

ACTIVITIES OF THE BIOMASS/SIBEX CRUISE OF THE UMITAKA MARU III

Masaaki MURANO and Hideo HOTANI

The UMITAKA MARU III belonging to the Tokyo University of Fisheries participated in the BIOMASS/SIBEX Project during the period from November 22, 1983 to March 14, 1984. Scientists on board the vessel were 15 in total from 7 universities and 2 other organizations and consist of 8 biologists, 5 chemists and 2 physicists. Research activities in the Southern Ocean were carried out in the third and fourth legs. In the third leg oceanographic, biological and acoustic surveys were conducted on the meridional line of 116°E and in the area between 61°S to 65°S and 116°E to 122°E. In the fourth leg the surveys were mainly carried out on the 150°E line. A sediment trap, which had been moored by the R/V HAKUHO MARU, was recovered after a lapse of 42 days successfully. Visual observations were made on seabirds and marine mammals during the two legs. Throughout the voyage from Tokyo to Tokyo pollutants such as chlorinated hydrocarbons were measured for the surface sea water and air. (p. 1-7).

OCEANOGRAPHIC CONDITIONS OF THE SOUTHERN OCEAN SOUTH OF AUSTRALIA DURING THE SUMMER OF 1984

Noboru MATSUURA, Denzo INAGAKE, Jiro FUKUOKA
and Akira KITAZAWA

The oceanographic observations were carried out by the T/V UMITAKA MARU in the Australasian sector of the Southern Ocean during January to February 1984. In this paper, we described about three major fronts in the Southern Ocean and the Antarctic Divergence from the XBT and CTD observations.

Four meridional sections were analyzed for positions of the Subtropical Convergence, the Subantarctic Front and the Antarctic Front on the basis of the thermal structure and of changes of the surface salinity. The Subtropical Convergence was at 40°S along 116°E and at 47°S along 150°E. The Subantarctic Front was at 49°S-50°S along 116°E and at 55°S along 150°E. The Antarctic Front was at 55°S-56°S along 116°E and at 56°S-58°S along 150°E.

In a grid survey area between 61°S and 65°S, between 116°E and 122°E, we found a high-salinity zone in the surface between 63°S and 64°S. Horizontal salinity distribution at the depths of 100m and 200m also showed the existence of the high-salinity water in this zone. Moreover, it was confirmed by the dynamic topography that this zone was coincident with the Antarctic Divergence Zone. (p. 9-22).

SURFACE DISTRIBUTION OF NUTRIENTS IN THE SOUTHERN OCEAN SOUTH OF AUSTRALIA

Masaru MAEDA, Yasunori WATANABE, Noboru MATSUURA,
Denzo INAGAKE, Yukuya YAMAGUCHI
and Yusho ARUGA

Phosphate, silicate, nitrate and nitrite concentrations in surface waters were determined in the Australasian Southern Ocean. They were also measured continuously across the Antarctic Polar Front along 150°E with an autoanalyzer.