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Original article

# A bryozoan fauna from the Mississippian (Tournaisian and Viséan) of Belgium<sup>☆</sup>



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## ABSTRACT

Eleven bryozoan species are described from the Mississippian of southern Belgium, including one new species, *Atactotoechus vaulkensis*, and one species left in open nomenclature (*Stenophragmidium* sp.). From this fauna, four species are restricted to the Tournaisian stage, and seven occur in the Viséan. The fauna is mainly small-sized, represented by branched ramose, encrusting and reticulate growth forms. Bryozoans in the Mississippian of southern Belgium preferred deeper, clay-rich environments. The identified bryozoan species are mainly distributed within the European basin, with some similarities with the Mississippian faunas of Siberia and Kazakhstan.

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## 1. Introduction

The Early Carboniferous was a time of intensive diversification in marine biotas after the Late Devonian turnover (Ross, 1981; Ernst, 2013). Abundant and diverse Mississippian bryozoan assemblages are known from various parts of the world (Tolokonnikova et al., 2014); however, the distribution of these faunas remains not well understood.

Southern Belgium represents the historical type area of the Tournaisian and Viséan stages (Hance et al., 2006a, 2006b; Poty et al., 2014), where marine Mississippian deposits (mainly limestones) are extensively developed and contain abundant and diverse fossils (e.g., Demanet, 1958). Mississippian bryozoans including some fenestrate and cryptostome species have been known from Belgium for a long time (d'Everlange-Witry, 1780; de Koninck 1842–1844; Delépine, 1928; Demanet, 1938; Kaisin, 1942). However, these early unrevised reports are very simplistic and contain limited information about the content of the bryozoan assemblages of southern Belgium. Analysis of facies with bryozoans from Waulsortian buildups of Tournaisian age in southern Belgium was carried out by Lees (1988, 2006) and Wyse

Jackson (2006), while McKinney et al. (1987) examined the role of fenestrate bryozoans as sediment bafflers in these buildups. Their abundance in some small reefs of the Lives Fm. (Viséan) was mentioned by Lauwers (1992) and Chevalier and Aretz (2005). Recent taxonomic descriptions of Tournaisian bryozoans from the Namur–Dinant basin were given by Tolokonnikova et al. (2015a).

The present paper provides a taxonomic description of bryozoan assemblages occurring within several Tournaisian (Ivorian) to Viséan (Warnantian) formations from southern Belgium (Namur–Dinant Basin). These assemblages are compared with contemporaneous faunas from different parts of the world.

## 2. Geological setting and material

Tournaisian–Viséan rocks are exposed extensively in southern Belgium on both sides of the Midi-Eifel fault zone, in the Brabant Parautochton, the Haine-Sambre-Meuse Overtuned Thrust sheets and the Dinant Synclinorium (Hance et al., 1999; Belanger et al., 2012) (Fig. 1). These Variscan structural elements constitute the Namur–Dinant Basin that developed along the southeastern margin of Laurussia during Devonian and Mississippian times. The Tournaisian–Viséan lithostratigraphy of southern Belgium was summarized by Poty et al. (2002); several sedimentation areas (see below) were recognized in the Namur–Dinant Basin by Poty (1997, 2016) and Hance et al. (2001). During the late Viséan, the

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