Additions to the Indonesian fauna of the hermit crab genus

*Pseudopaguristes* McLaughlin and a further division of the genus

*Paguristes* Dana (Crustacea: Decapoda: Paguroidea: Diogenidae)

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Abstract

An in-depth study of the genera *Paguristes* Dana, 1851 and *Pseudopaguristes* McLaughlin, 2002 in Indonesian waters has resulted in refined hypotheses of some of the evolutionary trajectories within the Paguroidea. Not only has the observed reduction in pleurobranch and arthrobranch number in three species, *Paguristes hians* Henderson, 1888, *P. kuekenthali* De Man, 1902 and *P. monoporus* Morgan, 1987 required the transfer of these taxa to *Pseudopaguristes*, they, and two new species, have required an emendation of the genus itself. Additionally, the investigation has also revealed an...
intermediate evolutionary change that heretofore has gone unrecognized. In several, apparently less
derived, representatives of Paguristes, the characteristic gill number of 13 pairs (ten of arthro-
branches and three pleurobranches) has been reduced to 12, with the loss of the pleurobranch on the
wall of fifth thoracic somite. Only one of these recognized species, Paguristes tuberculatus
Whitelegge, 1900, occurs in Indonesian waters. The genus Stratiotes, Thomson, 1899, erected for
Pagurus setosus Filhol, 1885, a junior synonym of Paguristes setosus (H. Milne Edwards, 1848), is
reinstated because its type species has proved to have 12 pairs of gills. Three new species are
included in Stratiotes: S. micheleae n. sp., S. breviantennatus n. sp., and S. ngochoae n. sp. The new
species assigned to Pseudopaguristes are P. asper n. sp. and P. gracilis n. sp.

Key words: Crustacea, Anomura, Paguroidea, Diogenidae, Stratiotes, Pseudopaguristes, new spe-
cies, Indonesia

Introduction

Among members of Paguroidea (sensu Martin & Davis 2001) 14 pairs of gills are consid-
ered the plesiomorphic condition (McLaughlin 1983, Martin & Abele 1986), consisting of
a pair of well developed arthrobranches on each third maxilliped and cheliped and each of
the pereopods 2–4 with a single pleurobranch on the thoracic wall of somites 5–8 (above
pereopods 2–5). As far as is known, only genera of Pylochelidae and several genera of
Diogenidae have this condition. Until just recently, all genera of the Diogenidae were
thought to have either 14 or 13 pairs of gills. However, when McLaughlin (2002b) found a
significant reduction to eight pairs in a species superficially resembling Paguristes Dana,
1851, she recommended confirming the gill number of all species of Paguristes.

In the present study, most Indonesian species presumably assignable to Paguristes,
have the expected number of gills: 13 pairs. Four species, however, have only 12 pairs (the
pleurobranch on the thoracic wall of somite 5 is absent) and five species have only eight
pairs of gills. These findings led the author to examine other described species of the genus
Paguristes deposited in the Muséum national d’Histoire naturelle, Paris, France, and as a
result, all three conditions of gill number were found among species of Paguristes sensu
lato. Consequently, the gill number in all species assigned to Paguristes must be verified.
The type material of the type species of Paguristes, P. hirtus (Dana, 1851), by subsequent
selection by Stimpson (1858), is no longer extant. However, P. weddellii (H. Milne
Edwards, 1848) a species from western South America is in fact a senior synonym of P.
hirtus (cf. Haig 1956) and an examination of the holotype (MNHN Pg 1699) showed that
the species has 13 pairs of biserial branchiae. Accordingly, Paguristes is restricted to spe-
cies with 13 pairs of gills.

One of the described species of Paguristes sensu lato with 12 pairs of gills is P. setosus
(H. Milne Edwards, 1848). Thomson (1899) established Stratiotes for Pagurus setosus Fil-
hol, 1885, which is in fact synonymous with Paguristes setosus (H. Milne Edwards, 1848).
The confusion caused by misidentifications of P. setosus was discussed and resolved by