Supplementary material 1. Presence/absence matrix including 39 associations, spanning the Early to Late Devonian: Barreda (1986), Volkheimer *et al.* (1986), Le Hérissé *et al.* (1996), Ottone (1996), Grahn & Gutiérrez (2001), Amenábar *et al.* (2006), Antonelli & Ottone (2006), di Pasquo (2007a, b), Rubinstein & Steemans (2007), Amenábar & di Pasquo (2008), Amenábar (2009), Noetinger (2010, 2015), Noetinger & di Pasquo (2010, 2011, 2013), García Muro & Rubinstein (2015), Noetinger *et al.* (2016, 2018), García Muro *et al.* (2017, 2018, 2025), Pineda *et al.* (2021), Camina (2024) and Camina *et al.* (2024a, b).

Supplementary material 2. Cluster analysis dendogram (Modified Forbes index - Ward algorithm), showing the similarities between associations from the East and West (localities framed in yellow) on the basis of Supplementary material 1.