

<http://dx.doi.org/10.11646/zootaxa.3760.2.1><http://zoobank.org/urn:lsid:zoobank.org:pub:C0E4CA6E-6D93-477E-99F6-14FFB652A2A7>

## 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.

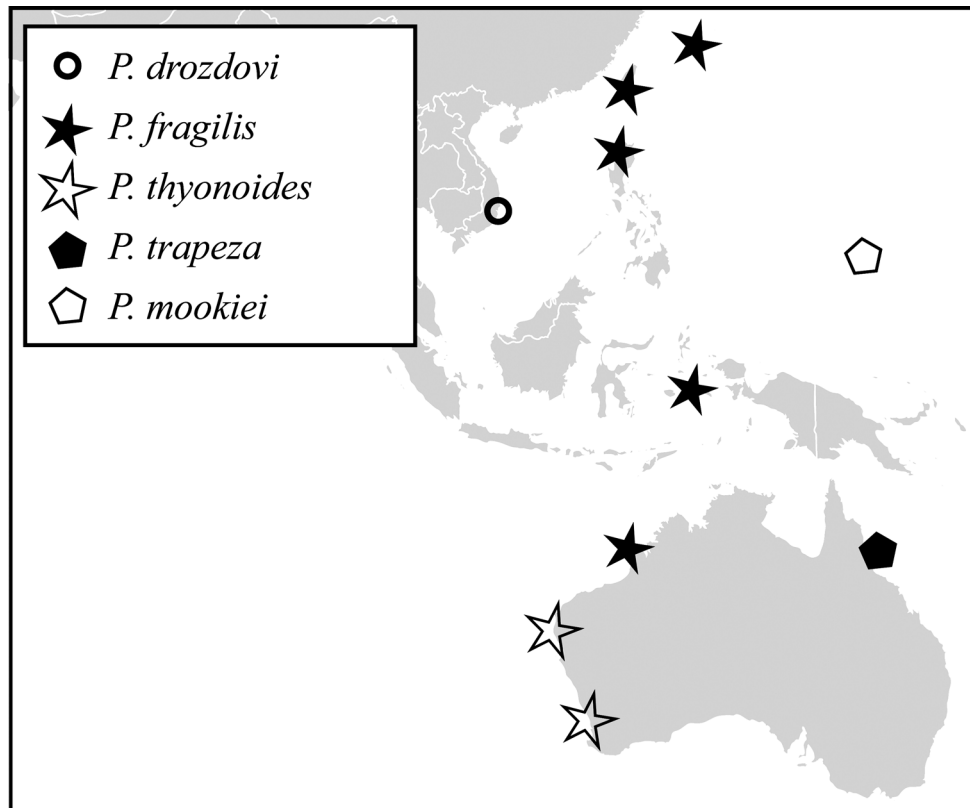


FIGURE 29. Distribution map of *Phyrella* species.

### Acknowledgements

Funding for this study was provided by National Science Foundation grants DEB- 0529724 (PEET project to Gustav Paulay and Alex Kerr) and DEB-1110653 (DDIG to François Michonneau). Specimens collected in Australia and deposited at UF used for this study were collected during the Census of Marine Life CReefs Australia. Specimens from Madagascar deposited at UF were collected during the BIOTAS expedition. We would like to thank Julian Caley and Shawn Smith (CReefs), Mireille Guillaume and Henrich Bruggemann (BIOTAS) for organizing these expeditions; Junko Inoue and Rei Ueshima for providing us with the photos and catalog numbers of the syntypes of *P. fragilis*; Annette Menez and Don Olavides for providing tissue samples and information regarding the biology of *P. fragilis* from the Philippines; Peter Schuchert from the Muséum d'Histoire Naturelle de Genève for providing the holotype of *P. bedoti*; Adam Baldinger from the Museum of Comparative Zoology for arranging the loan of types of *P. trapeza* and *P. thyonoides*; Nadia Ameziane and Marc Eleaume from the Muséum National d'Histoire Naturelle for arranging the loan of Cherbonnier's types; Claus Nielsen from the ZMUC for the holotype of *Thyonidiella oceana*; Mark O'Loughlin for discussions and providing us tissue samples of various Phylloporidae species; Tohru Naruse, James Reimer, Daisuke Uyeno, Yoshihisa Fujita, Masami Obuchi and Yoshida Ryuta for field assistance while in Okinawa, Japan; John Slapcinsky and Mandy Bemis for curatorial help at the FLMNH. Marc Eleaume, Mark O'Loughlin and one anonymous reviewer provided helpful comments that improved the manuscript.

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