure 1. Details of the oral disc are illustrated in Figure 2. A stage 36 tadpole has the following measurements: 59.6 total length, 22.0 body length, 6.4 basal tail muscle height, 5.9 basal tail muscle width, 4.0 maximum dorsal fin height located 14.8 from body terminus, 3.0 maximum ventral fin height located 16.8 from body terminus, 12.3 maximum body width, 10.2 maximum body height, 2.6 eye diameter, 7.3 interorbital distance, 3.8 internarial distance, 2.7 snout-naris, 7.0 snout-eye, 11.2 snout-spiracle, 4.2 naris-eye, 4.5 transverse oral disc diameter. Other major characteristics include: oral disc emarginate, oriented anteroventrally; marginal papillae large, in a single row laterally, two rows posteriorly, a wide gap anteriorly; papillae on posterior margin extremely elongated, forming a fringe along the posterior margin of the disc; submarginal papillae only at the corner of the jaws; spiracle short, sinistral, located ventrolaterally and oriented posterodorsally; vent tube dextral, attached to ventral fin, opening 4.0 from tail-body junction.

The tooth row formula is 2(2)/3(1). The A2 gap is wide, and the P1 gap extremely narrow. The keratinised jaw sheaths are narrow and serrated. The upper sheath is broadly curved, and the lower sheath broadly V-shaped. The eyes are dorsal. The nares are extremely small, and are covered with



FIG. 1. Lateral view of a stage 36 *Rana daemeli* tadpole. Scale bar = 15 mm.

FIG. 2. Oral disc of a stage 36 *Rana daemeli* tadpole. Scale bar = 1 mm.



skin in some specimens. The fins are low, tapering to a narrow but not sharp point.

In life tadpoles are heavily pigmented dorsally with gold and black, with a green tinge along the midline. Black pigmentation is more prominent laterally. Tadpoles are dark grey on the anterior portion of the ventral surface, and light grey with a purple tinge on the posterior portion of the ventral surface. Small clumps of gold pigment occur on the fins. A tadpole reared to metamorphosis was olive green dorsally and grey ventrally, weighed 1.42 g and was 24.3 mm in length. These tadpoles belong to the Benthic (Type 2: Profundal) ecomorphological guild of Altig & Johnston (1989). The typical ranid features of an emarginate oral disc and a fringe of elongated papillae along the posterior margin of the disc (Webb & Korky, 1977) should serve to distinguish this species from other Australian tadpoles so far described.

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