

The ecological significance of ECP is that it is an important link between photosynthetic and heterotrophic micro organisms (Bell, 1983). There is a rapid flow of dissolved organic carbon from the phytoplankton to the bacterial assemblages of the "phycosphere". This is an important step in mineralization and nutrient

cycling in aquatic environment.

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PROTEIN PATTERN OF THE OVARY, DEVELOPING EMBRYO AND FREE VELIGER IN THE SNAIL *CERITHIUM CORALIUM* (KIENER)

ABSTRACT

Protein pattern and number of fractions were observed to change from the intra-ovarian eggs to developing embryo and to free veliger stage of *Cerithium coralium*. Protein fractions decreased from 12 to 5 and 4 in the above respective stages. While the slow-moving fractions present only in the ovary, the fast-moving fractions were found in all stages.

STUDIES of protein constituents and their variations during molluscan development have been few. Goldberg and Cather (1965) found molecular heterogeneity in Lactate Dehydrogenase during development of the snail *Argo-buccinum*. No information on other molluscan

species is available. In the present study, an attempt has been made to study the protein constituents of the egg masses, containing developing embryos and of free veliger stages of *Cerithium coralium* (Kiener) (Cerithiidae.

Mesogastropoda). Ovarian tissues were also analysed for comparison.

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Specimens of *C. cordium* were collected from the intertidal area of Vellar River mouth and kept in the laboratory in glass aquaria filled with estuarine water (salinity ranges from 30‰ to 33‰). The snails readily spawned in the laboratory. Egg masses, attached to sides of the aquarium below the water line, were collected and reared separately upto free veligers. Egg masses as such also were utilised for obtaining the extracts of developing embryos. 48 hour-old free veligers were used for the extracts. Ovarian tissue was collected from a ripe female after removing the digestive gland.

Analyses of protein were done by disc electrophoresis in polyacrylamide gel as described by Davis (1964). 7% gel was utilised for the study and 10 mg sample/1 ml was homogenised with distilled water and centrifuged at 3000 rpm for 15 minutes. The supernatant of the extract was used for analysis. Each sample was distributed in gel tubes and five samples were run simultaneously with a supply of 5 mA/gel tube. Electrophoresis was carried out at a temperature of 16 ± 1 °C and 45 minutes were found to be sufficient to complete the run. The gels were stained with Coomassie Brilliant Blue in methanol : acetic acid : water mixture (5 : 5 : 1). Gels were destained and preserved in 7% acetic acid. The distance was measured from the origin and the relative mobility (RM) of each protein fraction is expressed as the percentage of total length of the run (the position of the maker dye).

Protein patterns in the ovary (A), developing embryos (B) and free veligers (C) are given in Fig. 1. The protein fractions, based on the rate of migration, are summarised in Table 1.

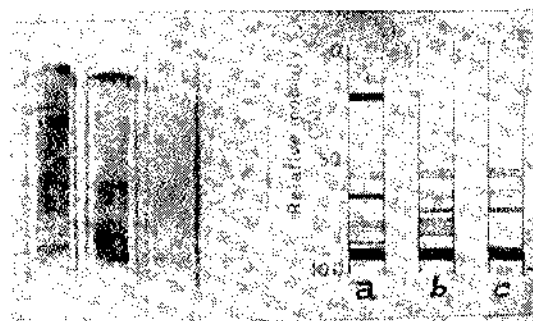


Fig. 1. Gel showing the protein pattern and the electropherogram: a ovary, b. developing embryos and c. free veligers.

TABLE 1. Protein fractions in the ovary, developing embryos and free veligers of *C. corallium*

| Stage | Slow moving (RM 1-33%) | Intermediate (RM 34-67%) | Fast moving (RM 68-100%) |
|--------------------|------------------------|--------------------------|--------------------------|
| Ovary | 4 | 3 | 5 |
| Developing embryos | 0 | 1 | 4 |
| Free veligers | 0 | 1 | 3 |

Fractions 7, 8, 9 and 12, found in the ovary are also present in the embryos, but only 7, 8 and 12 in the veligers. Embryos and veligers possess 4 common fractions, but the penultimate fraction seen in the former, is absent in the latter. An interesting feature observed was the decreasing number of fractions from the ovary to developing embryos and from the latter to that of veligers. Also significant

is the fact that in the cases of embryos and veligers, only fractions with RM of 50% and above were seen. According to Leaback (1976), the fast moving fractions have lower molecular size than those of slow moving fractions and probably simpler molecular constitution. Decrease in the number of protein fractions

and simplification of molecular structure might be due to functional requirements for that stage of development in the life cycle. Goldberg and Cathey (1965) also reported such variations in LDH pattern during the ontogeny of *Argobuccinum*.

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MARINE ALGAL FLORA FROM SOME LOCALITIES OF SOUTH TAMIL NADU COAST

ABSTRACT

Marine algae were collected from six localities along south Tamil Nadu Coast namely Tuticorin, Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam. Maximum number of 56 algal species at Tuticorin and minimum number of 25 species at Muttam were recorded. Totally 98 algae belonging to the groups Chlorophyta, Phaeophyta, Rhodophyta and Cyanophyta were recorded from these six places. The red algae occurred more in number than other algae in all these places.

STUDIES on marine algae occurring at different parts of Indian Coast were made by many workers. In Tamil Nadu Coast, the algae growing at Mahabalipuram (Srinivasan, 1946), Porto Novo region (Kannan and Krishnamurthy, 1978), Mandapam area (Chacko *et al.*, 1955., Umamaheswara Rao, 1969, 1972 a, 1972 b, 1973; Subbaramaiah, 1974; Subbaramaiah *et al.*; 1977), Tuticorin (Varma, 1960; Mahadevan and Nagappan Nayar, 1997) and Tiruchendur (Krishnamurthy, 1980)

were already reported. Information is not available on algae growing in other localities of Tamil Nadu especially from the southern part of Tamil Nadu. Hence, during the course of this study on the distribution of edible seaweeds along South Tamil Nadu Coast, the algae growing in six localities namely Tuticorin area (Karapad, Hare Island, Van Tivu, Kasuwar Island and Karaichalli Island), Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam were collected. The list of species