
Stratigraphy and microfacies of the Toarcian-Aalenian boundary from southern Germany

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Abstract

The micropaleontological evolution from the Upper Toarcian (Early Jurassic) to the Lower Aalenian (Middle Jurassic) in the Swabian Jurassic basin in southwestern Germany remains largely unexplored. With the aim of evaluating the biostratigraphic significance of benthic foraminifera and ostracods, this work focuses on the quantitative analysis of microfaunistic changes during the Toarcian-Aalenian transition in a sediment core from the eastern Swabian Alb. In general, a decrease in the abundance of the microfauna can be observed with the onset of the Aalenian. The data also reveal a remarkable dominance of agglutinating benthic foraminifera species with the beginning of the Aalenian stage while calcareous species like the relatively abundant *Lenticulina sp.* almost completely disappear. Furthermore, ostracods shells present in the Toarcian assemblages are lacking in the Aalenian completely. The obtained data regarding the abundance and diversity indicate a significant change in the Aalenian paleoenvironment towards unfavorable conditions for calcareous microorganisms and allows a better understanding of the paleoecology within the Swabian basin.

Keywords: Microfacies, Toarcian, Aalenian, Germany

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