

MORPHOLOGICAL STUDIES OF A COPEPOD, *PARACALANUS PARVUS* FROM BANDAR ABASS

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ABSTRACT : Copepods are a group of crustaceans found in the sea and all freshwater habitats. Calanoidea are the most numerous and diverse pelagic copepod order. In this order the A1 is usually long, apart from in some of the benthic species. The Copepods collection was done with the help of a standard plankton net Hydrobios, Kiel; 55 µm mesh size through vertical and horizontal hauls at about 25 centimeters below the water surface level. Sampling was done from eight different sites from Bandar-Abass water beach during April 2013 to March 2014. According to the present identification keys, the species under study matched with *Paracalanus parvus* (Claus, 1863), from Bandar Abass and Ghesm Island region of Iran.

Key words : Calanoidea, marine copepod, new report, *Paracalanus parvus*, Bandar Abass beaches.

INTRODUCTION

Copepods are a group of crustaceans found in the sea and all freshwater habitats. The free living copepods are considered as zooplankton and consume as food by fishes and other aquatic animals (Shayestehfar *et al*, 2013). Zooplanktons may consider as the water indicator Shayestehfar and Seyfoddin, (2010). Planktonic copepods are important to global ecology and the carbon and nitrogen cycle (Fangoulis *et al*, 2005). Small planktonic marine copepods (< 1 mm in length) are the most abundant metazoans on Earth, They have a very importance Roles in Pelagic Marine Food Webs (Jefferson, 2004). Review of the Impact of Parasitic Copepods on Marine Aquaculture was done by Stewart *et al* (2004). The free-living copepods fall into three orders: Cyclopoidea, includes the well known cyclops, they have moderately long secondary antennae and the females carry twin egg-sacs. Calanoidea, characterized by long first antenna (A1), and in the females, a single egg-sac. Harpacticoidea, much smaller and usually found foraging on submerged plants as their small antennae do not enable them to swim (Ward and Whipple, 1959).

Calanoidea are the most numerous and diverse pelagic copepod order. In this order the A1 is usually long, apart from in some of the benthic species. Some males have one A1 geniculate. The prosome is much broader than the urosome. In many species the cephalosome is fused to the first pedigerous somite forming a cephalothorax and the last two metasome somites are sometimes also

fused (Conway, 2012). In females, the posterior of the last metasome somite, and the urosome tend to be bilaterally symmetrical. Females usually have five pairs of swimming legs. The female P5, when present, are usually symmetrical, although often much reduced in size and complexity compared to P1-P4. Males always have five pairs of legs, the P5 usually greatly modified and asymmetrical. The P6 is reduced in both sexes to one or two tiny opercular plates that close the genital opening on the genital somite and are difficult to discern. Females usually have four free somites in the urosome. Males of the species described here almost always have five free urosome somites. Females either spawn their eggs directly into the sea or they are held in a single egg sac or egg mass, rarely paired egg sacs (Conway, 2012).

MATERIALS AND METHODS

The Copepods collection was done with the help of a standard plankton net Hydrobios, Kiel; 55 µm mesh size through vertical and horizontal hauls at about 25 centimeters below the water surface level. Sampling was done from eight different sites (Fig. 1) from Bandar-Abass water beach during April 2013 to March 2014. The collected samples were preserved in ependurph including 7% glycol-alcohol and then transferred to the biological laboratory of Arak University. Copepods were identified based on faunistical study with the help of Olympus-BX51 microscope, based on valuable references such as Conway *et al* (2012).

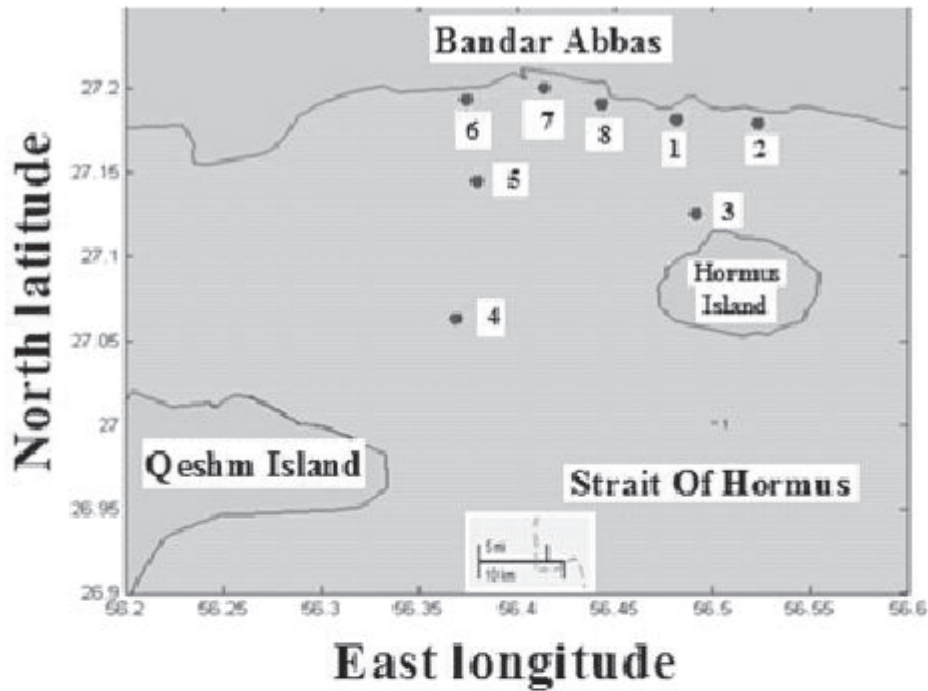


Fig. 1 : The topography of sampling sites in Bandar Abass city.

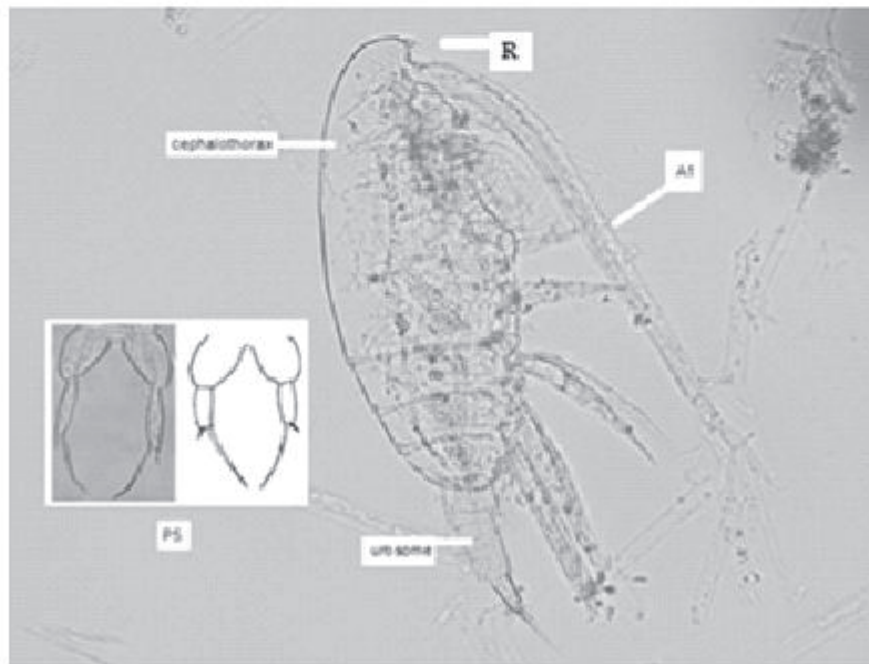


Fig. 2 : A- Dorsoventral position of *Paracalanus parvus* (Claus, 1863), B) P5.

RESULTS AND DISCUSSION

Shown the represented characteristics as under:

1- First pedigerous somite fused to cephalosome to form cephalothorax.

Female:

A1 reaches to around the middle of the urosome (Fig. 2 A). Segment three of exopods of P3 and P4 with row of fine spines on outside margin.

P5 (Fig. 2 B) tiny, delicate, uniramous. distal segment with long slender spine at tip and a much smaller spine outside this, normally symmetrical and two, occasionally three-segmented.

Male:

A1 not geniculate, quite robust; slight hump on the dorsal prosome; second urosome somites the longest; P5 reaches half-way down the urosome), slender,

asymmetrical, uniramous; right leg short, two-segmented, resembling the female P5 limbs; left leg five-segmented; both legs terminating in two sub-equal spines.

CONCLUSION

According to the present identification keys, the species under study matched with *Paracalanus parvus* (Claus, 1863), which is reported for the first time from Bandar Abass and Qeshm Island region of Iran. In this study, Females were more dominant, A total of 368 individual were collected from eight different sampling sites, (number of males 46 and number of female 322, was collected during May to November 2013, in addition the species of *P. parvus* has a broad distribution in Persian Gulf.

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