

**COPEPODS ASSOCIATED WITH INDIAN MOLLUSCS—[E]  
ANTHESSIUS MYTILICOLUS N.SP. FROM MYTILUS VIRIDIS  
AT ENNORE**

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THE genus *Anthessius* (Fam. Myicolidae) was erected by Della Valle, 1880, with *A. pleurobranchae* as its type. Twenty-nine species are known ever since, most of which are described recently by Illg (1960), Stock, Humes and Gooding (1963), Stock (1964) Humes and Stock (1965) and Humes and Ho (1965). The revised key presented by Stock, Humes and Gooding (1963) is easy and explicit and has been found useful to identify one of the diversified, yet a unique group, of the Molluscan associates.

*Material examined* : Five adult females and one adult male collected at the Ennore Estuary near Madras from a single specimen of *Mytilus viridis* (Linne) measuring 10 cm., on March, 8, 1966.

*Types* : One ovigerous female (Holotype) and three females (paratypes) have been deposited in the National Collections of the Zoological Survey of India, Calcutta.

*Adult female* : The length excluding caudal setae is 0.84 mm. and width is 0.3 mm. based on 4 specimens. The body shape (Fig. 1 a) is cyclopoid. The prosome is larger than the metasome. The epimeral areas of the metasomal segments are rounded. The fifth leg segment is distinct and projects outwards. The genital segment is flask shaped. Two long ovisacs are attached dorsolaterally on either side reaching about the level of the second caudal seta. The second post genital segment is smaller than the other two which are about equal. The caudal ramus is long (Fig. 1 d) measuring about twice the length of the anal segment. There is one lateral, 4 terminal and 1 sub-terminal, setae on each ramus of which only three terminal setae bear setules. There is a marked reduction in the length of terminal setae as in *A. stylocheili* Humes and Ho.

The antennule (Fig. 1b) is 7-segmented, the second is the longest and terminal the shortest. The first segment bears 4 setae distally; the second bears 3 setae proximally and 5 distally; the third and fourth 3 setae each; the fifth 4 setae; the sixth 6 setae originating from a semicircular opaque area and the seventh segment 2 setae and two aesthetascs. The antenna (Fig. 1c) is 3-segmented; the second and third segments are of equal lengths. The second segment bears an inner naked seta; the third bears 3 small inner lateral setae and two long setae sub-terminally. Four sclerotised and recurved claws are present terminally of which the innermost is the shortest. The maxillule (Fig. 2 j) consists of a single segment with a notch in the middle. Terminally, the segment is lobed bearing 4 unequal setae. The maxilla (Fig. 2 k) is 2-segmented. The proximal segment is large and flattened while the distal is small, inclined and tapering, bearing 3 teeth at its tip and one on either side.

The mandible (Fig. 2 i) consists of a single segment bearing two long lashes terminally. There are 2 heart shaped spines close to the outer flagellum and one on its base.

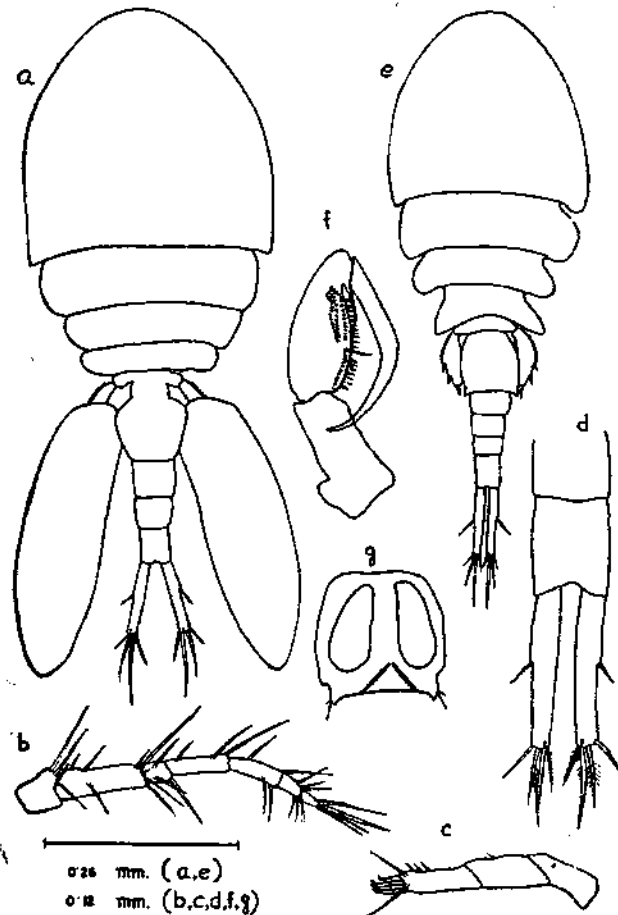


FIG. 1. *Anthessius mytilicolus* n. sp.

Adult female : (a) dorsal view ; (b) antennule ; (c) antenna ; (d) caudal rami ; Adult male : (e) dorsal view ; (f) maxilliped ; (g) genital segment.

The maxilliped (Fig. 2 h) is imperfectly segmented. The appendage is free of ornamentation except for a small inner lateral spine and a minute sub-terminal spine close to the terminal mammiform process. The four swimming legs (Fig. 2 l-o) each consists of a 2-segmented protopod, (coxa and basis), a 3-segmented exopod and a 3-segmented endopod of similar length. The setal formula is given in Table 1. The articulated spines are sheathed and setae plumose except for that on the outer margin of the basis. A process situated terminally on the exopod of legs 1 and 4 has an outer sheath and an inner row of setules which is noted with an asterisk in the Table. A row of fine hairs is present on the outer margins of all endopod segments and on the inner margin of the first exopod segment. The first and second endopod segments bear prominent unarticulate spines on their outer lateral corners. The feathered seta on the coxa of the 4th leg is the smallest. The fifth leg (Fig. 2 p) is 3

TABLE I

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

	Protopod						Endopod					Exopod						
	Si	Se	Si	Se	Si	Se	Si	Se	Si	St	Se	Si	Se	Si	Se	Si	Se	St
P1	1	0	0	1	0	I	1	1	4	1*	III	1	0	1	0	4	1	I
P2	1	0	0	1	0	I	1	I	5	I	III	1	0	2	0	3	I	II
P3	1	0	0	1	0	I	1	I	5	I	III	1	0	2	0	3	I*	II
P4	1	0	0	1	0	I	1	I	5	1*	III	1	0	2	0	1	I*	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 \* include one process intermediate between a spine and a seta.

times as long as broad. The three sheathed or fringed spines are about equal in size. A shorter but thicker row of spinules is present on its outer margin. Two rows of longer and more slender spinules are present on the inner margin separated by a free area in the middle. One naked seta arises terminally between the two terminal sheathed spines. Another naked seta arises at the tip of the 5th pedigerous segment close to the insertion on the outer margin of the leg segment. Two small spines representing the 6th legs are present dorsally at about the insertion of the ovisac.

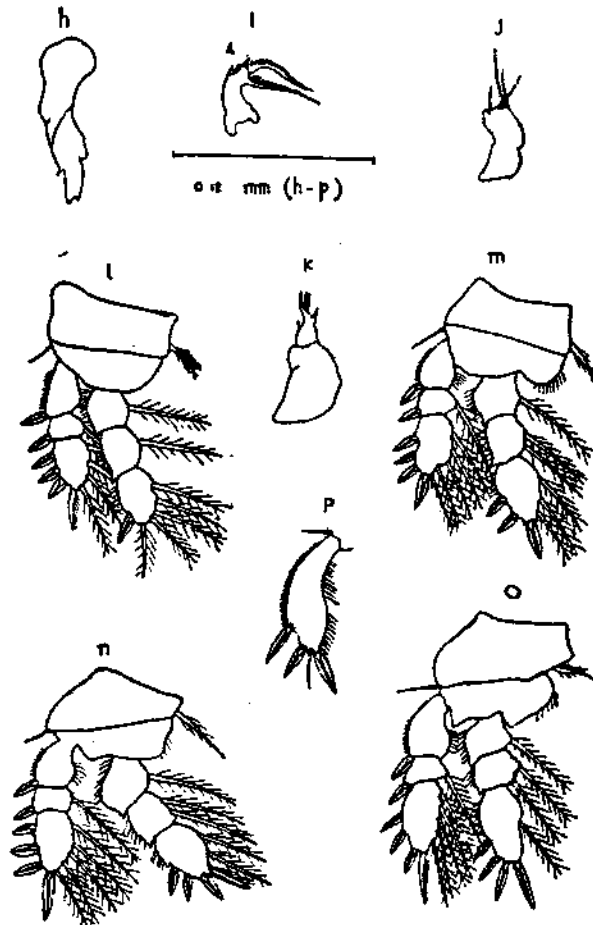


FIG. 2. *Anthessius mytilicolus* n. sp.

Adult female : (h) maxilliped ; (i) mandible ; (j) maxillule ; (k) maxilla ; (l-p) 1st to 5th legs.

Adult male : The body shape (Fig. 1 e) is similar to that of the female but smaller. The epimeral areas are more expanded. The urosome is 6-segmented. The genital segment (Fig. 1g) possesses convex lateral margins. There is a prominent postero-lateral spine on either side at the base of which arise two unequal setae representing the 6th legs. The anal segment is the longest. Length is 0.7 mm. ; width : 0.26 mm.

The maxilliped (Fig. 1f) consists of two long segments and a terminal claw. The first segment is unornamented but with an outer lateral lobe distally. The second segment bears a row of longer spinules all along its inner margin, another row of smaller spinules parallel to the marginal row and two more rows of small spines as shown in figure are present. One naked seta arises from about the middle of the inner margin and another from a process at the inner tip of the segment. The claw is strong, stout and curved with a blunt end.

*Remarks* : On running down the revised key (Stock, Humes and Gooding, 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. mytilicolus* the two rows are only narrowly separated. Both differ greatly in several features such as the shape of 5th leg, ornamentation of the antenna, caudal rami and setal formula.

After the key was published, 3 species namely, *A. amicalis*, *A. alatus* and *A. solidus* described by Humes and Stock (1963) have their body habitus very much modified. Three more species were described by Humes and Ho, of which *A. dolabellae* Humes and Ho belongs to the II, I, 5 group. Of the remaining two, *A. distensus* and *A. stylocheili* show great many differences in the shape, size and ornamentation of the majority of structures and even in the armature of the 5th leg.

#### SUMMARY

*Anthessius mytilicolus* n. sp. obtained from the mantle cavity of *Mytilus viridis* (L.) Ennore near Madras (India) is described.

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