Permian *versus* Jurassic geotectonic position of the Lhasa block – facts and controversies

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The Cimmerian Continent (or Cimmeria, Cimmerian terrane, Cimmerian blocks) was detached from eastern Gondwana in the Late Paleozoic as a sliver/ribbon of continental strip rifting elements. Recently, these elements belong to an almost continuous long belt (ca. 13,800 km) from central Italy trough Greece, Turkey, Iran, Afghanistan, Tibet, SW China, Myanmar, Thailand up to Indonesia (Sumatra). The palaeogeographic position and relationship of some elements during Permian-Mesozoic times is still matter of discussion. The Qiangtang and Lhasa blocks (present-day Tibet) belong to these elements and their location in space and time and their relationship causes a lot of controversies. Their position alongside eastern Gondwana in the mid-Early Permian (ca. 290–285 Ma) are suggested both by palaeomagnetic and facies studies. Palaeomagnetic studies indicated this position one decade ago, which has been confirmed by recent studies. The Cimmerian Continent [Iran (Alborz)-Qiangtang-Baoshan-Tengchong-Sibumasu] was separated from the Gondwanian part of Pangea during mid-Early Permian time by rifting and drifting. Northwards migration of it took place during Permian-Triassic times caused wide opening of the Bangong-Nujiang Tethyan Ocean and closing of the Paleotethys Ocean but the Lhasa block was still southern margin of the Bangong-Nujiang Ocean. The Triassic Indosinian Orogeny has been one of the most spectacular geotectonic event reflecting collision of this continent with Indochina block and closure of the Paleotethys Ocean. The separation of the Lhasa block from Gondwana is enigmatic but most probably took place during earliest Jurassic times. This separation was followed by quick shift northward.

Intensive sedimentological studies of the Late Triassic (Carnian-Norian) several flysch-type turbidites in the eastern Tethyan Himalaya (e.g. Qulonggongba, Pane Chaung, Langjiexue, Quehala, Duoburi formations/groups) indicate that their provenance was connected with Lhasa block, which has been their source area during early-stage evolution of the Neotethys. The late Early Permian rift-related basaltic magmatism in northern Baoshan (in SW China) and sourrounding regions was connected with first step of separation from Gondwana margin of this block (together with South Qiangtang and Sibumasu blocks and simultaneously with opening of the Bangong-Nujiang Ocean before the Middle Permian) – independently of Lhasa block which was separated later, the most probably during Late Triassic or Triassic/Jurassic transition time with very wide space of the Bangong-Nujiang Tethyan Ocean between Qiangtang and Lhasa blocks (2,600 km ±710 km – 23.4° ±6.4° during the Middle Jurassic with its maximum width in the Late Triassic).

From the palaeobiogeographic point of view, the worldwide distribution of Pliensbachian-Early Toarcian large bivalves of the so-called *Lithiotis*-facies, dominated by *Lithiotis*, *Cochlearites*, *Litioperna* genera revealed by the authors' studies, indicates very rapid expansion of such type of bivalves alongside southern margin of Neotethys, and could be good evidence of palaeogeographic position of the Lhasa block in this time. Himalayan and Tibetan (Nyalam area) occurrences of *Lithiotis* and/or *Cochlearites* bivalves could help to place the Lhasa block nearby the Gondwana during Early Jurassic times. This palaeobiogeographic research contradict another interpretation based on different fossils (Permian fusulinids and brachiopods) interpreted as subtropical fauna, which could occur in low subtropical latitudes together with other parts of the Cimmerian Continent.

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