

Juvenile *Kosoidea* sp. From Lower Paleozoic strata, Paraná Basin, Brazil

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Complete and fragmented discinid (Brachiopoda: Discinidae) valves were collected from the northern portion of the Paraná Basin, Brazil. The samples were collected from shales of the Iapó and Vila Maria Formations (Late Ordovician to Early Silurian) both from Goiás and Mato Grosso States, Central Brazil. The sedimentological and paleontological data from the outcrops indicate a glacial-influenced depositional environment in a shallow epicontinental sea. Besides the discinids there are also lingulids and other calcitic brachiopods, mollusks and ostracods such as *Satiellina jamairiensis*

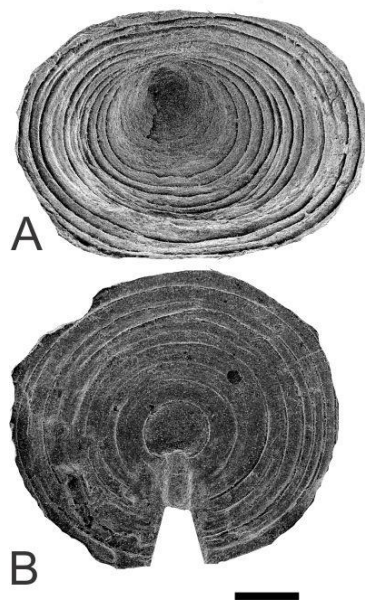


Figure 1 – (A) Dorsal and (B) ventral valves of *Kosoidea* sp. Scale bar = 500 μ m

Vannier, 1986 and *Conchoprimitia circularis* [1], that indicate marine environmental conditions during Late Ordovician. The discinid specimens are preserved as impressions, internal and external molds or partially or even completely substituted by iron oxides. Most of the fossils were preserved as fragments. Ventral valves are outnumbered by the dorsal ones. No conjoined valves were found so far. Discinid specimens are attributed to *Kosoidea* sp. Mergl et Havileck, 1988 once their shell is convexoplane, almost circular in outline and rectimarginata; their maximum width is about their mid-length. Dorsal valve is conical, ornamented by rugalae and with a subcentral apex; anterior and lateral slopes are straight. The ventral valve is plane, with thin growth lines, and a central umbo. Listrium is present and represents 50% of the valve radius; the listrium has suparallel lateral margins; the posterior margin of the pedicle notch is a triangular aperture; the opened pedicular valve and the small size of the specimens, as long as small numbers of growth lines indicates that they are juvenile forms. Analyzed dorsal valves (n=62) showed average size of 21 mm wide, 19 mm long, and 6 mm tall (n=11); ventral valve (n=13) were 23 mm wide, and 21 mm long. This numbers show that not all valves were perfectly circular; the authors recognize that several of them show plastic deformation due to fossilization process. No complete adult forms were found so far. The rare occurrence of ventral valves is explained by a taphonomic bias:

the size of the fossils is small, which indicates that they were preferentially selected. Ventral valves have greater probability of breaking during this selection process once they have an open posterior margin. Dorsal valves have higher preservation potential in this strata once they are conical (can be carried easily by water currents) and do not have any opened margin. This is the first known occurrence of *Kosoidea* sp. at the Paraná Basin. Very similar species, *Kosoidea cedarbergensis* Basset 2009, has been recovered from the Soom Shale of the Cedarberg Formation, Cape Province, South Africa (Upper Ordovician strata)[2]. The authors are not secure to assume that Paraná Basin species are *K cedarbergensis* at the moment once we do not have neither adult specimens nor information on their musculature system. The main differences between both consist on the convexity of the dorsal valve, which is weakly convex in *K. cedarbergensis*. Ventral valves have central umbo whilst *K. cedarbergensis*' umbo is excentric. *K. cedarbergensis* has short listrium, while ours extend through half of the valve.

References:

[1] Adorno R.R. et al. Revista Brasileira de paleontologia.

[2] Basset M et al.(2009) Journal of Paleontology 83(4):614-62