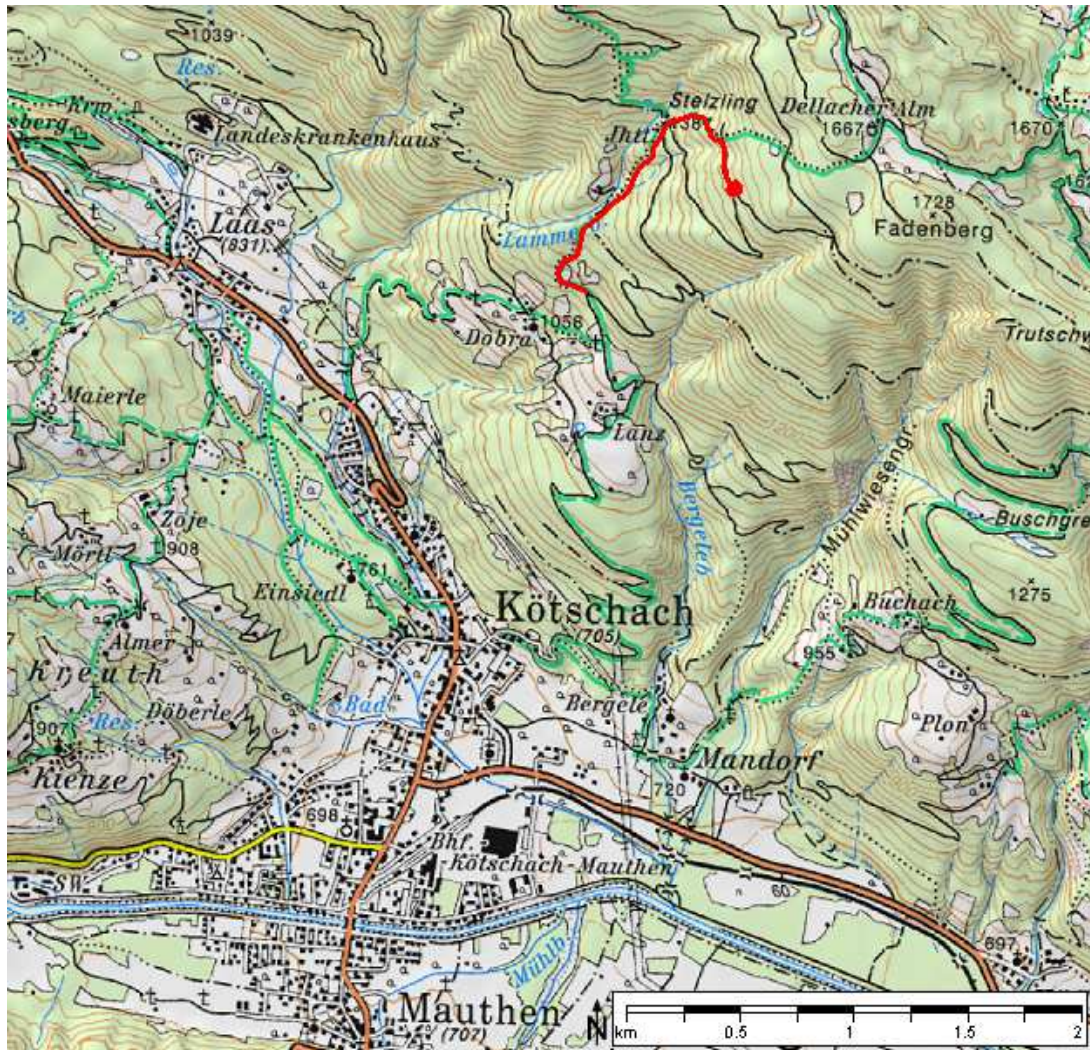


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## **Geotope 47: Stelzling Hut – Red Sandstone atop Crystalline Rock**



Red marking: Hiking route according to advance description; green tracks: hiking trails; ©BEV: Federal Office for Calibration and Measurement, 2005.

### Access:

A forest road is leading from Kötschach-Mauthen via Lanz to Dellach Alm. Just in front of the Stelzling Hut the road makes a turn and continues further on to Dellach Alm. After two more bents the critical rocks are exposed at an altitude of 1510 m.



## Description of the Geotope



Contact between the crystalline rocks and the overlying pebbly sandstones of the Laas Formation.

In the Gailtal Alps sedimentary rocks (limestones, dolomites, sandstones, silt and mudstones, conglomerates, breccias) represent the cover sequence of the crystalline basement consisting of gneisses, micaschists, amphibolites and slates. The nature of the contact between the two rock associations is very critical for understanding the geological development of this area.

The Geotope is one of the very few places in which the contact

is clearly exposed. The unconformity displays the contact between the underlying micaschists and the transgressing red clastics of the Laas Formation dated as Lower Permian (260 to 290 m.y. BP). There are no hints for a tectonic overprinting of the contact and there are neither cataclasites nor any traces of movements. This assures that the sedimentary rock sequence was not thrust upon the underlying crystalline complex but was deposited directly upon

the basement rocks. The reddish clastics are succeeded by calcareous sediments which are increasing upward.

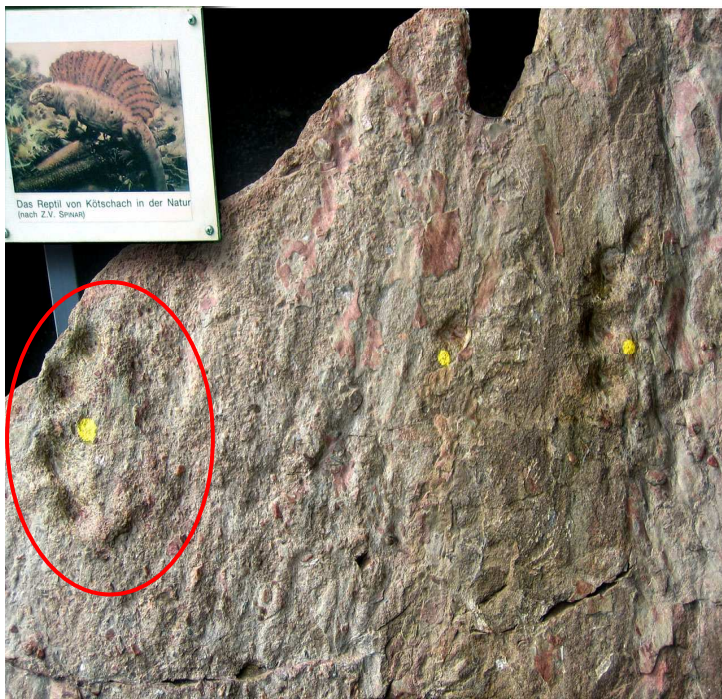


Traces of grazing and burrowing in fine-grained sandstones and siltstones of the Gröden Formation.

At the beginning of the Permian the area of the later Gailtal Alps was not covered by a sea but instead was a dry continental area. Temporarily it was affected by devastating heavy rainfall events in an arid climate which resulted in thick layers of loose rock debris. These loose thick gravel deposits were mobilized by rivers, mudflows and debris flows to be transported to coastal areas. There either conglomerates and breccias or reddish and greenish sand deposits were formed. For example, red sandstones are occurring at the

Geotope in the wood-covered slope above the road. They are strongly bioturbated by grazing and burrowing tracks which presumably were made by crab-like animals.

In conclusion, the arid climate was not completely hostile for life. This assumption is supported by imprints of claws on a rock slab which is exhibited in the city-hall of Kötschach-Mauthen. Supposedly, these tracks were made by a cat-sized reptile in the soft sediments covering this area. Contrary to South Tyrol, where such tracks frequently occur in the Gröden Formation, this is the only record from Austria. According to G. Niedermayr & E. Scheriau-Niedermayr who published the important discovery of the traces in the year 1980, they might belong to the tetrapod species *Ichniotherium cotta*. The animal lived some 100 million years before the appearance of the dinosaurs in the Triassic and Jurassic.



Claw imprints of *Ichniotherium cotta*.