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Mesozoic nonmarine palaeogeography and palaeotectonic evolution in the Middle-East China

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During the period of Triassic (200-180Ma), North China (NC) is characterized by a great basin of the Ordos-North China Basin located in the center of NC and its vast nonmarine sediments deposited under hot and dry climate and occasional eolian condition, containing Early-Middle Triassic fauna of *Lystrosaurus-Kannemeyeriidae*. Before Late Triassic, South China (SC) was floating within the Tethys far away from NC and dominated by shallow sea deposits and marine reptile fauna. Approaching and collision between NC and SC blocks in the Late Triassic and subduction of the Palaeo-pacific Ocean Plate resulted in retreating of the Tethys sea of SC towards the northwestern SC, dominated nonmarine deposits across southeast SC and uplifting and erosion of the southeast NC. The last two events led to the appearance of East highland terrain of NC in the end of the Late Triassic.

Early through Middle Jurassic(180-160Ma),except for extensive common coal series, a differential evolution of palaeogeography and tectonic, bordered by the northeast-oriented Great Xing'an Range and Taihang Mountain uplifted lineament(GXRTM) between eastern and western NC, was initiated. To the east NC there were a series of small-to medium sized basins with coal-bearing strata and volcanic rocks, and in west NC it was large scale Ordos-North China Basin. Meanwhile, the Yanshanian Orogeny characterized by complicated thrust and fold occurred in the end of the Early-Middle Jurassic. Above mentioned and coinstantaneous basin-range palaeogeography were interpreted to the composite results of closure of Okhotsk Ocean and the subduction of Palaeo-Pacific Plate.

A giant rift in NE trend along the GXRTM in NE China and southeast margin of SC appeared during J_3-K_1 (160-130Ma) responding to collapse of the Yanshanian orogenic belts formed at the end of J_{1-2} . An active continental margin with accretionary complex developed in the eastern Heilongjiang of China. In general, J_3-K_1 had been prevailing hot and dry climate and occasional eolian environment. Main provenance of T through J_3 from Late Paleozoic CAOB and late Mesozoic thrust belt in northern NC suggests that northern NC was continuous uplift or highland terrain of NC.

Early Cretaceous through Late Cretaceous (130-100Ma), strong thinning and stretching of the Earth crust in Middle-East China led to a variety of rift-fault basins covering the previous orogenic belts. Basins and depress centers migrated toward the eastern areas of the Middle-East China. Occasional transgressions and marine deposits along the NE and SE China indicate expansions of the Palaeo-Pacific Ocean. The whole NE and SE China was under back-arc tectonic settings of the subduction of Palaeo-Pacific Plate.

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