



## A new family within the holothuroid order Dactylochirotida with description of a new species from South Africa and comments on the dendrochirotid genus *Neoamphicyclus* Hickman, 1962 and the molpadid genus *Cherbonniera* Sibuet, 1974 (Echinodermata)

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### Abstract

A new species of *Cucumella*, *C. triperforata*, with simple, digitate tentacles is described from deep waters off the east coast of South Africa. Since *C. triplex*, the type species of this genus, also has simple, digitate tentacles, the genus *Cucumella* together with its type species is removed from the Dendrochirotida and re-assigned to a new family, Cucumellidae, within the Dactylochirotida. The remaining species of *Cucumella*, with the exception of *C. decaryi* Cherbonnier (= *Neostichopus grammatus* (H.L. Clark, 1923)) are assigned to *Neoamphicyclus* Hickman, 1962 within the dendrochirotid subfamily Thyonidiinae. The ossicles of the new species bear a striking resemblance to those of the molpadid *Cherbonniera utriculus* Sibuet, but ordinal differences readily separate the taxa.

**Key words:** Cucumellidae, *Cucumella*

### Introduction

Several specimens of minute unidentified holothuroids in the collections of the Iziko South African Museum, taken from fairly deep waters (710–775 m) off the South African east coast, are characterized by sparsely distributed tube feet, digitate tentacles and body wall ossicles comprising exclusively tables with a trilocular disc and a solid spire ending in usually 2 (sometimes 3) smooth, diverging processes/teeth. The material comes quite close to the South African *Cucumella triplex* Ludwig & Heding, 1935, the type species of *Cucumella* Heding. *C. triplex* is also a minute species described from a single 14 mm male specimen collected from the Agulhas Bank at 155 m. The current material differs from it only in the form of the calcareous ring, the nature of the spire of the tables, and the consistency of trilocular table discs in both male and female specimens. In *C. triplex*, although there are some tables with trilocular disc, these are stated to transform with age into multilocular ones. No such transformation is evident in all the current specimens despite their maturity. Hence, the two forms do not appear to be identical and the current material is here taken to represent a new species of *Cucumella*, described below as *C. triperforata*.

*Cucumella triplex*, because of its multiple tentacles, was described by Ludwig & Heding (1935) in the then known dendrochirotid family Phyllophoridae Östergren. It was retained in this family by Deichmann (1948) and by Heding & Panning (1954) but, because of its simple calcareous ring, the latter workers erected the subfamily Thyonidiinae to accommodate it and two other species. Pawson & Fell (1965), in their revision of the classification of the dendrochirotid holothuroids, transferred this subfamily from the Phyllophoridae to the Cucumariidae Ludwig, in which it was retained by Thandar (1991) and where it currently stands. Regrettably, *C. triplex* has not been encountered since its original description.

The number and form of the tentacles of *C. triplex* was a point of some contention by Heding (in Ludwig & Heding 1935) and Deichmann 1948. Ludwig, in his manuscript, recorded the number to be 15, while Heding, who re-examined the type, stated that the nature of the calcareous ring, suggests a maximum of 12 tentacles. He however admitted that the calcareous ring was too damaged to confirm this but stated that the tentacles are simple with