

Preface

Presented in this volume is the general report of the traverse project of the Glaciological Research Program in Mizuho Plateau, East Antarctica. The report, which covers the period from 1969 to 1975, is composed of five sections dealing with studies of geomorphological analysis of the ice sheet, climatic conditions, snow accumulation, ice sheet flow and geochemical analysis. Each section contains several related papers contributed by individual authors.

The background of the Glaciological Research Program in Mizuho Plateau is traced back to 1957, when the Japanese Antarctic Research Expedition launched out into preliminary surveys in Syowa Station and its vicinities. It was in September 1967 that this Program took a final shape under the supervision of the late Professor Hirobumi ÔURA of the Institute of Low Temperature Science, Hokkaido University, and it was in 1969 that the consistent observation began with an ultimate object aimed at investigating the local mass balance of the Antarctic ice sheet in Mizuho Plateau.

What happened during the period before 1969 are: traverses to the Yamato Mountains in 1960 and further to 75°S in 1961 for glaciological and related studies; temporary closing down of Syowa Station from 1962 to 1965 during which elaborated glaciological study programs were blueprinted and the reopening of the Station was prepared; reopening of the Station in 1966; a reconnaissance traverse to Plateau Station (U.S.A.) in 1967–1968, a round-trip traverse between Syowa Station and the South Pole in 1968–1969. In the meantime the long-term project was taking shape on the basis of the experiences of these traverses so that the past shortcomings, owing to that the observations had mainly been limited to small regions and not systematically related to each other concerning time and location, were eliminated.

The Glaciological Research Program in Mizuho Plateau thus formulated was required to obtain the accurate amount of input and output of snow or ice, together with the dynamics of the ice sheet, by taking advantage of the useful techniques and information accumulated during the past traverses. For this purpose the program was divided into two major projects: the traverse project and the deep core project. The reason why Mizuho Plateau was chosen as the research area for one local system of mass budget was that this plateau was easily accessible from Syowa Station, bounded on the east by Sandercock Nunataks and on the west by the Yamato Mountains.

The observation was made in three periods and started in 1969 under this

chief investigator succeeding Professor Ôura, who passed away unexpectedly on 11 March 1969. During the first period (1969–71), a survey was carried out in 1969–1970 on the side of the Yamato Mountains, which was followed in 1970–1971 by a survey on the side of Sandercock Nunataks and the construction of the inland station, Mizuho Camp. The second period (1971–73) was devoted to a pilot study of deep cores of the ice sheet and glaciological studies at Mizuho Camp. During the third period (1973–75), the sides of the Yamato Mountains and the Sandercock Nunataks were resurveyed in 1973–1974 and 1974–1975, respectively.

The data obtained by the observations in the consecutive years except the results of deep cores have been published in four volumes of JARE Data Reports with an aim to have them shared by researchers who may make effective use of them.

A separate volume will be published about the deep core project for the studies of the structure and the property of the inland ice.

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