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Towards a better definition of the Anisian/Ladinian boundary: New biostratigraphic data and correlations of boundary sections from the Southern Alps

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Abstract, Zusammenfassung, Riassunto

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ABSTRACT

Stratigraphic sections of basinal "Buchenstein Beds" in the northwestern Dolomites and eastern Lombardy are correlated on the basis of the distribution of macrofossils (ammonoids, Daonellas) and volcaniclastic layers. In Lombardy, these strata are bracketed by other Middle Triassic basinal sediments (Prezzo Lst., "Wengen Beds"), and the entire succession hosts a clear macrofossil (ammonoids, Daonellas) record ranging from the Late Anisian to the Late Ladinian. In the Anisian/Ladinian boundary interval this record appears to be relatively coherent when compared to equivalent standard sections in the western Tethys area. It allows the full integration of rich faunas from isolated localities in coeval platform carbonates (Latemar and Cernera) and intra-platform deposits (Monte San Giorgio). The combined series of fossils includes successive levels with key species of *Judicarites, Paraceratites, Kellnerites, Hungarites, Reitziites, Parakellnerites, Aplococeras, Ticinites, Halilucites, Stoppaniceras, Nevadites, Chieseiceras, Eoprotrachyceras, Arpadites* and *Protrachyceras* among other ammonoids and Daonellas. The non-condensed ammonoid succession is suitable for a partial revision of the Tethyan zonal subdivision. It also indicates a slightly, but distinctly diachronous base of the "Buchenstein Beds" or its single members. Thus the original location of the Anisian/Ladinian boundary at the base of the "Buchenstein Beds" (Bittner 1892) is ambiguous. The boundary between the Nevadites Zone and the Curionii Zone is at present the best constrained alternative. Not only can this marker be pinpointed in stratigraphic columns in the Southern Alps (i.e. the original "type-area" of the stage boundary) but it can also be traced to sections further afield in western Tethys and in North America.