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Review of the family Platyxanthidae Guinot, 1977 (Crustacea, Decapoda, Brachyura, Eriphioidea), with the description of a new genus and a key to genera and species

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Abstract

During recent studies of phylogenetic relationships within Eriphioidea (*sensu* Ng *et al.* 2008), we recovered molecular evidence that the genus *Platyxanthus* A. Milne-Edwards, 1863, was not monophyletic. This prompted detailed morphological examination of the group, which confirmed that clear differences in characteristics of the carapace, first male pleopod, antennae, antennules, epistome, abdomen, and thoracic sternum serve to separate the species of *Platyxanthus* into three distinct groups. Comparison of the type material of *Peloeus cokeri* (Rathbun, 1930), (formerly *Platyxanthus cokeri*) to *Peloeus armatus* Eydoux & Souleyet, 1842, indicated that *P. cokeri* is a junior synonym of *P. armatus* and that *Gordonoxanthus* Števc̆ić, 2011 (type species *Platyxanthus cokeri* Rathbun, 1930) is thus a junior synonym of *Peloeus*. *Danielethus* **n. gen.** is described to accommodate *Platyxanthus patagonicus* A. Milne-Edwards, 1863, and *Platyxanthus crenulatus* A. Milne-Edwards, 1863. A key to the known genera and species of the family Platyxanthidae Guinot, 1977 is provided.

Key words: Eriphioidea, Platyxanthidae, *Platyxanthus*, *Danielethus* **n. gen.**, *Gordonoxanthus*, *Otmaroxanthus*, *Peloeus*, taxonomy, new genus

Introduction

Alphonse Milne-Edwards (1863) erected the genus *Platyxanthus* to accommodate one species, *Platyxanthus orbigny* (H. Milne Edwards & Lucas, 1843), from the southeastern Pacific. Two southwestern Atlantic species (*Platyxanthus crenulatus* A. Milne-Edwards, 1879, and *Platyxanthus patagonicus* A. Milne-Edwards, 1879) were subsequently described. Alphonse Milne-Edwards' separation of the genus from typical xanthids was based upon the abdomen possessing six free (unfused) somites and telson, the basal antennal article not approaching the front, and the merus of the third maxilliped having an oblique distal margin. Despite considerable variation in morphologies of the carapace, antennae, and male pleopods (gonopods), A. Milne-Edwards concluded that the gross similarities of the abdomen, length of the basal antennal articles, and distal margin of the merus of the third maxilliped united these taxa. In her discussion of the Xanthidae MacLeay, 1838, based on the material deposited at the Muséum national d'Histoire naturelle in Paris (MNHN), Guinot (1968) pointed out that *P. crenulatus* and *P. patagonicus* differed from *P. orbigny* in the form of the buccal cavity, third maxilliped, first maxilliped, sternal plastron, and male first pleopod, but did not formally place them in separate genera.

Despite clear differences between *Platyxanthus cokeri* Rathbun, 1930, and *P. orbigny* in proportions of the third maxilliped merus, characteristics of the anterolateral teeth, and strength of the chelipeds, Rathbun (1930) chose to place *Platyxanthus cokeri* in *Platyxanthus* rather than erect a new genus. When reviewing *Platyxanthus* and *Peloeus* Eydoux & Souleyet, 1842, Guinot (1968) pointed out that *Platyxanthus cokeri* probably belonged to *Peloeus* and suggested that it may be a junior synonym of *Peloeus armatus* Eydoux & Souleyet, 1842.