

Morphological and Ecological Disparity in Naraoiids (Arthropoda) from the Early Cambrian Chengjiang Fauna, China

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ABSTRACT. *Misszhouia longicaudata* (Zhang & Hou) from the Chengjiang lagerstätte is separated from *Naraoia* Walcott by its antennular orientation, its smaller cephalic caeca and gut, lanceolate distal exopod lobe, and partial fusion of the exopod and first endopodal podomere. *Naraoia spinosa* Zhang & Hou (also from Chengjiang) shares derived characters with the type species, *N. compacta*. Deposit feeding is suggested for *Naraoia spinosa* by both morphology and preservational circumstances. New material shows previously unknown features in *Misszhouia longicaudata*, including frontal organs anterior to a sclerotised lobe of the hypostomal complex, the position of the mouth opening, details of antennule and biramous limb attachments, morphology of the sternites and limb rami, and the structure of the ventral cuticle in the cephalon and pleural areas.

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The systematic status of *Naraoia* Walcott, 1912, and several allied non-mineralised arthropods has most recently been reviewed by Fortey & Theron (1994). These workers provided evidence that Naraoiidae Walcott, 1912, could be defined as a monophyletic group that unites the Lower-Middle Cambrian *Naraoia*, the Lower Cambrian *Liwia* Dzik & Lenzion, 1988, the Ordovician

Tariccoia Hammann *et al.*, 1990, and the Upper Ordovician *Soomaspis* Fortey & Theron, 1994. Among a range of Early Palaeozoic Arachnata that are known from exceptionally-preserved faunas, naraoiids are of particular significance because they have been regarded as a possible sister or stem-group to trilobites (Fortey & Theron, 1994; Shu *et al.*, 1995).