

Taxonomy of the semiterrestrial crab *Lepidothelphusa cognettii* (Nobili, 1903) (Crustacea: Decapoda: Brachyura: Gecarcinucidae), with descriptions of five new species from Sarawak, Malaysia, Borneo

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Abstract. The taxonomy of the semiterrestrial gecarcinucid crab *Lepidothelphusa cognettii* (Nobili, 1903) from Borneo is revised. The identity of *L. cognettii* s. str. is clarified and five new species: *L. flavochela*, *L. limau*, *L. loi*, *L. padawan* and *L. sangon*, are described from southwestern Sarawak, Malaysia. The species are characterised by their diagnostic live colours, structures of their carapaces, chelae, male abdomens and male first gonopods. They also occupy geographically discrete ranges, sometimes with different habitats.

Key words. Decapoda, Gecarcinucidae, *Lepidothelphusa*, taxonomy, revision, mudstone, sandstone, Sarawak

INTRODUCTION

In studying the crustacean specimens of Borneo sent to him by Robert Shelford, curator of the Sarawak Museum from 1897 to 1904, Nobili (1903) recognised an unusual freshwater crab collected from 3000 feet high in Mount Penrissen which he identified as a new species, *Potamon* (*Geotelphusa*) *cognettii*. He remarked that the species can be distinguished from known Bornean freshwater crabs by its square carapace, the presence of a toothed projection on the chelipeds, and the disproportionately large adult male cheliped (Nobili, 1903: 18). Colosi (1920) later established a new genus, *Lepidothelphusa*, for the species. Bott (1970) highlighted the unusual-scissor blade like fingers of the chelipeds, and commented the species has relationships with the gecarcinucid genus *Phricotelphusa* Alcock, 1909, from Myanmar, Thailand and northern Peninsular Malaysia. He also added Bidi in Sarawak to the list of localities for the species. In discussing *Lepidothelphusa cognettii* (Nobili, 1903), Ng & Grinang (2004) noted that current records may involve more than two species, but they did not elaborate. Ng et al. (2008: 68) commented that the specimens from Bau (includes Bidi) was an undescribed species differing from the type species by the colour in life and form of the third maxillipeds and G1s. They also provided a photograph of a specimen from there.

Extensive collections in recent years from Kuching Division, Sarawak, have resolved the taxonomy of the species. Detailed descriptions and figures of *L. cognettii* s. str. and the five new species are provided. The habitat preferences and distributions of the species are also documented.

MATERIAL AND METHODS

The terminology essentially 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. Specimens examined are deposited in the Sarawak Museum (SM), Kuching, Sarawak; Sarawak Biodiversity Centre (SBC), Kuching, Sarawak; and the Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum (ex Raffles Museum of Biodiversity Research), National University of Singapore.

The G1 is a valuable character in separating the various species but has to be compared at the same orientation to make comparisons useful. In this paper, the G1s and G2s have been drawn from a standardised plane to ensure comparisons are accurate. The G1s of all *Lepidothelphusa* species are gently twisted so how they appear from dorsal and ventral views can be quite different in appearance. For example in *L. flavochela*, new species, the G1 appears almost straight from the dorsal view (Fig. 4A) but is gently curved from the ventral view (Fig. 4D).

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