HUO Rong, GUO Rongtao and DUAN Kaibo, 2014. Study on Filling-Succession of Sedimentary Basin for the Lower Jurassic of the Middle-Yangtze and Its Ajacent Areas. *Acta Geologica Sinica* (English Edition), 88(supp. 2): 254.

Study on Filling-Succession of Sedimentary Basin for the Lower Jurassic of the Middle-Yangtze and Its Ajacent Areas

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The Mid Yangtze and its adjacent area Lower Jurassic across Sichuan, Hubei and Hunan Province, the early Jurassic basin had expanded with warm climate and lush plants, which is an important period for coal forming. The area of the basin mainly include the Baitianba Group,Xiangxi Group, Ziliujing Group, Tongzuyuan Group, Jinshandian Group, Dawangchong Group, Chengchao Group and Jielongqiao Group.

Combining the theory of sequence stratigraphy, the measured field profile and logging data, analyses found that from west to east along Sichuan Dazu-Huilong Kaijiang-Yun'an-Xiangxi(Xiaokou)-Haihuigou(Miaokou)-No.1 well of Hangchuanfeng-Jianshandian-Chaocheng, the thickness is generally thicker except the profile of Haihuigou-Dangyangpiao. From the mid Yangtze to the upper Yangtze, the early Jurassic strata from east to west change from the coal-bearing dark strata of the Chengchao Group, Dawangchong Group and Jinshandian Group in the eastern Hubei area to the thicker Tongzhuyuan Group to the west of the Jingmen-Dangyang region. The Tongzuyuan Group of Lower Jurassic in the Jingmen-Dangyang region to the east of the Huangling anticline, with the largest thickness, contains three third-order sequences; the pinch-out of the third-order sequence JS_1 to the eastward and westward at the bottom shows that in the early period of the Early Jurassic, the Huangling anticline separated the upper Yangtze Sichuan Basin and the mid Yangtze Basin, and in the mid and late period the two foreland basins of different systems were connected. The lower Jurassic in the area of the mid Yangtze and eastern Yangtze is mainly a set of dark coal-bearing clastic rocks; the main facies sequence fabric of the third-order sequence is from the meandering river and the meandering river delta sandstones to the dark carbonaceous shale of the lake and flood plain facies intercalated with coal streaks, which is quiet different from the red bed sediments of the fresh water lake facies limestone. The deposition made up of floodplain sediments and limnetic facies sediments became thinner upward to be the third-order sequence sedimentary fabric, and changed into the sediments of purple mudstone intercalated with siltstone in the upper Yangtze region. In the Early Jurassic, the sedimentary basin framework and palaeogeography had enormous changes in the late period of the Rhetian of the Late Triassic from the mid Yangtze to the upper Yangtze; in the mid and late period of the Early Jurassic, the foreland basin in the mid Yangtze and the foreland basin in the upper Yangtze which were separated in the late period of Triassic, was connected into a unified intercontinental foreland basin; however, two sedimentary centers still existed, i.e. the Chuangzhong area and Jingmen-Dangyang area.

The framework of the sedimentary basin and palaegeography of the Early Jurassic show that a unified foreland basin with two depression centers was formed in the mid and upper Yangtze platform in the Paleozoic after pushed by the Xizang, Yunnan and Indo-China blocks in the south, thrust by the North China Block in the north, and compressed by the paleopacific block in the southeast.

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