Progress on Chinese Mississippian foraminiferal zonations and correlations

Qingyi Sheng*[1]

[1]Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences – China

Abstract

Foraminifera are one of the most significant tools in defining the age of Mississippian strata, and they are very useful for high-precision intercontinental biostratigraphic correlations. Based on samples from sections located in different blocks in China, this study achieves the following progress: 1) In traditional Chinese Carboniferous zonal schemes, Mississippian foraminiferal zones were broadly defined by genera, long-ranging species or local species, making it difficult to correlate to equivalent foraminiferal zones worldwide. A refined Chinese Mississippian zonal scheme of foraminifera is preliminarily established. New zones named for cosmopolitan species allow better international correlations. 2) Archaediscacean foraminifers are used as biostratigraphic marker microfossils from the early Viséan to early Serpukhovian. However, the ancestor of the archaediscids is still on debate. The specimens of *Lapparentidiscus* and *Viseidiscus* with continuous stratigraphic appearances from South China suggests that *Lapparentidiscus* is a unique pseudoamrnodiscid that gives rise to the archaediscids. The evolution trend of primitive archaediscacean foraminifers is: *Lapparentidiscus talasicus*–*Viseidiscus eospirillinoides*–*Viseidiscus monstratus*. The hyaline-radial layer of the archaediscids appears as a replacement instead of a filling. It replaces the dark, microgranular layer gradually, and extends from the umbilical area to the sides. 3) By investigating the foraminiferal succession of the Viséan/Serpukhovian boundary interval in China and its accurate correlation with conodonts from the Viséan/Serpukhovian boundary GSSP candidate section-the Naqing section and other auxiliary sections (such as the Narao section), the problem of basal Serpukhovian foraminiferal indices is discussed. The co-occurrence of typical Serpukhovian conodont *Lochriea ziegleri* and foraminfera *Janischewskina delicata* within the boundary interval provides important information of the correlation between conodont and foraminifera near the Viséan-Serpukhovian boundary.

Keywords: foraminifera, Mississippian, China

*Speaker