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Brachiopod fauna from uppermost Visean (Mississippian) mud mounds in Derbyshire, UK

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The systematic study of a brachiopod fauna collected from a Brigantian, uppermost Visean, Mississippian, mud mound complex on the Derbyshire Carbonate Platform (England, United Kingdom) recognises 45 species, representing 36 genera and seven orders (Productida, Orthotetida, Orthida, Rhynchonellida, Spiriferida, Spiriferinida, and Terebratulida). The mound complex is a decametre-scale lens-shaped buildup composed of three facies associations: the basal tabular unit made of skeletal packstone beds and tabular mounds, the complex core formed by metre-scale lens-shaped massive mounds and the surrounding inclined skeletal packstone flank beds. Brachiopods are widespread and very abundant in all three facies associations. Spinose, concavo–convex productides are dominant in the mud mound fauna, both in terms of the number of specimens, species, and biovolume. Productide success is related to scattered and scarce food resources, which they better exploited using their simple, unsupported feeding apparatus in comparison with that of the spiriferides. Spiriferides with a wide interarea are common and large in the basal tabular unit, but are rare and small in the complex core, probably due to greater availability of food resources during the deposition of the basal unit. Substrate type also played a role in controlling brachiopod diversity: varied substrates in the mound complex core allowed small-sized pedicle-attached rhynchonellides, spiriferides, and terebratulides to extensively colonise the seafloor, whereas they are rare in the basal unit.

Key words: Brachiopoda, mud mounds, Brigantian, Visean, Mississippian, Derbyshire, United Kingdom.

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