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A large xenusiid lobopod with complex appendages from the Lower Cambrian Chengjiang Lagerstätte

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A large lobopod, *Jianshanopodia decora* gen. et sp. nov., with body length (excluding appendages) about 220 mm from the Lower Cambrian Haikou section, near Kunming, Yunnan, southwest China, shows a mixture of characters, including features of the lobopod *Xenusion* Pompeckj, 1927, e.g., a large cylindrical body with annulations, stout and strong lobopod appendages each bearing bases of serial tubercles, and of *Aysheaia* Walcott, 1911, i.e., a pair of large frontal appendages. This suggests that the new genus might be a connecting link between *Xenusion* and *Aysheaia*. Besides, *Jianshanopodia* shares some features with the Early Cambrian stem group arthropod *Pambdelurion* Budd, 1997, and *Kerygmachela* Budd, 1993, e.g., the pairs of mid-gut diverticula, the possible presence of tail fan, the mouth cone, the frontal pharyngeal structures and the pharynax are surrounded by the bases of the large frontal appendages. However, compared with a series of segmentally arranged, imbricating, paddle-shaped, movable lateral flaps of both *Pambdelurion* and *Kerygmachela*, *Jianshanopodia* possesses distinct complex appendages with tree-like or lamellate branches. The discovery of this rare transitional form not only throws new light on the early diversification of lobopods, and may also have significance with respect to the origin of arthropods.

Key words: Arthropoda, Lobopodia, Xenusiidae, arthropod origin, Chengjiang Lagerstätte, Cambrian, China.

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