Holozäne Landschaftsentwicklung und aktuelle Vegetation im Fimbertal (Val Fenga, Tirol/Graubünden)

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mit 2 Photos, 15 Figuren und 9 Tabellen

Reconstruction of Holocene landscape development and present vegetation of the Val Fenga (Tyrol/Grisons)

Abstract. The Val Fenga in the Central Alps has been selected as the study area of a project comprising palaeoecological and phytosociological investigations, of which the results have been connected. The valley is situated in the border district between Austria and Switzerland. Its geological-geomorphological situation is complicated due to its location in the transition zone of two different geological nappes. The eastern side of the valley is part of the Lower Engadine Window and it is composed by flysch of the Penninic nappes while the western part belongs to the Austroalpine nappes, dominated by the crystalline rocks of the Silvretta massif. As a consequence of the comparatively high degree of hygric continentality the Val Fenga belongs to the climatic region of the Central Alps.

To reconstruct the holocene climate and vegetation development palaeobotanical investigations of peat profiles, and in addition, analysis of pollen dispersal have been conducted. The investigations of the actual pollen deposition are made of moss cushions out of the entire investigation area. Different groups of pollen types ("indicator units") which characterize the representation of different vegetation units and human impact in surface samples are determined by the results of the pollen analysis. The suitability of these units for the judgement of fossile pollen profiles is discussed.

The main emphasis of the investigations about the climate and vegetation history was put on the palaeobotanical analysis made of five peat profiles which are situated in a transect from the lower subalpine up to the alpine belt. A survey of the investigated mires is given in Tab. 3. By a synoptic reflection the palynological results of these peat profiles are discussed, and the synchronous effects of climatic change and human impact on the landscape in different altitudes are shown.

From the Boreal to the beginning of the Atlantic period a section of high climatic dynamics is shown by the pollen diagrams. During this time, the timberline, which reached almost the altitude of today’s alpine belt, was depressed several times. Approximately at the beginning of the older Atlantic period Picea abies immigrated into the region during a section, which is characterized by humid climatic conditions. Sometime later, about 7000 BP, the spruce spread out at the same time the Larch-Arolla pine wood reached its highest extension. Findings of fossile Pinus cembra prove the rise of the Arolla pine to an altitude of about 2400 m asl. During the following time Alnus viridis immigrated into the region as well as Picea abies under more oceanic conditions. But because of the continental climate of the Central Alps, the species only occurs in small amounts since then.

Climatic oscillations with only small effects on the timberline characterize the section of the younger Atlantic period. Only in the second half of the younger Atlantic and the

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