

National Commission for Stratigraphy Belgium

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2.3.3 Tribotte Formation - TRO

Lower Paleozoic

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Version: revised October 2011, A. Herbosch and J. Verniers

Authors: from the locality of Tribotte near Villers-la-Ville in the Thyle valley. Anthoine & Anthoine (1943): «Psammites de Tribotte» Ar2 de l'Assise de Villers-la-Ville. Later, Michot (1977) grouped in the «Assise de Tribotte » the «Psammite de Tribotte» and the «grès et psammites de Strichon». The latter definition was adopted by Verniers et al. (2001).

Description: In the Dyle basin, this formation shows three main lithofacies easily recognisable in the field. The lower third contains brownish grey, clayey fine sandstone and siltstone with coarse laminations strongly bioturbated. Some beds show metrical scale oblique stratification interpreted as large-scale bed forms like in the Abbaye-de-Villers Fm. Thin section examination shows abundant potassic feldspar and plagioclase in the sandstone at the base of the formation (Jodart, 1986 ms; Herbosch, in André et al., 1991). The upper two thirds show yellowish grey to greenish grey sandstone and siltstone, clearly more clayey than below. Bioturbation is rather strong with dominating oblique to vertical burrows ("Fucoïdes" of the older literature). The upper part shows typical structures as vertical bioturbation with Spreiten, flaser bedding, etc. indicating an intertidal environment of deposition. In the middle part a rather mature, bioturbated, light grey sandstone can be observed locally near Strichon ("grès et psammite de Strichon" Anthoine & Anthoine, 1943).

In the Senne valley the outcropping conditions are not so good but the facies looks sandier. At Quenast (northern side of the Senne) a large outcrop shows numerous slump and large-scale bed forms that have been studied in detail by Debacker et al. (2003). They conclude that in most of the case these folds are pre-cleavage and can be interpreted as slump folds. This interpretation shows that during the late Early to Middle Ordovician (Chevilpont to Tribotte formations) a regionally persistent S-dipping palaeoslope existed in the southern part of the Brabant Massif.

The lower boundary of the formation is very difficult to place precisely as it is gradual with the Abbaye de Villers Formation, showing an upward increasing sand fraction and a change of colour from dark grey to brown.

Stratotype: Not yet defined. Type area in the Thyle valley between the old Abbaye of Villers to the N, Villers-la-Ville in the centre, Rigenée to the SW (Thyle valley) and Gentissart to the SE (Ri de Gentissart valley). A good section of the upper part (and the transition to the Rigenée Fm.) can be observed along the railways (Court-St-Etienne - Fleurus) between km 42.3 and 42.7 (50°34'11.80" N/4°33'16.09 E to 50°33'59.02 N/4°33'28.00" E).

Area: Outcrop area of the Brabant Massif: Senne, Dyle basins and Orneau valley.

Thickness: 250 to 300 m in the Dyle basin and 150 to 200 m in the Senne basin.

Age: No macrofossils observed. A poor chitinozoan assemblage containing *Euconochitina vulgaris* indicates a Dapingian to lower Darriwilian (mid Arenig to early Llanvirn; Verniers et al., 1999; Samuelsson & Verniers, 2000). The assemblage of acritarchs recorded by Vanguetaine & Wauthoz (2011) from the lower part of the Tribotte Fm. is very similar to this of the Abbaye de Villers Fm. and belong to the *Frankea hamata*-*Striatotheca rarirugulata* biozone of the Lake District. A late Dapingian to early Darriwilian (late Arenig) age is indicated, corresponding to the *A. cucullus* graptolite zones (Ogg et al., 2008, fig. 5.4). The upper part of the Tribotte Formation is dated with acritarchs as lower Darriwilian (latest Arenig to earliest Llanvirn; Vanguetaine & Wauthoz, 2011).

Remarks: Synonyms: "Assise de Villers-la-Ville" (Malaise, 1911), "Psammite de Tribotte et Grès et psammite de Strichon" (Anthoine & Anthoine, 1943), "Assise du Tribotte" (Michot, 1978), part of the "quartzophyllades zonaires de Quenast" (Beugnies in Waterlot et al., 1973); (sandy) upper part of the "Formation de Quenast" (André et al., 1991; Servais et al., 1993).?