of the Rossfeld to the west. Also the comparison with contemporaneous sediments to the north in the Osterhorn group shows a complete different evolution in its basin fill. Here, over the Early Oxfordian to Early Tithonian Tauglboden Formation follow the Oberalm Formation with intercalated Barmstein limestones of Late Tithonian to Berriassian age and further upsection the Schrambach Formation (Late Berriasian-Valanginian) and at least the Rossfeld Formation (Hauterivian-Barremian). In the Weitenau syncline the sedimentary sequence roughly span an age range from Late Kimmeridgian to Aptian. The Hochreith Formation with the accompanying gypsum of the Alpine Haselgebirge should, according to several authors, overly the Late Tithonian Oberalm Formation. Due to our results the Hochreith Formation underly the Oberalm Formation, which gradually pass upsection into siliciclastic sediments with chromium spinell and garnet. Here the lower Rossfeld beds, dated by ammonites as Late Valanginian to Hauterivian contain, in comparison to the Rossfeld Formation of the type locality a complete different spectrum of heavy minerals with hornblende, chromium spinell, garnet and zircon according to previous investigations.

Further investigations on the Weitenau sedimentary succession with matrix dating and component analysis will allow to reconstruct the palaeogeographic provenance of the sedimentary succession as well as the derivation of the clasts (hinterland reconstruction) and the emplacement of the Alpine Haselgebirge (gypsum).

Fahlore reaction textures as a function of fS_2 in the Cu-ore deposits from Schwaz-Brixlegg (Tyrol, Austria)

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The fahlore minig area of Schwaz-Brixlegg in the lower Inn valley (Austria) is located in the northern Austroalpine Greywacke Zone. In the area of Schwaz and Brixlegg the Northern Greywacke Zone consists of Devonian dolomites, Palaeozoic schists and porphyric gneisses. The ore deposits are situated in Devonian dolomite and transgressive overlying Triassic sediments. They are thought to be the result of hydrothermal metal transport in the lower Devonian sedimentation environment with additional younger remobilizations in the Triassic sediments. Within the framework of SFB HiMAT project (historical mining activities in Tyrol and adjacent regions) the mining district of Schwaz Brixlegg plays a key role for the understanding of prehistoric and historic mining in the eastern Alps.

In the fahlore deposit of Groß Kogel near Brixlegg, fahlores texturally occur in three generations. The main fahlores are zoned tetrahedrite-tennantite solid solutions (fahlore I + II), which show reaction textures involving the transformation of fahlores into the assemblage chalcostibite + stibnite + sphalerite + pyrite ± enargite-famatinite ± fahlore III along the model reactions: (e.g. $Cu_{10}Zn_2Sb_4S_{13} + Cu_{10}Zn_2As_4S_{13} + 3\ S_2 \rightarrow 4\ Cu_3AsS_4 + 2\ Cu_3SbS_4 + 2\ CuSbS_2 + 4\ ZnS$, in the Zn system).

In BSE images, the fahlore (I + II) grains show a strong patchy zoning. Sb-rich fahlore I changes to As-rich fahlore II patches along grain boundaries and fractures most likely associated with hydrothermal alteration. Within the fahlore grains are 50-200 µm large reaction areas, which show three different mineral assemblages, 1.) with fahlore III and enargit-famatinite, 2.) without enargite-famatinite but with Fahlore III, and 3.) without fahlore III but with enargite-famatinite. Within these reaction zones, the grain sizes range from 1 µm to 15 µm. The enargite-famatinite grains also show strong chemical As-Sb zoning. Compared to fahlore I and II, fahlore III composition is Sb-richer and As-poorer. The formation of the observed reaction textures is thought to be coupled with either sinking temperatures and/or rising fS_2. Thermodynamic data of fahlore solid solutions are well known but data for the reaction products are very rare. At 300°C and $\log fS_2 = -8.5$ tennantite and S_2 form enargite at the same temperature and at $\log fS_2 = -7.5$ tetraedrite and S_2 form famatinite. Assuming that the temperature of fahlore formation was low (<300°C), the strong variation in the composition of fahlore I and II and the complex solid solutions of both the products and the educts and local variations in the fS_2 conditions most likely result in the formation of compositionally different microdomains.

How many Triassic oceans?

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In recent years the number of independent oceanic basins within the Western Tethys has considerably increased. From an originally single Western Tethys ocean (Laubscher 1971, Bernoulli & Laubscher 1972), especially Stampfli (Stampfli et al. 1991, 1999, Stampfli & Kozur 2006, Stampfli in Moix et al. 2008) has introduced a system of at least four, more or less parallel E-W directed oceanic basins with intermediate small ribbon-continental blocks. These from Ladinian time onward existing oceans are from north to south the Meliata-, Maliac-, Pindos- and Neotethys ocean and are described to represent highly individual Triassic histories in space and time.

Starting from critical key areas for this concept we discuss its strength as well weakness and its reliability. Based on facial, tectonic and paleomagnetic considerations we see no reasons for this multiple splitting of the oceanic Western Tethys end and present arguments for combining at least the Meliata- and the Maliac ocean as well as the Pindos- and the Neotethys ocean into single oceans. Following the concept of Schmid et al. (2008) and Gawlick et al. (2008) for a far distance westward transport of the Pindos ophiolites in combination with their later complicated deformationsl history in their present place, (Vamvaka et al. 2006), all Western Tethys remnants of oceanic crust would fit in a single ocean paleogeography as classically supposed.

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