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NEW OCCURRENCE OF CLD- AND-BEARING METAPELITES IN THE SOUTHALPINE BASEMENT OF THE UPPER VAL CAMONICA

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The lithologically homogeneous metamorphic basement of the Southern Orobic Alps is constituted of four different tectono-metamorphic units (GANSSER and PANTIC 1988; SPALLA and GOSSO 1999). This pre-Alpine metamorphic basement consist of metapelites with interlayered quartzites, amphibolites, minor marbles and pegmatites and large metagranitoid bodies. Type I tectonometamorphic units are characterised by an earlier metamorphic imprint under intermediate-pressure amphibolite facies conditions (Ky-St-bearing metapelites) followed by a greenschist facies retrogradation; these metamorphic rocks are unconformably overlain by Permian terrigenous sequence. The dominant metamorphic fabric is a S2 foliation synchronous with the greenschist facies imprint (MILANO, et al. 1988; DIELLA, et al. 1992; BERTOTTI, et al. 1993). Type II tectonometamorphic units show similar relationship with the Permian cover and a similar metamorphic evolution with type I, from which they differ for the occurrence of an epidote-amphibolite facies metamorphic imprint (Bt-Cld-Grt-bearing metapelites) predating the amphibolite facies imprint (ALBINI, et al. 1994; SPALLA, et al. 1999). Type III tectonometamorphic units represent the shallowest pre-Alpine tectonic units displaying a polyphase structural evolution (pre-D2, D2, D3) fully recorded under greenschist facies conditions; the relationship with Permian sequences are comparable with those of the previous types (CERIANI 1994; GANSSER and PANTIC 1988). Finally type IV tectonometamorphic units are characterised by a high-temperature low-pressure metamorphic imprint (Bt-Sill- bearing metapelites), synchronous with S2, following the intermediate pressure amphibolite facies equilibration (Syn-D1) and predating the last greenschist re-equilibration (syn-D3); Permian sediments are exclusively in tectonic contact with these metamorphic rocks (DIELLA, et al. 1992; GOSSO, et al. 1997; MOTTANA, et al. 1985). In Upper Val Camonica a preliminary structural and microstructural analysis points out a new pre-Alpine metamorphic outline, in spite of still discontinuous new structural data. Here adjacent volumes of metapelites show the following contrasted structural vs metamorphic evolutions:

Cld-Bt-Grt- bearing fabric is overprinted by a pervasive greenschist facies foliation;

Cld-Bt-Grt- bearing fabric is followed by the development of Bt-St-Grt assemblage and subsequently overprinted by a greenschist facies foliation;

Bt-St-Grt fabric predates a greenschist facies foliation;

And-Chl-Ms assemblage randomly overgrows the Cld- and St- bearing fabrics.

The aim of this contribution is to correlate these apparently contrasted deformation -metamorphism relationship in a coherent regional scale outline on the basis of meso- and microstructural investigations.

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