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## ON AN UNUSUAL CONCENTRATION OF *SAGITTA TENUIS* CONANT IN THE ESTUARY OF POTENGI, NATAL, BRAZIL

### ABSTRACT

An unusual concentration of *Sagitta tenuis* Conant is reported from one of the sampling stations within the estuary of Potengi, Natal, Brazil on December 8, 1992. A major proportion of the population was within the size range of 4.7 mm and 6.7 mm and dominant stages were II and III.

A COMPREHENSIVE study of zooplankton carried out within the estuary of Potengi, Natal, Brazil, during the period 1979-1980 furnished information on the diurnal and seasonal variations in the abundance of the main components (Esnal *et al* 1985, Sankarankutty & Medeiros, 1985, Sankarankutty *et al.*, 1985, Nair & Sankarankutty, 1988, Sankarankutty, 1991 and Sankarankutty *et al.*, in press-a).

Recognizing the need to detect and monitor any modifications in the zooplankton community, further investigations on a long-term basis was initiated in October 1992 selecting three fixed stations situated at varying distances from the mouth of the estuary. Present paper deals with an unusual concentration of *Sagitta tenuis* observed on December 8, 1992 at Station 3.

The present study was carried out during the tenure of a fellowship awarded to one of the authors (C.S.) by the Council for the Development of Science and Technology (CNPq, Brasilia) for which the author expresses

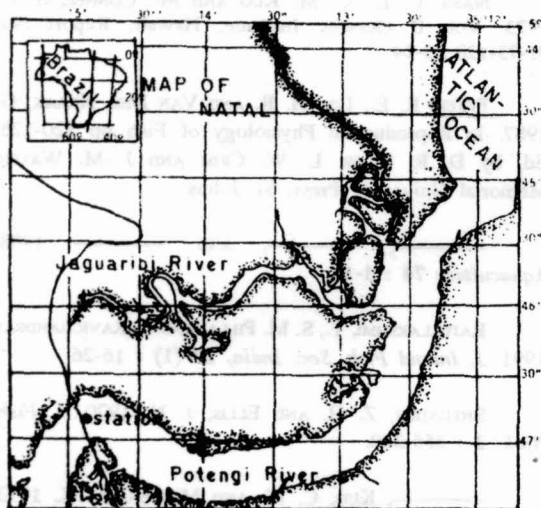


FIG. 1. Map indicating the sampling station within the estuary of Potengi, Natal, Brazil

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From October 1992 the sampling was reinitiated at three fixed stations (Fig. 1) including the station sampled during the previous study (Station 1). A zooplankton net with a mouth diameter of 48 cms. and mesh size of 125 micron is being used to collect monthly samples by vertical hauls from close to the bottom to the surface. Five samples are being taken at each sampling to provide a more representative value of the zooplankton number. Surface water samples are also analysed to determine temperature and salinity.

The zooplankton samples collected during the period 1979-1980 (Nair & Sankarankutty, 1988) showed that chaetognaths were present throughout the year with a peak in July-August. This study also revealed that chaetognaths were generally more abundant in the samples taken

during the high tide especially during the night. Presence of three species was also confirmed within the estuary viz. *Sagitta enflata* Grassi, 1881, *S. helenae* Ritter, Zahony, 1910 and *S. tenuis* Conant, 1896. *S. tenuis* was the most

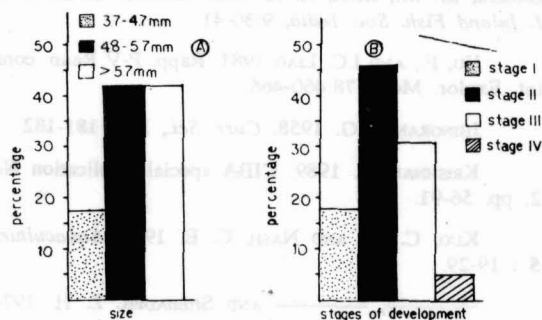


FIG. 2a. Percentage of size frequency of *Sagitta tenuis* in the samples

FIG. 2b. Percentage of stages of development of *S. tenuis* in the samples

common species and is considered a true inhabitant of the estuary.

On December 8, 1992 the samples taken at Station 3 contained an uncommonly high concentration of *S. tenuis*. On a detailed analysis, it was observed that the total number of chaetognaths in the five samples ranged from 739 to 1217 individuals per haul which gave an average value of 1078/m<sup>3</sup>. At stations 1 and 2 the value obtained, though higher than that observed in the earlier study (Nair & Sankarankutty, 1988), was 164/m<sup>3</sup> and 288/m<sup>3</sup> respectively. Fig. 2 gives the size frequency of the population sampled as well as stages of development indicating that most of the specimens measured between 3.7 mm and 6.7 mm and stages I to IV were represented at 18, 46, 30 and 5% respectively.

Data obtained on the zooplankton in 1993 and 1994 (Sankarankutty *et al.*, in press-b) showed very interesting and profound modifications when compared with those collected in 1979-1980 (Sankarankutty *et al.*,

in press-a). Not only the production of zooplankton as a whole showed a dramatic increase in 1993 and 1994, a clear shift in the population maxima from July-August to

February-April was also evident. These changes are also reflected in the population of chaetognaths. A significant increase in salinity (38.1‰) was also observed.

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**REGENERATION OF EYESTALK IN THE HERMIT CRAB *CLIBANARIUS LONGITARSUS* (DE HAAN) (CRUSTACEA : DECAPODA : ANOMURA)**

## ABSTRACT

Three hermit crabs with unequal eyestalks were collected from Vellar estuary. The identity was established as *Clibanarius longitarsus* (De Haan). This hermit crab regenerates the eyestalk when it is cut distally. But when the eyestalk is cut proximal to the optic ganglia there is no regeneration.

THE LENGTH of the eyestalk is an important taxonomic character in the identification of hermit crabs coming under the genus *Clibanarius* (Dana). These hermit crabs are mostly found in estuaries and backwaters, among them, *Clibanarius longitarsus* (De Haan) is the dominant one. The occurrence of this hermit crab has been reported by Sundararaj (1927), Reddy (1935), Gravely (1941), Thomas (1967), Sarojini and Nagabhushanam (1972) and AjmalKhan (1992) from the estuaries and backwaters situated on the east coast of India.

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In Vellar estuary (lat. 11°29' N; long. 79° 46' E), this hermit crab occurs abundantly and is the most dominant species. The eyestalks in this species are equal and as long as the antennular peduncle (Fig. 1A). The eyestalks are yellow in colour and no stripes are present on the eyestalks.