

LIMNOLOGICAL AND MARINE BIOLOGICAL  
STUDIES CARRSEDOUT DURING SIXTH INDIAN  
SCIENTIFIC EXPEDITION TO ANTARCTICA  
(1986-1987)

BABAN INGOLE  
National Institute of Oceanography  
Dona Paula, Goa 403 004, India

Preliminary results of limnological and marine biological (zooplankton & benthic) studies carried out during the VIth Indian Scientific Expedition to Antarctica (1986-87) are presented. A primary objective of this study was (i) to characterize the distribution, production and overall survival strategy of micro-invertebrates in' freshwater habitat of Schirmacher Oasis, (ii) to assess the geographical distribution and standing stock of zooplankton (especially Antarctic Krill, *E. superba*) in Indian Ocean sector of Southern Ocean, (Hi) to investigate the qualitative and quantitative aspects of life on the sea floor.

(i) Limnological studies

Ten freshwater lakes in Schirmacher Oasis were sampled thrice (December 1986, January - Frebruary 1987) for hydrobiological characterization. Samples for microfauna were collected from the periphery of all ten lakes. Analysis of the samples indicate the high benthic productivity with low species diversity. The luxurient growth of benthic vegetation (moss & algae) in and around the lake support a variety of organisms. Most of the animals were detritus feeders and found in the region of organic production. The dominance of resting eggs in

microfauna indicate the magnitude of survival strategies in micro-invertebrates, under the extreme stress of cold and photoperiod. A detailed bathymetric map of Priyadarshini Lake, has been prepared.

(ii) Geographical distribution of Antarctic krill and other Zooplankters

A total of 49 stations were occupied in Indian Ocean sector of Antarctic Ocean to study the distribution and abundance of zooplankton. Fifteen stations were sampled in the euphotic zone of Polynya and 34 stations in the open waters (between 25°S to 68°S latitude; 10° to 60°E longitude). Zooplankton samples were collected from the depth of 200 meters to the surface using different nets such as Bongo net, H.T. Net and IOSN Net.

Analysis of the samples indicate the swarming behaviour of zooplankters (especially krill) at the surface layer (0-200m) and the values for standing stocks were highest between 55° to 65°S latitude and 15° to 35° longitude).

(iii) Benthic Investigations

Benthic productivity measurement were carried out at 4 stations. Analysis of the samples shows that the sea floor life (benthic faunal) is very diverse and more abundant near the shelf than in open sea.