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2.5.6 Fallais Formation - FLL

Lower Paleozoic

Commission members
Proposals and discussion
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Chronostratigraphy

Author: Verniers, 1976 ms, 1983a.

Description: Unit of light green, olive-greenish grey, or light grey chloritic mudslate and mudstone, with rare siltstone and fine sandstone beds from distal turbiditic origin, mostly without laminated hemipelagite; in the Mehaigne area it can be subdivided into six members according to the frequency of siltstone and sandstone beds (except for member D and the volcanic Pitet layer): from top to bottom:

Member E: light or olive greenish grey, or light grey mudslate, mudstone, siltstone and fine sandstone, with non-calcareous chloritic pelite in the e-divisions; Tde sequences mainly between 8 and 11 cm; T(b)cde absent or rare (0-7%), generally about 75% thicker than the main Tde sequences, with the c-divisions between 11 and 20 cm thick; upper boundary placed below the first of frequently present obliquely stratified fine sandstone beds (a few per meter); lower boundary not observed but probably the top of the volcano-sedimentary layer of Pitet.

Volcano-sedimentary layer of Pitet (PTT): 20 m massive fining upward (very) coarse pure crystal tuff with slate and crystal lenses, passing gradually upwards into (medium) coarse tuff, heterogeneous with crystal and glass lenses; gradual transition into at least 5.5 m of (very) fine ash tuff or cinerite showing fine lamination, faint oblique stratification and compact sedimentation at the top; abrupt lower boundary observed with the member D.

Member D: medium to dark grey mudslate, mudstone and siltstone, quartzic, non-calcareous pelite; Tde sequences thin to medium thick (average of 12 cm); T(b)cde sequences frequent and generally thicker than Tde sequences; with thin c-divisions; lower boundary with member C not observed due to an observational gap of 30 m.

Member C: light greenish to olive-green mudslate, mudstone, siltstone and fine sandstone with non-calcareous chloritic matrix in the e-divisions; thin Tde sequences (on average 6-9 cm), T(b)cde sequences absent or rarely present (0-11%), generally about 60% thicker than the average Tde sequence; with c-divisions mostly between 0.5 and 9 cm and rarely (about 10%) between 11 and 16 cm; lower boundary with member B unobserved due to an observational gap of 7 m.

Member B: greenish mudslate, mudstone, siltstone and fine sandstone; in the e-division non-calcareous chloritic pelite; thin Tde sequences (about 10 cm); T(b)cde sequences frequent and much thicker (20-50 cm) than Tde sequences; lower boundary with member A not observed.

Member A: same lithology as Mbr C; lower boundary supposedly with the Latinne Fm via fault contact.

Stratotype: Mehaigne valley all around the village Fallais; the type sections of the members are: Mbr A in section IG-19, Fallais village centre, Mbr B and Mbr C in section KG-2. KG-3 and KG-4 in the sunken road north of the Ferme de Chantraine, Dreye; Mbr D in outcrop IF-9 in the hamlet Les Falihottes, Pitet; the volcano-sedimentary layer of Pitet in the abandoned quarry in the Butte St-Sauveur, Pitet and in the Bois Cornet, Pitet; Mbr E in section KF-2 in the sunken road 250-350 m south-east of the church of Dreye.

Area: Mehaigne and Burdinale valleys (type area); Orneau valley: a volcano-sedimentary rock is present at 20 m below the top of the formation. In the Thisnes valley (Monstreux; Verniers unpublished and Diependaele, 1997 ms) a volcano-sedimentary rocks (“porphyroid of Monstreux”) is present at about 8 to 10 m below the Corroy Fm and from 11 to 22 m below the same formation a purple shale member is observed, the only purple-coloured bed in the Silurian of the Brabant Massif. In the Sennette valley a local member B with thin bedded sandstone layers, showing oblique stratification and undulating bedding planes is separating two green shale members (A and C) with rarer sandstone (Verniers, unpublished).

Thickness: Mehaigne area: estimated for the formation: >626 m (Mbr E: 135 m, Volcano-sedimentary layer of Pitet: 31 m, Mbr D: >22 m, Mbr C: 140 m, Mbr B: >28 m, Mbr A: 270 m, Verniers, 1983a); Orneau valley: difficult to estimate: 300-400 m (Delcambre & Pingot, in press a); Thisnes valley (Monstreux): difficult to estimate: >450 m (Verniers, unpublished); Sennette valley: >375 m (cut off at the base by a fault; Verniers, unpublished).

Age: Based on acritarchs Telychian, upper Llandovery (Martin, 1969a); chitinozoans from the Mehaigne area indicate the *longicollis* global biozone for members A, B and C, calibrated with a range post-*griestoniensis* to pre-*insectus* graptolite

biozones. The *margaritana* global biozone is observed in members D, Pitet and E. According to the latest calibration by Mullins (1998) these three members would correspond to the *insectus* graptolite biozone, topmost Telychian, uppermost Llandovery (reinterpreted after Verniers, 1981, 1982).

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