OCCURRENCE OF TWO CANUELLID NAUPLII (COPEPODA, CRUSTACEA) IN SÃO SEBASTIÃO CHANNEL AND VICINITY

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ABSTRACT

Two Canuellid nauplii (stage I) are briefly described from the waters of São Sebastião Channel and vicinity: one is planktonic and quite frequent, and, the other, benthic. Both resemble other Canuellid nauplii known, but differ mainly in having a ventral posterior process, a very thin transparent tongue-like structure. This is the first record of Canuellidae copepods in Brazilian waters.

KEYWORDS; Canuellidae, Copepoda, nauplii, coastal water, Brazil.

INTRODUCTION

Lang (1948) placed the families Longipediidae and Canuellidae in the Sectio Polyarthra. *Longipedia*, of the first family, has been found in Santos bay waters since 1952 (Paiva Carvalho, 1952). Its nauplius occurs abundantly off São Sebastião in the plankton and the adults in the sandy bottom of the Channel. Canuellidae nauplii were found recently in the Channel waters (Bjornberg, pers. obs.).

Although resembling closely other nauplii of the same family figured in the literature (Vincx & Heip, 1979; Dahms, 1990; Gurney, 1930, *apud* Lang, 1948), the São Sebastião nauplii show features which distinguish them from the already known species. Besides the planktonic specimen, a benthic specimen was collected over the shelly bottom near to Itassucê Island, situated in the Channel's vicinity.

METHODS

The planktonic nauplius was caught with a 30 μm meshed plankton net. The benthic specimen was collected with a special net (Wakabara *et al.*, 1993) pulled manually over the bottom. The metal frame of the mouth of the latter net was flat on one side and arched on the other, fitted with a 300μm meshed netting on the inside and a 30μm meshed bag 1 m long on the outside. It was pulled over the bottom, flat side downwards to catch the hyperbenthos. Both nauplii were fixed in 4% formalin and drawn with the help of a Labophot Nikon microscope fitted with a camera lucida.

DESCRIPTION OF THE NAUPLII

(Fig.1)

Both yellowish larvae were in the first naupliar stage. They were about th same length (0,14mm) when measured from the frontal margin of the body to th posterior margin, spines excluded. The scutum, is shorter than the body in bot specimens; the muscles are parallel (fig.1B); the labrum large, about half the length o the body. The antennule is four segmented in the benthic, and five-segmented in th planktonic form. Both have three terminal setae on the antennule. The antenna coxopod has a masticatory spine in the planktonic and no spine in the benthic specime Both have a six-segmented exopod with six setae; the endopod, non segmented in bot has four setae in the planktonic specimens and three in the benthic specimen. Th mandibles are alike in both but the planktonic specimen has five setae on the fou segmented exopod, and the benthic specimen, only four. There is also one seta more o the second segment of the mandibular endopod in the planktonic nauplius. The mo striking difference between both nauplii lies in the length of the caudal spines, whic are very short in the benthic nauplius and very long in the other. Both have a media ventral caudal process.

DISCUSSION

The collected nauplii differ from the Canuellidae nauplii known up to now, having a posterior, ventral median tongue-like lamella – the caudal process. Su process is very thin and transparent in our animals, similar to those found in the naupl of the Poecilostomatoida (Taeniacanthidae, Tegobomolochidae and Lichomolgida described by Izawa (1986). Their muscles are also like those of the cyclopoid naupl Our specimens are Canuellid nauplii because of the following morphologic characteristics, as listed by Dahms (1990): (i) their antennules are more than segmented; (ii) the antennal exopodite has more than five segments; (iii) the mandibul endopodite is distinctly 2-segmented; (iv) the caudal setae or spines are stout and stro and heavily spinuled in the first naupliar stage; and (v) the labrum is setuled near to t margin. The benthic nauplius has short posterior spines and less setae because probably crawls over the bottom. It is otherwise very similar to the plankto specimen. The latter has very long posterior stout spines, which help to maintain t nauplius suspended in the water. Unfortunately no adult Canuellidae have been found bottom samples or in other habitats of the area. Rearing experiments with the collect nauplii have failed so far.

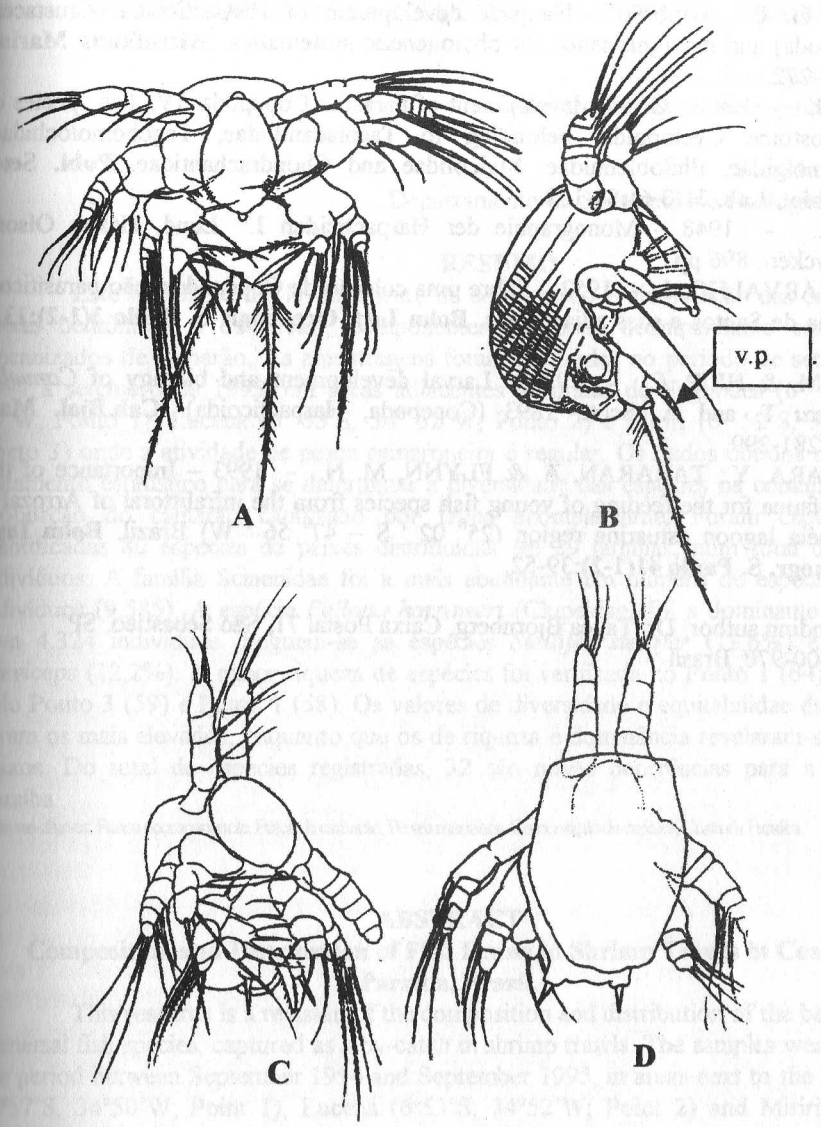

Fig. 1 - A: Nauplius I of a Canuellidae (0.14mm), planktonic specimen, ventral view. B: Canuellid nauplius I, planktonic specimen, seen in profile, showing the parallel muscles and the ventral process (v.p.). C: Benthic specimen of Canuellid nauplius I (0.14mm), ventral. D: Benthic specimen of Canuellid nauplius I, dorsal.

REFERENCES

DAHMS, H. U. - 1990 – Naupliar development of Harpacticoida (Crustacea, Copepoda) and its significance for phylogenetic systematics. **Microfauna Marina 6:**169-272.

IZAWA, K. - 1986 – On the development of parasitic Copepoda. IV. Ten species of Poecilostome Cyclopoida, belonging to Taeniacanthidae, Tegobomolochidae, Lichomolgidae, Philoblennidae, Myicolidae and Chondrachantidae. **Publ. Seto Mar. biol. Lab. 31(3-6):**81-162.

LANG K.. - 1948 – Monographie der Harpacticiden I. Lund, Häkan Olsons Boktryckeri, 896 pp.

PAIVA CARVALHO, J. - 1952 – Sobre uma coleção de Copépodos, não parasíticos, da Baía de Santos e suas adjacências. **Bolm Inst. Oceanogr. S. Paulo 3(1-2):**131-187.

VINCX. M. & HEIP, C. - 1979 – Larval development and biology of *Canuella perplexa* T. and A. Scott, 1893 (Copepoda, Harpacticoida). **Cah.Biol. Mar. 20(3):**281-299.

WAKABARA, Y.; TARARAN, A. & FLYNN, M. N. - 1993 – Importance of the macrofauna for the feeding of young fish species from the infralittoral of Arrozal - Cananéia lagoon estuarine region (25^0 02 ' S – 47^0 56 ' W) Brazil. **Bolm Inst. Oceanogr. S. Paulo 41(1-2):**39-52.

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