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NOTE

OCCURRENCE AND ABUNDANCE OF *SAGITTA BEDOTI* BERANECK (CHAETOGNATHA) IN A TIDAL CREEK OF SAGAR ISLAND. SUNDERBANS.

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ABSTRACT

Distribution of *Sagitta bedoti* Beraneck with reference to prevailing hydrological conditions was studied at two stations in a tidal creek of Sagar Island, Sunderbans, during July, 1977 to June, 1978. Salinity ranged from 1.5 to 22.8‰ and the water temperature varied from 20 to 31.5 C. Maximum population density of this species was encountered in March (355/m³) at station 2. The abundance was found to be related with higher salinity. The population was poor during the monsoon months (July to October) at both the stations.

Key-words: Distribution, chaetognaths, Sagitta, island, Sunderbans.

Chaetognatha form an important component of zooplankton community. Its importance as an indicator of water masses deserves intensive research. Studies on chaetognaths have in Indian water been reviewed by Silas and Srinivasan (1970). Works of Nair (1976, 1977), Nair and Rao (1973), Nair, Peter George and Paulinose (1977), Srinivasan (1974) and Kaliyamurthy (1975) are worth mentioning. This communication presents an assessment of abundance of *Sagitta bedoti* in relation to the hydrological conditions in a tidal creek of Sagar Island, a part of Sunderbans ecosystem. No information on this group was available from this zone of estuarine complex of Hooghly river.

Zooplankton and water samples were collected fortnightly during July, 1977 to June, 1978 at two stations in a creek (Chemaguri) in the southern sector of Sagar Island (Fig. 1). The plankton net used was made of bolting silk No. 10 (mesh: 0.15 mm). Salinity was estimated by Mohr-Knudsen method (Strickland and Parsons, 1968).

Salinity and Temperature: Salinity distribution in the creek water was largely influenced by tidal flow dominating during premonsoon period (March-June) and the fresh water mixing during monsoon period (July-October). As a consequence, the salinity was fairly high (17.4 to 22.8‰) during premonsoon months and low (1.5 to 8.8‰) during the monsoon. Salinity during the period of study varied from 1.5 to 22.8‰ while the temperature varied from 20 to 31.5°C. Temperature and salinity values at both the stations showed distinct seasonal variation. There was a gradual increase in salinity from

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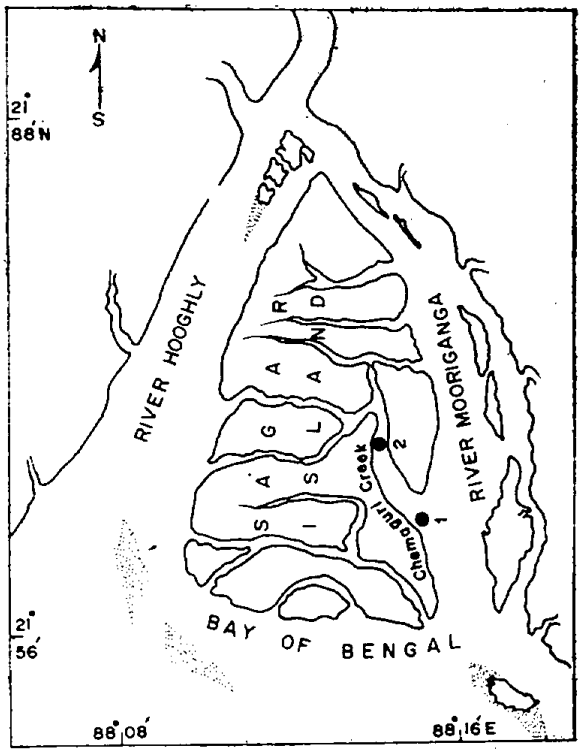

Fig. 1. Map of Sagar Island showing station position.

October to June. Highest temperature values were recorded in October (31.2°C) and in May (31.5°C) (Fig. 2).

Sagitta bedoti : Chaetognatha comprised almost 5% of the total zooplankton in the studied area and *S. bedoti* formed 0.36 to 3.64% of chateognath population with peak (355/m3) in March at station 2. Maximum population was encountered during premonsoon (March to June) when the salinity and temperature values were fairly high. There was depletion in the population of this species during monsoon (July to October) and early postmonsoon (November and December). This species was absent in the collections taken from July to October at station 2 and only present in small numbers (0.36–0.51%) at station 1 when the salinity was 1.5 to 8.8‰ (Fig. 2). The population of this species in the upper stretch of the creek (st.2) during January to June was more than that at station 1. The depletion in the population at station 1 was probably due to high turbid condition prevailing in the area.

Comparison of data on the peak periods of chaetognath population in different regions is of considerable interest. On the basis of IIOE collections Nair (1977) showed higher density from October to April along the west coast of India. Kaliyamurthy (1975) reported maximum number during May 1968 and June 1969 in Pulicat lake. The data recorded during the present study

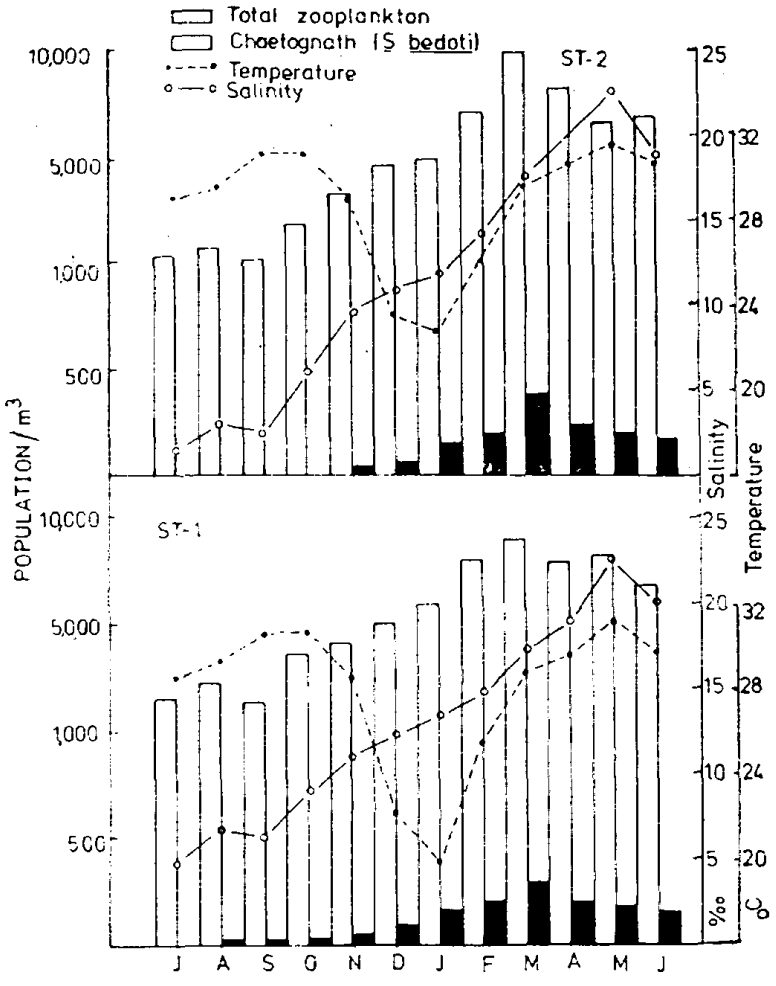

Fig. 2. Monthly variation of *Sagitta bedoti* in relation to temperature and salinity.

revealed that the number and the percentage composition of this species increased in high saline waters (January to June) and decreased during the low salinity regime (July to December).

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