
The Dawn of the Dapingian: the search for early radiations of Ordovician rhynchonelliform brachiopods

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Abstract

The Middle Ordovician was a key time for the diversification and evolution of the Ordovician Brachiopoda. It marks the firm establishment of the Paleozoic evolutionary fauna, replacing that of the Cambrian dominated by lingulate brachiopods and some short-lived taxa. Previous studies on global palaeobiogeography have often grouped together the Dapingian and Darriwilian. The Dapingian is relatively short (c. 3 myr) and difficult to differentiate from the Darriwilian, particularly in successions in mountain belts commonly correlated with the Arenig. Improved stratigraphic correlations and some new brachiopod faunas are revealing a hidden diversity and distinctive bioregional patterns. Network Analysis of occurrences on the platforms, in more marginal continental settings together with those associated with oceanic terranes of the Celtic Province has identified a cluster of high-diversity faunas seaward of the platform provinces, revisiting the hypothesis that these areas were cradles for subsequent diversifications on adjacent shelves.

Keywords: Dapingian, brachiopods, rhynchonelliforms, network analysis, Celtic Province

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