

National Commission for Stratigraphy Belgium

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2.3.5 Ittre Formation - ITT

Lower Paleozoic

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

Authors: From the town of Ittre, Sennette basin. « Assise d'Ittre » from Beugnies in Robaszynski & Dupuis (1983, fig. 9), formalized by Servais (1991) and Servais et al. (1993).

Description: Rhythmic alternation of beds, with sharp bedding planes, of light grey fine sandstone, medium grey siltstone, and dark grey mudstone. The sandstone beds are often >5 cm thick up to pluridecimeteric and show parallel, oblique and convolute lamination, fining upward graded bedding, with load casts and other current marks at their base. The siltstone shows parallel lamination and the mudstone no stratification. They are interpreted as quite distal turbidites of the Bouma-type.

In the Lessines borehole (Unité II, Herbosch et al., 1991) the lithofacies are more diverse than in outcrops and three facies have been described. A first facies shows a pluricentimeteric and rhythmic alternation of irregular basal laminae of siltstone followed by graded mudstone. The succession of structure and the cm scale of the sequences correspond quite exactly to the low density turbidites model described by Stow and Piper (1984). The second facies correspond to the decimeteric turbidites of the Bouma-type observed in outcrop. And the third facies shows fine sandstone and siltstone with parallel, oblique and convolute laminations. All these three lithofacies are interpreted as turbidites of different density that have been deposited in a deep-marine environment (slope to basin plain). These former observations are confirmed by new field observation of Storme (2004 in Vanmeirhaeghe, 2006).

A megaslump within the Ittre and the Bornival formations has been described in the Sennette valley (Debacker et al., 2001). Thin (10-20 cm) volcanic tuffs were described in the basal part of the formation in the Sennette valley (Corin, 1964; Martin & Rickards, 1979; Debacker, 2001; Debacker et al., 2003, 2004).

Stratotype: Sennette valley, along the E side of the canal trench south of Asquemont km 39,580 to 39,400 (Debacker et al., 2001 fig. 3 & 9).

Area: Brabant Massif: Lessines borehole (Dender), Senne and Dyle basins and Orneau valley.

Thickness: estimated >180 m in the Sennette valley (Debacker, 2001; Debacker et al., 2001); >82 m thick in the Lessines borehole, Dender valley (Herbosch et al., 1991); not possible to estimate in the Dyle or Orneau valleys.

Age: Graptolites described by Martin & Rickards (1979) and Degardin in Herbosch et al. (1991) indicate a Sandbian to lower Katian (Caradoc) age. For Maletz and Servais (1998) they indicate the *N. gracilis* or *D. foliaceus* (= *multidens*) Biozone (Aurelucian or Burrellian), with a preference for the Burrellian which correspond to the upper part of the Sandbian (Ogg et al., 2008 fig.5.5). The chitinozoans, moderately well preserved and diverse with the presence of *Belonechitina cf. robusta* indicate a Burrellian age (Verniers et al., 1999; Samuelsson & Verniers, 2000). A restudy of the chitinozoans by Vanmeirhaeghe et al. (2005) and Vanmeirhaeghe (2006) concluded that the formation corresponds to an interval situated within the *S. cervicornis* chitinozoan Biozone and has a late Burrellian to Cheneyan age. In summary the Ittre Fm. encompass most probably all the Sandbian and the earliest Katian.

Remarks: Synonyms: "Assise de Gembloux" (Malaise, 1911); "SI1c, Llandeilien, formation des phyllades et quartzophyllades noirs à *Nemograptus gracilis*" (Beugnies in Waterlot et al., 1973, fig. 48); "unité F" (Martin & Rickards, 1979); "Assise d'Ittre" (Beugnies in Robaszynski & Dupuis, 1983, fig. 9).?