

Foreword

The fifth Symposium on Antarctic Biology was held at the National Institute of Polar Research, Tokyo, from 17 to 19 of September 1981.

Since 1977, the international program of BIOMASS (Biological Investigation of Marine Antarctic Systems and Stocks) has started its activities, and succeeded in achieving its first seagoing program of international multi-ship survey in the Southern Ocean in the 1980-1981 season, the so-called FIBEX (First International BIOMASS Experiments). Some of the organizations such as the Tokyo University of Fisheries and the Fisheries Agency missioned their ships, T. S. UMITAKA MARU and R. V. KAIYO MARU, to attend the FIBEX respectively. Not only the above vessels but also the icebreaker FUJI of the Japanese Antarctic Research Expedition took part in the FIBEX. The exploratory fishing ship YOSHINO MARU of the Japan Marine Fishery Resource Research Center also partly took part in this project.

The subjects studied by many scientists who participated in the FIBEX cruise were widely varied, yet the main subject of FIBEX was krill standing stock estimation by using the scientific fish echo sounder. Most of data obtained by the KAIYO MARU and the UMITAKA MARU were preliminarily analyzed to be reported and discussed at the cruise report meeting held at the Tokai Regional Fisheries Laboratory and the Tokyo University of Fisheries in April and May of 1981 respectively. Furthermore, data obtained by the icebreaker FUJI, the YOSHINO MARU and Syowa Station, Antarctica, were also partly reported and discussed at the FIBEX report meeting held at the Ocean Research Institute, University of Tokyo in August 1981.

On the occasion of FIBEX, to summarize results of FIBEX and to deepen our understanding of Antarctic marine ecosystems, the Fifth Symposium on Antarctic Biology was organized under the above-mentioned situation. The invited papers covered physical and chemical oceanography properties, primary production and related properties, zooplankton and krill biology, fish biology, and marine mammals and sea birds ecology. However, as far as krill stock studies are concerned, one of the papers was invited, because those data were internationally discussed at the Post-FIBEX Data Interpretation Workshop held in September-October of 1981 in Hamburg. For this Symposium, not only the papers related to FIBEX but some other papers were invited to develop the discussions.

Concerning the publication of the papers of the Symposium, the papers contributed to T. S. UMITAKA MARU cruise of the Tokyo University of Fisheries were invited to the Transactions of the Tokyo University of Fisheries, No. 5-Biological Investigations of Marine Antarctic Systems and Stocks (FIBEX) by UMITAKA MARU 1980-1981 which was issued in March 1982 by the University. The rest of papers will be

published in this proceedings of the Symposium. The abstracts of all papers published in the Transaction No. 5 of the Tokyo University of Fisheries are presented in the proceedings as collected abstract.

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