

A New Genus and Two New Species of Caprellidae (Crustacea: Amphipoda) from Mesophotic and Deep-sea Waters of Australia

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ABSTRACT. Caprellids from mesophotic and deep-sea waters from Australia have been scarcely studied. A new genus *Pseudoliropus* gen. nov., and two new species *Pseudoliropus keablei* and *Pseudoprotella australiensis* sp. nov. are described based on material collected from 56 to 1125 m deep during surveys on board the vessels RV *Sprightly* (1973), FRV *Kapala* (1977–1986) and RV *Southern Surveyor* (2005) along the coast of the Northern Territory, Queensland, New South Wales, Victoria and Tasmania. *Pseudoliropus* is superficially very close to *Liropus* but can be readily distinguished by the absence of a mandibular molar (present in *Liropus*) and 2-articulate mandibular palp (3-articulate in *Liropus*). *Pseudoprotella australiensis* can be differentiated from all the remaining species of *Pseudoprotella* mainly on the basis of the unique body ornamentation (acute projection on the head, pereonites with abundant tiny tubercles scattered over the surface, and rows of lateral tubercles on the proximal end of pereonites 2–4). Further collections in deep ecosystems are mandatory to properly understand global amphipod diversity in Australian waters.

Introduction

The least known ocean regions occur below depths accessible to SCUBA diving and include mesophotic ecosystems and the deep sea (Woodall *et al.*, 2018).

The past several decades have seen interest in characterizing the biodiversity and ecology of mesophotic ecosystems, and in particular, mesophotic coral ecosystems (MCEs) (Bell *et al.*, 2018). These are communities of corals, sponges, algae, associated invertebrates and fishes that occur in the transition zone between well-lit surface waters and dark deeper waters, usually from 30–40 to 150 m deep (Abesamis *et al.*, 2018). The lower limit of the mesophotic

corresponds to the maximum depth at which there is sunlight penetration to support photosynthesis and, hence, the growth of zooxanthellate coral reefs (Hinderstein *et al.*, 2010). Some coral biologists divide the mesophotic into upper and lower portions, with a faunal transition of species around 60 m (see Baldwin *et al.*, 2018 and references therein). Unlike isolated lower mesophotic reefs (60–150 m), which contain many endemic species, upper mesophotic reefs (30–60 m) are inhabited by numerous shallow reef organisms threatened by local and global stressors, which find refugia in MCEs (Weinstein *et al.*, 2014). The increasing availability of remotely operated vehicles (ROV) and autonomous underwater vehicles (AUV) (e.g., Englebert *et al.*, 2017;

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