

## Preface

This volume is an outgrowth of a joint program of ice core drilling at Mizuho Station in East Antarctica by the Japanese Antarctic Research Expedition (JARE) in 1971–1975 and collaborative research on core analysis done at the drilling site and in home laboratories up to 1978.

After the successful oversnow traverse from Syowa Station to the South Pole and return in the 1968–69 austral summer, the glaciological program of JARE was concentrated on the glaciology of the Mizuho Plateau, *viz.* the hinterland of Syowa Station, and station glaciology at Mizuho Station. The results of the traverse glaciology program covering the period of 1969–1975 were published as the “Glaciological Studies in Mizuho Plateau, East Antarctica, 1969–1975” in a series of special issues of *Memoirs of National Institute of Polar Research*. In the traverse glaciology, the establishment of offset and ice-movement markers and their resurvey is a vitally important task; markers were set in two summer seasons (1969–70 and 1970–71) and resurveys were carried out in the 1973–74 and 1974–75 summer seasons. On 28 June 1971, the Mizuho Station (formerly Mizuho Camp, officially redesignated in March 1978) was established at 70°42'S and 44°20'E at an elevation of 2230 m (annual mean air temperature is about –33°C). Ice core drilling at Mizuho was one of the major items in the station glaciology program.

Ice core drilling in October–November 1971 by JARE-12 provided cores to a depth of 75 m; in July–November 1972 a new core was bored to 147 m in depth; from December 1974 to January 1975 (JARE-15 and -16) another core was recovered from a depth of 146 m. Borehole logging and preliminary core analysis *in situ* were carried out. Laboratory studies have been carried out at the Institute of Low Temperature Science, Hokkaido University, which was the first core depository; The Ice Physics Laboratory, Faculty of Engineering, Hokkaido University; Muroran Institute of Technology; Water Research Institute, Nagoya University; National Research Center for Disaster Prevention; and the National Institute of Polar Research. During the course of core analysis, the National Institute of Polar Research sponsored a joint core analysis project which lasted from 1975 to 1977. This is the main reason of the publication of this special issue.

This volume contains one paper on drilling technology and operation, eight papers on the physical and chemical characteristics of retrieved cores, and data from the core analysis and borehole logging. Core analysis is still in progress; however, as the first product of the combined efforts of field glaciologists and laboratory scientists, this volume will make a significant contribution to the planning

of drilling programs by JARE as well as to the Antarctic glaciology in general.

Finally, on behalf of the editors, I extend sincere gratitude to the assistance of Dr. Norikazu MAENO and Mr. Hideki NARITA at the Institute of Low Temperature Science and Dr. Shinji MAE and Mr. Fumihiko NISHIO at the National Institute of Polar Research.

Kou KUSUNOKI, Editor  
National Institute of Polar Research