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REPORT OF THE SCCS WORKING GROUP ON THE DEVONIAN - CARBONIFEROUS BOUNDARY

Hasselbachtal section

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Critical advantages of the section are

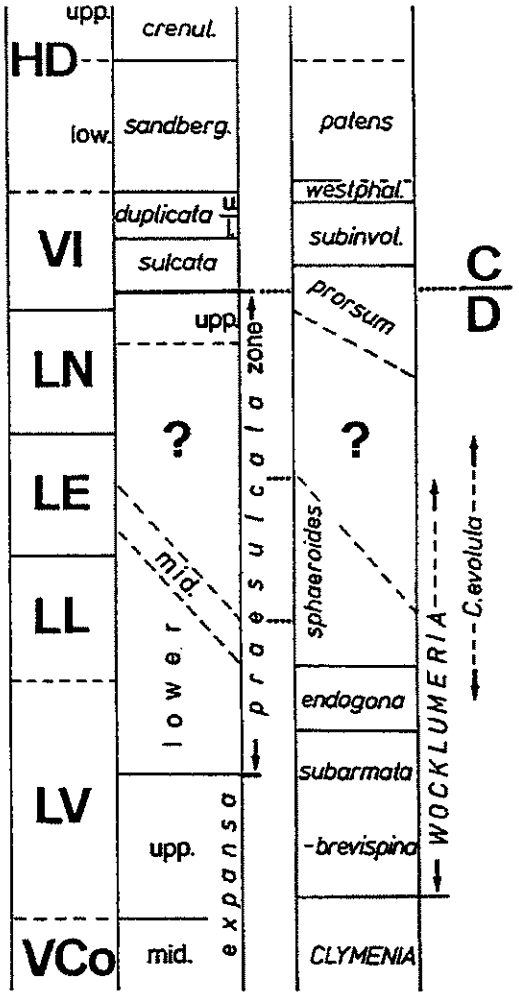
- a very easy accessibility,
- fossil content that allows detailed correlations with continental as well as marine environments,
- a reasonable representation of time by rock,
- the shallow diagenetic rank and quiet tectonic environment.

Since 1984 (Cour. Forsch.-Inst. Senckenberg, 67), the section has been supplemented by a borehole. Additional researches have provided more biostratigraphical data, the most important being the ammonoids of the Wocklumer Kalk which are now well correlated by Th. BECKER (Bochum) with the Schindewolf stratigraphy at Oberrödinghausen. Among other researches are the spectacular radiometric age determination of zircons from the tuff bed (79) by U. KRAMM (Munster) (The datation-340-350My- is now certainly the best available and closest to the D/C boundary) and also the geomagnetic investigation of H. UKAS (Köln) (10° lat. S., magnetism not altered with time).

Hasselbachtal section is one of the links in a 200 kms long chain of sections reaching as far east as the "Provinzialsteinbruch Drewer" the latter also recently proposed as stratotype (CLAUSEN et al. 1987, ZIEGLER et al. 1988). The relationships between most of these sections at the critical boundary levels have been discussed in detail by BLESS et al. 1988.

Compared with the other proposed boundary stratotypes elsewhere in the world, the major characteristic of the area which now forms the northern border of the Rheinisches Schiefergebirge is the display of siliciclastic material immediately below the boundary beds. These beds form a morphologically shallow hinterland in the south, and the siliciclastic detritus was derived from the rising Variscides and delivered into a shallow sea. Siliciclastics are absent in places e.g. on the flanks or tops of shoals (dead Givetian-Frasnian reef complexes) where a rather condensed sediment of carbonate limestone formed and where gaps and non-sequences are common. The siliciclastic discharges are well dated (fig. 1) by their miospore content : they reach a maximum thickness in the Seiler locality and they have interrupted the limestone deposition eastwards, in the Oese, Apricke and Oberrödinghausen localities, at LL time. During LE time, the discharge went to a minimum in this area but was still spectacular in the Riescheid locality to the west. The siliciclastic influx started again in LN time, now on both sides of the Seiler locality, interrupting the limestone deposition in Hasselbachtal where the top of the Wocklumer limestone might be younger than elsewhere in the basin. One should remember that LL to LN times are represented by several hundreds of meters of sediment in the Irish Munster basin and might represent therefore some significant timespan.

Unfortunately, no specific faunas are known (fig. 1) in this interval (See evoluta-prorsum interregnum in BECKER, 1988). Consequently, this timespan cannot be proved to be represented by rocks in any of the other proposed boundary stratotypes elsewhere in the world.



After learning the new comments by BECKER and KORN on the discovery of C. evoluta in the basal Hangenberg Shales, in Hasselbachtal, well above the base of the LE zone, the question is risen if C. evoluta can have a much longer range than formerly accepted. This suggestion is also strengthened by the fact that C. evoluta has been previously found in the Etroeungt Quarry (Northern France) at a level near the base of the LL zone.