1. IN SEARCH OF A STRATOTYPE LOCALITY

ERIC OLAUSSON

Department of Marine Geology, University of Göteborg,
Box 33031, S-400 33 Göteborg, Sweden

INTRODUCTION

At the Paris INQUA Congress in 1969 the Holocene commission defined the Pleistocene/Holocene boundary at 10 000 ^{14}C years B.P. Libby half-time, which was accepted as the reference date for this boundary. This was an important step towards a Pleistocene/Holocene boundary stratotype.

In 1971 the INQUA Holocene Commission and the INQUA Subcommission for NW European shore lines studied southern Sweden. During this field congress a proposed stratotype locality in Göteborg was demonstrated by N.A. Mörner.

At the INQUA Congress in Christchurch in 1973 the Holocene Commission decided that the proposed core from the Botanical Garden in Göteborg, Sweden, lacked some of the requirements for such a type section.

In 1973 the Holocene Commission asked me to select and evaluate a type locality along the Swedish West Coast which would fit the requirements for a type area better than the "Göteborg core" seemed to do. The requirements laid down for the type section by the Commission were as follows.

1. The locality must lie in an area as tectonically stable as possible.
2. A continuous sedimentation in a marine environment should have occurred during the uppermost Pleistocene – Lower Holocene.
3. It should be possible to date the layers with a high degree of precision using currently known dating methods.
4. The locality should be accessible for studies in the future.

FIELD AND LABORATORY WORK

A pilot study was planned and carried out in collaboration with Curt Fredén at the Geological Survey of Sweden and Ingemar Cato at the Geological Survey of Sweden and the University of Göteborg. During 1973, 27 cores were taken at 14 stations from Göteborg to Strömstad. The field work was led by I. Cato. Nearly 200 samples were collected for a rapid survey of the

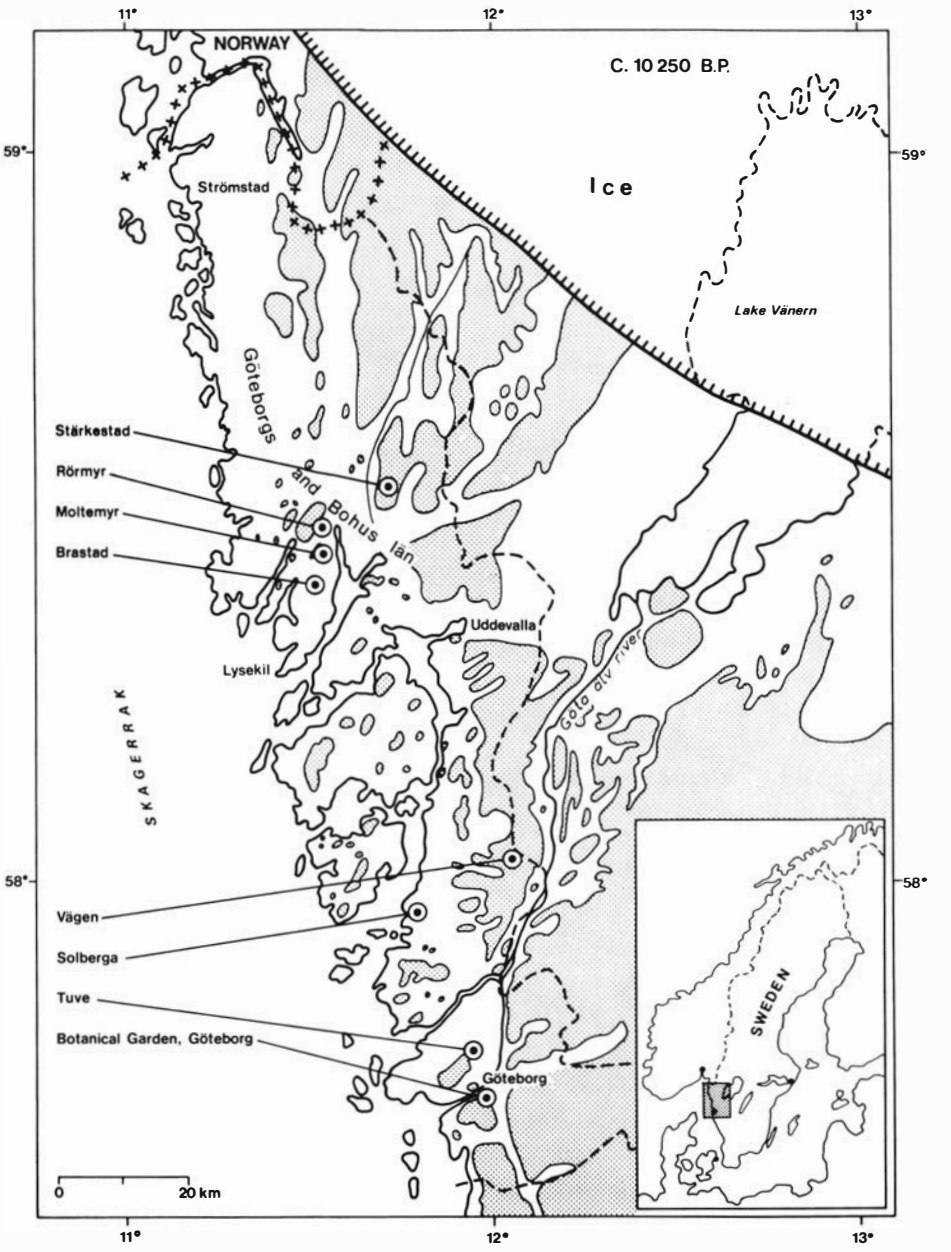

Fig. 1:1. The palaeogeography of south-western Sweden (Bohuslän with adjacent parts of Dalsland and Västergötland) about 10 200 years B.P. and the localities studied by the project.

cores. The diatom and pollen contents in these samples were then studied by Urve Miller and Ann-Marie Robertsson, both of the Geological Survey of Sweden.

The pilot study indicated that two of the stations were promising: Solberga and Brastad (Fig. 1:1). The leading group (Cato, Fredén and myself) decided that these two stations should be investigated further. A report on this preliminary study was given at the INQUA Congress in Christchurch in 1973.

In 1977 two cores were taken by a Foil Piston Corer at each station, one for various analyses, one for storage and/or future studies.

In order to obtain further details about the Late Weichselian-Preboreal development cores taken for different purposes by members of the working group were used. The extensive geological investigations carried out after the landslide at Tuve in 1977 were of great importance. Finally Moltemyr and Rörmyr, two small bogs with marine clay sequences, situated below the highest shore line, were investigated in 1980 since the Brastad core demonstrated an hiatus at the Pleistocene/Holocene boundary. The analyses made on the core from the Botanical Garden in Göteborg were reinterpreted. Older corings from adjacent areas were also taken into consideration. The map (Fig. 1:1) shows all the localities and the palaeogeography at 10 000 years B.P.

For geographical and palaeohydrographical reasons the localities studied by the project (italics) and others can be placed into two groups:

The Moltemyr group: *Moltemyr, Brastad, Rörmyr,* and *Stärkestad.*
The Solberga group: *Solberga, Vägen,* Tuve, Ingebäck, Bäckebol, Tingstad, and the Botanical Garden in Göteborg.

THE WORKING GROUP

The research group consisted of the following scientists whose contributions appear in Chapters 2–19:

Niels Abrahamsen, University of Aarhus: Magnetostratigraphy.
Ann Marie Brusewitz, Geological Survey of Sweden: Clay minerals and bulk chemistry.
Ingemar Cato, Geological Survey of Sweden and University of Göteborg: Member of the leading group, supervising the field and laboratory work; grain size, water contents, bulk density, and organic carbon analyses.
Rolf W. Feyling-Hanssen, University of Aarhus: Molluscs.
Curt Fredén, Geological Survey of Sweden: Member of the leading group, mapping of the Quaternary deposits in western Sweden.

Rex Harland, Institute of Geological Sciences, Leeds: Dinoflagellate cysts.
Karen Luise Knudsen, University of Aarhus: Foraminifers.
Alan R. Lord, University College, London: Ostracods.
Naja Mikkelsen, Geological Survey of Denmark, Copenhagen: Coccoliths together with K. Perch-Nielsen.
Urve Miller, Geological Survey of Sweden: Diatoms.
Eric Olausson, University of Göteborg: Leader of the working group; stable isotope analysis.
Ingrid U. Olsson, University of Uppsala: ^{14}C datings.
Katharina Perch-Nielsen, Eidgenössische Technische Hochschule, Zürich: Coccoliths together with N. Mikkelsen.
Ann-Marie Robertsson, Geological Survey of Sweden: Pollen.
Kjell Björklund, University of Bergen, analysed some samples for Radiolaria but discovered no remains thereof.

The group has met several times. At the last workshop May 7–11 1981, officials of the Holocene Commission and the International Commission on Stratigraphy were invited together with a few specialists. We then presented our preliminary results, discussed our conclusions and during a field trip showed our localities. The specially invited experts were asked to give their impressions/advice in short papers. The contributions of three of them appear in Chapters 22–24.

The summary of the investigations and the proposal to the Holocene Commission (Chapters 20–21) were written by me in collaboration with I. Cato and C. Fredén.

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