



1 From post-collisional Extension and Rift Volcanism to weak Compression and Basin Inversion: the Late Paleozoic and Early Mesozoic Evolution of the western Margin of the Yangtze Platform (Lancang River Zone), southwestern Yunnan, China

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A re-evaluation of the existing data and an integrated tectono-sedimentological, geochronological and geochemical approach has led to a new perception of the Late Paleozoic and early Mesozoic geodynamic evolution of the Lancang River Zone (Yangtze Platform): [1] A near-shore continental rift or back-arc basin with strong bathymetric variation must have existed from the Upper Devonian to the middle Lower Permian along the present Lancang River Zone. The extension phase, which led to the creation of the basin, is in time and facies related to the expanding continental margin of the Yangtze Platform in the Devonian and Lower Carboniferous. [2] Characterized by an eastward progressing deformation front, closure of the basin began in the Upper Carboniferous and progressed from present west to east. This closure was associated with the formation of an accretionary wedge on the west side. From this belt to the present west, the deformation increases parallel to the gradual change from greenschist- (Phyllite Belt) to lower blueschist facies (Lancang Group) docu-

menting a large-scale thrust belt or accretionary wedge. [3] The closure of the basin led to the exhumation of the blueschist- and greenschist- metamorphosed rocks and the formation of a land area on the western edge of the Yangtze Platform up to the Middle Permian. [4] Late Paleozoic orogenesis was followed by marine ingressions, post-orogenic bimodal rift volcanism and continental sedimentation. The continental volcanism is an expression of a regional thermal event causing crustal anatexis and the formation of the Lincang Granite. The petrology and geochemistry of the Permo-Triassic basalts along the Lancang River correspond to the continental flood basalts of the Emeishan Large Igneous Province (LIP). Hence, the new plate tectonic model excludes a Mesozoic island-arc setting hitherto believed to be related to the subduction of the Paleo-Tethys. [5] In the Upper Triassic, weak compression and basin inversion took place along the Lancang River Zone. The cause of this compression is unclear but could be associated with the collision of the Tengchong micro-continent further to the west.