

National Commission for Stratigraphy Belgium

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2.3.4 Rigenée Formation - RIG

Lower Paleozoic

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

Authors: from the hamlet of Rigenée 1.5 km to the south of Villers-la-Ville in the Thyle valley. Malaise (1909): «Assise de Rigenée SI2b». Used with the same meaning by Servais (1993).

Description: Dark grey to bluish grey slate (mudstone and siltstone), vaguely or coarsely laminated or without any stratification, bearing locally pyrite. This formation was never studied in detail for lithology and sedimentology. The lower boundary of the unit marks a rapid transition over 5 to 10 meters and sharp change from the light coloured clayey siltstone of the Tribotte Formation to the dark slate of the Rigenée Formation. This abrupt change of lithofacies records a regional transgression well known in N-Gondwana and Baltica as the « Formosa flooding Event » (Paris et al., 2007).

Stratotype: Type area in the Thyle valley, north of Rigenée in the Vallon des Goutailles: 50°34'15.64" N/4°31'16.63" E to 50°34'04.74" N/4°31'15.65" E. Also near Gentissart along the railway km 42.8-42.9 and along the old vicinal: 50°33'58.48" N/4°33'33.97" E (Servais, 1993).

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

Thickness: 250 m in the Dyle valley (Gentissart; Delcambre et al., 2002), about 150 m in the Senne valley, >80 m in the Sennette valley (Debacker et al., 2001) and estimated at about 150 to 200 m in the Orneau valley (Servais, 1993).

Age: Graptolites in the lower or middle part of the formation in the Sennette valley belong to the lower Llanvirn *D. artus* Biozone (Martin and Rickards, 1979) or after a restudy by Maletz and Servais (1998) to the *D. artus* and the *D. murchisoni* biozones () which corresponds to the middle to upper Darriwillian (entire Aberdeiddian).

Acritarchs from the Dyle basin indicated also a middle Darriwillian age (Martin, 1969a). Acritarchs studied by Servais (1993) indicate that for the base of the formation a lower Darriwillian or younger age cannot be excluded. Higher levels of the formation seem to have (at least) an upper Darriwillian or younger age indicated by the presence of *Frankea hamulata*, a species not found in rocks older than upper Darriwillian. The age of the lower part of the formation is surely Darriwillian but possibly pre-Llanvirn according to the acritarchs studied by Vanguetaine & Wauthoz (2011). A poor assemblage of chitinozoans with *Lagenochitina obelgis* and *Cyathochitina calix* indicates the same large age bracket (Verniers et al., 1999; Samuelsson & Verniers, 1999, 2000). Taking into account all these results the Rigenée Fm. correspond most probably to the upper half of the Darriwillian.

Synonyms: "Unité D" (Martin & Rickards, 1979; "Formation de La Tourette" (Lenoir 1987 ms; Servais et al., 1993).