

Taxonomy of the freshwater crab *Coccusa cristicervix* Ng & Grinang, 2004 (Decapoda: Brachyura: Gecarcinucidae), with description of a new species of *Thelphusula* from Sarawak, Malaysia, Borneo

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Abstract. The taxonomy of the Sarawakian gecarcinucid freshwater crab *Coccusa cristicervix* Ng & Grinang, 2004, is revised with the recent discovery of males, and the species is transferred to *Thelphusula* Bott, 1969. The male abdomen, first and second gonopods are described and figured for the first time. A new species, *Thelphusula pueh*, is also described from swampy habitats in Kampung Sebako in Pueh, Lundu District, Sarawak.

Key words. Crustacea, Brachyura, Gecarcinucidae, taxonomy, *Thelphusula*, Sarawak, Malaysia

INTRODUCTION

The Bornean gecarcinucid genus *Thelphusula* Bott, 1969, has nine recognised species: *T. baramensis* (De Man, 1902), *T. buergeri* (De Man, 1899) (= *Gecarcinucus* (*Cylindrothelphusa*) *buergeri lebangensis* (Balss, 1937)), *T. dicerophilus* Ng & Stuebing, 1990, *T. granosa* Holthuis, 1979, *T. hulu* Tan & Ng, 1997, *T. luidana* (Chace, 1938), *T. sabana* Tan & Ng, 1998, *T. styx* Ng, 1989b, and *T. tawauensis* Tan & Ng, 1998 (cf. Tan & Ng, 1998; Ng et al., 2008). The distribution of the genus in Borneo appears to be confined to the northern half of the island, with *T. buergeri* found in central Kalimantan. On the other hand, the allied genus *Coccusa* Tan & Ng, 1998, established for *C. isophallus* Tan & Ng, 1998 (type species) and *C. adipis* (Ng & Wowor, 1990), occurs in eastern and western Kalimantan. The distributions of these taxa may not be real and merely a consequence of collecting efforts, with Sarawak and Sabah being relatively better surveyed. Species of *Thelphusula* and *Coccusa*, however, have very cryptic habits, being nocturnal and burrowers in swampy and/or well forested areas, and hence not easily collected (Tan & Ng, 1998; pers. obs.). More species can be expected to be discovered from Borneo.

Coccusa cristicervix Ng & Grinang, 2004, was described from the Bau area in western Sarawak on the basis of one adult female specimen. We have since collected more specimens of this species, and the male characters require that it be transferred to *Thelphusula*. We also describe a new species,

T. pueh, from Kampung Sebako, Pueh, Lundu District, in eastern Sarawak.

MATERIAL AND METHODS

The terminology used follows Ng (1988), with the abbreviations G1 and G2 used for the male first and second gonopods, respectively. Measurements provided (in millimetres) are of the carapace width and length, respectively. The Malay words Kampung and Gunung are used for village and mountain, respectively. The specimens are deposited in the Sarawak Biodiversity Centre (SBC), Kuching, Sarawak, Malaysia; and the Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum (ex Raffles Museum of Biodiversity Research), National University of Singapore.

TAXONOMY

Family Gecarcinucidae Rathbun, 1904

Thelphusula Bott, 1969

Remarks. *Thelphusula* Bott, 1969, was established with *Potamon* (*Geothelphusa*) *buergeri* De Man, 1899, as the type species. Bott (1969) recognised five other species in the genus as he defined it at the time: *Potamon* (*Potamonautes*) *baramensis* De Man, 1902, *Potamon* (*Geothelphusa*) *hendersonianum* De Man, 1899, *Potamon* (*Geothelphusa*) *kadamaianum* Borradaile, 1900, *Parathelphusa* (*Liothelphusa*) *luidana* Chace, 1938, and *Potamon* (*Potamon*) *melanippe* De Man, 1899 (see also Bott, 1970: 58). *Potamon* (*Thelphusa*) *bidiensis* Lanchester, 1900, was regarded as a junior subjective synonym of *Thelphusula melanippe*, while *Potamon kadamaianum* was treated as its subspecies by Bott (1970). Ng (1989a: 64) questioned Bott's (1970) concept of *Thelphusula* and argued that it should be separated into three distinct morphological groups. He disputed Bott's (1970)

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