

## Foreword

This volume "Proceedings of the NIPR Symposium on Polar Biology, No. 9" is respectfully dedicated to Takao HOSHIAI on his retirement from the National Institute of Polar Research, where he was Director-General as well as Professor of Marine Ecology for many years. The subject of this volume is a proceedings of the annual symposium discussing new results obtained in polar regions covering marine and terrestrial biology. However, we decide that the main theme of the Seventeenth Symposium would be "Sea Ice Ecology" in dedication of HOSHIAI's enormous contributions in this field.

Takao HOSHIAI was born in Mishima, Shizuoka Prefecture, on November 7, 1930. He lived in Numazu until the end of his high school. Numazu faces Suruga Bay and Mt. Fuji stands behind Numazu. His interests toward the ocean must have had been created during those in high school days. In 1955, he graduated from the Biology Department at the Faculty of Science, Tohoku University, under the guidance of Professor Mutsuo KATO and he was granted a Master's degree in 1957.

He was appointed Research Associate at the Asamushi Marine Biological Station of the same University in 1957. He was promoted to Associate Professor in 1965 there. His works on the synecological study of intertidal communities at the Station were highly evaluated and he was granted a Doctor's degree in 1965 from Tohoku University. His publications from the Station are cited in many outstanding scientific journals. In particular, Dr. Joel W. HEDGPETH, who revised "Between Pacific Tides" (fourth edition in 1968), cited the 2nd paragraph on page 123 of T. HOSHIAI's paper (Bull. Mar. Biol. Stn. Asamushi, Tohoku Univ., 12, 93-126, 1965) in this book.

In 1965, he moved to the Polar Division of the National Science Museum in Tokyo. Since then, he has been working on polar ocean biology until his retirement in December 1994. He studied the ecology of the colored layer of the sea ice at Syowa Station during his first winter expedition in 1967 as a member of the JARE-8 winter program (Japanese Antarctic Research Expedition). It would seem his experience at the Asamushi Marine Biological Station had driven him to work on a synecological study on the ice algal community. His findings on the colored layer of sea ice were pioneering in the study of ice algal ecology.

During his 2nd winter program in 1970 (JARE-11), he carried out more precise observations on the seasonal change of ice algal communities and this work was presented at the SCOR/SCAR Polar Oceans Conference held at McGill University, Montreal, May 1974. The proceedings of this Conference were published in 1977 as "Polar Oceans" and his work at Syowa Station is highly respected.

In 1973, the Polar Division was disbanded and developed into an establishment of the National Institute of Polar Research (NIPR) and he was appointed Associate Professor at the Department of Physiology and Ecology. He was promoted to Professor at the same department in 1976. He was later appointed Head of Division of Data and Processing in 1983 and Head of Division of Research in 1984. In 1985, he worked as a deputy director of NIPR and he was elected as the Director-General of NIPR in 1988.

He worked in the Antarctic eight times starting in 1965/66 when he first joined the JARE-7. He designed the routine marine observations on board ship, in particular, surface chlorophyll measurement. He joined the winter program four times at the Japanese Antarctic Station, Syowa and he served as the leader of JARE three times among eight expeditions.

Other than his contributions to the JARE program, he participated in the United States Antarctic Research Program. He visited the McMurdo Station during the 1971/72 austral summer season and worked on the ice algal communities. He also joined the British Antarctic Program and visited the South Georgia Station during the 1972/73 austral summer. There, he observed the interesting feeding behavior of notothenioid fish.

The international BIOMASS (Biological Investigations of Marine Antarctic Systems and Stocks) program is a mile stone of the SCAR history. The program was established in 1977 to investigate the ecology of the Southern Ocean and the program was drawn to a close in 1991. T. HOSHIAI acted as a key person to organize the Japanese BIOMASS program as well as to cooperate within the international framework. The Japanese contributions to the BIOMASS program are referred elsewhere in the book "The Biology of the Southern Ocean" written by Professor George A. KNOX in 1994. These contributions are due to T. HOSHIAI's guidance and leading of the program.

T. HOSHIAI also worked intensively in the scientific business. He is an active member of the SCAR/SCOR Working Group 86-Ecology of Sea Ice. This group is one of important groups to create research programs to follow up BIOMASS. This is the "EASIZ (Ecology of Antarctic Sea Ice Zone)" program, which is one of the important research program within the SCAR toward the year 2000.

He attended many meetings related to the SCAR, ATCM (Antarctic Treaty Consultative Meeting), and CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources). Other than Antarctic business, he also worked on the Arctic area. Actually, he was a key person when the Japan tried to be a full member of the IASC (International Arctic Science Committee). Japan is now a member of IASC and is developing multi-disciplinary research programs in the Arctic area.

He paid a lot of effort to establishing the graduate course in polar science. In April 1993, National Institute of Polar Research opened the Department of Polar Science, School of Mathematical and Physical Science, The Graduate University for Advanced Studies. Currently, a total of 12 graduate students are studying polar sciences.

In retiring from the National Institute of Polar Research, he was elected Professor Emeritus of the National Institute of Polar Research as well as Professor Emeritus of the Graduate University for Advanced Studies. He is now appointed as a supervisor of Japan Society for the Promotion of Science. We hope he will continue his research activities, and continue to guide young scientists.

(M. F. & A. T.)