

# Hochwipfel Formation

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Österreichische Karte 1:50.000

Blatt BMN 197 Kötschach

Blatt BMN 198 Weißbriach

Blatt BMN 199 Hermagor

Blatt UTM 3109 Oberdrauburg

Blatt UTM 3110 Kötschach-Mauthen

Blatt UTM 3116 Sonnenalpe Naßfeld

Blatt UTM 3117 Nötsch im Gailtal

Carta Topografica d'Italia 1:50.000

Foglio 018 Passo di Monte Croce Carnico

Foglio 031 Ampezzo

Foglio 032 Tolmezzo

Foglio 033 Tarvisio

## Definition

Quartz-rich sandstone, siltstone and shale with at places interbedded ruditic horizons, commonly at the base of the unit, and rare acid volcanic bodies (keratophyres).

## Description

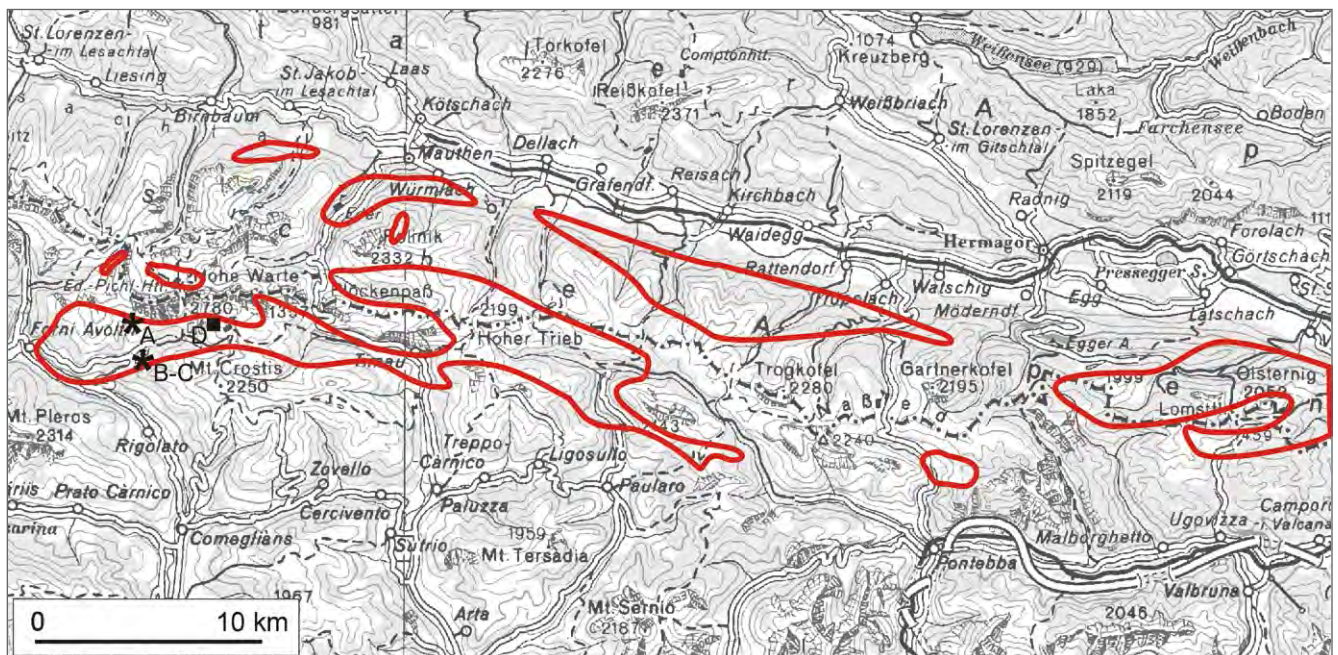
The Hochwipfel Formation can be subdivided into 4 lithofacies:

a – Quartz-arenite to lithic sandstone, siltstone and shale in beds with thickness from few to 30 cm with turbiditic features. The lithology division A, B, C and D of the Bouma sequence (Bouma turbidite facies model, according to the classification of WALKER & MUTTI (1973), are frequently recognized within lithofacies a. Locally the lithic sandstone yield fossil plant remains.

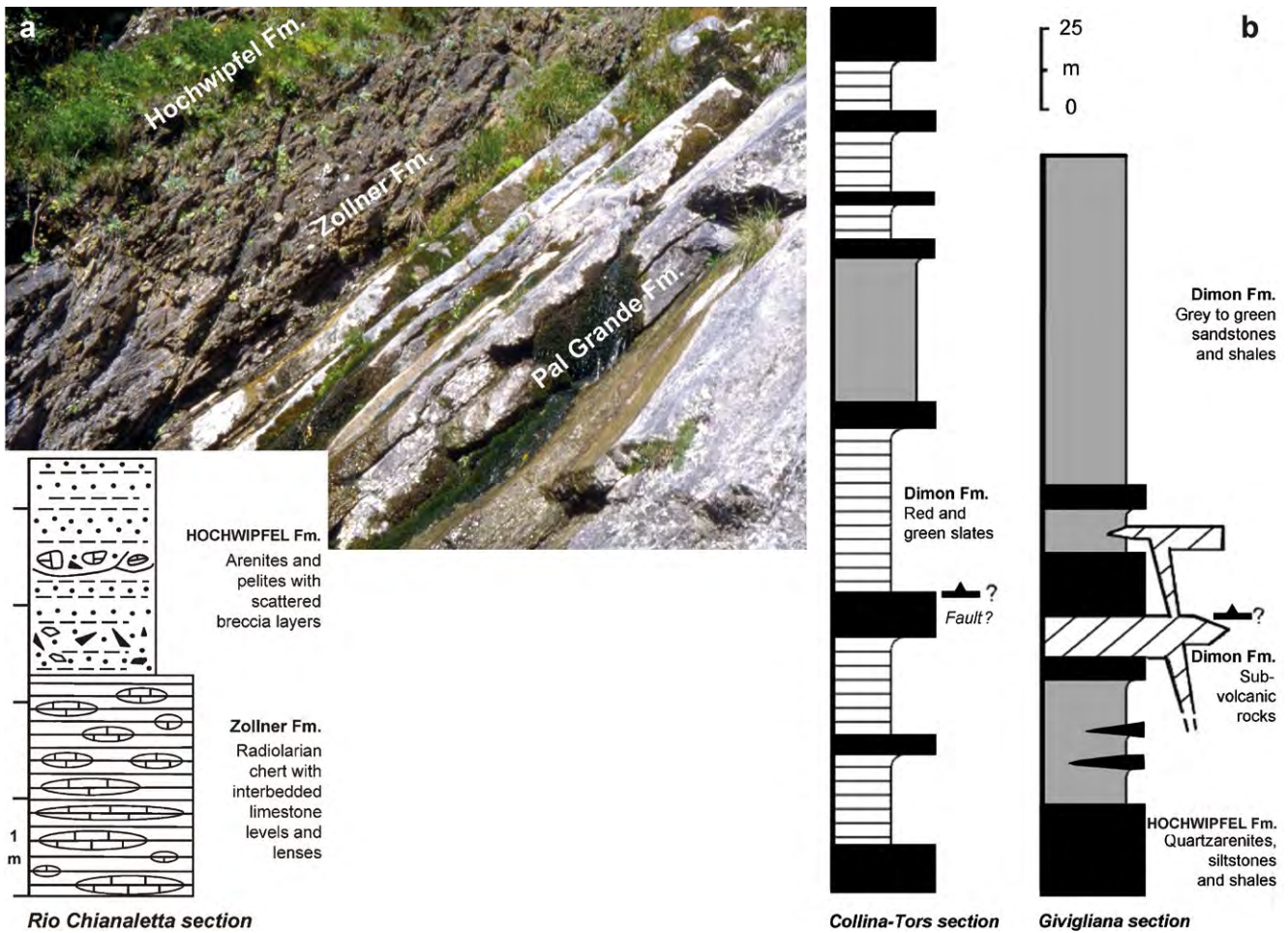
b – Silicatic rudite, breccia and conglomerate made mainly by radiolarian chert clasts, and rare clasts of sandstone and siltstone, very rare basic volcanics and quartz clasts are also present. The siliciclastic rudite may reach thickness of 30-40 m.

c – Limestone rudite mainly constitutes by clasts derived from the Upper Devonian limestone, and subordinate radiolarian chert, sandstone and siltstone. The limestone rudite are sporadically interbedded within the lower part of the formation, their thickness varies from few dm to 3 m. At places limestone clasts rich in crinoid debris (encrinites) of late Visean age are present.

d – Acid volcanic and sub-volcanic (tuffs) products (Keratophyres: GORTANI, 1906; GENTILI & PELLIZZER, 1964; VAI in BRAGA et al., 1971).



Areas of outcrop of the Hochwipfel Formation with indication of the stratotype of the lower and upper boundary (asterisks): A: Rio Chianaletta Section; B: Collina-Tors Section; C: Givigliana Section. Reference section (square): D: Pic Chiadin section.



The Hochwipfel Formation type section. a) log of the Rio Chianaletta Section (modified after PERRI & SPALLETTA, 1998), and view of the section in the field (photo G.B. VAI); b) log of the Collina–Tors and Givigliana Sections (after SPALLETTA & VENTURINI, 2009).

## Fossil content

Plant remains and spores rarely found within the turbiditic sequence of lithofacies a (AMEROM & SCHÖNLAUB, 1992). One of the localities richer in flora was studied by AMEROM et al. (1984). Other findings of plant remains are located at Mt. Bruca and in the Pramosio area.

## Depositional environment

Pelagic, in open marine basin with local strong tectonic control (Flysch: VAI, 1963) (SPALLETTA & VENTURINI, 1995; VENTURINI & SPALLETTA 1998).

## Stratotype

Rio Chianaletta Section (PERRI & SPALLETTA, 1998), at coordinates N 46°36'13.7", E 12°50'02.8" for the lower boundary. Collina–Tors and Givigliana Sections (SPALLETTA & VENTURINI, 2009), for the upper boundary, at coordinates respectively N 46°34'36", E 12°49'13" and N 46°34'19", E 12°49'21".

## Reference sections

Pic Chiadin section (SPALLETTA & VENTURINI, 1988), at coordinates N 46°35'52", E 12°54'2", where the lithofacies b is well exposed and the arenite yields plant remains.

## Type area

Carnic Alps.

## Main outcrop areas

The Hochwipfel Formation crops out along the whole Carnic Alps from the Bordaglia Valley to the west to the Mt. Ois-ternig to the east.

## Thickness

The estimated thickness of the Hochwipfel Formation is less than 1000 m; measured thickness varies from 350 to 600 m.

## Boundaries

*Underlying units* – Zollner Formation (conformable gradual contact), Pal Grande Formation (paraconformable–unconformable contact affected by tectonic superimposition).

*Overlying units* – Dimon Formation (conformable gradual contact), Late- and Post-Variscan units (Permo-Carbonifero Pontebbano and Val Gardena Formation) (unconformable contact: Variscan angular unconformity).

*Lateral units* – Dimon Formation.

## Derivation of name

After Mount Hochwipfel.

## Synonymy

'complesso argilloso-scistoso carbonifero': GORTANI (1913).

Hochwipfelfazies: HERITSCH (1928).

Hochwipfelschichten: KAHLER & METZ (1955).

'Flysch ercinico' [partim]: VAI (1963).

Formazione dell'Hochwipfel: SELLI (1963); VAI in BRAGA et al. (1971).

Formazione del Hochwipfel: SPALLETTA et al. (1980, 1982); GERMANI (2007); SPALLETTA & VENTURINI (2009).

Hochwipfel-Formation: SCHÖNLAUB (1985).

Hochwipfel Formation: BRIME et al. (2008).

Hochwipfel-Formation/Hochwipfel Formation: SUTTNER (2014).



Views of the Hochwipfel Formation in the field. a) sandstones, siltstones and shales of lithofacies a, outcrop along the Valentin Valley (photo C. VENTURINI); b) silicatic breccia of lithofacies b, near Casera Plotta (photo C. SPALLETTA); c) limestone rudite of lithofacies c, near Creta di Collina (photo C. SPALLETTA); d) silicatic breccia of lithofacies b, near Casera Plotta (photo F. SGORBINO).

## Chronostratigraphic age

Carboniferous: Middle Viséan (AMEROM et al., 1984) to lower Bashkirian.

## Biostratigraphy -

## Complementary references -

## Remarks -

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