

***Pilbarophreatoicus platyarthricus* n.gen., n.sp.**  
**(Isopoda: Phreatoicidea: Amphisopodidae)**  
**from the Pilbara Region of Western Australia**

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**ABSTRACT.** *Pilbarophreatoicus platyarthricus*, a subterranean phreatoicidean isopod from an intermittent stream in the arid Pilbara region of northwestern Western Australia, is described. With subterranean morphofacies, namely slender vermiform body, eyeless, anteroventral lobe on pereonite 1, reduced abdominal epimera, clearly demarcated pleotelson and lacking in pigment, the species is distinguished particularly by details of the pleotelson. *Pilbarophreatoicus platyarthricus* is a Gondwanan relic surviving in an aquifer in a region with marked surface aridity. Discovery of *P. platyarthricus* highlights the importance of groundwater as a reservoir of biological diversity.

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The Phreatoicidea are ancient isopods, constituting the earliest derived members (Brusca & Wilson, 1991) and having the longest known fossil record of all living isopods. Their fossil record dates from the Essex fossil beds at Mazon Creek, Illinois, USA, of the Upper Carboniferous (Schram, 1970). Pre-Triassic representatives are known from marine deposits in the Northern Hemisphere (Birstein, 1962; Glaessner & Malzhan, 1962) but their post-Triassic record is exclusively from fresh waters of several of the Gondwanan fragments (Australia, New Zealand and South Africa), with maximum species diversity and abundance in the Bassian zoogeographic province of southern Australia (Knott, 1975). Phreatoicidean diversity in northern, by

comparison with that of southern, Australia seems much reduced with the only records, until recently, from the South Alligator River area of the Northern Territory (Nicholls, 1943; Knott, 1975). However, information about the groundwater fauna of north-western Australia is increasing and more phreatoicideans are being found. *Crenisopus acinifer*, from a freshwater spring in the Kimberley region of Western Australia, was described by Wilson & Keable (in press). In addition, Wilson & Ponder (1992) described two species of *Tainisopus* from a cave pool and a spring outflow in the Kimberley that resembled phreatoicoideans, although they were not assigned to a currently described isopod suborder or family.