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The vegetation changes and terrestrial ecosystem variations across the Triassic-Jurassic transitions in the Sichuan Basin, China: progresses and perspectives

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The terrestrial Triassic and Jurassic sequences are continuously cropped out in the Sichuan Basin, China yielding diverse fossil biota. The Upper Triassic deposits are represented by the Xujiache Formation with abundant and diverse fossil, including plants, spore-pollen, bivalves, conchostracans and ostracodes, indicating Norian to Rhaetian age. The Lower Jurassic sequences Zhenzhuchong and Ziliujing Formations consist of shell limestones, purple red mudstone and limestones with sandstone or variegated bed. The former formation is the basal part of the sequence (ca. corresponding to the Hettangian). The Triassic/Jurassic boundary is defined in between the Upper Jurassic Xujiache Formation and the base of Lower Jurassic Zhenzhuchong Formation.

The fossil vegetation in the Xujiache Formation include four plant communities, such as coastal hydrophyte community, marsh humid hygrophYTE community, bank & plain hygrophYTE to Mesophyte shrub, arborescent forest community, and the mesophyte and xerophyte upland arborescent forest community. However, the The Early Jurassic floras of the Sichuan Basin are featured by the dominance of ferns and cycads, the rise of the Dicksoniaceae, the decrease of pteridophytes and the occurrence of ginkgophytes and conifers. It is noteworthy that some arid and hot elements (*Brachyphyllum* and *Pagiophyllum*) have been described from this flora showing important climate significances. Our recent survey demonstrates that the Late Triassic climate is fluctuated with

The climate in the Early Jurassic shows close succession relationship with the Late Triassic Xujiache Period in northeastern Sichuan regions. The humid climate continued from the Late Triassic to the late Early Jurassic in Kaixian; the humid climate last to the early Early Jurassic in the lacustrine and delta regions in

Xuanhan and Daxian regions. The Early Jurassic climate show no difference from that of the Late Triassic, prevailed by hot and humid conditions, and the temperature increase while the humidity decrease compared with than that of Late Triassic.

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