DISCOVERY OF PARASTENOCARIDIDAE (COPEPODA, HARPACTICOIDA) IN INDIA, WITH THE DESCRIPTION OF THREE NEW SPECIES OF PARASTENOCARIS KESSLER, 1913, FROM THE RIVER KRISHNA AT VIJAYAWADA 1)

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1) This paper is dedicated to the fond memory of my elder brother, Yenumula Venkata Ranga Reddy, who, a tower of strength to my family, passed away while this work was in progress.

ABSTRACT

In a two-year study of the family Parastenocarididae in the River Krishna at Vijayawada, South India, five species belonging to the genus Parastenocaris Kessler, 1913, have been met with. Of these, three are new to science: P. gayatri n. sp., P. savita n. sp., and P. sandhya n. sp. The first two of these belong to the brevipes-group, the last one to the sioli-group. This paper gives an illustrated description of these new taxa, and also briefly discusses their affinities and ecology. The other two species, viz., P. curvispinus Enckell, 1970, and Parastenocaris sp., will be dealt with elsewhere. This is the first report on Parastenocarididae from India.

Incidentally, it has also been found that parastenocaridids constitute a rather favoured item in the diet of the postlarvae of a commercially important gobioid fish, Glossogobius giuris (Hamilton, 1822). A brief note of this finding has been made.

RÉSUMÉ


Par ailleurs, il a été mis en évidence que les Parastenocarididae constituent un élément apprécié dans l’alimentation de la post-larve d’un poisson d’importance commerciale, Glossogobius giuris (Hamilton, 1822). Une note courte relative à cette trouvaille est fournie.

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INTRODUCTION

Parastenocaridids are small harpacticoids (length 0.2-0.6 mm), inhabiting the space between sediment particles of underground and subsoil waters. Aided by their minute, vermiform body and short limbs, they can crawl or swim freely in the capillary system of the interstices between sand grains.

The family Parastenocarididae contains about 200 species in five well-recognized genera: Parastenocaris Kessler, 1913, Forficatocaris Jakobi, 1969, Paraforficatocaris Jakobi, 1972, Potamocaris Dussart, 1979, and Murunducaris Reid, 1994. Of these, Parastenocaris is the most speciose genus and has a world-wide distribution, whereas all other genera, containing few species, are exclusively Neotropical (Reid, 1994). The family is ‘primarily freshwater’ and only about a dozen species inhabit marine and brackish coastal subsoil water (Wells, 1986). In the whole of Asia, only about 20 species have so far been recorded (see Dussart & Defaye, 1990), but, surprisingly, none from India, as confirmed by H. K. Schminke (pers. comm.).

In the course of a two-year study of parastenocaridids of the River Krishna at Vijayawada, I have come across five species, viz., Parastenocaris gayatri n. sp., Parastenocaris savita n. sp., Parastenocaris sandhya n. sp., Parastenocaris curvispinus Enckell, 1970, and Parastenocaris sp. The three new species will be described below; accounts of the other two species found will be published elsewhere.

STUDY AREA

The River Krishna is one of the major rivers of India. Originating near Mahabaleswar at an altitude of 1360 m in the Western Ghat mountains, only about 60 km from the Arabian Sea, the river flows across almost the entire peninsular India from the west to the east over a distance of approx. 1300 km before discharging into the Bay of Bengal. It enters the sea by two principal mouths and has built up a large, very fertile delta continuous with that of the Godavari River to the northeast. In the deltaic region, numerous artificial habitats such as tanks, ponds, canals, etc., are fed by the river. The river derives its water from the monsoon rains and has several tributaries, of which the Bhima (north) and the Tungabhadra (south) are the largest ones. It has a catchment area of about 233,229 km².

At the head of the delta at Vijayawada (16°31′N 80°E) there is an important barrage, named Prakasam Barrage, which was constructed in 1955 for regulating the flow of water in a system of irrigation canals, and which is situated 80 km from the river mouth. The river narrows between two hills of gneiss and then spreads