Carboniferous

Commission members
Proposals and discussions
Lithostratigraphy
Chronostratigraphy

2.2.1 Chokier Formation

Authors: d'Omalius d'Halloy, 1853; Dumont, 1832; Purves, 1881; Van Leckwijck, 1957, 1964; Paproth et al., 1983.

Description: The Chokier Formation is composed of calcareous shales, pyrite-rich aluniferous shales ('ampelites') and silicites ('cherts' or 'phtanites'), with a rich marine fauna, devoid of coal seams or rootlet beds with the exception of the Bois-et-Borsu Member ('Shales with Posidoniellas and goniatites', Purves, 1881). Weathered, fissile black or violaceous shales dominate in the outcrop areas.

Lower unit of the Belgian Coal Measures Group ('Houiller sans houille', Dumont, 1832). The base corresponds to the top of the Dinantian carbonates and is normally corresponding to a sharp boundary at the place of a stratigraphic gap of varying importance, often developed as a karst surface. Radioactive shales rich in organic matter ('hot shales') which are often incorporated in the Chokier Formation may be used as a practical indicator for delimiting the formation both upwards and downwards.

The Chokier Formation is always overlain by the Andenne Formation, whenever the stratigraphic record is sufficiently complete. In the western Namur Synclinorium and the eastern Campine basin, with thicker and probably more complete sequences, the basal transition is more gradual.

Stratotype: Former 'ampelite' outcrops on the slopes below the castle of Chokier.

Area: As for the Belgian Coal Measures Group.

Thickness: Generally 20 to 40 m, decreasing towards the Brabant Massif (Bouckaert, 1967). Increasing to 80-150 m in the Charleroi mining district and Dinant –Theux basins (under the form of the Bois-et-Borsu Member) and possibly also in the eastern Campine basin (corresponding to Geverik Member of the Epen Formation in The Netherlands, van Adrichem Boogaert & Kouwe, 1993). The Chokier Formation becomes much thicker, reaching a thickness of 200 m, in the western part of the Namur Synclinorium ('Auge hennuyère', Blaton - Saint Ghislain area). In the St Ghislain borehole, Lower-Upper Carboniferous transitional beds (Gottignies Formation), together with undoubted Chokier beds, reach a thickness of 432 m.

Age: Serpukhovian; Arnsbergian and Chokierian, rarely Alportian, based on goniatite zonation, or Namurian A according to traditional subdivision. Transition beds such as the Tramaka Member, could be of Pendleian (E1) age.

Tramaka Member

Authors: Austin et al., 1974; Paproth, Conil et al., 1983.

Description: Grey-coloured coarse crinoidal limestone lenses, preserved in karstic dissolution structures, laterally passing into silty limestones and black finely bedded limestones ("Encrinite de Tramaka", Austin et al., 1974).

Boundaries: unconformably overlying karstified Lower Carboniferous limestones (Seilles Formation); unconformably overlaid by dark shales of the Chokier Formation.

Stratotype: Abandoned quarry of Tramaka, Seilles commune.

Area: Northern flank of Namur Synclinorium, between Namur and Huy (Andenne uplift zone)

Thickness: 3.70 m in type locality

Age: Early Serpukhovian; conodonts and foraminifers suggest a Namurian age (Arnsbergian or older), possibly equivalent of lower part of Chokier Formation or of Gottignies Formation.

Remark: The Tramaka Member was defined as a formation in Paproth, Conil et al., 1983.

Bois-et-Borsu Member

Authors: Newly defined, after the Bois-et-Borsu commune, mining village in the 19th century.

Description: The Bois-et-Borsu Member contains marine 'ampelites' typical for the Chokier Formation, interbedded with 3 coal seams and sandstone rootlet beds. Despite irregular thickness distribution and complex tectonics, coal seams with thickness of 30-70 cm have been mined.

The Bois-et-Borsu Member overlies Lower Carboniferous (Warnantian) deposits. The upper boundary is erosive. It is lateral equivalent to the Chokier Formation.

Stratotype: Bois road section and abandoned mining galleries (cf Vandercammen, 1948).

Area: Deep synclines in the eastern part of the Dinant Synclinorium (Clavier, Bois-et-Borsu and Bende coalfields) and the overturned beds in the Theux tectonic window.

Thickness: Possibly up to 250 m; due to poor exposure and presence of thrust faults, real thickness is not known.

Age: Early Serpukhovian, Arnsbergian and Chokierian, or Namurian A according to traditional subdivision, as for the Chokier Formation.