

The molluscan composition of the tempestitic shell beds of the Grund Formation (Lower Badenian, Middle Miocene) in Lower Austria

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Artificial outcrops in the Grund Formation identified its typical shell beds as distinctly allochthonous tempestites, which are inappropriate to reconstruct paleocommunities and their ecological parameters. Quantitative bulk samples from five of these shell beds are very similar to each other with regard to the faunal composition of their most abundant taxa. We identified 129 morphospecies from more than 4200 individuals. Only thirteen of them can be considered to be abundant, because they contribute at least 1% to the total abundance present in the five samples. In contrast to the faunal composition of

the most abundant taxa, species richness and the frequency distribution (and their descriptive parameters) of shell sizes differ strongly between the five shell beds. A regression analysis identifies the diversity (measured as species richness) of the shell beds as functions of shell sorting: Badly sorted shell beds have higher species richness than well sorted shell beds. The species richness present in Grund is therefore taphonomically controlled, because the sorting of the allochthonous shell beds is ruled by their transport history.