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ABSTRACT

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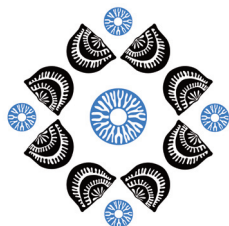
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Diversity and spatial turnover of bryozoan assemblages in the reefs of the Vasalemma Formation (Late Ordovician), Estonia

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The reefs of the Vasalemma Formation, late Sandbian, Late Ordovician, of northern Estonia contain an exceptionally rich and abundant bryozoan fauna. They are an example of contemporaneous bryozoan-rich reefs known from around the world, representing the peak diversification interval of this group during the Ordovician. The diversification is associated with global climatic cooling and increasing atmospheric and sea water oxygenation. However, the mechanisms that led to the bryozoan diversification are poorly known. Here we estimate the bryozoan richness (α and γ diversity) and turnover (β diversity) at the level of samples, reefs, and formations in the Vasalemma Formation. The resulting richness and turnover values differ among the three observational levels and hence are scale dependent. A pattern with lowest between-reef turnover and relatively high between-sample turnover could be detected, reflecting high small-scale (within reef) heterogeneities in lithology and original bryozoan habitat. This is consistent with the hypothesis that small-scale substrate heterogeneity was the most important diversification driver in the Vasalemma Formation.



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