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## The identity of the semiterrestrial crab *Terrathelphusa kuchingensis* (Nobili, 1901) (Crustacea: Decapoda: Brachyura: Gecarcinucidae), with descriptions of four new species from southwestern Sarawak, Borneo, Malaysia

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### Abstract

Four new species of semiterrestrial gecarcinucid crabs are described from limestone and sandstone habitats in southwestern Sarawak, Malaysia: *Terrathelphusa aglaia* n. sp., *T. cerina* n. sp., *T. kundong* n. sp., and *T. mas* n. sp. The taxonomy of *T. kuchingensis* (Nobili, 1901) is discussed, its precise identity ascertained from fresh material, and its actual distribution determined. This increases the number of *Terrathelphusa* species in Borneo to eight.

**Key words:** limestone, sandstone, Bau, Gunung Penrissen, Southeast Asia

### Introduction

The semiterrestrial gecarcinucid genus *Terrathelphusa* Ng, 1989, is currently represented by six species from Borneo and Java, namely *T. chilensis* (Heller, 1862) (= *Geothelphusa modesta* De Man, 1892) (Java), *T. kuchingensis* (Nobili, 1901) (southwestern Sarawak), *T. kuhli* (De Man, 1883) (type species, west Java), *T. loxophthalma* (De Man, 1892) (Kalimantan), *T. ovis* Ng, 1997 (northeastern Sarawak), and *T. telur* Ng, 1997 (Brunei) (Ng 1989, 1997; Ng *et al.* 2008). *Terrathelphusa kuhli* and *T. loxophthalma* had been placed in *Perbrinckia* Bott, 1969 (type species *Thelphusa enodis* Kingsley, 1880) by Bott (1969, 1970), who included taxa from Sri Lanka, Java, and Borneo. Ng (1989), however, noted that the Borneo and Java taxa should be placed in a phylogenetically distinct genus from *Perbrinckia*. *Perbrinckia* is now regarded as endemic to Sri Lanka and contains 13 species (see Ng 1989, 1997; Bahir & Ng 2005; Klaus *et al.* 2006; Ng *et al.* 2008; Beenaerts *et al.* 2010).

For Sarawak, Ng (1989) clarified the identity of *T. kuchingensis* (Nobili, 1901), which had been synonymised with *T. loxophthalma* by Bott (1970) and showed it was a valid species. Specimens from eastern Sarawak that had been identified as *T. loxophthalma* (type locality probably southeastern Kalimantan) by Holthuis (1979) and Ng (1989) were also referred to a new species, *T. ovis*, by Ng (1997), who also described another new species, *T. telur*, from Brunei.

Fresh collections from southwestern Sarawak over the last decade have obtained many specimens that appear to belong to *T. kuchingensis*. Differences in carapace form, live colour, and habitat, however, suggested that more than one species was involved. The present study clarifies the taxonomy of *T. kuchingensis* s. str. from the type material and fresh specimens. Four new species are also recognised. Specimens examined are deposited in the Sarawak Museum (SM), Kuching, Sarawak; Sarawak Biodiversity Centre (SBC), Kuching, Sarawak; and Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum (ex Raffles Museum of Biodiversity Research), National University of Singapore. Measurements provided (in millimetres) are of the carapace width and length, respectively. The terminology essentially follows Ng (1988), with the abbreviations G1