

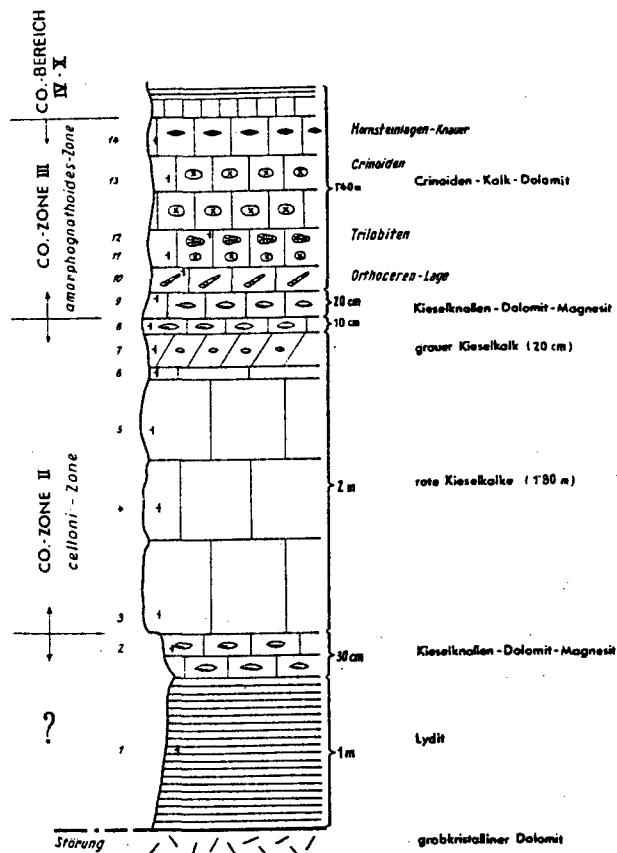
Section 10

The Lachtal-Grundalm Section near Fieberbrunn (figs. 26, 27)

by Helfried Mostler¹

The section is exposed at an altitude of 1220 m in the Lachtal valley near the Lachtal-Grundalm. This graptolite bearing locality is one of the "classical" outcrops for the Silurian of the Graywacke Zone. The first records of graptolites date back as early as 1930. In fact, the sequence represents a mixed shale-limestone succession known in the literature as "Lydit-Kieselkalk-Komplex" at the base and the 5 m thick "Dolomit-Kieselschiefer-Komplex" above (H. MOSTLER 1966). However, due to intense faulting only short undisturbed sections can be found. The following description is based on an overturned section published by H. MOSTLER 1966 and H. JAEGER 1978.

Fig. 26: The basal part of the Lachtal-Grundalm Section after Mostler 1966 covering the cherty limestones of the *P. celloni* Zone and the dolomitic crinoidal limestone of the *P. amorphognathoides* Zone



¹ Dept. of Geology and Paleontology, Univ. of Innsbruck, Austria

The stratigraphic base of the section comprises the "Lydit-Kieselkalk-Komplex". This cherty formation is formed by black massive cherts known as "lydites" in the Alpine terminology, radiolarian-bearing dolomites and reddish cherty limestones which grade into crinoidal limestones (fig. 26). The overall thickness does not exceed some 5 m. The accompanying microfauna consists of shell debris of ostracods, foraminifers, brachiopods, radiolarians, conodonts and echinoderms. In addition, shells of bivalves, solitary corals, trilobites and orthocone nautiloids sparsely occur the latter being concentrated at the base of the 1.40 m thick crinoidal limestone member.

Conodonts from the above described short section indicate the presence of the *P. celloni* Zone in the lower 2.10 m thick part (reddish cherty lst.) and the *P. amorphognathoides* Zone in the following 1.40 m thick part of the section.

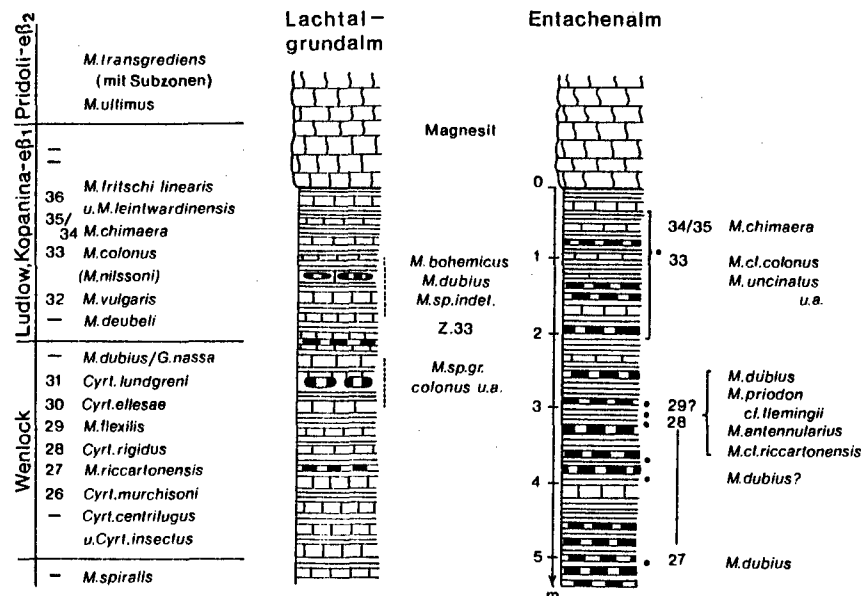


Fig. 27: The graptolite bearing upper part of the Lachtal-Grundalm Section of Tyrol and the Entachenalm Section of Salzburg (after JAEGER 1978). Both sections display the mixed facies of the dolomite-graptolitic shale Formation of the time span from the Wenlock to the Lower Ludlow.

According to H. JAEGER 1978 determinable graptolites only occur in the upper part of the section, i.e. in the "Dolomit-Kieselschiefer-Komplex" (fig. 27). The lithology resembles the Cardiola Fm. of the Carnic Alps. Representatives of *M. bohemicus* are most abundant at a higher level. According to H. JAEGER they characterize the graptolite Zone 33. Based on the new definition for the Wenlock/Ludlow boundary this horizon corresponds to the basal Ludlow. Yet, co-occurring conodonts are non-diagnostic long ranging elements which permit no further age assignment. Other graptolites were identified as *M. dubius* cf. *frequens* and *M. sp. indet. ex grege colonus*.

A second occurrence of graptolites is in a creek adjacent to the main outcrop of the Lachtal brook. At this horizon *M. bohemicus* is missing; the remaining fauna seems

identical with the one mentioned for the first outcrop. Hence, H. JAEGER concluded a slightly older age within the *M. vulgaris* Zone.

In the Tyrolean part of the Graywacke Zone the "Dolomit-Kieselschiefer-Komplex" is overlain by dolomitic rocks and magnesite. According to H. MOSTLER 1966 the onset of this carbonates can be placed within the *O. crassa* Zone or at the base of the following *A. ploeckensis* Zone, i.e. at or near the base of the Ludlow.

Summarizing the available data from the Lachtal-Grundalm section a composite succession through the major part of the Silurian can be established in this part of the Graywacke Zone. It starts in the Middle (?) or Upper Llandovery and can, although strongly affected by faults, well be followed through the Wenlock into the basal Ludlow. Yet, there are no positive records from the Pridoli Series of the Upper Silurian which, however, may be obliterated in the strongly recrystallized dolomites.