

A NEW SPECIES OF COPEPOD *ANTHESSIUS PLACUNAE* FROM THE GILLS
OF WINDOW-PANE OYSTER *PLACENTA PLACENTA* (LINNEAUS)
OFF KAKINADA BAY

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ABSTRACT

Anthessius placunae n. sp. (Copepoda, Mycicolidae) infecting the gills of windowpane oyster *Placenta placenta* (Linnaeus) has been described in detail and compared with the other species of the genus *Anthessius*. Incidence of infection is 50.7-75% during April and May. Damage caused to the gills of the host is negligible.

INTRODUCTION

WHILE studying the biology of Pea-crab *Pinnotheres placunae* (Hornell and Southwell) inhabiting the Windowpane oyster *Placenta placenta* several parasitic copepods attached to the gills of the oyster were encountered. These copepods belonged to the genus *Anthessius* created by Della Valle (1880) with *A. pleurobrancheae* as its type. Thirty species have so far been included under the genus most of which are described by Bocquet and Stock (1958), Humes (1959), Illg (1960), Stock *et al.* (1963), Stock (1964), Humes and Stock (1965), Humes and Ho (1965) and Reddiah (1966).

As the present species do not agree with the hitherto described species, it is proposed to describe as a new species and named it as *Anthessius placunae* after its host.

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MATERIAL

390 *Placenta placenta* were examined during April and May 1975, collected from mud flats off Kakinada Bay at a depth of 8-10 m. 235 oysters were infected by the copepods. 5-15 copepods were found in each oyster. The females are mostly ovigerous.

DESCRIPTION

FEMALE: (Fig. 1 a) Average body length (10 specimens) excluding caudal setae 1.547 mm; width 0.816 mm. Body shape cyclopid. Prosome longer than urosome, metasome larger than cephalosome (including 5th segment); ephemeral areas of metasomal segments rounded, fifth segment distinct and projects outwards. Genital segment flask shaped, long ovisacs being attached dorsolaterally on either side and reaching the level of the second caudal setae; ovisacs measuring 0.912 x 0.224 mm and bears 69-76 eggs. Second post-genital segment smaller than first and third post-genital segments which are equal in length. Caudal ramus, 1/3 longer than the anal segment (0.96 x 0.128) which bears one lateral and 4 terminal setae; the latter with setules. Central two terminal setae long of which inner one is longer.

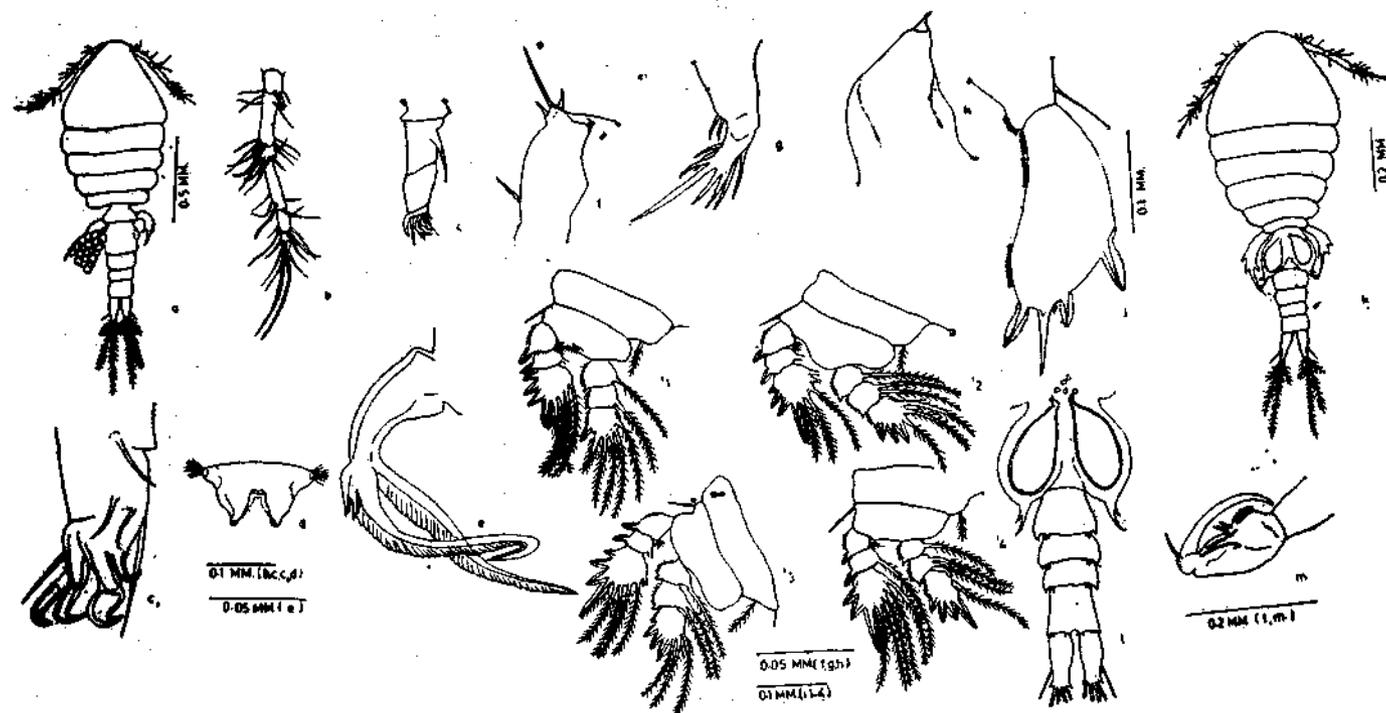


Fig. 1. *Anthesius placunae* n. sp. - a. Female, dorsal view; b. Antennule; c. Antenna; cl. Antenna, enlarged view; d. Labrum, e. Mandible, f. Maxillule; g. Maxilla, h. Maxilliped, i₁ - i₄. Swimming legs 1-4, j. Fifth leg, k. Male, dorsal view, l. Abdomen, ventral view and m. Maxilliped.

Antennule (Fig. 1 b) 7 segmented, the second being the longest and the subterminal shortest. First segment bears 3 setae distally; second with 4 proximal and 7 distal setae besides a terminal aesthetask; third segment with 3 setae and 2 aesthetasks; 4th with 3 setae and an aesthetask; 5th with 3 setae and 2 aesthetasks, one at the base and the other subterminal; 6th with 2 setae and 2 aesthetasks, one at the base and the other at the tip which is the longest and 7th with 3 lateral setae and a long terminal aesthetask. **Antenna** (Fig. 1 c, c1) 3 segmented, 2nd being the longest. 2nd and 3rd segments equal in width. 2nd segment bears a naked seta, 0.08 mm in length; 3rd with 2, relatively short and two long setae-sub terminally. 4 sclerotized and recurved claws present terminally, of which, one is long and slender. **Labrum** (Fig. 1 d) bears lateral groups of long slender setules; posterior edge bifurcated, each lobe having a short distal marginal row of minute spinules. **Mandible** (Fig. 1 e) consists of a single segment bearing two long lashes terminally, 2 hyaline lamellate (spines) lobes, close to the outer flagellum present.

Maxillule (Fig. 1 f) consists of a single segment with the bilobed margin, terminally bearing 5 unequal setae and basally a single spine.

and tapers, bears 4 teeth at its tip and two on either side. **Maxilliped** (Fig. 1 h) highly modified, segmentation obscure, basal portion appears inflated in ventral view, an ornamental terminal hyaline process present. Area between maxillipeds and first pair of legs slightly smaller ventrally. A transverse line connects the bases of the maxillipeds. **Swimming legs** (Fig. 1 i₁₋₄) each of 4 swimming legs consists of 2 segmented protopod, 3 segmented exopod and 3 segmented endopod; exopod and endopod being equal in length. Setal formula is given in Table 1. Articulated spines sheathed and setae plumose except in exopod of legs 1 to 4 has a terminal process with an outer sheath and an inner row of setules (which is marked with an asterisk in the Table 1). A row of fine hairs present on outer margins of all endopod segments and on the inner margin of first exopod segment. **Fifth leg** (Fig. 1 j) 3 times as long as broad; three sheathed or fringed spines, 2 at terminal and one subterminal, are unequal in size. A shorter and thick row of spinules present on its inner basal and terminal margins with a gap in the centre which is clearly visible in the ventral view. One naked seta arises terminally between the two terminal sheathed spines. Basipodite of 5th leg bears a spine. Two small spines representing the 6th legs

TABLE 1. Articulated processes (spines and setae) on the swimming legs of *Anthessius placunae* n. sp.

	PROTOPOD				EXOPOD						ENDOPOD							
	Si	Se	Si	Se	Si	Se	Si	Se	Si	St	Sc	Si	Se	Si	Se	Si	St	Se
	1		2		1		2		3		1		2		3			
P ₁	1	0	0	1	0	I	1	1	4	1*	III	1	0	1	0	4	1	I
P ₂	1	0	0	1	0	I	1	I	5	1*	III	1	0	2	0	3	1	II
P ₃	1	0	0	1	0	I	1	I	5	1*	III	1	0	2	0	3	1	II
P ₄	1	0	0	1	0	I	1	I	5	1*	II	1	0	2	0	1	1	III

Spines are denoted by Roman; setae by Arabic numerals; P1-P4: 1st-4th swimming legs. Si, St and Se, inner, terminal and outer margins of segments
Numerals marked with asterisk include one process intermediate between a spine and a setae.

Maxilla (Fig. 1 g) two segmented. Proximal segment large and flattened and bears 2 short spines laterally; distal segment small inclined

present dorsally at about the insertion of ovisac.

MALE: Body shape (Fig. 1 k) similar to that of female, but smaller in size (1.196 x 0.704). Urosome (Fig. 1 l) 6 segmented, genital segment possess convex lateral margins. Posterolateral margins of genital segment bear two unequal setae on either side, which represent the 5th legs; third post-genital segment shortest; urosomal segments next to genital segment on ventral side bear 2 groups of two spine-like structures, towards posterior margin. Maxilliped (Fig. 1 m) consists of two long segments and a terminal claw, first segment unornamented; 2nd bears a row of longer spinules parallel to the marginal row and clusters of spinules as shown in figure, naked setae arise about middle of inner margin and another from a process of tip of segment. Claw strong, stout and curved with a blunt end. Size of spermatophore 0.128 x 0.096 mm.

Remarks: On the basis of the revised key for identification of the species belonging to this genus provided by stock *et al.* (1963), the new species can be traced to couplet 15 in which the inner margin of leg 5 bears 2 distinct rows of spinules as in *A. arenicola* (Brady, 1872). However, in *A. placunae* the two rows are distinctly separated and the outer margin of the 5th leg is devoid of setae. Both differ greatly in several features such as the shape of 5th leg, ornamentation of the antenna, caudal rami and setal formula.

A. solidus, *A. amicalis* and *A. alatus* described by Humes and Stock (1968) have their body habitus very much modified. *A. dollabelle* Humes and Ho, belongs to the II, 1, 5 group. (based on revised key of Stock *et al.*, 1963) *A. distensus* and *A. stylocheili* show many differences in the size and ornamentation of majority of structures, the antenna, antennule, maxillule, maxilla, maxilliped, urosomal segments and shape and structure of fifth leg. The present species differs from the above mentioned species and from *A. mytilicolous* described by Reddiah (1966) in size, ornamentation of cephalic appendages, proportions of

anal and caudal rami, lengths of caudal setae and in the ornamentation of fifth leg.

Incidence of infection: 50.7 - 75.0% in April and May. Gill damage in the infected oysters has been observed, but it is more in the case of the oysters infested with pea-crab *Pinnotheres placunae*. Hence damage caused by the copepods alone is almost negligible as the association is for a short time during summer months.

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