

New Genera of Phreatoicidea (Crustacea: Isopoda) from Western Australia

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ABSTRACT. Three new species belonging to new monotypic genera from Western Australia are added to the phreatoicidan isopod family Amphisopodidae: *Eremisopus beei* n.gen., n.sp. from the northwestern Kimberley region, *Peludo paraliotus* n.gen., n.sp. from Cape le Grand on the southern coast, and *Platypyga subpetrae* n.gen., n.sp. from Stirling Range. All species are illustrated using scanning electron micrographs. Both Ciliophora and ostracode Crustacea were found as epibionts on these species. All three isopod genera have highly restricted geographic distributions and could be threatened by anthropogenic degradation of their environments. Western Australia now has eight described genera of Amphisopodidae and Hypsimetopodidae, a generic diversity similar to Tasmania. Members of the Phreatoicidae, however, are absent in Western Australia. The distribution of Western Australian phreatoicidians suggests that they may have originally diversified in East Gondwana, while the Phreatoicidae show relationships to West Gondwana. A key to genera of Western Australia Phreatoicidea is included.

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The description of two new isopod genera in the suborder Phreatoicidea (Wilson & Keable, 1999; Knott & Halse, 1999) and a new species of *Crenoicus* (Wilson & Ho, 1996) foreshadow the existence of considerable undescribed diversity in this suborder. The systematics, evolutionary history and biogeography of the Phreatoicidians have been treated elsewhere (Wilson & Johnson, 1999; Wilson & Keable, 2001). In this paper, we add three new genera from Western Australia (*Peludo*, *Eremisopus*, and *Platypyga*), that were introduced as undescribed taxa in previous papers. These new genera further extend the morphological diversity of the Phreatoicidea, which will allow the relationships of its component taxa to be assessed from any systematic level. Such data are relevant, given the basal phylogenetic position accorded to the suborder (Wägele,

1989; Brusca & Wilson, 1991), and their Palaeozoic fossil record (Wilson & Keable, 2001). Although not considered here, the proposed sister group relationship between Insecta and malacostracan crustaceans (K. Wilson *et al.*, 2000), or even between insects and isopods (Brusca, 2000), may be assessed using data from our figures. If any detailed external morphological synapomorphies of malacostracans and insects exist, they may be illustrated in this paper.

As part of our ongoing program to revise the suborder, we also provide a key to the genera found in Western Australia. Epibionts, conservation and biogeography of the new phreatoicidan taxa are discussed to provide new knowledge of the Gondwanan fauna of Western Australia, in which phreatoicidians often are listed as a minor component (e.g., Hopper *et al.*, 1996).