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On the Alpidic structures in the Venediger nappe system of
the western Tauern Window

The Alpidic structures of the Venediger nappe system in the western Tauern Window are controlled by the different plasticity of the Hercynian basement; the gneiss cores (Zentralgneis) act as relatively rigid blocks, and the synclines of Hercynian metavolcanic and metasedimentary series are zones of strong compression. The Mesozoic, and parts of the Paleozoic cover are squeezed out and thrust some distance over the bordering gneiss cores to the north (see "Geologischer Tiefbau der Ostalpen", 3. Bericht).

In recent studies, emphasis has been placed on the sedimentary cover of the Venediger nappe system south, east, and north of the Venediger massif. If the quartzites and calcareous quartzites within the Paleozoic rock sequences in the area between the Venediger and the Granatspitz gneiss cores were of Mesozoic age as suggested by CORNELIUS (1941) and FUCHS (1958), this would have important bearing on the structure of the cover of the gneiss cores in Alpidic time. The same is valid for the black (graphitic) schists in the upper part of the Maurer Tal if they were of Mesozoic age.

The results are that neither the black schists nor the quartzites can be considered to be of Mesozoic age because all these rocks are intimately related to the encountering Paleozoic rock sequences.

The black schists of the Maurer Tal and the bordering metablastic gneisses show mutual inclusion of screens and, in places, transitional borders. The schists are considered to be the equivalent to the Habach phyllites but display a higher degree of metamorphism.

The quartzites and calcareous quartzites mentioned above are related to the bordering Paleozoic sequences by alternating layering of the different rock types. Bands of schists intercalated within the quartzites display the same metamorphic history as do the surrounding rocks. This is true for the occurrences both within the "injected schists" (FUCHS, 1958) of the Riffel Decken (connected with the Venediger gneiss core), and within the cover of the Granatspitz gneiss core.

From this it can be deduced that the partly calcareous quartzites in the area between the Venediger and the Granatspitz gneiss cores are part of the Paleozoic sequence of metavolcanics and metasediments and do not mark a thrust fault in Alpidic time. In this light it seems doubtful whether there is forcing evidence for the Alpidic age of the thrusting of the Riffel Decken over the Granatspitz gneiss core and its Hercynian cover. Intercalations of Bündner Schiefer east of the Granatspitz gneiss core are not controlled by the fault plane and can be interpreted as slices between digitations of the entire Hercynian system.