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An Early Ediacaran Predator from the Southwestern Siberian Craton: When did the Dawn of Metazoan Begin?

Sovetov J. K.^{1,2}

¹Trofimuk Institute of Petroleum Geology and Geophysics SB RAS, Laboratory geodynamics and paleomagnetism, Novosibirsk, Koptyug Pr. 3, 630090, Russia, sovetovyk@ipgg.sbras.ru

²Novosibirsk National Research State University (NGU), Department of Geology and Geophysics, Novosibirsk, Pirogov Street 2, 630090, Russia.

A cast of the dorsal part of a highly developed Mollusca named *Archaeosepia taseevica* has been found about 60 m above the Aleshinsky Fm. red glaciofluvial sandstone, in lowermost Ediacaran shoreface fine sandstone of the Chistyakova Formation (middle Taseeva Group), in the southern Yenisei Ridge [1]. The Chistyakova Fm. inner shelf and shoreface deposits mark the onset of postglacial sea transgression after the Marinoan glacial epoch [2] and before the deposition of early Ediacaran cap dolomite. The cap carbonates occur in the middle Chistyakova Fm. section and consist of micritic dolomite and dolomitic siltstone. According to its external anatomy, *Archaeosepia taseevica* (2,5x6 cm) belongs to Cephalopoda, Sepiida order. It has a head with eight arms, two tentacles and two sessile eyes and a bullet-shaped short body with a flexible bordering fin. A head is separated from body by a cervical groove. The eight arms have fine tips and very small suckers on the end, while two long feeding tentacles have terminal clubs with rows of large ring suckers. The Chistyakova Fm. sediments contain also trace fossils and metazoan problematics. The *Archaeosepia taseevica* found in the 600-590 Ma Chistyakova Fm. is much older than the known stratigraphic level with the classical Ediacaran biota. The find of *Archaeosepia taseevica* extends the beginning of the Metazoan evolution into the Cryogenian and calls for a revision to the existing model of the Ediacaran biota structure and food chains. Namely, the occurrence of a predator with nekton character indicates that various soft-body animals had colonized all shallow shelves as early as in the Ediacaran and that predation became a way of competitive selection among the Metazoans long before the Cambrian.

References:

[1] Sovetov J and Blagovidov V (2004) In: *Sedimentary Basins: Methods of Research, Structure and Evolution*: Scientific World: 159-212

[2] Sovetov J (2015) *Russian Geology and Geophysics* 56 (11): 1521-1529

