

SWARMING OF *CRESEIS ACICULA* RANG (PTEROPODA) IN THE PALK BAY OFF MANDAPAM

ABSTRACT

A dense swarm of *Creseis acicula* in April 1980 in the Palk Bay, Mandapam was reported and its occurrence along the Indian Coast discussed.

INFORMATION on the swarms of various species of zooplankton of the coastal and inshore waters of India is limited. Most commonly encountered adult molluscan plankters in the inshore waters are the pteropods *Cavolinia* spp. and *Creseis* spp. Swarms of *Cavolinia* spp. were reported by Sakthivel (1972). Similarly swarm of *Creseis acicula* which is a common neritic pteropod in the Indian seas was reported by Sakthivel and Haridas (1974) on the west coast and on the east coast by Krishnamurty (1967) and Peter and Paulinose (1978). The present note deals with the swarms of *Creseis acicula* in Palk Bay off Mandapam.

While surveying a stretch of the sea shore at Dhargavalasai on 2-4-80 for the collection of

egg clusters of cephalopods for culture experiments, one of the authors noticed the sandy beach of this area, nearly of 2 km long matted with *C. acicula* for a thickness of 20 mm and for a width of 200 to 250 mm (Fig. 1). A sample of 1 g of the material contained 2,434 specimens ranging in size between 9-12 mm in length.

A dense swarm of *C. acicula* was observed on 16-4-80 very near to the shore of Pillamadam. A sample of 250 ml of sea water collected at 0730 hrs. contained unusually large numbers of these pteropods. The biomass of the sample was estimated at 6.5 ml for 250 ml sea water and it contained 780 specimens. The salinity

of the water was estimated as 31.96‰. *C. acicula* collected from this area measured between 10-12 mm in length. The sample was exclusively composed of the species. The sudden appearance of the swarms of *C. acicula* and the total absence of other zooplankton in the Pillamadam area near the fish farm of C.M.F.R.L. is interesting and needs further investigation. During the period of swarm, the sea was calm with little wave action and had high temperature, high salinity and maximum period of sunshine.

An examination of zooplankton samples collected regularly in April from Gulf of Mannar,

not collected between 0700 and 0730 hrs in March April and May was respectively 1,900, 135 and 1,339 respectively. The occurrence of relatively greater number of *C. acicula* in the zooplankton samples in Gulf of Mannar coincided with the period of swarming observed in Palk Bay. Among the nutrients silicate (3.78µg at/l) and nitrate (2.00µg at/l) values were higher than the phosphate (0.59µg at/l).

Eventhough *C. acicula* is not much favoured as food by majority of fishes, Chacko (1949) observed the species in the stomach contents of *Sardinella gibbosa* (Cuv. and Val.), *Dussumieria hasseltii* (Bleeker), *Rastrelliger kanagurta*

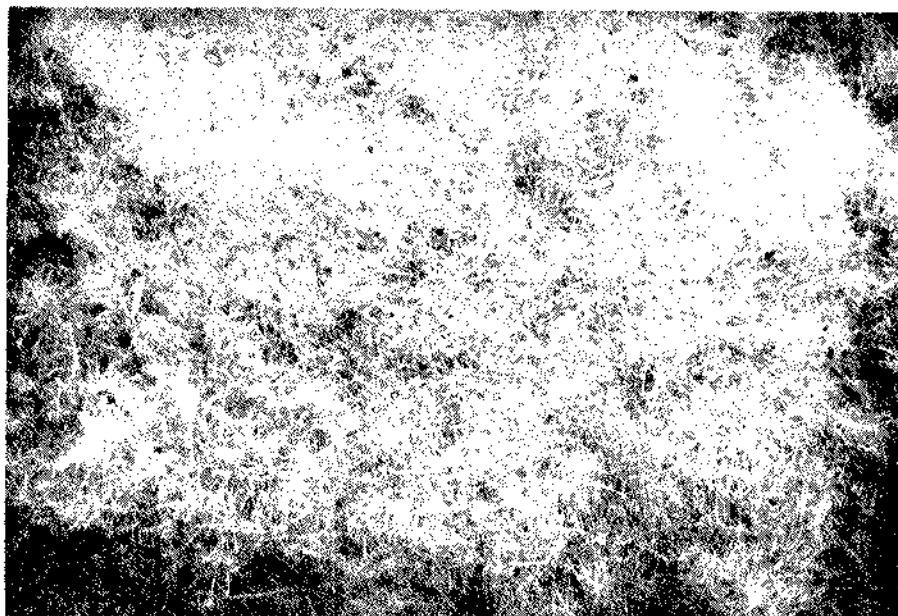


Fig. 1. Swarms of *Cresis acicula*, washed ashore

Mandapam during the period of swarm in Palk Bay area revealed that zooplankton was fairly abundant and it formed the secondary peak (17.2 ml) of the year 1980. Mean monthly number of *C. acicula* from the samples of 10 minutes haul with mouth half metre diameter

and *Mene maculata*. During the period of the present swarm, the catch of *S. gibbosa* and *D. hasseltii* improved considerably.

Along the west coast, this species is reported to occur in the region off Bombay from

January to March in smaller number, but with a peak in October (Pillai, 1968), off Trivandrum Coast (Menon, 1945) and off Cochin (Sakthivel, 1974) from November to April. Its peak abundance on the east coast was observed in March around Krusadai Islands (Chacko, 1950), near Mandapam (Prasad, 1954) and off Porto novo (Krishnamurty, 1974). Swarms of *C. acicula* and cladoceran *Avirostris* sp. recorded off Cochin coincided with the occurrences of

Trichodesmium bloom (Sakthivel and Haridas, 1974). However, no such association was noticed in the present investigation.

The authors are grateful to Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute and Dr. A.V.S. Murty for encouragement and Shri K. J. Mathew for critically going through the manuscript and offering helpful suggestions.

Central Marine Fisheries Research Institute,
Cochin - 682 018.

S. KRISHNA PILLAI
JOSEPH XAVIER RODRIGO

REFERENCES

- CHACKO, P. I. 1942. *Curr. Sci.*, **11**: 404
 ———— 1949. *Proc. Ind. Acad. Sci.*, **29** Sect. B: 83-97.
 ———— 1950. *Ibid.*, **31** B: 162-174.
 ———— AND S. MAHADEVAN 1956. Fish Stn. Repts. and year book April 1954 to 1955. Govt. of Madras. p. 139.
 KRISHNAMURTY K. 1967. *Hydrobiologia*, **29**: 226.
 PETER, K. J. AND V. T. PAULINOSE 1978. *Indian J. Mar. Sci.*, **7**: 126-127.
 PILLAI, V. K. 1968. *J. mar. biol. Ass. India*, **10**: 237-244.
 PRASAD, R. R. 1954. *Indian J. Fish.*, **1**: 1-36.
 SAKTHIVEL, M. 1972. *Indian J. Mar. Sci.*, **1**(2): 148.
 ———— AND P. HARIDAS 1974. *Mahasagar, Bull. Natr. Inst. Oceanogr.*, **7** (1 & 2): 60-67.