

ABSTRACTS

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TAXONOMIC REVISION OF THE CORNUTE FAMILY COTHURNOCYSTIDAE BATHER, 1913 (ECHINODERMATA, STYLOPHORA) BASED ON NEW AND REVISED OCCURRENCES FROM THE ANTI-ATLAS (MOROCCO), MONTAGNE NOIRE (FRANCE) AND NEVADA (USA) [poster]

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The family Cothurnocystidae Bather, 1913 forms a relatively well-defined clade of cornute stylophorans characterized by a marginal frame posteriorly closed by a bridge formed by M_5 and M'_5 , two polyplated infracentral areas, strong protuberances on the lower surface of anterior marginals, a cothurnocystid marginal Mc inserted between M_2 and M_3 , a blade-bearing M_3 (spinal) in contact with the zygial plate, a marginal M_4 -when present- restricted to the upper surface, two moveable posterior spines (glossal and digital) articulated to the theca, and respiratory structures (cothurnopores) in the right anterior corner of the supracentral area. Cothurnocystids diversified in the Furongian–Early Ordovician time interval, possibly from middle Cambrian *Archaeocothurnus*-like taxa, and thrived during most of the Ordovician, with *Cothurnocystis elizae* (Katian, Scotland) as their youngest known representative.

New middle Tremadocian cornute material recently collected in the lowermost Fillmore Formation of eastern Nevada extends the stratigraphic range of '*Cardiocystella*' *prolixora* described lower in the same section, in Furongian deposits of the Whipple Cave Formation. This material adds morphological data for this taxon and, in particular, confirms the posterior closure of its marginal frame by a M_5 – M'_5 bridge. This more complete characterization indicates '*Cardiocystella*' is a junior synonym of *Procothurnocystis* and the earliest-known cothurnocystid. These Laurentian fossils occur in limestones that were deposited in shallow, agitated, warm-water carbonate environments, in contrast with Gondwanan deeper, quieter, cool-water siliciclastic occurrences.

The genus *Procothurnocystis* was defined for cothurnocystids with a M_4 marginal, but only two adorals (A_0 lost). Two taxa were originally assigned to this genus: *P. courtesolei* (late Tremadocian, Montagne Noire), and the type-species, *P. owensi* (Dapingian, Wales). The occurrences reported here considerably extend the range of this taxon downward, into Furongian–middle Tremadocian of Nevada (see above). Locally extremely abundant material very close to *P. prolixora* occurs in the late Tremadocian of the Anti-Atlas, Morocco. Two younger occurrences of *Procothurnocystis* have been also reported in the late Darriwilian of Bohemia (Dobrotiva Formation) and the early Sandbian of the Anti-Atlas (Izegguirene Formation).

Two other cothurnocystid genera were described: *Arauricystis* and *Cothurnocystis*. *Arauricystis* (late Tremadocian, Montagne Noire) differs from *Procothurnocystis* by the loss of Mc . *Cothurnocystis* differs from *Procothurnocystis* by the loss of M_4 . Finally, '*Cothurnocystis*' *fellinensis* (late Tremadocian, Montagne Noire) probably represents the most basal member of the family Cothurnocystidae, as its upper surface retains the plesiomorphic condition with three adorals (A_0 is lost in *Arauricystis*, *Cothurnocystis* and *Procothurnocystis*). This cornute should be assigned to a new genus.