

UNESCO/IASH TECHNICAL PAPERS IN HYDROLOGY

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THE International Hydrological Decade, 1965–74, seeks to foster research in all aspects of hydrology, and to assist all countries in making a fuller assessment of their water resources. Snow and ice studies are an integral part of the international program. Three projects are emphasized: world inventory of perennial and seasonal snow and ice masses; measurements of glacier variations on a worldwide basis; and combined heat, ice and water balances at selected glacier basins. The Coordinating Council of the International Hydrological Decade gave the responsibility for developing and coordinating these snow and ice projects to the International Commission of Snow and Ice, working under the sponsorship of the UNESCO-IHD Secretariat. Working groups of the Commission have written the five technical manuals details of which are given in the reference list on p. 406 and are in the process of preparing several others. These manuals are guides to the programs of the International Hydrological Decade, and are also useful technical manuals for many kinds of glaciological work which might not be directly related to the IHD.

Perennial ice and snow masses ([IHD], 1970[b]) was written to aid in inventories of glaciers, permafrost, and other persisting ice masses. About 80% of all of the fresh water in the world exists in solid form, and an assessment of this snow and ice material is important for an understanding of man's environment. The glacier inventory program indicates how quantitative data on size, altitude, and other characteristics can be recorded together with descriptive material on a simple format developed for computer compilation. To test and demonstrate the procedure, the results of three pilot study programs are included. The inventory of ice beneath the surface recommends literature search, mapping, and various types of data recording procedures. This guide was prepared by a working group under the direction of Fritz Müller and takes into account suggestions in Vinogradov and others (1966).

Seasonal snow cover ([IHD], 1970[c]) is a guide to the measurement, compilation, and assemblage of data on winter snow, another part of the world inventory program. This document was prepared in cooperation with the World Meteorological Organization, in response to their interest in producing modern guides for the measurement of snow. Methods of snow measurement, mapping techniques and problems, programs for snow observations, and pertinent definitions are given. The guide was prepared by a working group under Marcel de Quervain.

Variations of existing glaciers ([IHD], 1969[b]) is a revised and updated compilation of several committee reports of the International Commission of Snow and Ice which predate the IHD. These committees were set up after the International Geophysical Year, and their reports led to the establishment of a Permanent Service on the Fluctuations of Glaciers at Zürich (Peter Kasser, Director). This guide lists basic observations to be made on mountain glaciers as well as on ice sheets, ice caps, and calving glaciers, and describes material to be submitted to the Permanent Service on the Fluctuations of Glaciers.

Antarctic glaciology in the International Hydrological Decade ([IHD], 1969[a]) is a publication which points out the important role that Antarctic glaciological studies play in efforts to obtain a complete understanding of the hydrologic cycle and to establish a world water balance. Antarctic glaciological studies are described in hydrologic terms, and the fact that hydrology and glaciology are both related and indistinguishable in the Antarctic is emphasized. This report was prepared by the Secretary of the SCAR Working Group on Glaciology, Uwe Radok, in cooperation with the Commission.

Combined heat, ice and water balances at selected glacier basins ([IHD], 1970[a]) is a guide to a program of the IHD which seeks to attempt a better understanding of the relation of glaciers to their meteorological environment. The problem is attacked by means of meteorology, glacier mass balance, and hydrologic studies performed at scales ranging from point measurements to complete drainage basins. The scale is extended to even larger areas by the establishment of combined balances stations along three great worldwide chains, two running east–west in the Northern Hemisphere and one running north–south along the coast of the Western Hemisphere. The various balance terms involved and the required types of measurements are discussed. One appendix lists the stations which were established by the end of 1967. A second appendix presents a mass-balance terminology; this was also printed in the *Journal of Glaciology* (Anonymous, 1969). The report was prepared by a working group under the chairmanship of M. F. Meier.

Forthcoming technical manuals will deal with an inventory of sea, lake and river ice; avalanche classification; and additional standardization material for the combined heat, ice and water balances program.

These publications may be purchased from Professor L. J. Tison, Secrétaire Général, Association Internationale d'Hydrologie Scientifique, Braamstraat 61, B-9001, Gentbrugge, Belgium.

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