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Revision of the genus *Phyrella* (Holothuroidea: Dendrochirotida) with the description of a new species from Guam

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Abstract

Recently collected material from Australia, Japan and Guam allowed us to revise *Phyrella* and describe *Phyrella mookiei* sp. nov. We redefine the genus based on combined morphological and molecular analyses. *Phyrella* unlike most dendrochirotids eviscerate posteriorly. The number of tentacles is variable (14–20), as is the degree of fragmentation of the calcareous ring, calling into question the separation of Phyllophorinae and Semperiellinae, and suggest that *Semperiella* and *Thyonidiella* are synonymous with *Phyrella*. We recognize five species in *Phyrella* (*Phyllophorus trapezus* Clark, 1932, *Phyllophorus fragilis* Mitsukuri & Ohshima, 1912 (synonymized with *Thyonidiella oceana* Heding & Panning, 1954), *Phyllophorus thyonoides* Clark, 1938, *Semperiella drozdovi* Levin & Stepanov, 1999, and *Phyrella mookiei*), assign three others provisionally (*Lipotrabeza ambigua* Cherbonnier, 1988 (synonymized with *Phyllophorus contractura* Cherbonnier, 1988 and *Thyonidiella cherbonnieri* Rowe & Richmond, 2004), *Phyllophorus bedoti* Koehler, 1895, and *Orcula tenera* Ludwig, 1875), considering the last two *species inquirenda*. *Phyrella aculeatus* (Ludwig, 1894), is transferred to *Euthyonidiella*. *Orcula* (*Phyllophorus?*) *dubia* Bedford, 1899, *Thyonidiella exigua* Cherbonnier, 1988 and *Thyonidiella kungi* O'Loughlin, 2012 are provisionally transferred to *Phyllophorus sensu lato*, the first is considered *species inquirenda*. Molecular phylogenetic analysis recovers a well-supported *Phyrella*, but suggests that some genera and subfamilies of Phyllophoridae are not monophyletic.

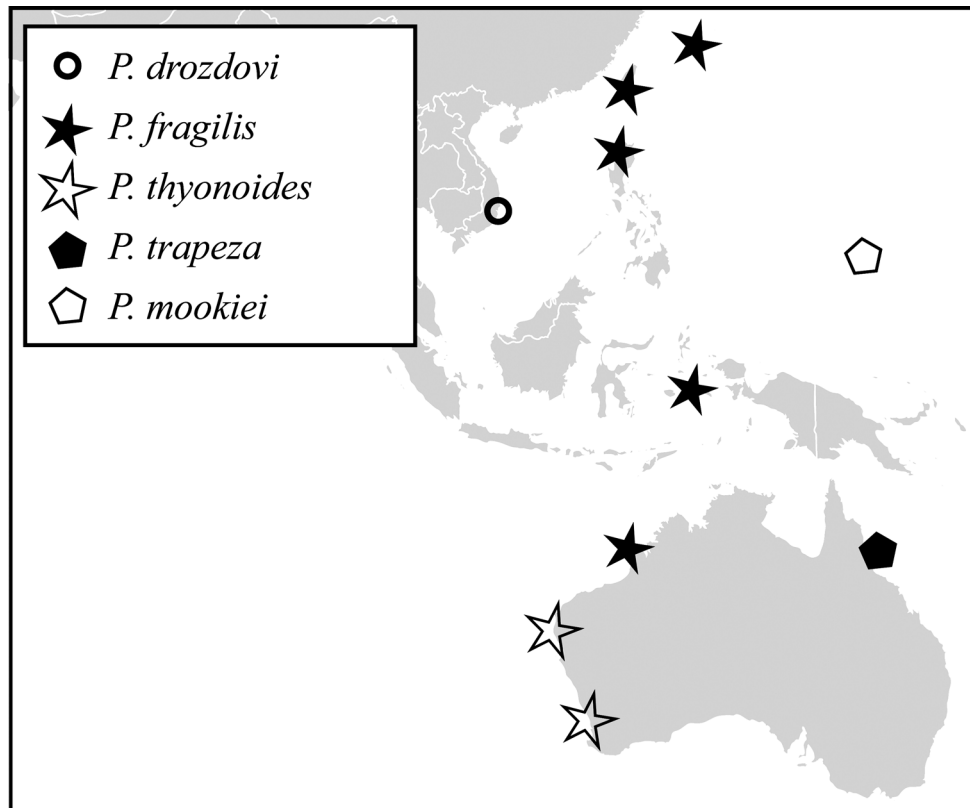


FIGURE 29. Distribution map of *Phyrella* species.

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