



Discovery of the genus *Rybocyclops* Dussart, 1982 (Crustacea, Copepoda, Cyclopoida) in subterranean groundwaters of southeastern India, with the description of a new species and its biogeographic significance

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Abstract

Rybocyclops Dussart, 1982 is a little-known stygobitic genus, hitherto represented by its type and only species, *R. pauliani* (Lindberg, 1954), from Madagascar. A second species, named *Rybocyclops dussarti* **sp. nov.**, is described herein from an agricultural bore-well in southeastern India. The new species has a unique combination of morphological characters, which, *inter alia*, include: genital double-somite enlarged; anal operculum moderately large; furcal rami somewhat outcurved and about twice as long as wide; female antennules 11-segmented; legs 1–4 with spine formula 2.2.2.2, and setal formula 5.5.5.4; legs 1 and 4 without seta on inner margin of coxa and basis; leg 4 male with one seta more than in female on second endopodal segment; leg 5 fused to somite and represented by vague protuberance, bearing three setae; and leg 6 reduced to two setae. The generic diagnosis is partially amended for accommodating the new species. The discovery of *R. dussarti* **sp. nov.** is of much biogeographic interest because it is the first record of *Rybocyclops* from Asia and only the second freshwater stygobitic cyclopoid taxon from India, with apparent Gondwanan distribution.

Key words: copepod, cyclopoid, stygofauna, *Rybocyclops dussarti* **sp. nov.**, taxonomy, Gondwanan distribution

Introduction

Until recently, India has remained almost a grey area as far as the freshwater subterranean copepods are concerned. Regarding the stygobitic cyclopoid copepods from the Indian subcontinent, *Haplocyclops* (*Kiefercyclops*) *fiersi* Karanovic & Ranga Reddy, 2005 is the only species known to date. The four cyclopoids reported by Pesce & Pace (1984), viz. *Thermocyclops oblongatus* (G. O. Sars, 1927), *Eucyclops serrulatus* (Fischer, 1851), *Mesocyclops aspericornis* (Daday, 1906), and *Tropocyclops prasinus* (Fischer, 1860) from several freshwater wells near New Delhi are “actually all stygophiles (or even stygoxenes), not stygobites” (Karanovic & Ranga Reddy, 2004b).

Ongoing investigations of the Indian stygofauna have yielded a stygobitic population representing a new species of the little-known Gondwanan genus *Rybocyclops* Dussart, 1982. The genus was established for a single Madagascan species, *Rybocyclops pauliani* (Lindberg, 1954). Subsequently no author has recorded either this species or added any further species to the genus. This paper gives an illustrated description of a new species, named *Rybocyclops dussarti* **sp. nov.** Further, the original definition of the genus *Rybocyclops* is amended and a brief note on the biogeographic significance of the new species added.

Up till 2001, only seven freshwater stygobitic crustacean species were reported from India (Ranga Reddy, 2004a). They are: *Indoniphargus indicus* (Chilton, 1923) (Amphipoda), *Nichollsia kashiense* Chopra & Tiwari, 1950 and *N. menoni* Twari, 1958 (Isopoda), *Macrobrachium cavernicola* (Kemp, 1924) and *Troglindi-*