

The three principal domains of Saxo-Thuringia:
Result of heterogenous Variscan overprint
of Cadomian / Palaeozoic Peri-Gondwana crust

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The Saxo-Thuringian Zone of the European Variscides contains the record of the Cadomian and the Variscan orogeny and a Palaeozoic marine transition stage.

The classical view of a relatively simple double vergent folded sedimentary basin at the end of the Lower Carboniferous is challenged by the widespread occurrence of Upper Devonian to Lower Carboniferous pressure emphasized regional metamorphic units in the hanging as well as the foot wall of low grade Palaeozoic successions. Here we demonstrate that the subdivision of the Saxo-Thuringian Zone in three principal units (autochthonous domain, wrench and thrust zone, and allochthonous domain) and their heterogeneous overprint by two regional deformation events during the Variscan orogeny explains the entire geological record.

Upper Devonian to Lower Carboniferous continental subduction of the allochthonous domain affects a Cadomian basement and sediments of the same continental shelf preserved in the autochthonous domain. Strain partitioning during this regional D1 process led to the evolution of a wrench and thrust zone surrounding the autochthonous domain. The latter was only affected by regional D2 deformation, which was related to the rapid exhumation of the subducted rocks of the allochthonous domain and the final filling of the Saxo-Thuringian flysch basin, which covers the autochthonous domain and the wrench and thrust zone.

Above model does not need no complicated history of collision in the sense of an Armorican Terrane Assemblage, nor does it require that there were several minor oceans present. Thus, the Saxo-Thuringian Zone is interpreted as a fragment of Peri-Gondwana that never separated from Gondwana to move as an independent terrane and that borders to the Old Red Continent, represented by the Rheno-Hercynian zone, along a strike-slip dominated segment of the Rhenic suture.
