

Summarised description

Unit name

Mondrepuis Formation

Code

MON

Status

Formal Formation

Parent unit

none

Child units

Levrézy Member, Ruisseau des Roches Member, Parensart Member, Muno Facies

Characteristic description

Dark grey and bluish-grey shale with light grey or greenish-grey siltstone laminae and fossils accumulations preserved as moulds.

Age

Upper Pridoli to lowermost Lochkhovian in the southern part, Lochkhovian in the northern part.

Thickness

150 to 1000 metres

Area of occurrence

Southern margin of the Dinant Synclinorium and both limbs of the Neufchâteau – Eifel Synclinorium, west of the Serpont meridian.

Type locality

The historical stratotype at Mondrepuis (France) is discontinuous and the Bois de Ridoux section at Haybes (France) is very degraded nowadays. The best section, although difficult to access, is situated along the N5 motorway south of Couvin but the upper part is faulted.

Alternative names

Schistes de Mondrepuis

Authors

Thorent (1839)

Modified after

Denayer, J. & Mottequin, B., 2024. Lower Devonian lithostratigraphy of Belgium. *Geologica Belgica*, 27/3-4, 115–154.

Date

23/09/2025

Cite as

Denayer, J. & Mottequin, B., 2025. The Mondrepuis Formation, 23/09/2025. National Commission for Stratigraphy Belgium. <https://ncs.naturalsciences.be/lithostratigraphy/Mondrepuis-Formation>

Full description

Unit name

Mondrepuis Formation

Code

MON

Status

Formal Formation

Parent unit

none

Child units

Levrézy Member, Ruisseau des Roches Member, Parensart Member, Muno Facies

Origin of the name

After the village of Mondrepuis (France).

Alternative names

Schistes de Mondrepuis.

Authors

Thorent (1839, p. 245): *Schistes verts de Mondrepuis*

Modified after

Denayer, J. & Mottequin, B., 2024. Lower Devonian lithostratigraphy of Belgium. *Geologica Belgica*, 27/3-4, 115–154.

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Characteristic description

The Formation is essentially shaly with dark grey and bluish-grey shale with light grey or greenish-grey siltstone laminae. Heterogeneous sandy laminae and thin beds of yellowish, greenish and brownish micaceous quartzitic sandstone occur locally. Fossils are frequent and occur as lens-like accumulations of shells (brachiopods, bivalves, crinoids, trilobites, tentaculites, etc.), decalcified and limonitic on the outcrop. On the north-eastern margin of the Rocroi Inlier, these carbonate facies were named *Siltites et Grès du Pont Collin* by Meilliez (1989). In the lower part, coarse-grained sandstone beds are locally developed. South of the Rocroi Inlier, the facies are slightly metamorphic and the Mondrepuis shale passes to the bluish-grey slate with thin sandy laminae of the **Levrézy Member** (*schistes de Levrézy* in Gosselet, 1880, p. 62, 67). The slates are finely micaceous, occasionally graphitic and locally reddish-brown in colour due to the disseminated oxidised pyrite. In the French part of the Semois River valley, this member includes 2–6 m thick lenses of sandy crinoidal limestone (*Calcaire de Naux*, *Calcaire de la Havetière*, *Calcaire de Montcy-Notre-Dame*; Clerc, 1830; Bultynck, 1982) that correspond to some calcareous sandstone beds observed on the Belgian side.

On the eastern flank of the Givonne Inlier, two members have been distinguished (Belanger & Ghysel, 2017). The lower one, situated 30–100 m above the base of the Formation is the **Ruisseau des Roches Member** (*Horizon du Ruisseau des Roches* in Beugnies, 1976, p. 484). It consists of bioclastic carbonate shales rich in macrofossils. The upper one, the **Parensart Member** (*Horizon de Parensart* in Godefroid & Cravatte, 1999, p. 7), a term proposed to replace Beugnies' (1976) *Horizon de Muno*, is dominated by shales with thin beds of carbonate siltstone, decalcified and limonitic on the outcrop. The Parensart Member is c. 75 m thick and situated 100 m above the Ruisseau des Roches Member. These last two members were integrated into a distinct unit by Godefroid (1982), i.e. the *formation de Muno* (*Grès et schistes de Muno* in Maillieux & Demanet, 1929, table 2) here referred as the **Muno Facies**.

Area of occurrence

The Mondrepuis Formation can be traced on the southern limb of the Dinant Synclinorium between Macquenoise and Gedinne then it passes to the Levrézy Member south of the Rocroi Inlier. In the Ardenne Anticlinorium, the classical facies of the Mondrepuis Formation is developed on the northern flank of the Serpont Inlier. On the southern limb of the Neufchâteau–Eifel Synclinorium, the Formation and its fossiliferous members (Ruisseau des Roches and Parensart) are developed on the margin of the Givonne Inlier.

Type locality

The historical stratotype at Mondrepuis (France) is discontinuous and the Bois de Ridoux section at Haybes (France) is very degraded nowadays. The best section, although difficult to access, is situated along the N5 motorway south of Couvin but the upper part is faulted. The Parensart and Ruisseau des Roches members are exposed along the disused railway between Muno and Sainte-Cécile (Godefroid & Cravatte, 1999), though in this locality the facies is more fine-grained than in the Dinant Synclinorium. The Levrézy Member is exposed along the western bank of the Meuse River between Bogny and Braux (France) and along the eastern bank of the Semois (Semoy) River between Navaux and Thilay (France).

Age

The Formation is diachronous. Near the Givonne Inlier, the Ruisseau des Roches Member yielded a Pridoli brachiopod fauna (e.g. *Quadrifarius dumontianus*, *Dayia shirleyi*, see Godefroid & Cravatte, 1999) whereas the Parensart Member contains a diverse Lochkovian brachiopod fauna (e.g. *Howellella mercurii*, Fig. 3A) indicating an early Lochkovian age (Boucot, 1960; Godefroid & Cravatte, 1999; Mottequin & Jansen, 2025). In the Dinant Synclinorium, the Mondrepuis Formation yielded only Lockhovian fauna and microflora (R Zone at Willerzie and Lahonry, Steemans, 1989a).

Thickness

In the type locality (Meilliez & Blieck, 1994b) and along the northern margins of the Rocroi and Serpont inliers, the Formation is up to 150 m thick and rapidly increasing in thickness southwards to 500 m near Willerzie (Blockmans, in press) and 300–800 m on the northern margin of the Givonne Inlier (Belanger & Ghysel, 2017). The Levrézy Member reaches 1000 m on the southern margin of the Rocroi Inlier.

Lower boundary

First bed of the dark shale and overlying the sandstone units of the underlying Fépin Formation.

Upper boundary

First bed of reddish siltstone of the overlying Oignies Formation.

Regional correlations

The Mondrepuis Formation passes, northwards to the middle part of the Fooz Formation (Marteau Member) though the transition is not exposed.

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