

During the Quaternary Period, which comprises the last 2.3 million years, large areas of the continents were repeatedly glaciated as a result of great global climatic changes. One such area was Scandinavia, whose mountains were the source for repeated glaciation that covered much of eastern, central, and western Europe. With a particular emphasis on the four countries of Denmark, Norway, Sweden, and Finland, this text describes how these glaciations, and their intervening warmer stages, affected Scandinavia and its surrounding areas. The book begins with an investigation of Pre-Quaternary substratum and then proceeds to examine northern Europe in the Quaternary Pre-Saalian, Saalian, and Eemian stages. In particular, this account focuses on the last cold stage, the Weichselian, with its extensive Late Weichselian glaciation and the subsequent deglaciation, and on the last 10,000 years, the Holocene, with its well-documented environmental changes.

The Quaternary history of Scandinavia provides a cross-frontier synthesis of how the glaciation affected this vast region, and will be invaluable to students and researchers of Quaternary science.

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of Scandinavia

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Preface

An outline of the Quaternary history of Scandinavia cannot be treated without taking into account the development of northern continental Europe generally, including the whole area affected by the repeated glaciations originating in the Scandinavian mountains. The emphasis in the present account is, however, on the four Nordic countries of Denmark, Norway, Sweden, and Finland. These together are here referred to as Scandinavia, leaving out Iceland, which geologically is a separate entity. The only fuller account in English on the Quaternary of the Nordic countries (edited by Rankama, 1965) had separate authors and chapters for each country and was written over 30 years ago. In the present work the areas bordering the four Nordic countries are included without a strict limit being put to the area treated, but for practical reasons – the language barriers being the most important – the areas southeast and east of Finland are not given the attention they would geologically deserve. The outline given of the Quaternary history cannot in any way be considered exhaustive. It is a subjective attempt at giving a general outline of a complicated history.

The volume is intended not only for students with a knowledge of the main methods employed in Quaternary studies of formerly glaciated areas, but also as an introduction to those for whom the area is less familiar.

The author wants to acknowledge the following persons with thanks for their invaluable help received in the preparation of the manuscript: above all, Tuija Jantunen for skilfully drawing the figures by computer, made possible by support from the University of Helsinki and the Finnish Society of Sciences and Letters; my wife Ruth for carefully reading through the manuscript; Lauri Pesonen for providing Figure 2, and Bjørn Andersen, Jan Lundqvist, and Kaj Strand Petersen for providing a number of photographs. No one other than the author, however, is responsible for the misunderstandings and errors in interpretation that regrettably occur in a treatise of this kind.

Some of the works referred to in the text are general summaries that give further references to the original papers. But as many references as possible were included to aid those readers who want to acquaint themselves with the original papers in more detail. Many of them were published in Danish, Norwegian, Swedish, or Finnish but have summaries in English, as do most papers published in other languages, such as in Russian and Estonian.

Finally, the author wants to thank Catherine Flack and Katharita Lamoza of the Cambridge University Press for their much appreciated assistance in the preparation of the manuscript for publication.