PTB (Permian-Triassic Boundary) succession in the western Dolomites of the Southern Alps

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Fig. 1. The glacial valley embracing the town of Ortisei, a famous tourist resort of the western Dolomites and its background mountains, viewed from the Bulla section.

In the Southern Alps, the PTB (Permian-Triassic Boundary) is settled within the basal part of the Werfen Formation (Chunglinsgian-Inian Tesero Member) conformably overlying the Bellerophon Formation, although temporal gap between the formations is a subject of dispute. The succession in the Tesero and Bulla sections of the western Dolomites is designated as the hypostenotypic and parastratotype of the PTB, respectively and most intensively studied stratigraphically, palaeontologically, geochemically and magnetostratigraphically (e.g., Magaritz et al., 1988; Schiöler et al., 2000; Parabegoli et al., 2007). Both sections are well exposed along the road surrounded by a magnificent panorama of the Southern Tyrol. Repeated detailed field works by many earth scientists are recorded directly on a rock face as markings of a sample level with various manners, round holes, cylindrical tracks and others.

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References


Fig. 2: Location of the PTB sections of Tesero and Bulla. The region south of the Innsbruck line, including the Dolomites, is tectonically referable to the Southern Alps.

Fig. 3: A: Exposure of the roadside cliff at the entrance of the town of Tesero. Hindeodus paradoxus, an index fossil of the base of Triassic, first appears about 11 m above the base of the Werfen Formation (Wm.). B: Lithostratigraphic division and profiles of δ13C and δ18O (Magaritz et al., 1988); C: D: Photic micrographs; E: Oolitic grainstone from Unit 4a of the Werfen Fm.; D: Bioclastic wackestone from Unit 3 of the Bellerophon Fm.
Fig. 1. PTB succession of the Bulla section. A: Stratigraphic subdivision across the PTB (Pambogli et al., 2007). B: Close up of the boundary between the Bulla Member (Mb.) and the Lower Tesero Mb. C: Polished marlstone intercalated within fissile limestones of the lower part of the Lower Tesero Mb. D: Close up of the PTB. E-G: Photic micrographs; E: Gastropod grainstone from the basal part of the Lower Tesero Mb.; F: Ooid grainstone contained in the marlstone shown in Fig. 4 C; G: Laminated marlstone very rarely containing foraminifera immediately above the PTB.