

Late Triassic Tectonic-Sedimentary Paleogeography of the Northern Qiangtang Basin, Tibet Plateau, Western China

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The late Triassic northern Qiangtang basin in the Tibet Plateau is located between the Ladhulong-Jinshajiang suture zone and the Shuanghu mélangé belt. It is an important basin in the northern Qinghai-Tibet Plateau, and belongs to composite foreland basin type according to Jordan's classification of foreland basins. Based on rock-types and fossils, five sedimentary facies-belts or petro-stratigraphic units are recognized from north to south in the basin: a flysch nappe-arc volcanic rock-marble assemblage (the Ruolagangri Group); grey deep-water flysch sedimentary rocks (the Zangxiahe Formation); grey deep-water fine-clastic rocks (the Jieza Group); platform carbonates (the Juhuashang Formation); and deltaic coal-bearing clastic rocks (the Tumenggela Group). In transverse section, there is a wedge of sediments thicker in the north and thinner in the south, with dual provenance: the Ruolagangri thrust belt in the north and the Shuanghu mélangé belt in the south. The late Triassic depocenter was located in the middle part of the basin, but subsidence was centered in the northern part of the basin. The foreland basin sedimentation and tectonic evolution are associated with collision of the Ladhulong-Jinshajiang orogenic zone. The basin is a typical symmetric foreland basin between suture belts. This kind of basin geometry allows very thick syn-sedimentary flysch and molasse sediments to be preserved and is related to the thrusts in the suture belt.

The detailed division and correlation of the late Triassic strata not only enriches our knowledge of the late Triassic stratigraphy and paleo-organisms and sedimentary facies, but also has important significance for understanding the sedimentary sequence and palaeogeographic and tectonic evolution of the late Triassic northern Qiangtang Basin.