J. mar. biol. Ass. India, 1979, 21 (1 & 2) : 41-44

ON A COLLECTION OF DEEP SEA DECAPOD CRUSTACEANS FROM THE GULF OF MANNAR

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ABSTRACT

Seven decapod crustaceans belonging to sections Penaeidea (4 species), Caridea (2 species) and Astacidea (1 species) collected during the exploratory cruises of the fishing vessel belonging to the Integrated Fisheries Project, Cochin from the Gulf of Mannar, off Mandapam are reported. All these species are recorded from the Gulf of Mannar for the the first time, three of which are newly reported from the east coast of India.

INTRODUCTION

DURING the exploratory cruises of the fishing vessel *Klauss Sunnana* belonging to the Integrated Fisheries Project, Cochin in the offshore waters of Gulf of the Mannar, southwest of Mandapam, during 1969–1970 some deep sea decapod crustaceans were caught by trawl nets from depths ranging from 200 to 350 m. All the seven species obtained are reported for the first time from the area. The lengths given for all the species are of carapace.

SECTION: PENAEIDEA

Family: Penaeidae

Subfamily: Solenocerinae Wood-Mason and Alcock

Solenocera hextii Wood-Mason, 1891

Solenocera hextii Wood-Mason, 1891:275; George, 1967:338–339 (synonymy); 1969:18.

Material: Several specimens collected from trawl catches (depth 250–300 m) from 26–8–1969 to 12–4–1970. L: 18.2 to 44.5 mm.

Remarks : Postrostral carina sharp but not laminose. Antennular flagella with red and white bands. The spines on the cervical groove situated ventral to the posteriormost rostral tooth well developed. The characteristic 'L' shaped groove on either side of the branchiostegal region also clearly defined. Well developed stout and blunt spine on the outer distal end of the exopod of the uropod. The structure of the thelycum and petasma conforms with the earlier descriptions.

Good quantities of this species were obtained from the present locality. Due to the larger size they form potential commercial species The virgin grounds in the Gulf of Mannar is under exploited by the fishing industry at present. This is the first report of the species from this area.

Subfamily: Aristaeinae Alock

Aristeus semidentatus (Bate, 1888)

Hemipenaeus semidentatus Bate, 1888:305.
Aristeus semidentatus George, 1967:338-339 (synonymy); 1969 : 20.

Material: Off Mandapam, Gulf of Mannar (12–4–1970) 5 females. L: 30. 5–36.2 mm.

Remarks: Specimens agree well with earlier descriptions. The rostrum bearing 3 dorsal teeth extends beyond antennular peduncle by $\frac{1}{2}$ its length and antennal scale by 1/3 length. Pleurobranchs of female long with spinules. Buttress of pterygostomian spine not very long and near to the branchiohepatic groove. Proportion of chela, carpus and propodus of first, second and third legs agree well with the measurements of Ramadan (1938), the chela being

distinctly longer in proportion, than the carpus. The size of the female specimen is less than those caught from the west coast (George, 1967). All the five specimens have conjoined pads covering the thelycum, indicating the impregnated condition.

This is the first report of the species from the Gulf of Mannar on the southeast coast of India, extending the distribution further east on the Indian Coast.

Subfamily : Penaeinae Burkenroad

Penaeopsis rectacuta (Bata, 1888)

Penaeus rectacuta Bate, 1888:266.

Penaeopsis rectacuta Hall, 1962:18; George, 1967:342 (synonymy); 1969 : 27-28.

Material: Gulf of Mannar (20-3-1970) 4 males, L:13.0–23.4 mm; 4 females. L :21.0–29.9 mm.

Remarks: Unlike Hall's (1962) specimens, the hepatic sulcus is wide and deep, almost straight posterior to the hepatic spine and extends to the middle of the carapace. Anteriorly, it curves ventrally to reach the branchial angle. Lower antennular flagellum prehensile in males. A boss present at the posterior end of the thelycal plate, midventrally, although, Hall has not shown such a protuberance in his diagram of the Malaysian specimens.

The third pereopod reaches the antennal scale while fourth exceeds carpocerite by dactylus and 1/3 propodus length. Three pairs of lateral movable spines on telson as noticed by Alcock (1906) and Hall (1962). The petasmal lobes do not terminate in spines in the specimens on hand unlike the observation of Hall in specimens from Malaysian waters.

Cardiac plate with 21 spinules as against 20 in Japanese specimens (Kubo, 1940). Zygocardiac ossicle consists of a median large tooth and a series of seven teenth above and one large tooth on the lower row. Prepyloric with a median large tooth and four teeth on either side followed by a spinule. In other respects the specimens reported for the first time from Gulf of Mannar agree with the earlier descriptions.

Metapenaeopsis andamanensis (Wood-Mason, 1891)

Metapenaeus philippiensis var. *andamanenis* Wood-Mason, 1891:271.

Metapenaeopsis andamanensis Hall, 1961:109-110; 1962:35-36; 1965:99; George, 1967 : 343; 1969 : 25 (synonymy)

Material: Gulf of Mannar (20–3–1970) 1 male. L: 19 mm; 3 females. L: 16.5–19.0 mm; (12–4– 1970) 2 females, L: 19.5–23.0 mm.

Remarks: The earlier descriptions tally, in general, with the specimens on hand. The rostrum with 6–7+1 dorsal teeth, more or less horizontal and straight as observed by Hall (1962) and George (1967) although, Alcock has described it as uptilted. Lower antennular flagellum longer than the upper, much more longer than the entire antennular peduncle as in the Malayan specimens. But, it is only 0.7 times the carapace length. As Hall (1962) has observed in some specimens, the third pereopods surpass the rostrum by the length of the entire chela, although, Bate (1885) has not found such a condition in any of his specimen.

Thelycal plate has a shallow groove near the posterior free margin, although, it cannot be considered to be 'bilobed' as stated by Bate (1888). This report of the species from the Gulf of Mannar extends its distribution to the east coast of the Indian Peninsula.

SECTION : CARIDEA

Family : Pandalidae

Parapandalus spinipes (Bate, 1888)

Plesionika spinipes Bate, 1888:646.
Parapandalus spinipes George, 1969:43 (synonymy).

Material: 4 specimens. Gulf of Mannar (28–8–1969) 1 female. L:14.5 mm; (12–4–1970) 3 females. L: 24.7–25.5 mm.

Remarks: Rostrum upturned at the tip. The minute tubercle on the dorsal surface of the carapace at about 1/6 of its length from the posterior end as observed in the specimens from southwest coast of India (George and Rao, 1967) is clearly visible in the specimens on hand. The sixth abdominal segment little less than twice as long as broad, its breadth equal to the length of the fifth abdominal segment.

Lower antennular flagellum longer than the upper and about 5.4 the carapace length. Third maxilliped extends beyond the antennal scale by the length of its dactylus. Second pereopod exceeds the tip of antennal scale by its chela and 1/8 length of carpus. This is the first report of the species from the Gulf of Mannar on the east coast of India.

Heterocarpus gubbosus Bate, 1888

Heterocarpus gibbosus Bate, 1888:634; George, 1969:44-45 (synonymy).

Material: Several specimens. Gulf of Mannar (2–8–1969 to 12–4–1970). L: 18.8–36.8 mm.

Remarks: Considerable variation has been noticed in the size of the dorsal crest, dentition and distribution of teeth on the dorsal side of the rostrum. Out of the 9 dorsal teeth 5–6 situated on the carapace while 3–4 on the rostrum; 13–15 ventral teeth. The dactyli of the third legs longer unlike the specimens reported by Alcock (1901) and George and Rao (1967). As observed by de Man (1920) in the 'Siboga' material, the dactyli are 1/3 or more the length of the propodus. The dorsal carina on third abdominal tergum well defined.

The lower antennular flagellum longer than the upper and exceeds the carapace length. The first and second legs extend upto the tip of the antennal scale while the third and fourth legs exceed antennal scale by the length of the dactylus and propodus. The fifth leg extends beyond the antennal scale by the length of the entire dactylus and half propodus. The species is first reported from the Gulf of Mannar.

SECTION : ASTACIDEA

Family : Astacidae

Nephropsis stewarti Wood-Mason, 1873

Nephropsis stewarti Wood-Mason, 1873:40; de Man, 1916:111-113 (synonymy).

Material: 2 specimens. Mandapam, Gulf of Mannar (18–3–1970) 1 male. L:44.5 mm; 1 female, L: 38.0 mm.

Remarks: The specimens on hand agree with the description of 'Siboga' material by de Man (1916). The rostrum extends beyond the antennal peduncle by ¼ its length. The blunt teeth on the sides of the mid dorsal rostral groove are not spiniform on the proximal part of the rostrum unlike the 'Siboga' material, thus agreeing with the descriptions by Wood-Mason (1873) and Alcock (1901). Abdominal pleura project outwards in dorsal view. Small spine present at the base of the uropod.

Large, chelipeds fully tomentose, equal in size, longer than abdomen unlike de Man's specimens. Merus extends beyond the antennal peduncle in the present material, bearing a stout tooth on the upper margin and a smaller one at the lower aspect.

The beautifully red fingers have naked white tips. Body colour is greenish yellow with deep red appendages. From the Gulf of Mannar, this species is reported for the first time.

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