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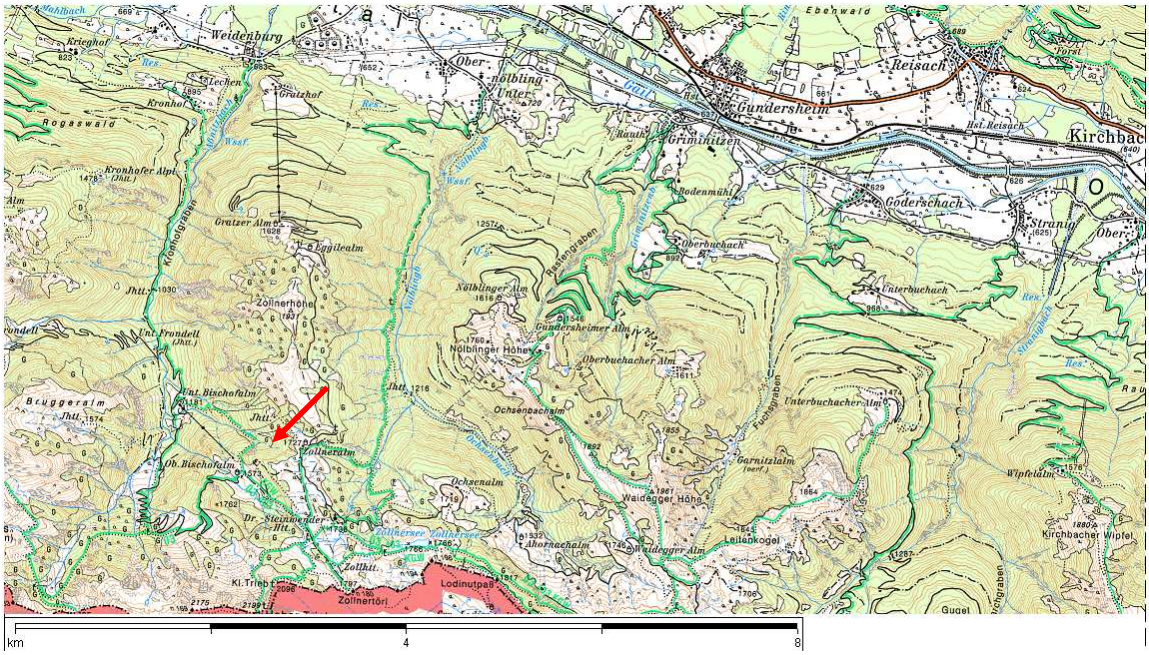
Geotope 40: Obere Bischofalm – Black Shales from the Silurian



Red arrow: Fossil locality; green tracks: hiking trails; ©BEV: Federal Office for Calibration and Measurement, 2005.

Access:

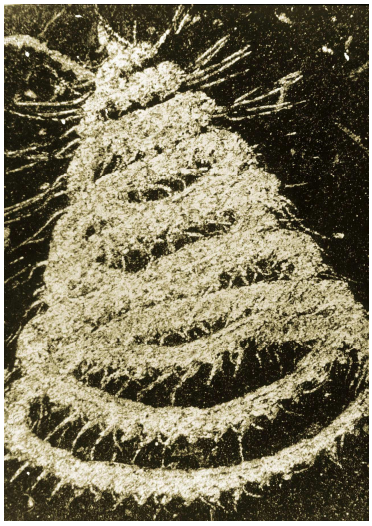
By car from the village of Weidenburg to Zollner Alm or by car following the Bischofalm Creek to Untere Bischofalm and further on by foot to Upper Bischofalm. The locality is indicated on the map.

Description of the Geotope

The Geotope belongs to a 100 to 200 m wide zone of black shales and cherts which extend between limestone and clastic sequences from the Köderhöhe in the west to the Hochwipfel mountain and further on to the east. These rocks are excellently exposed in a small gully northeast of the Lower Bischofalm. The distinct rock assemblage dates from the Silurian and Lower Devonian Periods (440 to 400 m.y. BP). The dominating lithologies comprise black colored rusty shales and claystones as well as dm-thick cherty beds, known as “Lydites”. The origin of these rocks was deep anoxic water in which the skeletal remains of the single-celled Radiolaria consisting of silica together with graptlites accumulated. Upon their dead they were enriched in great masses on the sea bottom. Due to tectonism the individual sedimentary packages are strongly faulted and deformed.

Beside the radiolarians, graptolites are the only fossil occurring in these beds. They inhabited the upper layers of the oceans and not the bottom which was oxygen-free and totally dark. Of special interest in this sequence are light grey imprints of graptolites similar to the locality Zollner Hut and Gundersheim Alm Road. Graptolites belong to an extinct group of animals with distant affinities to living pterobranchs. By splitting the shales with a hammer with some luck imprints of such animals can be found on the surface and resemble a sawing blade-like outline. In the past, this locality in particular has yielded a succession of index graptolites for the Upper Silurian and Lower Devonian.

Graptolite-occurring exposure between the Lower and Upper Bischofalm showing Upper Silurian black shales.



Imprint of the graptolite species *Cyrtograptus spiralis*.