Cyanobakterien dominiert wird. Die Chlorophyten-dominierte Bohrervergesellschaftung in 7 m Tiefe ist bereits der tief-euphotischen Zone zuzurechnen. In dieser Tiefe ist ein ausgeprägtes Diversitätsmaximum im Endolithenspektrum anzutreffen. Die abnehmende Lichtverfügbarkeit auf der 15 m Stufe (bereits im Übergangsbereich zur dysphotischen Zone) und darunter führt zu einer deutlich verlangsamten Ausbildung der Ichnozönosen und unterhalb 30 m sind nur initiale, aphotische Bohrervergesellschaftungen anzutreffen, die durch heterotrophe Bohrpilze dominiert werden.

PALAEOCOMMUNITY DYNAMICS IN ITS STRATIGRAPHIC CONTEXT: A CASE STUDY FROM A MIDDLE MIOCENE, MARINE, SILICICLASTIC, SHALLOW-WATER ENVIRONMENT AT THE LOCALITY GAINFARN (VIENNA BASIN, AUSTRIA)

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Facies contacts within depositional sequences are gradational but rapid faunal replacements may occur at the major flooding surfaces, which separate parasequences. We studied such fine-scale paleocommunity dynamics in a 16m long transect in the Middle Miocene (Badenian stage) of the Central Paratethys, which consists of siliciclastic, pelitic and sandy to gravely shallow-water deposits, and can be separated into 2 basal progradational (coarsening- and shallowing upward) parasequences and a retrogradational (deepening upward) parasequence at the top. The fossils of this section are generally indicative of a fully marine, warm water inner shelf setting, but the range of sediments present and the different life habits of the fauna suggest very heterogeneous habitats and depositional environments. Benthic faunas in this succession are primarily autochthonous and storm-influenced level bottom assemblages, but a distinct oyster-vermetid boundstone occurs at the base of the uppermost parasequence.

Ordination of species using detrended correspondence analysis suggests that two basic benthic assemblages can be distinguished, indicative of disjunct and gradational replacement. The faunal assemblage in an oyster-vermetid boundstone shows only minor overlaps with the level bottom assemblages; the latter, however, display a distinct gradient from pelitic (deeper and quiet water) to sandy (shallower and more agitated) habitats. Therefore it is interpreted that the level bottom assemblages in the three parasequences belong to the same basic metacommunity, which was not seriously affected by the strong facies changes at the transgressive surfaces. The assemblage of the oyster-vermetid boundstone, however, is tied to a very unique set of environmental conditions. It therefore occurs only once in the studied section and indicates an abrupt environmental change at the base of the uppermost parasequence.

The most important structuring environmental parameters of the benthic assemblages are interpreted to be bathymetry and hydrodynamic energy. Level bottom assemblages are arranged along a curved substrata gradient, from offshore pelitic to foreshore sandy habitats. The distinct assemblage from the oyster-vermetid biostrome occurs in a very shallow, but quiet-water environment with high sedimentation rates.

Gradual replacements are clearly bound to small-scale sea-level changes, because level-bottom assemblages are developed along a dominant gradient that crosses the parasequence

boundaries and is unaffected by storm-induced winnowing and out-of-habitat transport. Their species form loose aggregates, and independently track their preferred environmental parameters, rather than forming strongly integrated paleocommunies. Disjunct replacement is aligned with the sudden appearence of oyster-vermetid biostromes, which is associated with a 3rd-oder sequence boundary. Nevertheless, the oyster-vermetid biostrome stands for a very unique but short lasting set of environmental conditions that did not seriously affect the long-term metacommunity.