

**DISCRIPTION OF CORYCAEUS (DITRICHOCORYCAEUS)
ASIATICUS(COPEPODA: CYCLOPOIDA, CORYCAEIDAE)
FROM MANORA CHANNEL, KARACHI, PAKISTAN**

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ABSTRACT: Copepods of family Corycaeidae were the abundant cyclopoids in the coastal waters worldwide. Only three species *C. crassiusculus*, *C. flaccus* and *C. dahli* were reported from the northern Arabian Sea. The present study is the first report on the presence of fourth species *Corycaeus (Ditrichocorycaeus) asiaticus* in the coastal waters of Pakistan. The species is a rare one as only few specimens were recorded.

KEYWORDS: *Corycaeus asiaticus*, Arabian Sea, Manora Channel.

INTRODUCTION

The family Corycaeidae is the cosmopolitan group of mesozooplankton (Dussart 1965; Boxshall, 1977). represented by 39 species (Razouls *et al.*, 2005-2013). They were reported to predate on other mesozooplanktons (Turner *et al.*, 1984). The genus *Corycaeus* was first described by Dana (1846). Dahl, 1912 has created sub genus *Ditrichocorycaeus* within *Corycaeus*. Boxshall and Halsey 2004, elevated *Ditrichocorycaeus* to the genus level.

The information about the diversity of Corycaeidae from Pakistan is very limited. In the past two species *C. crassiusculus*, *C. flaccus* were reported (Haq *et al.*, 1973), but recently another species *C. dahli* was reported from Manora channel (Ara and Farooq, 2013). This study is an attempt to extend the knowledge about the diversity of cyclopoid copepods in our coastal waters. This is the first report on the presence of fourth species *C. asiaticus* in the Pakistani coastal waters. This report is a part of ongoing research on the copepod diversity in the coastal waters of Pakistan.

C. asiaticus is a widely distributed species known to occur in coastal, oceanic and epipelagic environments. This species was extensively reported from various parts of Indian, Indo-Pacific and West-Pacific Oceans (Farran, 1911; Tanaka, 1957; Motoda, 1963). A single male specimen was recorded during John Murray expedition (1933-1934) from southern Arabian Sea (Sewell, 1947).

MATERIALS & METHODS

Zooplankton samples from Manora Channel were collected by using zooplankton net with mesh size 170 µm during 2010 to 2013. Specimens were sorted out by using stereomicroscope and the specimens were examined in detail under the digital microscope (by using objective lens 100x, oil immersion). The specimen was dissected for the detail examination of antennule (A1), antenna (A2) and swimming appendages

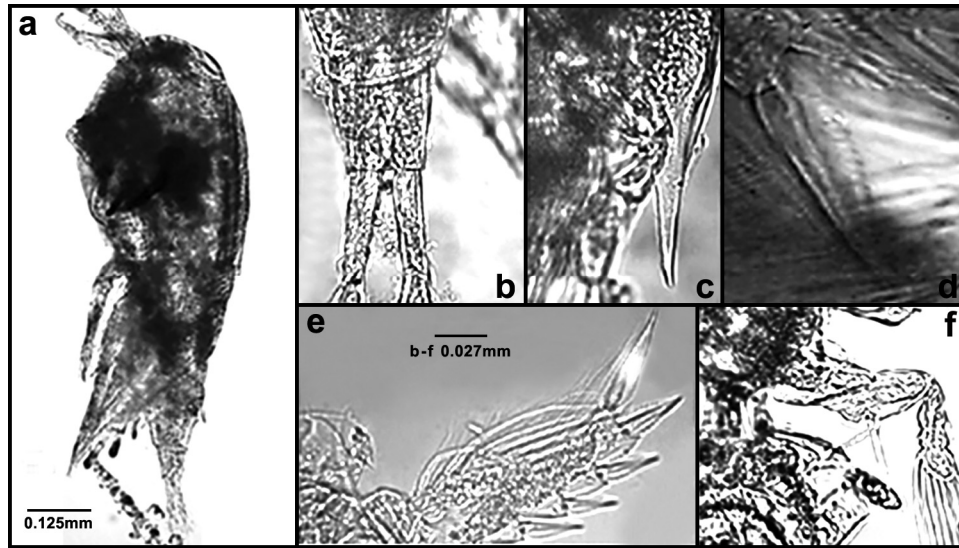


Fig. 1. Digital microscopy of the female *C. asiaticus*: a, habitus; b, urosome; c, cephalosome terminal spine; d, terminal spine of P2; e, P3; f, P4.

(P1 to P4). The specimen was measured by using an ocular micrometer in mm. The total length of the species was measured from the tip of the prosome to the end of caudal ramus. The species was identified by using the published literature and keys (Motoda, 1963; Razouls *et al.*, 2005-2013).

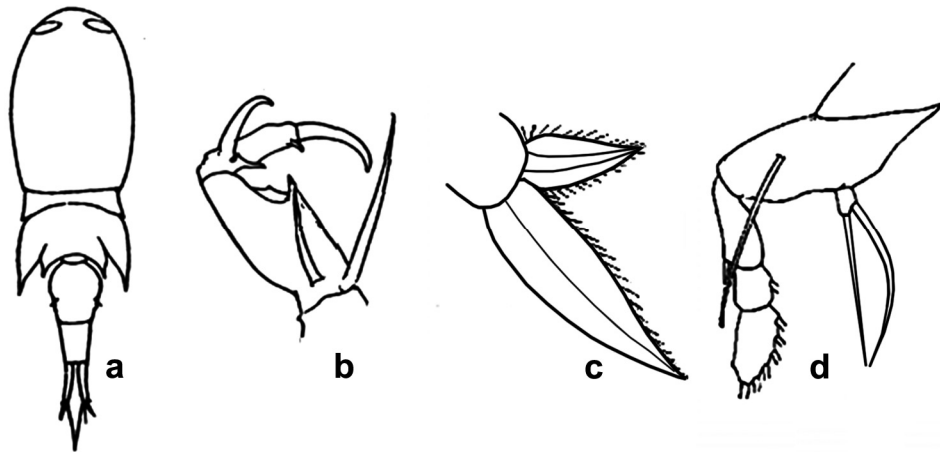


Fig. 2. Diagrammatic representation of *C. asiaticus*: a, habitus; b, A2; c, terminal spine of P2; d, P4.

Systematic account:Order **Cyclopoida** Burmeister, 1835Family **Corycaeidae** Dana, 1852Genus ***Corycaeus*** Dana, 1845Genus ***Ditrichocorycaeus*** (Dahl, 1912)***Corycaeus (Ditrichocorycaeus) asiaticus*** (Dahl, 1894)*Corycaeus asiaticus* (F. DAHL, 1894)*Corycaeus (Ditrichocorycaeus) asiaticus* (M. DAHL, 1912)*Corycaeus (Ditrichocorycaeus) asiaticus* (GURNEY, 1927)*Corycaeus asiaticus* (FARRAN, 1936)*Corycaeus (Ditrichocorycaeus) asiaticus* (DAKIN and CoLEFAX, 1940)*Corycaeus (Ditrichocorycaeus) asiaticus* (SEWELL, 1947)*Corycaeus (Ditrichocorycaeus) asiaticus* (TANAKA, 1957)**Material Examined:** 2♀ specimens collected from Manora Channel during 2013.

Adult ♀ size: 0.95 mm (Fig. 1 and 2).

Description of Female:

Female has cuticular lenses on anterior rounded part of prosome (Fig. 1a and 2a). Prosome is two times as long as urosome (Fig. 1a). A2 segment with three anterior inner spines. Outer spine is short not extending to a distance as inner spines. The second basal segment of A2 is very broad with a single teeth at the margin. Bristles of A2 unequal in length. Urosome length slightly larger than the length of caudal rami (Fig. 1b). No knob is present ventrally on genital somite (Fig. 1b). P2 apical spine curved with no serrations on outer side (Fig. 1d and 2c). Genital somite is as lengthy as wide. Anal somite is narrow. Caudal rami long. Terminal spine of exopod of P3 is not as long as in P2 (Fig. 1e). Exopod of P4 is 4 segmented, endopod is rudimentary with 2 spines (Fig. 1 f and 2d).

REMARKS

This *C. asiaticus* was recorded first time from the coastal waters of Pakistan. The edopodite of P4 leg bears characteristic two setae. The presently described specimen shows resemblance with the specimen described by Dahl, 1912 and Tanaka, 1957. Little variation in total length was observed. The size of our specimen (0.95 mm) was smaller as compared to the specimens reported from Australian waters which ranged between 1.04-1.40 mm in length (Richardson *et al.*, 2013).

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