

The Cymonomid Crabs of New Zealand and Australia (Crustacea: Brachyura: Cyclodorripoida)

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ABSTRACT. The cymonomid crabs of New Zealand and Australia are revised. Prior to the present study, three species each were known from New Zealand and Australia, respectively. Here, eight new species are described and the six previously known species are redescribed and refigured based on type material. Although based on few locality records, the New Zealand species of *Cymonomus* show north-south distributions corresponding to the Aupourian and Cookian Provinces, respectively, demarcated by the subtropical convergence in the vicinity of the Chatham Rise. Notably, the New Zealand species, *C. clarki*, is the southernmost occurring cymonomid worldwide. Most Australian records of *Cymonomus* are from southern waters; few are known from northern Western Australia or Queensland, and none from the Northern Territory, probably reflecting limited sampling effort. One new species from Tasmania is unique in *Cymonomus* in having transparent, well-defined corneas, rather than opaque-translucent corneal surfaces that are undifferentiated from surrounding cuticle. The New Zealand and Australian species of *Cymonomus* belong to species groups that range widely in the Indo-West Pacific, or even globally; whether these groups represent natural divisions awaits revision of the Atlanto-East Pacific cymonomid fauna. A key to the species of *Cymonomus* from New Zealand and Australia is provided.

Introduction

The cyclodorippoidan crabs of the family Cymonomidae Bouvier, 1898 are small, cryptic forms usually occurring in deep outer shelf or slope waters. Phylogenetically, cymonomids (along with other cyclodorippoidans) are sister to the eubrachyurans (Ahyong *et al.*, 2007; Tsang *et al.*, 2014). Of the five recognized cymonomid genera, only *Cymonomus* A. Milne-Edwards, 1880 is known from New Zealand and Australian waters. Species of *Cymonomus* are characterized by elongate eyestalks that are fixed or only slightly movable, a quadrate carapace without functional orbits, reduced, sub-dorsal pereopods 4 and 5, and a pleotelson in both sexes (Ahyong *et al.*, 2009). Prior to the present study, 35

species of *Cymonomus* were known worldwide, with highest diversity in the Indo-West Pacific (Ng *et al.*, 2008; De Grave *et al.*, 2009; Ahyong & Ng, 2017). In the last decade, new species of *Cymonomus* have been described from Australia (Ahyong & Brown, 2003), New Zealand (Ahyong, 2008), the Philippines (Ahyong & Ng, 2009, 2011), East Africa (Ahyong, 2014) and East Asia (Ahyong & Ng, 2017). To date, six species of *Cymonomus* have been recorded from New Zealand and Australia (Dell, 1971; Griffin & Brown, 1976; Ahyong & Brown, 2002; Ahyong, 2008). Cymonomids are uncommon but deep-water sampling in the region, largely over the past two decades, by the National Institute of Water and Atmospheric Research, New Zealand (NIWA) and the Commonwealth Scientific and Industrial Research

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