

**Hermit Crabs of the Family Parapaguridae  
(Crustacea: Decapoda: Anomura) from Australia:  
Species of *Strobopagurus* Lemaître, 1989,  
*Sympagurus* Smith, 1883 and Two New Genera**

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**ABSTRACT.** The deep-water parapagurid hermit crab fauna from Australia is much more diverse than previously believed. The most recent information on parapagurids (De Saint Laurent, 1972) indicated the presence of three species and one subspecies in this region. The study of numerous unidentified or unreported parapagurid materials deposited in various Australian museums revealed the presence of at least 21 species. With the exception of three species of the genus *Parapagurus* Smith, 1879, all other parapagurids known from Australia are discussed. The heterogeneous genus *Sympagurus* Smith, 1883, is revised and restricted. Two new genera, *Oncopagurus* and *Paragiopagurus*, are proposed for a number of species previously assigned to *Sympagurus*. Four new species were discovered and are described, *Sympagurus papposus*, *S. soela*, *S. villosus*, and *Oncopagurus cidaris*. Of the previously recognised species, those found to be poorly described in the literature are diagnosed and illustrated. The Australian material is compared with types and/or supplemental material from other regions of the Pacific deposited in major museums or institutions. The affinities and important morphological variations of the species are discussed, and the overall distributions of the species updated. The subspecies of *Sympagurus acutus* (De Saint Laurent, 1972) are elevated to specific rank, and assigned to *Paragiopagurus* n.gen. The juvenile stages of *S. brevipes* (De Saint Laurent, 1972), an abundant species that reaches a large size, is described, and compared with the adults. Keys for the identification of all parapagurid genera and Australian species (except those of *Parapagurus*), are presented. The distribution of the species is summarised.

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## Introduction

The Australian Museum zoologist, Thomas Whitelegge (1900: 135), in his account of the HMCS *Thetis* Expedition off the coast of New South Wales, remarked on the limited knowledge of the deep-water fauna from that coast, and accurately predicted that once it "has been thoroughly explored, there can be no doubt that its waters will be found as richly endowed with life as in any part of the world". In that same publication he described a new hermit crab in the family Paguridae, *Sympagurus diogenes* Whitelegge, 1900, a species that eventually would prove to be the first Parapaguridae known from Australian waters. Since then, few additions have been made to the parapagurid fauna of Australia. The use of the family Parapaguridae Smith, 1882, was abandoned by A. Milne Edwards & Bouvier (1893) and most subsequent carcinologists; however, some continued to use it. Hale (1941), for example, described in the

Parapaguridae three subspecific taxa, *Sympagurus arcuatus diogenes*, *S. a. johnstoni*, and *S. a. mawsoni*, from Tasmania and Macquarie Island. When De Saint Laurent (1972) reinstated the family Parapaguridae and presented a preliminary worldwide review of all known species, she synonymised Hale's *S. a. diogenes* with *Parapagurus diogenes*, and the other two subspecies with *P. dimorphus* (Studer, 1883). In De Saint Laurent's study, only three species and one subspecies were reported from the Australian region, all of which she placed in the genus *Parapagurus* Smith, 1879, i.e. *P. dimorphus* (Studer, 1883), *P. diogenes* (Whitelegge, 1900), *P. minutus* Henderson, 1896, and *P. pilosimanus latimanus* Henderson, 1888. Although in his revisionary studies, Lemaitre (1989, 1993) did not add any parapagurids to the Australian fauna, he did elevate *P. pilosimanus latimanus* to its original specific status, retaining it in *Parapagurus* (sensu Lemaitre, 1989), and assigned the remaining three species known from Australia at the time to the genus *Sympagurus* Smith, 1883.