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ABSTRACT BOOK

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Aristocystitidae (Echinodermata, Blastozoa): Systematic and taxonomic review

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The Early Palaeozoic represents a critical time interval of life's history, during which echinoderms, as most other metazoans, underwent a major radiation. In this context, the subphylum Blastozoa Sprinkle, 1973 is of particular interest, as its morphological diversity was significantly concentrated early in its history (Foote, 1992). Aristocystitid specimens are generally poorly preserved (incomplete theca) and, very frequently, they do not show the oral surface, which is of prime taxonomic importance. Frequently, the taxonomic identification of many aristocystitid taxa simply relies on fragmentary portions of theca, mostly aboral regions, and is based on characters such as the shape and size of the theca; the shape, size and arrangement of thecal plates; the structure and arrangement of respiratory pores; and the occurrence of anatomical elements added as tubercles (Escribano Ródenas *et al.*, 1999; Gutiérrez-Marco & Aceñolaza, 1999; Gil Cid & García Rincón, 2012). In addition, aristocystitids are one of the blastozoan clades displaying the widest morphological diversity, which makes precise definition and taxonomy very difficult (Kesling, 1968; Paul & Kesling, 1968).

Since the last works of Chauvel (1980) and Chauvel & Meléndez (1986), systematic revisions were carried out on several aristocystitid taxa: *Aristocystites* (Parsley, 1990; Paul & Parsley, 2019), *Enodicalix* (Gutiérrez-Marco & Aceñolaza, 1999; Paul & Gutiérrez-Marco, 2020), *Binocalix* (McDermott & Paul, 2019), *Lepidocalix* (Makhlouf *et al.*, 2017), *Oretanocalix* (Gutiérrez-Marco, 2000; Paul & Gutiérrez-Marco, 2022), and *Prokopius* (Paul, 2018). However, the identification of the Ordovician aristocystitid *Calix* remains problematic, and will require to review the morphology of all taxa assigned to it, to critically reevaluate their assignment to that genus, and ultimately, to identify key characters for the diagnosis of *Calix* (Makhlouf *et al.*, in progress). However, although the characters of the type species of *Calix* are well established, all other species currently assigned to *Calix* require thorough morphological review, to reevaluate their assignment to that genus (Makhlouf *et al.*, in progress). The same work has to be done for all other problematic aristocystitid genera, such as *Glaphocystis*, *Phlyctocystis*, and *Maghreboecystis*. The systematics of the family Aristocystitidae remain unclear, and would benefit from a thorough revision, including a phylogenetic analysis and the systematic review of several taxa (Makhlouf *et al.*, in progress).

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