

**STELlicOMES PAMBANENSIS, A NEW CYCLOPOID COPEPOD
PARASITIC ON STARFISH**

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THE siphonostomatous family Stellicomitidae of Humes and Cressey, 1958, includes three genera, namely, *Stellicomes* Humes and Cressey, *Onycopygus* H. & C., and *Asterocomes* Padmanabharao, 1962. Under the genus *Stellicomes* two species, *S. tumidulus* and *S. guineensis* are so far known.

All stellicomitids are parasitic on asteroids and are characterised by the presence of a highly reduced siphon. Besides it is interesting to note that there is a tendency in most of them to show reduction or absence of endopodites of the natatory legs. The form described below agrees with *Stellicomes* in most of its generic characters and at the same time differs from the species described earlier in the presence of the second leg with highly reduced one-jointed endopodite, third and fourth legs without endopodites and the sixth leg as a single seta in male. These characters being of significant taxonomic value, the present form is treated as a new species under the genus *Stellicomes*.

Material examined—When a number of starfishes, *Pentaceros hedemanni* (Lütken) were collected from Gulf of Mannar near Pamban and washed in 5% formalin, a large number of *S. tumidulus* were observed in the washings along with ten female (two egg bearing) and four male specimens of the new form described below.

The holotype, the allotype and the paratypes are deposited in the Reference Collection Museum of the Central Marine Fisheries Research Institute, Mandapam Camp. The specific name of the new form refers to the place from where it is collected.

Type locality—Gulf of Mannar near Pamban.

Type specimen—*Stellicomes pambanensis* sp. nov.

Family—Stellicomitidae Humes and Cressey, 1958.

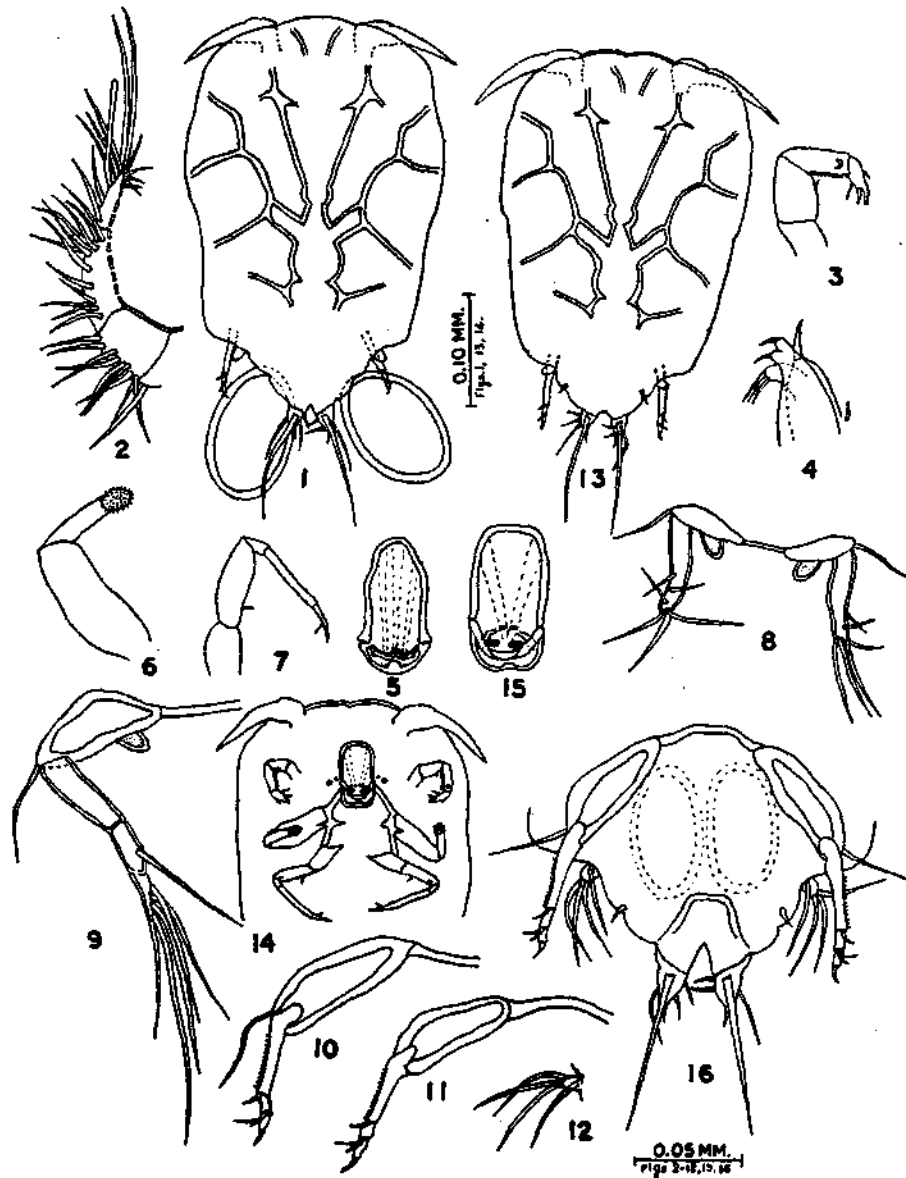
Genus—*Stellicomes* Humes and Cressey, 1958.

***Stellicomes pambanensis* sp. nov.**

FEMALE

The length varies from 0.46 to 0.48 mm. There is no external segmentation on the surface of the body. An internal chitinized frame work is visible through the dorsal cuticula; caudal rami minute with a long terminal and four small lateral setae. (Fig. 1).

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FEMALE: 1. Dorsal view of the adult. 2. Antennule. 3. Antenna. 4. Mandible and maxillule. 5. Labrum and labium. 6. Maxilla. 7. Maxilliped. 8. First leg. 9. Second leg. 10. Third leg. 11. Fourth leg. 12. Fifth leg.

MALE: 13. Dorsal view of the adult. 14. Ventral view of cephalosome. 15. Labrum and labium. 16. Urosome with 4th, 5th, and 6th legs in position.

Antennule (Fig. 2) is 4-segmented with the posterior edge sclerotized. The first segment bears one seta, the second nine, and each of the third and fourth numerous setae. A single aesthetask is present on the last segment. *Antenna* (Fig. 3) is 4-segmented, the first segment is without setae or spines, the second with a small seta, the third having a row of spines along the inner edge and the fourth with two small setae ending in a truncated process and a spine. *Mandible* (Fig. 4) is a simple spine with an isolated seta. *Maxillule* (Fig. 4) is with two branches, the inner having three setae and the outer two setae. *Maxilla* (Fig. 6) is 2-segmented, the first is broad without armature and the second is narrow ending in a spinose pad. *Maxilliped* (Fig. 7) is 4-segmented, the second segment bears a small seta and the fourth a claw with an inner subterminal seta. *First leg* (Fig. 8) is with 1-segmented exopodite having six setae, three external setae are short, the two internal setae and a single terminal seta are long and with a reduced 1-segmented endopodite. A prominent basipodite seta is present in all the four legs. *Fifth leg* (Fig. 12) is 1-segmented with three terminal setae. *Sixth leg* is absent.

Table representing the setal formula of second, third and fourth legs

(Figs. 9, 10, 11)

P	Basipodite		Exopodite							Endopodite
	1		1		2		3			
	Si	Se	Si	Se	Si	Se	Si	Se	St	
P ₂	0	1	0	0	1	0	4	0	1	Reduced and 1-seg- mented.
P ₃	0	1	0	1	0	1	0	1	1	Absent
P ₄	0	1	0	1	0	1	0	1	1	Absent

(P₂, P₃ and P₄ represent the second, third and fourth legs respectively. Si=Seta internal, Se=Seta external, St=Seta terminal. The setae and spines have been represented with Arabic and Roman numerals respectively.)

MALE

The length varies from 0.43 to 0.46 mm. The head and thoracic appendages and caudal rami are like those of female. Mouth area differs from that of female sixth leg is represented as single seta. (Fig. 13).

Remarks—*Stellicomes pambanensis* agrees with *S. tumidulus* Humes and Cressey, 1958, and *S. guineensis* H. & C., in the following characters which are significant enough to justify its inclusion under the genus *Stellicomes*.

(a) General appearance of the body.

(b) Four segmented antennule with a single aesthetask on the last segment as in *S. guineensis*.

- (c) Four segmented antenna ending in a truncated process and a spine.
- (d) Mandible as a simple spine with an isolated seta and two branched maxillule.
- (e) Two segmented maxilla ending in a spinose pad.
- (f) Four segmented maxilliped with a small seta on the second segment ending in a claw with an inner subterminal seta.
- (g) One segmented exopodite with six setae in the first leg.
- (h) One segmented fifth leg with three terminal setae.
- (i) Caudal rami minute with a large terminal seta and four small lateral setae.

The new form, however, shows affinities to *Onycopygus impavidus* Humes and Cressey (1958) in the presence of second leg with reduced one segmented endopodite and three segmented exopodite having five setae on the last segment and of a sixth leg in male, and to *Asterocomes indica* Padmanabharao (1962) in the presence of third and fourth legs without endopodites.

In the reduction of one segmented endopodite without any armature of the first and second legs and in the absence of setae except for a very slender one on the last segment of the exopodite of third leg, *Stellicomes pambanensis* does not agree with any of the members under the family *Stellicomitidae*. In the reduced one segmented endopodite of the first and second legs, in the complete absence of endopodites in third and fourth legs and in the presence of sixth leg in male *Stellicomes pambanensis* appears to have taken a different evolutionary course from the other two earlier species *S. tumidulus* and *S. guineensis*. But, we are far from having a complete knowledge of the group to throw light on the interrelationships among the members from the point of view of their evolution.

SUMMARY

1. A new cyclopoid copepod, *Stellicomes pambanensis*, parasitic on *Pentaceros hedemanni* (Lütken) is described under the genus *Stellicomes* Humes and Cressey, 1958, of the family *Stellicomitidae*.

2. *Stellicomes pambanensis* is characterised by the presence of (i) first and second legs with highly reduced one segmented endopodites (ii) third and fourth legs without endopodites and with exopodites having a prominent, well chitinized spine on each of the three segments and (iii) a sixth leg in male as a single seta.

3. The affinities of the new cyclopoid copepod with the known members of the family *Stellicomitidae* are discussed.

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