National Commission for Stratigraphy Belgium

Carboniferous

5.41.1 Bonne River Formation - BON

Author: Poty, this paper.

Description: This formation includes the Thon-Samson Fm, the Poilvache Fm and part of the Anhée Fm of Paproth et al. (1983).

- ***Thon-Samson Mbr - THO*** (Conil et al., 1967; Pirlet, 1968a; Paproth et al., 1983)

This member includes the Thon-Samson Fm of Paproth et al. (1983), except for the bedded lime mudstones, stromatolitic and other limestones (packstones-grainstones) at the top of that formation which resemble those of the overlying Poilvache unit and are now included in it. The Thon-Samson Mbr is, therefore, mainly composed of massive, pale to dark limestones (grainstones-rudstones), usually crinoidal ("petit-granit" de Thon). Corals and brachiopods are locally present.

- ***Poilvache Mbr - POI*** (Conil et al., 1967; Pirlet, 1968a; Paproth et al., 1983; Poty et al., 1988)

As defined here, the Poilvache Mbr includes (1) some limestones previously attributed to the Thon-Samson Fm by Paproth et al. (see above), (2) the Poilvache Fm of Paproth et al., and (3) part of the overlying Anhée Formation of Paproth et al. It comprises bedded, pale to dark limestones, sometimes cherty, arranged in parasequences dominated by lime mudstones and stromatolitic limestones. Macrofossils (corals and brachiopods) are uncommon.The formation is locally brecciated ("Grande Brèche Viséenne").

Stratotype: The Bonne River Fm is exposed near and along the old railway in the village of Modave (Pirlet, 1968), on the east bank of the R. Bonne. Thon-Samson Mbr, Plates-Escailles quarry at Maizeret, on the west side of the Samson valley. Poilvache Mbr, north-eastern part of the Poilvache Castle Rock, on the east side of the Meuse valley, 6 km north of Dinant.

Thickness: Thon-Samson Mbr: 8 m in the stratotype. Poilvache Mbr: 80 m.

Area: NSA, CSA, DSA. The Thon-Samson and Poilvache Mbrs are known in the Boulonnais where they correspond respectively to the lower and the upper parts of the Joinville Limestone (Poty, 1994).

Age: Early Warnantian. Thon-Samson Mbr: Cf6aForaminifer Subzone, top of the RC6 Coral Zone or base of the RC7 Coral Zone (possible appearance of *Dibunophyllum*) (Conil et al., 1991). Poilvache Mbr: top of the Cf6ato lower part of the Cf6gForaminifer Subzones, RC7aCoral Subzone (presence of *Dibunophyllum* and *Diphyphyllum*) (Conil et al., 1991). The Thon-Samson Mbr corresponds to the HST of the third-order sequence 8 of Hance et al. (2001), while the Poilvache Mbr corresponds to the TST of the third-order sequence 9.