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**On two members of the family Lernaepodidae (Crustacea: Copepoda) parasitic on elasmobranchs in Chilean waters, with a description of *Pseudocharopinoides myliobatidos* n. g., n. sp. from *Myliobatis chilensis* Philippi**

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**Abstract**

*Pseudocharopinoides myliobatidos* n. g., n. sp. (Lernaepodidae) is described. Although similar to *Pseudocharopinus* Kabata, 1964, it differs from this genus in the ventral position of its posterior processes and by its non prehensile second antenna. The similarity indicates that it belongs to the *Charopinus*-branch of the Lernaepodidae. In addition, *Brianella corniger* Wilson, 1915 is recorded on *Sympterigia brevicaudata* and is redescribed.

**Introduction**

While examining lernaepodid copepods on elasmobranch fishes off the northern coast of Chile, the authors found on *Myliobatis chilensis* Philippi, 1892 some specimens that at first sight appeared to belong to the genus *Pseudocharopinus* Kabata, 1964. The ventral position of the posterior processes precluded, however, placing them in that genus. The family Lernaepodidae does not contain a genus similar to *Pseudocharopinus* which bears the posterior processes ventrally. It became necessary, therefore, to erect a new genus for the newly discovered copepod. This paper contains its description and the proposed name *Pseudocharopinoides* n. g. Also redescribed and illustrated in detail are the appendages of *Brianella corniger* Wilson, 1915.

**Methods**

The specimens were examined after clearing in lactic acid. Methods used in the examination and preparation of drawings were same as those used by Castro & Baeza (1981). The terminology follows that proposed by Kabata (1979).

***Pseudocharopinoides* n. g.**

*Female.* Lernaepodidae, *Charopinus*-branch. Cephalothorax cylindrical, longer than trunk, head distinctly delimited, with well-developed dorsal shield. First antenna indistinctly segmented, with basal papilla and apical armature well developed. Second antenna not prehensile; endopod bi-segmented. Mandible with 3 secondary teeth. Endopod of first maxilla with 3 terminal papillae; exopod lateral. Maxilliped close to buccal cone. Posterior trunk processes present, in ventral position.

*Male.* Unknown.

*Etymology.* The name alludes to the close similarity of this genus with *Pseudocharopinus*.

*Type-species.* *Pseudocharopinoides myliobatidos* n. sp.

***Pseudocharopinoides myliobatidos* n. sp. (Figs 1-6)**

*Host.* *Myliobatis chilensis* Philippi, 1892.

*Site.* Spiracles and nasal fossae.

*Locality.* Antofagasta, Chile (23°29' S; 70°25' W).

*Record of specimens.* One non-ovigerous female (taken 18 Jan. 1984) and two ovigerous females (taken 2 Sept. 1984).

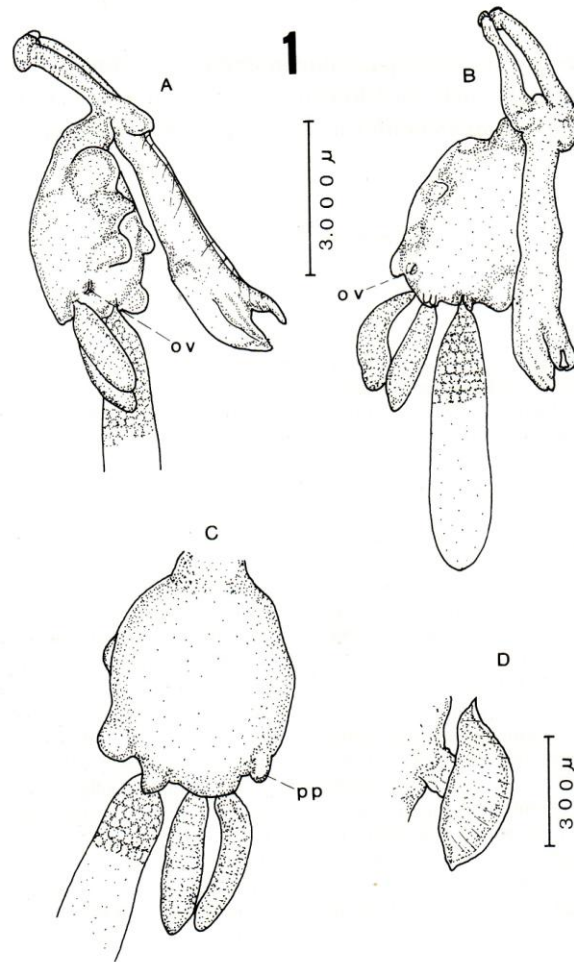
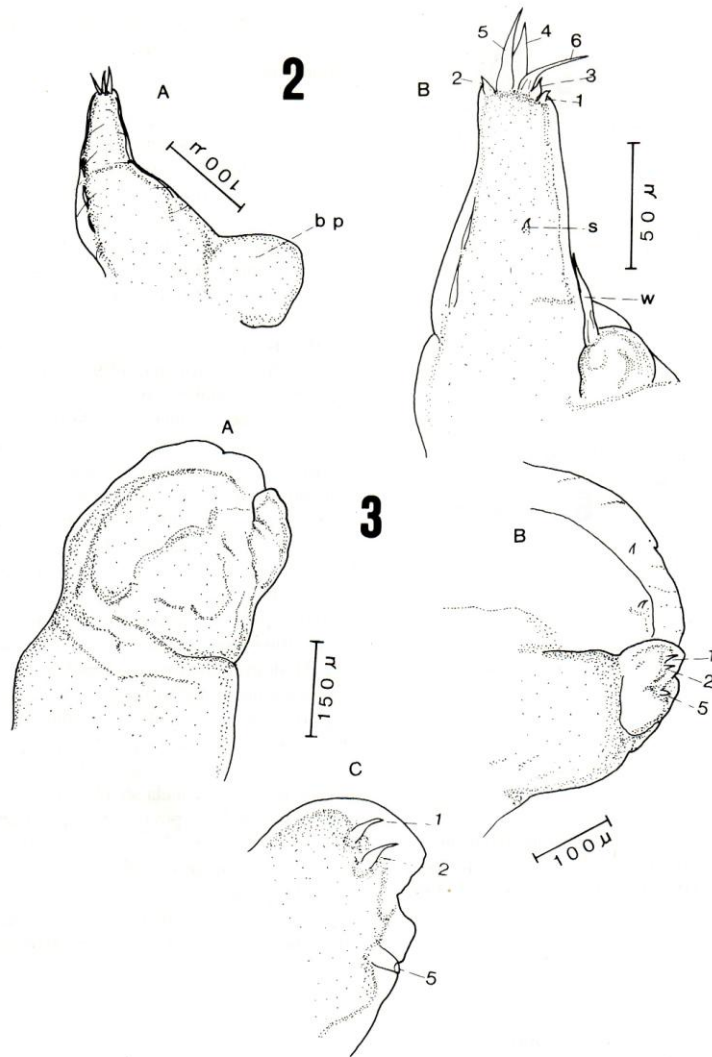
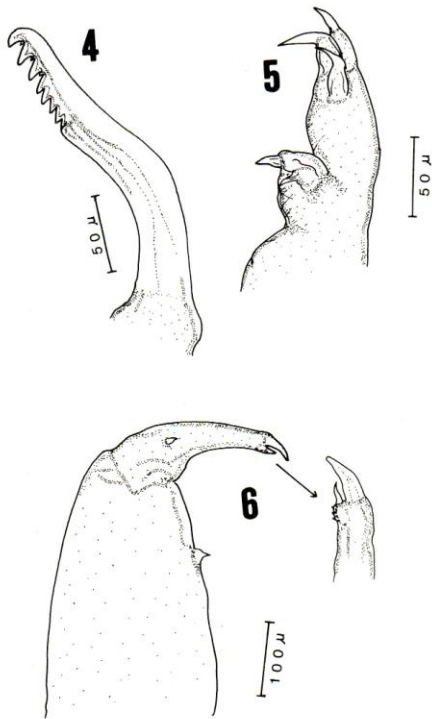


Fig. 1. *Pseudocharopinoidea myliobatidos*. Female. A, lateral view; B, dorsal view; C, ventral view; D, bulla, lateral view. (ov, oviducal pore; pp, posterior process).



Figs 2-3. *Pseudochoropinoides myliobatidos*. Female. Fig. 2A, first antenna, entire; B, distal part, apical armature. (bp, basal papillae).  
Fig. 3. A, second antenna, entire; B, endopod distal, with detail of armature; C, endopod armature.



Figs 4-6. *Pseudocharopinoides myliobatidos*. Female. Fig. 4. Mandible. Fig. 5. First maxilla. Fig. 6. Maxilliped.

*Type-material.* Holotype (ovigerous) deposited in Museo Nacional de Historia Natural de Chile. Reg. No. 15059 MNHN-CP. Paratype Reg. No. 15060 MNHN-CP.

#### Description

*Female.* (Fig. 1A-C). Cephalothorax cylindrical, longer than trunk; head distinctly delimited, with well-developed dorsal shield. Trunk width reaching 70% of its length, with 3 pairs of dorso-lateral protuberances, one similar postero-lateral pair (Fig. 1C, pp) and unpaired protuberance in centre

of posterior margin, ventral to egg sacs. Posterior processes half length of trunk, ventral to egg sacs; genital process absent.

*Dimensions* (in mm, based on 3 measurements). Cephalothorax length 4.20 (3.90-4.40); width 0.85 (0.73-0.91). Trunk length 3.90 (3.70-4.10); width 2.80 (2.20-3.30). Second maxilla length 2.80 (2.50-2.90), width 0.38 (0.36-0.42). Posterior processes length 2.20 (2.10-2.30); width 0.50 (0.40-0.70). Egg sacs length 4.60; diameter 1.20.

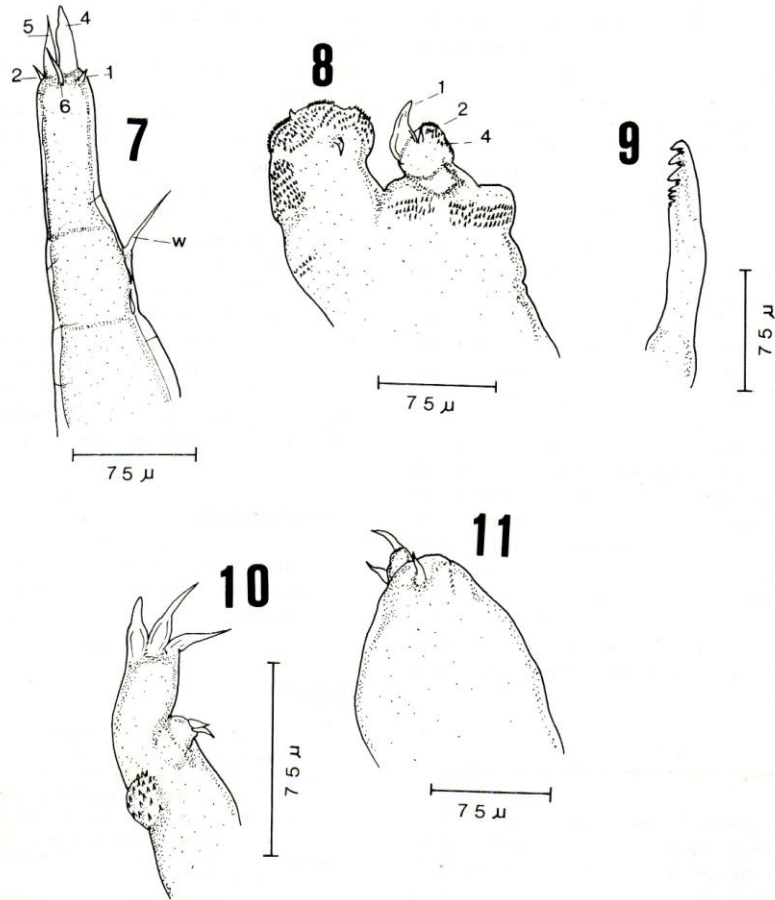
First antenna (Figs. 2A, B) indistinctly segmented, with rounded basal papilla (Fig. 2A, bp); apical armature (Fig. 2B) comprising setae (4), (5) and (6), as well as tubercles (1), (2) and (3); short spine (solus, see Kabata, 1979, p. 342) marking obsolete segmental boundary; whip present (Fig. 2B, w). Second antenna (Fig. 3A, B) with heavily sclerotized sympod; exopod armed with 2 spinules on distal surface; endopod bi-segmented, proximal segment unarmed, distal with armature comprising reduced hook (1), spinule (2) and short process (5). Mandible (Fig. 4) with dental formula P1, S1, P1, S1, P1, S1, B5; basal teeth of about equal size. First maxilla (Fig. 5) endopod long, with 3 terminal, setiferous papillae; exopod lateral, bearing 2 apical setae, otherwise unarmed. Second maxilla (Fig. 1A, B) shorter than trunk, fused at tip with its opposite number and forming narrow collar. Bulla (Fig. 1D) with short manubrium and fusiform anchor. Maxilliped (Fig. 6) with long, slightly tapering corpus; myxal area armed with subconical, setiferous papilla; subchela slender, gently curving, with distal batch of spinules at base of barb; latter half length of claw. Claw very slightly curving, tapering, without secondary teeth.

*Male.* Unknown.

*Etymology.* The specific name is the genitive form of the host's classical Greek name *Myliobatis*.

#### Comments

As mentioned above, the Lernaepodidae does not contain a genus that combines a general similarity to *Pseudocharopinus* with a ventral position of the posterior processes and a non-prehensile second antenna. The conclusion that the copepod



Figs 7-11. *Brianella corniger*. Female appendages. Fig. 7. First antenna. (w, whip). Fig. 8. Second antenna, distal part. Fig. 9. Mandible. Fig. 10. First maxilla. Fig. 11. Maxilliped.

from *Myliobatis chilensis* must be accommodated in a separate genus is, therefore, unavoidable.

The lernaeopodid copepods parasitic on elasmobranchs have been grouped by Kabata (1979), with very few exceptions, in two branches of the family, distinguishable from each other by the posi-

tion of their posterior processes. The members of the *Lernaeopoda*-branch have uropods ventral to the oviducal pores, whereas those of the *Charopinus*-branch have them in a dorsal position. If Kabata's views are accepted, it is necessary to place the present species in a genus distinct from *Pseudo-*

*Tropidocope*

*charopinus*, from which it is distinguished by the ventral position of its uropods. Even rejection of Kabata's views would not make inclusion of *P. myliobatidos* in *Pseudocharopinus* possible, because of the differences between their second antennae. The latter genus has second antennae of more primitive, prehensile type, whereas those of the present species have reduced endopods, incapable of prehension.

The intra-familial position of *Pseudocharopinoides* is also problematical. Kabata's (1979) delineation of the branches of the Lernaepodidae would place it in the *Lernaepoda*-branch, because of the ventral position of the uropods. Most other morphological features, however, show such close similarity with *Pseudocharopinus* that can only be explained by a very close relationship between these two genera. The authors, therefore, prefer to place it in the *Charopinus*-branch. Similarly, the position of the genus *Lernaepodina* Wilson, 1915, distinguished from *Lernaepoda* mainly by the dorsal position of its uropods, should be in the *Lernaepoda*-branch. Kabata (1979) placed it in the *Charopinus*-branch, accepting the position of the uropods as the determining diagnostic feature. Both *Lernaepodina* and *Pseudocharopinoides* could be intermediate between these two branches of the family.

#### ***Brianella corniger* Wilson, 1915 (Figs. 7–11)**

*Host.* *Sympterygia brevicaudata* (Cope, 1877).

*Comment.* This species, described by Wilson (1915) on an unknown host from Lota, Chile, was quoted by Atria (1967) from a ray *Psammobatis* sp. (= *Sympterygia*) off Antofagasta. The present paper reports it on *S. brevicaudata* from the Antofagasta coast. As no complete description of the appendages of this species exists, it is redescribed and illustrated here.

#### *Description of appendages*

*Female.* First antenna (Fig. 7) apparently trisegmented with long whip (w); last segment with one short spine on its medial surface. Apical armature with well developed setae (4 and 5), slender seta (6) and fine tubercle (1 and 2). Second antenna (Fig. 8) sympod sclerotized. Exopod globose, densely spinulated with 2 spines. Endopod bi-segmented, prehensile, with strong hook (1), spine (2) and developed projection (4) with spinulate surface. Mandible (Fig. 9) dental formula as follows: PIS1, PIS1, PIS1, B4, the 2 last teeth of minor size. First maxilla (Fig. 10) endopod with 3 terminal papillae, each with one seta. Exopod approximately ventral in position, bearing 2 short setae; dorsal surface with patch of spinules. Maxilliped (Fig. 11) corpus globose, rounded, bearing 2 setae and distally one papilla surmounted by one seta.

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