

**A NEW GENUS OF THE FAMILY PENNELLIDAE
(COPEPODA : SIPHONOSTOMATOIDA) PARASITIC ON ELASMOBRANCHS
IN THE SOUTHWEST COAST OF INDIA**

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ABSTRACT

A new species of parasitic copepod *Penicillus indicus* collected from elasmobranchs is described in detail. In order to accommodate this species in the family Pennellidae, a new genus *Penicillus* is established.

INTRODUCTION

AT PRESENT the family *Pennellidae* includes sixteen genera (Kabata, 1979) which exhibit a wide range of morphological differences. This paper intends to install one more genus to the family *Pennellidae*, based on parasites collected off Cochin, Mangalore and Lakshadweep during the course of the study of parasitic copepods on Elasmobranchs.

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***Penicillus* gen. nov.**

Cephalothorax subspherical, antennary process well developed. Holdfast unbranched and directed downwards. Neck cylindrical, slender, long and imperceptibly passing into genital trunk. Genital trunk subcylindrical, transversely ridged, abruptly narrowing at the region of oviduct orifice. Abdomen subcylindrical, transversely striated and shorter than the

genital trunk. Abdominal brush present lateroventrally. It is filiform and unbranched.

5-10 hollow bell shaped structures attached on the sides of the abdomen. Egg sacs long and uniserial. Appendages greatly reduced. Mouth pennellid-like. Four pairs of swimming legs present, uniramous, devoid of spines and setae. Male unknown.

***Penicillus indicus* sp. nov. (Fig. 1)**

Material: Eight ovigerous females were collected from the ventral side of the body of the shark *Eulamia melanoptera* (Quoy and Gaimard), *E. ellioti* (Day) and *E. dussumieri* (Muller and Henle) caught off Cochin, Mangalore and Lakshadweep respectively. Only the genital trunk of the parasites were visible externally. The neck and cephalothorax was buried inside the viscera near the liver. The parasites were removed carefully by cutting open the muscle of host without damaging the holdfast.

Etymology: The generic name is given because of the similarity of the organism with the genus *Pennella* and the specific name *indicus* is because the specimens were collected from Indian waters.

surface of the head slightly convex, with short and minute papillae arranged in two pairs of patches. A pair of small, concave patches at the centre and another larger pair on either side.

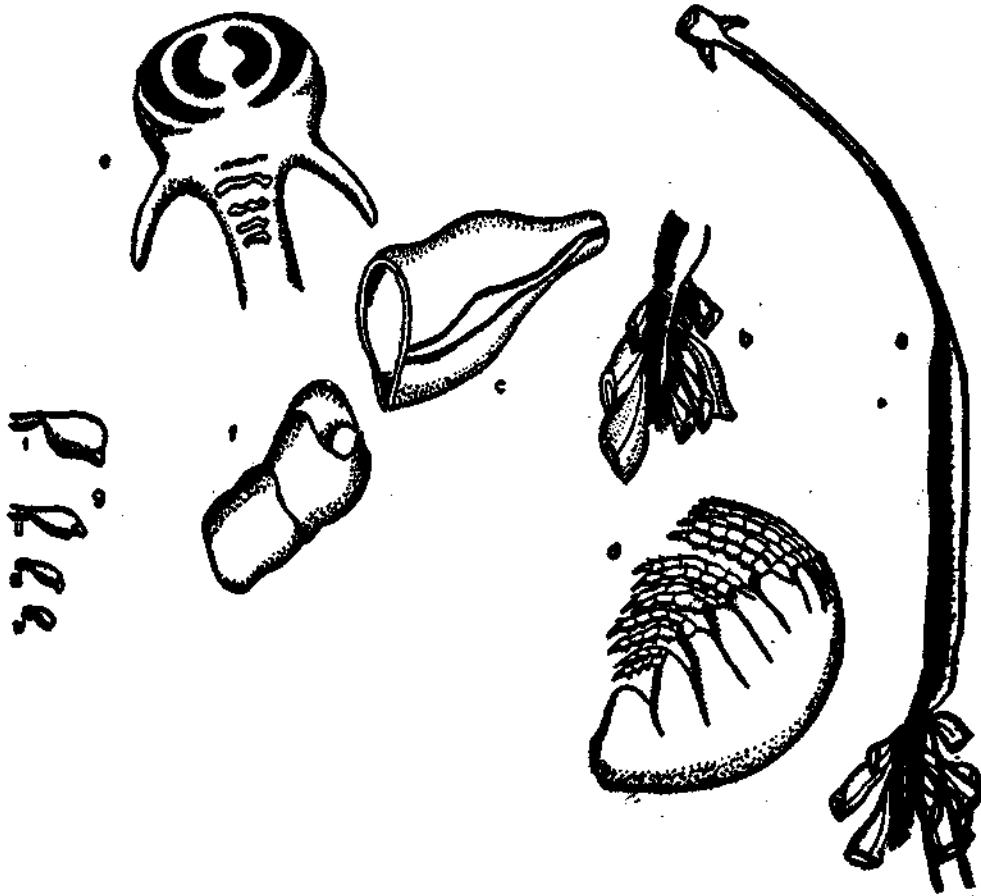


FIG. 1. *Pennellus indicus* sp. nov.: a. Female animal, b. abdominal region (enlarged), c. bell-shaped structure, d. organ inside the bell, e. cephalothorax (enlarged), f. second teannan and g. Thoracic legs I-IV.

The holotype female will be deposited in the Indian Museum, Calcutta and other paratypes will be lodged at the Museum, Department of Industrial Fisheries, Cochin University of Science and Technology, Cochin 682 016, India.

Female: Head sub-spherical. The anterior

A pair of holdfasts arise from the posterior side of cephalothorax. They are unbranched and directed posteriorly. The neck is slender and long. Subequal in length with the genital segment. Genital trunk broad and sub-cylindrical. The entire segment is completely covered with transverse ridges. Abdomen about one-third the length of genital trunk, tapering posteriorly.

Abdominal brush or plumes present ventrolaterally. Plumes numerous in number and unbranched. Five to ten hollow bell-shaped structures present on either side of the abdomen. These structures are brown in colour with longitudinal white striation. Distribution of these structures does not follow any pattern as regard to size, shape and position. These structures are strengthened by chitinous border. The inner margin, which faces the abdomen is open.

Within the bell shaped structure, there is another organ, which is subspherical in shape and folded. The outer margin bear seven pairs of appendages. Each appendage is further branched into two arms. Each arm six segmented. Distal segment pointed. The arms bear spinules on the upper surface and setules at the lower surface.

Appendages: First antenna not observed in this species. Second antenna stout and three segmented. The first and second segment subequal in length. Third segment modified into a chela. Maxilla and Maxilliped absent. Four pairs of thoracic legs present on the ventral side at the beginning of the neck. All legs uniramous. First leg broad, two segmented. Second and third legs small, subequal in length and two segmented. Fourth leg minute and single segmented.

Total length: 6.35 cm.

Remarks: Among the members of the family *Pennellidae*, the present new species shows resemblance only to the members of the genus *Pennella*. *Penicillus indicus* sp. nov. broadly exhibits similarity to *Pennella* spp. in all aspects as far the cephalothorax and genital trunk are concerned. But the abdominal region of *P. indicus* has remarkable variation with the genus *Pennella*. The presence of bell shaped structures at the abdominal region of *P. indicus* is a very distinct character that is not seen in any other genera of the family *Pennellidae*. Because of this peculiarity, the present species could not be included in the genus *Pennella*. This new species was collected from different hosts at different localities viz. Cochin, Mangalore and Lakshadweep from three different species of sharks. All the species collected from these localities exhibit similar characters. This clearly shows that this is an established character of the genus. Hence the new genus *Penicillus* is erected in the family *Pennellidae*.

The new genera and new species can easily be separated and identified from all other known genera of the family *Pennellidae*, by the presence of peculiar bell shaped structures at the abdominal region.

REFERENCES

- KARATA, Z. 1979. Parasitic copepoda of British Fishes. *Publ. Ray Society, London*, p. 468.