



Reconstructing the Palaeozoic Gondwana margin and its redistribution - new aspects

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New reconstructions of the Palaeozoic world have been done starting with the latest Neoproterozoic making of Gondwana. A main orogenic event is recognised from South-America to Australia in the Early Cambrian time, amalgamating Antarctica-Australia to the rest of Gondwana. An extension of this orogen is found along the Himalayan domain, Afghanistan and Iran. This major event in the construction of Gondwana constrains the location of other blocks such as South-China in Cambrian times. The Cadomian orogeny observed in Armorica, Saxo-Thuringia and central Iberia is also an Early Cambrian event, quite different and younger than the Cadomian events recognized in the Avalonian domain. The Cadomian s.str. terrane colliding with Gondwana contains Proterozoic basement elements, regarded as potentially belonging to the North China-Tarim block, close to that part of Gondwana in terms of palaeolatitude. The Avalonian-type Cadomian elements (extending up to South-America) had been accreted to Gondwana during Late Neoproterozoic orogenic events, related to the amalgamation of the Amazonian-west African craton to the rest of Africa. The opening of the Rheic ocean detached Avalonia from Gondwana in a transform margin context, related to near collision of Baltica with Gondwana during the Ordovician. The detachment of the future Variscan terranes is now regarded as taking place after a major Early Devonian obduction event along a major portion of the Gondwana margin (Eovariscan HP event). Subduction inversion under Gondwana detached a ribbon-like series of Terranes (Galatian and Hun terranes), opening the Palaeotethys in the Middle Devonian, after a long rifting phase starting in the Late Ordovician. Following the formation of Pangea, slab pull forces in the remnant Palaeotethys, detached the ribbon-like Cimmerian terrane from Gondwana, in Early to Middle Permian times.

Most terranes detached from Gondwana contributed to continental growth around Laurussia, then Eurasia. The continental terranes are separated by locally large suture zones, where oceanic and newly created crustal material is derived from intra-oceanic arcs and back-arc domains. This material compensates the loss of parts of continental material into subduction zones.