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New artiopodan euarthropods from the Chengjiang fauna (Cambrian, Stage 3) at Malong, Yunnan, China

Yuyan Zhu, Han Zeng, Yao Liu and Fangchen Zhao
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The artiopodans, consisting of trilobites and their relatives, were a major euarthropod group in the Paleozoic. Since the first discovery of *Naraoia* from the Chengjiang fauna, a significant number of artiopodans have been subsequently found in China. Here we describe three new artiopodan species from the lower Cambrian Chengjiang fauna (Cambrian Series 2, Stage 3) at Malong, Yunnan, China. *Zhugeia acuticaudata* gen. et sp. nov. is defined by a semielliptical cephalon with long genal spines, nine overlapping thoracic tergites, and a pygidium with an elongated needle-like median spine. Its cephalic shield covers multiple anterior thoracic tergites. *Tonglaiia bispinosa* gen. et sp. nov. is defined by a suboval cephalon, seven thoracic tergites, and a micropygous pygidium with a pair of parallel posteriormost spines. *Sidneyia malongensis* sp. nov., a new occurrence of *Sidneyia* from South China, is defined by a crescent-shaped cephalon, eight imbricated tergites, and an abdomen consisting of two cylindrical segments and a tail fluke. The evolutionary affinities of these new taxa are reconstructed and discussed in a phylogenetic context. Phylogenetic analyses resolve *Z. acuticaudata* among the xandarellids and *T. bispinosa* gen. et sp. nov. as a trilobitomorph with an uncertain placement, The discovery of three new species improves the biodiversity of artiopodans from the Cambrian and the Chengjiang fauna.

Key words: Arthropoda, Trilobitomorpha, Vicissicaudata, Burgess Shale-type fossils, exceptional preservation, Lagerstätten, Cambrian, Yu'anshan Formation, Chengjiang.

Yuyan Zhu [yyzhu@nigpas.ac.cn; ORCID: https://orcid.org/0009-0005-1957-7429], Han Zeng [hzeng@nigpas.ac.cn; ORCID: https://orcid.org/0000-0002-5728-7896] (corresponding author), Yao Liu [yaoliu@nigpas.ac.cn; ORCID: https://orcid.org/0009-0007-5098-8220], and Fangchen Zhao [fczhao@nigpas.ac.cn; ORCID: https://orcid.org/0000- 0001-8473-4439], State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing 210008, China; University of Chinese Academy of Sciences, Beijing 100049, China.


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