

## **Coral biostrome of the Shangsi Formation (middle Visean, Mississippian) in Yashui, Guizhou, South China Block**

YAO, Le <sup>1,2,\*</sup>, WANG, Xiangdong <sup>1</sup>, LIN, Wei <sup>1</sup>, LI, Yue <sup>1</sup>, QIE, Wenkun <sup>1</sup>

<sup>1</sup>Key Laboratory of Economic Stratigraphy and Palaeogeography, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing 210008, China;

<sup>2</sup>University of Chinese Academy of Sciences, Beijing 100039, China

\* yaole010081@163.com

For the first time, a middle Visean (Mississippian) coral biostrome is described from the Shangsi Formation in Yashui, Guizhou, South China. The thickness of the biostrome has a lateral variation from 2.7 m to 5.2 m. The biostrome is mainly composed of tabulate and rugose corals, and its diversity is low, consisting of five species in five separate genera. Notably, the composition of the biostrome changes both horizontally and vertically. Other common fossil taxa in thin sections are brachiopod fragments, crinoid ossicles, and foraminifers. In addition, calcareous algae, ostracods, bryozoans and gastropods also occur but are relatively sparse.

The growth and demise of the coral biostrome were controlled by the changes of hydrodynamic energy resulting from sea-level variation. The growth of the biostrome was caused by hydrodynamic energy weakened due to sea-level rise, which was evidenced from the increased occurrence of micrites or peloids and in-situ coral colonies from biostrome-base to biostrome. Packstones and grainstones overlying the biostrome indicate that hydrodynamic energy strengthened owing to sea-level fall, which led to the demise of the biostrome.

In this study, the coral biostrome shows some similarities with the middle to late Visean coral biostromes from Europe and North Africa (western Palaeotethys) in aspects of biotic composition and growth mode. The distinctly different solitary rugose coral compositions of the biostromes between western Palaeotethys and South China (eastern Palaeotethys) may be ascribed to their palaeogeographic disjuncture. Consistent with the biostromes from western Palaeotethys, the occurrence of the biostrome in South China suggests that its evolution fits with that of the western Palaeotethys and a warm climate episode did exist during the Visean.