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Generic revision of holocystitid blastozoans

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Brightonicystis is a valid genus characterised by nine or more oral plates, with two in the B and D ambulacra not reaching the inner mouth edge; five ambulacral facets shared by oral and facetal plates; two generations of smooth thecal plates with buried humatipores. *Brightonicystis* contains two named species, *Brightonicystis gregaria* and *Brightonicystis salmoensis*, with other unnamed taxa known from Canada and Sweden, all of which are Hirnantian. All other holocystitid genera are Silurian. A review of the Holocystitidae confirms the established genera *Holocystites* and *Brightonicystis* both characterised by five ambulacra with shared facets, as well as *Trematocystis, Pustulocystis*, and *Paulicystis* all characterised by four ambulacra. The hypothesis that the differences between *Pentacystis* (without orals) and *Osgoodicystis* (with two or six orals) are taphonomic is reviewed and rejected. The peristome border and food grooves should be absent in *Pentacystis* if the oral plates on which they occur were lost during preservation. *Pentacystis* species show both features developed on facetal plates. *Osgoodicystis* is reinstated as a valid genus with six narrow orals. *Moyacystis* gen. nov., type species *Osgoodicystis cooperi*, bears only two orals (O1 and O6) and facetal plates with oral pores in the peristome border. *Pentacystis, Osgoodicystis*, and *Moyacystis* gen. nov., all possess five ambulacral facets restricted to single facetal plates and a smooth thecal surface. The Australian genus *Austrocystites* is a junior synonym of *Trematocystis*. Holocystitid subfamilies and subgenera introduced by Frest and Strimple (in Frest et al. 2011) are not discussed herein.

Key words: Blastozoa, Diploporita, Holocystitidae, taphonomy, oral plate arrangements.

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