

National Commission for Stratigraphy Belgium

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2.3.1 Chevlipont Formation - CHV

Lower Paleozoic

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

Authors: named after the old mill of Chevlipont, situated in the Thyle valley about 1 km to the north of the ruins of the Abbaye of Villers. Anthoine & Anthoine (1943): "quartzophyllade de Chevlipont" LI 1 de l'Assise de Mousty». Used with the same content by Martin (1976), Servais et al. (1991).

Description: The most common facies is formed by grey siltstone (called "quartzophyllade" in older literature) with characteristic wavy bedding consisting of millimetric alternations of light grey siltstone and dark grey clayey siltstone and mudstone. Silty laminae occur characteristically in small lenses a few cm long and a few mm thick with oblique lamination that forms the base of rhythmic microsequences (T0 of Stow and Piper, 1984). Small slumps occur frequently, clearly visible in cores of boreholes (Herbosch et al., 1991) but more difficult to observe in outcrop. A decametric slump has also been described by Beckers (2004) in the railway type-section near the Chevlipont mill. The dominant facies, interpreted as top-cut sequences of low density turbidites (Stow model), can sometimes be replaced by centimetric to decimetric beds with massive, plane parallel or convolute structures characteristic of Bouma-type turbidites (Herbosch et al., 1991). The lower boundary (with Mousty Fm.) is gradual and marked by an upward increase of silt laminae and disappearance of the black shale intervals. The upper limit is nowhere observed in outcrop.

A less frequent facies consists of decimetric turbidites of the classical Bouma-type and is observed in a slump of the Thyle valley (railway section km 38.1; Beckers, 2004) and in the Marke area (Debacker, 1999). In this later region interstratified volcanic rocks (metarhyolite) have been described in outcrop (Denaeyer and Mortelmans, 1954; Corin, 1965) and in boreholes (Debacker, 1999).

Stratotype: in the Thyle valley, near Chevlipont, in the railway section between Tangissart and Chevlipont, from Km 37.3 (50°36'17.61" N/4°32'13.22" E) to km 38.2 (50°35'44.28" N/4°32'00.25" E). The upper part of the formation is visible along the path to the Bois de l'Hermitage, 50 to 100 m east of the railway (50°35'45.29" N/4°32'09.93" E to 50°35'44.37" N/4°32'04.87" E).

Area: Present throughout the entire Brabant Massif. Outcrop area: the Dender valley (Lessines borehole), the Marke, Senne and Sennette valleys and Dyle basin. Also in many boreholes in the southern or northern part of the Brabant Massif (see Legrand, 1968; De Vos et al., 1993). In the Condroz inlier, only in the Wépion borehole (Graulich, 1961).

Thickness: In the order of 150-200 m in the Dyle valley, at least 92 m in the Lessines borehole (Herbosch et al., 1991 ; Herbosch et al., 2009), at least 40 m in the Marke valley (Longueville, 1997 ms) and at least 140 m in the Wépion borehole (Graulich, 1961).

Age: Earliest Tremadocian, for the lower half of the formation based on the presence of the dendroid graptolites *Rhabdinopora flabelliformis* ssp. *socialis* and *typica* (Lecompte, 1948, 1949), and based on acritarchs (Martin, 1969a, 1969b, 1976; Vanguetaine in André et al., 1991). In the upper part Lecompte (1949) described a clearly different subspecies *R. flabelliformis* aff. *norvegica* which point to the upper part of the *R. flabelliformis* s.l. (Ogg et al., 2008, fig. 5.4). The Chevlipont Fm. seems to be restricted to the lowest Tremadocian, namely the Tr1 and lower part of Tr2 Time Slices of the Ordovician subdivision by Bergström and Xu (2007).

Remarks: Synonyms: Part of the "Assise de Villers-la-Ville" (Malaise, 1911); "quartzophyllades de Chevlipont" (Anthoine & Anthoine, 1943); "quartzophyllades de Virginal" (Mortelmans, 1955), "couches de Chevlipont" (Michot, 1978); Virginal Fm. (Servais et al., 1993).