

21. PROPOSAL BY THE WORKING-GROUP¹

In accordance with the requirements set up by the Holocene Commissions in 1973, the Pleistocene/Holocene boundary is recognized and defined at two localities in Bohuslän, south-western Sweden.

At Moltemyr, situated about 55 m above sea level in a hilly region, the boundary is recognized at a depth of 3.45 m below surface. The marine sequence extends from 2.15 m down to about 26 m. The basin turned into a lake during the Boreal subage.

At Solberga, situated just above the present sea level in a wide valley with a low relief, the boundary is defined in a zone between 19.3 and 18.9 m depth in an entirely marine clay sequence. The drawn-out boundary is due to a high accumulation rate in the beginning of the Holocene.

There have not been any prerequisites for a precise radiocarbon determination of the boundary in the investigated clay sequences. However, in the near future it will be possible to date foraminiferal tests from the boundary by the aid of the accelerator dating technique. According to the known chronology of the Fennoscandian terminal moraines and to related radiocarbon determinations the amelioration, which constitutes the Pleistocene/Holocene boundary, occurred about 10 200–10 300 years B.P.

The Pleistocene/Holocene change in climate involved not only ameliorated conditions for the fauna and flora, but, due to the rapid ice retreat, also caused a strong and sudden meltwater injection, which gave rise to a distinct lowering of the oxygen isotope ratio in the foraminiferal tests. This isotopic change can also be recognized in contemporary layers in deep-sea sediments, which speaks in favour of the use of the *meltwater spike*, as the most useful signal of the Pleistocene/Holocene boundary. On a regional base the changes in the flora and fauna can be used as well. Since the successions of fossils are more detailed in the Solberga core and the $\delta^{18}\text{O}$ change is more distinct in the Moltemyr one, these localities complement each other. We therefore suggest that one of these sites is chosen as a boundary stratotype section and the other as a hypostratotype section.

¹ The members of the working-group are given in Chapter 1.