Brachiopods from the Ordovician of southern Belgium (Avalonia): the end of a terra incognita

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Abstract

Contrary to the well-exposed Devonian–Carboniferous rock sequence, the thick siliciclastic Cambrian–Silurian succession of Belgium is poor in macrofossils and, more especially, in brachiopods. These rocks mostly crop out in the Brabant and the Stavelot–Venn massifs, and in the Condroz Inlier. Occurrences of Ordovician brachiopods have been reported since the second half of the 19th century in the Brabant Massif but, until recently, only those from the Ashgill Fosses Formation (Condroz Inlier) have been properly taxonomically studied (Sheehan 1987). In the Early Ordovician, Belgium was located in high southern latitudes (it was part of Avalonia, a terrane with a Gondwanan origin), offshore from high latitude Gondwana (Amazonia–North-West Africa). During the Ordovician, Avalonia rifted from Gondwana and drifted northward, eventually docking Baltica in the Katian forming a block that collided with Laurentia in the Silurian and closing the Iapetus Ocean. The ongoing revision of the historical collections of the Royal Belgian Institute of Natural Sciences, complemented with newly collected specimens, has enables us to document the development of brachiopod faunas in this part of Avalonia from the Tremadocian. Early and Middle Ordovician brachiopod faunas are characterized by poor preservation leading to tentative identifications, low diversity and low to medium abundance assemblages, dominated by linguliformean taxa (Candela et al. 2021; Candela & Mottequin 2022, in press), from assemblages rooted in the Furongian (Popov et al. 2013). Middle to Late Ordovician brachiopod assemblages (e.g., Oxhe and Fosses formations) are characterized by a distinct shift towards rhynchonelliformean-dominated faunas that show stronger affinities with palaeo-equatorial faunas (Laurentia, Baltica), than with Early Ordovician peri-Gondwanan and Gondwanan faunas.

Candela, Y. & Mottequin, B., 2022. Tremadocian and Floian (Ordovician) linguliformean brachiopods from the Stavelot–Venn Massif (Avalonia; Belgium and Germany), *Geologica Belgica*, 25/1-2, 1-15.

Candela, Y. & Mottequin, B., in press. Middle and Upper Ordovician linguliformean and craniiformean brachiopods from the Brabant Massif, Belgium: infaunal giants, encrusting forms and durophagy. *Geobios*.

Candela, Y., Marion, J.-M., Servais, T., Wang, W., Wolvers, M. & Mottequin, B., 2021. New linguliformean brachiopods from the lower Tremadocian (Ordovician) of the Brabant Massif, Belgium, with comments on contemporaneous faunas from the Stavelot–Venn Massif. *Rivista Italiana de Paleontologia e Stratigrafia,* 127/2, 383-395.

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Popov, L.E., Holmer, L.E., Bassett, M.G., Ghobadi Pour, M. & Percival, I.G., 2013. Biogeography of Ordovician linguliform and craniiform brachiopods. Geological Society, London, Memoirs, 38, 117-126.
Sheehan, P.M., 1987. Late Ordovician (Ashgillian) brachiopods from the region of the Sambre and Meuse Rivers, Belgium. Bulletin de l'Institut royal des Sciences naturelles de Belgique, Sciences de la Terre, 57, 5-81.

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