

PLEISTOCENE GLACIATIONS OF THE EASTERN EDGE OF THE ALPS

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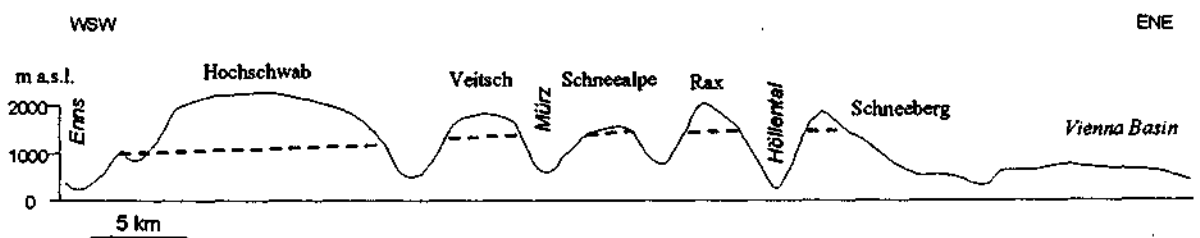
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The investigations aimed at the reconstruction of the extent of the Pleistocene glaciers in the isolated montane massifs of the Rax (2007 m asl.), Schneecalpe (1903 m), Schneeberg (2076 m) and Stuhleck (1782 m), located in the easternmost part of the Alps. The remnants of the last (Würm) glaciation are preserved relatively well, while those of the Riß and older are scarce and doubtful.

The massifs, lying relatively close each to other (ca 30 km), reveal considerable differences in sizes of the glaciers. This is due to the differences in geomorphology, heights and slope aspect. Rax, Schneecalpe and Schneeberg represent a plateau-type of morphology, controlled by the bedrock (carbonates). Vast accumulation areas reflected in relatively intensive glacierization. Some glaciers were supplied by the plateau ice caps and were the longest in the area (4 - 5.5 km). Much shorter (ca 1.5 km) were valley glaciers supplied only by the firm fields. Stuhleck is built mostly of metamorphic rocks and reveals a ridge-type morphology. It is lower at ca 120 - 250 m, moreover. Poorly supplied glaciers were short (ca. 1.2 - 2 km) and filled upper parts of the NW side valleys. Glaciation of the SE side was limited to three small cirque glaciers.

Würm, Riß and older (Mindel ?) fluvioglacial terraces and fans occur at the mouths of the NW Stuhleck valleys. Relatively easily erodible bedrock contributed to intensive fluvioglacial accumulation. More resistant carbonate rocks of other massifs produced apparently smaller amount of debris.

The altitude of the equilibrium/firm line (ELA) was estimated by calculating the AAR (accumulation area ratio) for well reconstructed valley glaciers. Subsequently, the calculation was carried out for adjacent glaciers supplied by the plateau ice caps. It lowers from ca. 1380 - 1430 m asl. in the Stuhleck to ca. 1330-1400 in the Schneecalpe and even less further westward (Hochschwab 1050-1100 m; Cornelius 1934 & 1939, Fritsch 1993, Kolmar 1993).



Analysis of the ELA and distribution of the moraines reveals that only a portion of the plateau ice caps supplied the valley glaciers while large parts of them remained inactive or contributed very little to the feeding of the active glaciers.

References: Cornelius, H.P., 1934 - *Zeitschr. f. Gletscherkunde*, XXI. Leipzig; Cornelius, H.P., 1939 - *ibidem*, XXVI; Fritsch, A., 1993 - unpubl., GBA, Wien; Kolmer, Ch. - 1993. *Ibidem*.