

Predatory Drilling Frequencies in Lower Miocene (Karpatian) Near-shore Molluscan Assemblages from the Locality Laa (Lower Austria)

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Karpatian molluscan assemblages of the Central Paratethys occur in restricted environments and have well-known species-abundance patterns. They are only preserved from near-shore settings and, compared to the shelf assemblages of the Badenian, are characterized by rather low diversity (species richness and evenness). To date, however, virtually nothing is known about ecological interactions between molluscs and their shell-drilling predators from these assemblages. Here we show that drilling intensities at the locality Laa are generally low, but differences between higher taxa and among abundant species are evident.

The overall drilling frequency (DF), calculated from 2451 molluscan shells was only 5.2%, but differed between bivalves ($n = 474$, 4.4%) and gastropods ($n = 1977$, 5.4%). Correcting predation frequency estimates for disarticulated valves increased the overall molluscan drilling frequency to 5.8% and that of bivalves to 8.9%. The bivalve *Corbula gibba* was the single abundant species with relatively high drilling intensities ($n = 137$, corrected DF = 13.1%), but the most abundant bivalve species, *Pitaria roulini*, had a corrected DF of only 5.1% ($n = 155$). The most abundant gastropod species, *Agapilia pachii* ($n = 845$), had an exceptionally low drilling frequency of only 2.1% but all other abundant gastropod species – *Granulolabium bicinctum* ($n = 660$, DF = 7.9%), *Potamides theodiscus* ($n = 156$, DF = 8.3%) and *Cyllenina ternodosa* ($n = 98$, DF = 6.1%) – remained also well below drilling frequencies of 10%.

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