ENVIRONMENTAL AND BIOLOGICAL PRODUCTIVITY STUDIES DURING OVERWINTERIZATION (1986-87)

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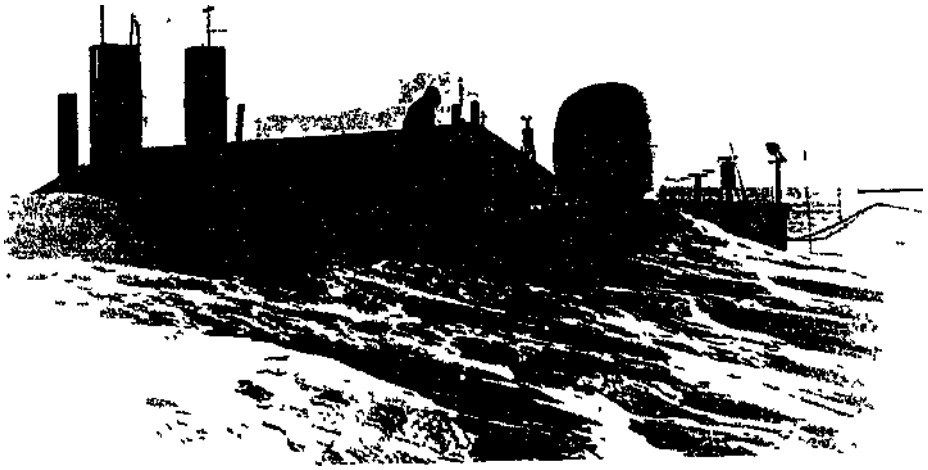
During winter, spring and summer (May 1986 to January 1987) seawater samples were collected from three depths (0M,



DAKSHIN GANGOTRI - PROFILE IN ANTARCTIC WINTER

10m and 30m) of the fast ice area and analyzed for phytoplankton (qualitative estimation) and zooplankton biomass—Particulate matter from the water column collected during austral summer 1986. Winter period (May 1986 to August 1986) and summer (September 1986 to January 1987) were analyzed to study the changes in the major biochemical constituents during different climatic conditions.

Qualitative estimates of phytoplankton showed dominance of few species such as Fragilaria cylindrus and ConScenodiscus during winter months and as photoperiod increased number of phytoplankton species also increased. Dominant phytoplankton species from October onwards were Nitzschia sps., Thallasiothrix Sp. and Pinnularia. sp. During January when fast ice was broken bloom of unicellular flagellate was observed alongwith and Nitzschia sps.

Zooplankton biomass showed peak during December-January - 2250 nos/100m^3 and 2255 nos/100 m^3 respectively with maximum number of crustacean nauplii and Euphausia larvae. During winter months, zooplankton biomass was lower except during May & August (1180 and 1184 nos/100m^3) respectively, which could be attributed to the transitional period (from total darkness to sunrise).

Particulate matter was analysed for Particulate organic carbon (varies from 0.203 to 1.850 mg^{-1}), chlorophyll a (0.061 to 3.1 ug^{-1}),adenosin triphosphate(0.33 to 1.81 ug^{-1}) and some of the major biochemical compounds such as Particulate Carbohydrate (0.021 to 0.325 mg^{-1}), Particulate Protiens (0.44 to 0.400 mg^{-1}) and Particulate lipids (0.015 to 0.618 mg^{-7}). Data showed predominance of Particulate lipids and Particulate carbohydrates as compared with the Particulate protiens.

Particulate matter showed predominance of detrital carbon. These observations were further continued to assess the temperature effect on long term basis during the year. In winter months, when temperature was low the lipid contents were high and as temperature increased there was a shift from lipid to protein content.

Observations on seabirds :

Population dynamics, breeding and behavior in the vicinity of Dakshin Gangotri, were carried out on round the year basis.

Terrestrial floral collections have also been made during 1986 and 1987 summer-species listing and confirmation.