lockert und damit zu einem grossen Teil kohäsionslos ist.

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Cenerian orogeny (Ordovician) in the Strona-Ceneri zone (S-Alps) and analogies to the Lachlan fold belt (SE-Australia).

The Strona-Ceneri zone as part of the western Southern Alpine crystalline basement lies south of the Insubric line where Alpine overprint is weak, and therefore, Paleozoic structures are well preserved.

Two structural events (D1 and D2) produced regionally penetrative foliations in the Strona-Ceneri zone: D1 caused a first schistosity S1. S1 is discordantly cut by Late Ordovician metagranitoids and is most obvious in their xenoliths (-> xenolith phase D1). Coronitic garnet amphibolites can be interpreted as remnants of an eclogite facies overprint (M1). M1 is probably coeval with D1, since garnet amphibolite occurs as xenolith in the Ceneri gneiss which is a Late Ordovician S-type metagranodiorite to metatonalite. The Ceneri gneiss generated by the anatexis of metagreywackes at ~ 10 kbars (fluid-absent biotite melting in the kyanite field (VIELZEUF and HOLLOWAY, 1988) from where it intruded a layer of regional sillimanite-K feldspar metatexites, the present erosional surface. The metatexites are absent in kyanite and cordierite indicating depths of 6 to 9 kbars (VIELZEUF and HOLLOWAY, 1988). D2 is the main deformation of the metagranitoids producing S2 and a mineral streching lineation L2, both steeply plunging structures. D2 (Ceneri phase) is interpreted to be syn- to subsequent post-magmatic with respect to Late Ordovician magmatism and migmatism (M2; ZURBRIGGEN, 1994).

The steep structures and the rock assemblage of metagreywackes, metapelites, meta-ophiolites, and the huge amounts of metagranitoids, including Ceneri gneiss-types, are not restricted to the Strona-Ceneri zone. They are typical for most pre-Variscan basement units in the Alps which probably joined all together in early Paleozoic times. A further common phenomena of these units is the absence of Precambrian continental crust pre-dating the early Paleozoic, usually deep marine turbidite sequences – the protoliths of mica schists/gneisses.

Today the pre-Variscan basement is disrupted due to later tectonics. Therefore, it is suggested to have a closer look at the SE-Australian Lachlan Fold Belt (LFB) where a similar orogenic belt is preserved showing original configurations (for review see CONEY et al., 1990). There, fault-bounded Cambrian greenstones suture Ordovician to Lower Silurian turbidite sequences. Together they were intruded by huge amounts of Silurian to Devonian granitoids, including "Ceneri gneiss-types" or so-called "Cooma-types" (after the Cooma granodiorite, 150 km south of Canberra). Often, the plutons are N–S elongated and concordant to the generally subvertically die dipping structures in the country rocks. As well, Precambrian rocks are not exposed within the whole LFB.

There is common consensus that the LFB is not the product of a continent-continent collision. It formed in a continental/oceanic plates convergent setting at the eastern margin of East Gondwanaland. During the progress of Neoproterozoic and Cambrian supercontinent reassembly the Southern Alps were probably in a similar tectonic setting. During the Caledonian orogeny Laurentia collided with Baltica on its way passing South America – far away from the northern margin of Gondwanaland where the Southern Alps were situated, facing the same ocean to the north as the LFB does to the east.

From this point of view "Caledonian" can still be used to describe global pre-Variscan Paleozoic orogenic episodes, but definitely not the pre-Variscan tectonic setting and the orogenic belt of the Southern Alps since there is no evidence for a Caledonian-type continent-continent collision.

When Gondwanaland became assembled during Pan-African (sensu lato) and other orogenies its internal orogenic sutures provided large amounts of clastic materials which were transported to and deposited at its margins. The substrate consisted partly of thinned continental crust, but mainly of oceanic crust – the protolith of the ophiolitic amphibolites. Convergent plate tectonics accreted and subducted the sediments and their substrates. After an initial high pressure event (M1 and D1) thermal reequilibration lead to melting of the lowermost accretionary complex (M2). Simultaneous mantle-deriving magmas provided an additional heat input. All these interacting magmas intruded higher crustal levels and partly extruded, causing an inversion of the whole crust (D2). In shallower levels – like in the LFB – the large amounts of emplacing magmatites induced high T-low P metamorphism.

The *Ceneri gneiss is a key-lithology* linking up the sedimentary pile with Late Ordovician syntectonic migmatism and magmatism. Therefore this orogeny is referred to as the *Cenerian orogeny* producing the Cenerides. This type of orogeny does not produce Alpine-like nappe piles (typical for continent/continent collisions) with foreland basins filled with thick molasses and late to post-orogenic deep cutting exhumation. Therefore, high grade rocks remain at depth going into the next orogenic cycle. In our case the Variscan orogeny finally exhumed the migmatic gneisses of the Strona-Ceneri zone.

Acknowledgement: The comparative study is based on a Lachlan Fold Belt excursion (1995) which was greatly founded by the "Kommission für Reisestipendien der Schweizerischen Akademie der Naturwissenschaften".

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