



## On the Planopilumnidae Serène, 1984 (Crustacea: Brachyura: Pseudozioidea), with diagnoses of two new pilumnoid genera for species previously assigned to *Planopilumnus* Balss, 1933

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### Abstract

The taxonomy of the planopilumnid *Planopilumnus* Balss, 1933 (type species *Pilumnus spongiosus* Nobili, 1905) (Pseudozioidea), is revised. A junior synonym, *Rathbunaria* Ward, 1933 (type species *Rathbunaria sculptissima* Ward, 1933), is resurrected. Five species, *Pilumnus labyrinthicus* Miers, 1884, *Pilumnus vermiculatus* A. Milne-Edwards, 1873, *Pilumnus penicillatus* Gordon, 1930, *Planopilumnus minabensis* Sakai, 1969, and *Planopilumnus pygmaeus* Takeda, 1977, which have been described in or transferred to *Planopilumnus*, are here shown to be pilumnids (Pilumnoidea). Two new genera, *Vellumnus* and *Colerolumnus*, are established to accommodate these species.

**Key words:** Decapoda, Crustacea, Brachyura, Planopilumnidae, Pilumnidae, new genera, taxonomy

### Introduction

The systematic position of *Planopilumnus* Balss, 1933 (type species *Pilumnus spongiosus* Nobili, 1905) has been unclear for several decades. Although long regarded as a member of the Pilumnidae Samouelle, 1819, Crosnier (footnote in Serène 1984: 11) commented that Raoul Serène had realised that the type species of the genus *Planopilumnus* Balss, 1933, was unusual within the Pilumnidae, with different gonopodal structures, but nevertheless retained the genus (and his newly established subfamily Planopilumninae Serène, 1984) in the family.

The examination of the types and material of *Pilumnus spongiosus* in the Muséum national d'Histoire naturelle in Paris in the late 1980s confirmed that this species is in fact not a pilumnid but instead had many goneplacoid features. However, comparative studies showed that *Planopilumnus* was heterogeneous, with some of the species which had been placed in it by various workers (e.g. Balss 1933, 1938, 1957; Sakai 1969, 1976; Takeda 1977; Miyake 1983; Serène 1968, 1984) being true pilumnids and that two new genera needed to be established for them (see Ng 2003; Ng & Clark 2000a, b; Ng & Liao 2002; Ng & Ng 2003; Ng *et al.* 2001, 2008; Ng & Manuel-Santos 2007; Davie 2002). Although all these species superficially resemble each other with regards to their prominently pubescent carapaces, they had a very different arrangement of the male penis as well as diagnostic male first and second gonopods. The intention had always been to treat all these species in a larger revision of the Pilumnidae, but this exercise has taken far longer than hoped. As such, the pilumnids which has been originally classified in *Planopilumnus* have not yet been placed in new genera, with Ng *et al.* (2008) opting only to retain them in *Pilumnus* Leach, 1816, *sensu lato* for convenience. *Planopilumnus* and its allies have since been referred to the Planopilumnidae Serène, 1984, in the Pseudozioidea Alcock, 1898 (Ng *et al.* 2008).

The genus *Planopilumnus* is rediagnosed and figured herein. *Rathbunaria* Ward, 1933, long synonymised under *Planopilumnus*, is reinstated as a valid genus, its type species, *Rathbunaria sculptissima* Ward, 1933, differing markedly from *Planopilumnus spongiosus* in several key characters. Detailed diagnoses are