

Paper Number: 2348

The Discussion about the Closure Time of the Paleo-Asian Ocean in the Northeast Asian Area

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Structure, sedimentary, paleontology, geochemistry and other evidences were jointly utilized in this study to explore the closure time of Paleo-Asian Ocean between the North China platform and Jiamusi old land.

After conducting field exploration in the eastern part of northeast China's Jilin province, the author finds that there is a large area of basal conglomerate at the bottom of continental sedimentary strata in Yangjiagou formation, and the carbonate rock refers to the main ingredient of gravel. Thus, it proves that there was a tectonic movement, and uplift and denudation occurred in this area, which leads to angular unconformity in the late Permian. Through researching sedimentary environment and paleontology in Paleo-Asian Pacific region, the author explores the depositional environment of this region in Middle Permian and Late Permian. The region of Paleo-Asian Ocean refers to marine carbonate deposition in middle Permian, and there is continental clastic deposition in Late Permian. Also, geochemistry was jointly utilized in the study of the sedimentary environment in the northeastern region of Inner Mongolia in Linxi formation of Late Permian. The research found that there is the feature of brackish water at the bottom part of Linxi formation, and the sedimentary system of Linxi formation is primarily lacustrine environment. Hence, the author determines that the region's sedimentary environment has changed from salt water to fresh water gradually at the beginning of deposition in Linxi formation and Yangjiagou formation of Late Permian, demonstrating that the region is separate from sea and forms a lagoon after the Paleo-Asian Ocean closure. Furthermore, the study on geology and stratigraphy indicates that the collision was occurred in the late of Middle Permian between Jiamusi old land and the North China Plate. Then, after the closure of Paleo-Asian Ocean, a large area of continental lagoons was formed in Late Permian in the northeastern of China.

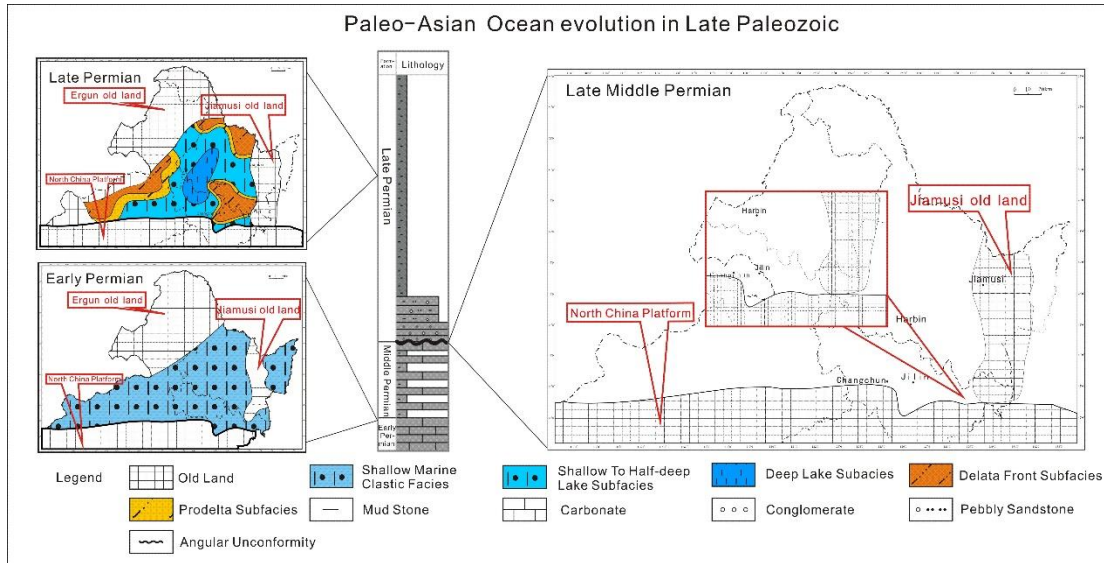


Figure 1: Paleo-Asian Ocean evolution in Late Paleozoic

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- [1] Fulai Li et al. (2009) Acta Sedimentologica Sinica [J] 27(2): 265-272
- [2] Xiyu Qu and Manli Zhang et al. (2013) Journal of Palaeogeography [J] 15(5): 679-692

