



Andhracoides shabuddin gen. nov., sp. nov., a new phreatoicidean isopod (Crustacea, Hypsimetopidae) from hypogean aquatic habitats in Andhra Pradesh, India

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Abstract

A decade-long survey of ground waters in the state of Andhra Pradesh, India, has so far yielded over sixty new crustacean taxa, belonging to Copepoda, Bathynellacea, Amphipoda, Isopoda, and Ostracoda. This paper describes a new genus and species attributable to the phreatoicidean isopod family Hypsimetopidae Nicholls, and provides ecological and behavioural observations. The new taxon was found in Guthikonda Cave, which is about 8 km from Piduguralla town in the Palnadu area of Andhra Pradesh State. The species belonging to this clade are unusual in that their dorsoventrally flattened pleotelson gives them a non-phreatoicidean appearance. Because the postanal margin is missing, as in other members of the Hypsimetopidae, this is a superficial similarity rather than homology with other isopods. Other unusual features include robust blunt denticles on opposing margins of the pleotelson and protopod of the uropods. The species in this clade, of which *Andhracoides shabuddin* gen. nov., sp. nov. is only the first to be described, are related to *Nichollisia* Chopra & Tiwari, found in northeastern India, and to *Pilbarophreatoicus* Knott & Halse from the Pilbara region of Western Australia. The new species differs from its undescribed congeners in being nearly devoid of dorsal setae; other species of *Andhracoides* gen. nov. are much more hirsute.

Key words: Phreatoicidea, cavernicolous, groundwater, systematics, ecology

Introduction

Chopra & Tiwari (1950; Chopra, 1947; Tiwari, 1955a) introduced the remarkable hypogean isopod genus *Nichollisia* Chopra & Tiwari, 1950, to crustacean biology, and confirmed the Gondwanan affinities of the Phreatoicidea by its presence in India. Since these initial reports, no new species of the suborder Phreatoicidea have been described from India. Currently, *Nichollisia* has just two species: *N. kashiense* Chopra & Tiwari, 1950 and *N. menoni* Tiwari, 1955. The genus was initially assigned to the family Nichollsiidae Tiwari, 1955a, although its affinities led Wilson & Keable (2001) to assign it to the family Hypsimetopidae Nicholls, 1943 (originally proposed as a subfamily of the Amphispodidae). Since that time, these phreatoicids on the Indian subcontinent have attracted studies on their biology, morphology and phylogeny (e.g., Gupta, 1985, 1989; Tiwari 1952, 1962; Tiwari & Ram, 1972; Erhard, 1998, 1999). One of us (YRR) has been pursuing research on the groundwater crustaceans, especially copepods and bathynellaceans, in Andhra Pradesh over the last decade (e.g., Ranga Reddy, 2001; Holsinger et al., 2006; Ranga Reddy & Totakura, 2010). The samples collected under the auspices of an ongoing major research project have yielded, inter alia, a new phreatoicidean cavernicolous isopod, which is related to, but distinctly different from the North Indian genus *Nichollisia*. To open a new chapter in our knowledge of the Indian Phreatoicidea, we introduce this new isopod as *Andhracoides shabuddin* gen. nov., sp. nov. and provide a detailed description of its morphology using scanning electron microscopy (SEM). Evidence is presented to support the creation of a new generic level taxon, and the unique features of the morphology of *Andhracoides* gen. nov. are discussed in relation to other hypsimetopid genera.