Rivision of the lowermost Cambrian SSF stratigraphy

*KONO SENA[1], Yukio Isozaki[1], Tomohiko Sato[2], Xingliang Zhang[3], Wei Liu[3]

1. The University of Tokyo School of Arts &Sciences, 2. Earth-Life Science Institute, Tokyo Institute of Technology, 3. Northwest university, China

The earliest Cambrian evolution of animals is marked by the appearance and rapid diversification of small shelly fossils (SSFs). We examined the litho- and bio stratigraphy of the lowermost Cambrian at the Xiaolantian and Hongjiachong sections in the Chengjiang area, eastern Yunnan, South China. By analyzing both outcrop and drilled core samples, we picked up many SSFs from the ca. 30 m-thick phosphorites (Zhongyicun Mb), and obtained the following results.1) the Zhongyicun Mb comprises 6 lithostratigraphic units, which include Unit 3 with characteristic black mudstone beds for a significant key for the mid-Zhongyicun Mb.2)SSFs were found from 26 horizons out of 83 in the Zhongyicun Mb and the overlying Dahai Mb. Five zones were discriminated. Interval 1 with*Acanthocasis orthocanthus, Spirellus* sp., *Protohertzina unguloformis* and*Protohertzina anabarica*(from uppermost of Unit 1 to lower part of Unit 2); Interval 2 with *Ocruranus finial, Purella*sp.and*Yunnanopleura biformis*(from upper part of Unit 2). This marks the first occurrence of cap-shaped SSFs. Interval 3 with *Helcionella*sp.and*Oelandiella korobkovi*(from Unit 3). Interval 4 with *Obtusoconus*sp.,*Conopoconis*sp. and*Erongia acculatus*(from lower part of Unit 6). Interval 5 with*Igorella* sp., *Bemella simplelx*and*Paragloborilus subglobosus*(from upper part of Unit 6). 3) In addition, at the Hongjiachong section, a unique interval with *Halkieria* sp.*,Pteromus* sp.and*Sinosachites delicatus*occurs between Interval 1 and 2.

These results from the Xiaolantian and Hongjiachong sections, the following 6 SSF zones are proposed here. Namely, 1)*Acanthocasis orthocanthus- Protohertzina anabarica*Zone, 2) *Halkieria- Pteromus*Zone, 3) *Ocruranus finial-Yunnanopleura biformis*Zone, 4)*Paracarinachites sinensis-Oelandiella korobkovi*Zone, 5) *Obtusoconus-Conopoconis*Zone, and 6) *Igorella -Bemella simplelx*Zone.Previously the Zhongyicun Mb was divided into two SSF assemblage zones (Steiner et al., 2007); however, the present study offers 6 zones. It is noteworthy that the key bed in the mid-Zhongyicun Mb, restricted within the*Paracarinachites sinensis-Oelandiella korobkovi*Zone,appears useful for regional correlation.

Keywords: Cambrain, SSF, Yunnan

