

## Trunk ornament on the palaeoscolecoid worms *Cricocosmia* and *Tabelliscolex* from the Early Cambrian Chengjiang deposits of China

Jian Han, Jianni Liu, Zhifei Zhang, Xingliang Zhang, and Degan Shu

*Acta Palaeontologica Polonica* 52 (2), 2007: 423-431

*Cricocosmia jinningensis*, one of the most abundant palaeoscolecoid worms from the Lower Cambrian Chengjiang deposits of south China, was originally described as bearing double longitudinal rows of lateral conical sclerites on the trunk. New observation reveals that the ventral trunk bears an additional set of ventral sclerites while the lateral sclerites display a tubercle-bearing (inner surface) and net-like (outer surface) microstructure similar to that of *Tabelliscolex hexagonus*. These findings mean that: (1) *Cricocosmia* shows a dorso-ventral and antero-posterior differentiation in trunk ornament; (2) as seen from the microstructure, *Cricocosmia* is close to *Tabelliscolex hexagonus*, supporting the idea that lobopodians and arthropods, both of which show an upper capping layer in the outer sclerites, are more closely related than the palaeoscolecids; and (3) the similarities among the scalids, pharyngeal teeth and the trunk spines of palaeoscolecids are superficial. *Tabelliscolex maanshanensis* sp. nov., characterized by an inner concentric circlet of laminae in each tubercle of the lateral trunk plate, is proposed herein. Element mapping reveal that four known pathways of preservation can be found co-occurring in a single specimen of *Cricocosmia* or *Tabelliscolex*, which sheds new light on the preservation of the Chengjiang fossils.

**Key words:** Priapulida, Palaeoscolecida, *Cricocosmia*, *Tabelliscolex*, Chengjiang, Cambrian, China.

Jian Han [elihanj@nwu.edu.cn](mailto:elihanj@nwu.edu.cn), Jianni Liu [eliljn@nwu.edu.cn](mailto:eliljn@nwu.edu.cn), Zhifei Zhang [elizf@nwu.edu.cn](mailto:elizf@nwu.edu.cn), and Xingliang Zhang [xlzhang@pub.xaonline.com](mailto:xlzhang@pub.xaonline.com), Early Life Institute and State Key Laboratory for Continental Dynamics, Northwest University, Xi'an, 710069, China; Degan Shu [elidgshu@nwu.edu.cn](mailto:elidgshu@nwu.edu.cn), Early Life Institute and Department of Geology, Northwest University, Xi'an, 710069, China; School of Earth Sciences and Resources, China University of Geosciences, Beijing, 100083, China.

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