

Alternative interpretations of some earliest Ediacaran fossils from China

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Acta Palaeontologica Polonica 58 (1), 2013: 111-113 doi: <http://dx.doi.org/10.4202/app.2011.0096>

In a letter to *Nature* (February, 2011), Xunlai Yuan and collaborators recorded carbon compression fossils from black

shales of the Lantian Formation (Ediacaran), southern Anhui Province, South China. The new fossils, described

under five morphological types (Types A to E), exhibit degrees of morphological differentiation suggesting that they

were multicellular eukaryotes. Some of the Lantian macrofossils were interpreted as algae, but others are of unknown affinities. For reasons noted in this discussion, Type A fossils attracted our particular attention, and we suggest an alternative interpretation of their affinities. According to our view, some of them (at least those with three faces and no globose holdfast at their base) may represent conulariid cni-darians or close medusozoan relatives. The undistorted organism probably was a three-sided cone in life. We believe that our suggested alternative interpretations of the anatomy and affinities of the fossils in question can be useful in guiding future research on the oldest currently known fossil assemblage of multicellular organisms.

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