

Biostratigraphy and paleoecology of benthic foraminifera from the Eggenburgian “Ortenburger Meeressande” of southeastern Germany (Early Miocene, Paratethys)

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With 8 figures and 2 tables

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Abstract: A modern taxonomic and semi-quantitative assessment of the benthic foraminifera from the “Ortenburger Meeressande” is presented based on well-preserved material consisting of 5510 specimens and representing 77 different species from the Straß borehole and the Maierhof section. The overall composition of the foraminiferal assemblage along with the occurrence of certain index forms are indicative of an Eggenburgian age and can also be used to discriminate the middle and late Eggenburgian at Straß, whereas at Maierhof only the middle Eggenburgian is present. *Lenticulina buergli* (WENGER) is recorded for the first time for Eggenburgian sediments of the South German Molasse Basin. This species is interpreted as an index fossil for the Eggenburgian stage in the Molasse Basin, in Austria as well as in South Germany. We discuss the assemblages from Straß and Maierhof with regard to salinity, temperature, oxygenation, turbulence, and water depth. For the Straß succession we estimate a water depth of approximately 20–50 m, while a water depth lower than 20 m is suggested for the Maierhof section. The abundance of oxic foraminifera in the middle Eggenburgian suggests well-oxygenated conditions of bottom waters. The upper Eggenburgian is characterized by a shift in abundance of oxic and suboxic foraminifera. This change coincides with a shift towards less water turbulence and might be related to a slightly lower oxygenated environment because of an overall deepening. We do not recognize an erosional surface at the base of the upper Eggenburgian, as has been described from the Central Paratethys.

Key words: Upper Marine Molasse, Eggenburgian, benthic foraminifera, biostratigraphy, paleoecology, paleogeography.

1. Introduction

The Eggenburgian represents a regional chronostratigraphic stage of the Early Miocene in the Central Paratethys (Fig. 1). The lower and upper boundaries of this stage are traditionally based on the first appearance and last occurrence of a typical bivalve assem-

blage that is characterized by large-sized pectinids and cardiids (STEININGER & SENES 1971, MANDIC & STEININGER 2003). The Eggenburgian type section is located in the Austrian Molasse Basin, close to the city of Eggenburg. The deposits in the area of the type section have been subdivided into a lower, middle, and upper Eggenburgian based principally on differences