



***Hypselodoris jacksoni*, a new species from the south-western Pacific Ocean (Nudibranchia: Chromodorididae), with a discussion on intraspecific variation in mantle glands in *Chromodoris willani* Rudman, 1982**

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Abstract

A new species of *Hypselodoris* (Chromodorididae) is described from the subtropical and temperate south-western Pacific Ocean (eastern Australia, Lord Howe Island, Norfolk Island). The colouration of *Hypselodoris jacksoni* sp. nov. is distinctive, though highly variable intraspecifically. *Hypselodoris jacksoni* belongs to the Indo-Pacific *Hypselodoris* clade (for which the key synapomorphy is a minute receptaculum seminis) and, based on comparisons of internal and external morphology, appears to belong to a subclade characterised by an elevated branchial sheath, probably most closely related to *H. krakotoa* Gosliner & Johnson, 1999, *H. reidi* Gosliner & Johnson, 1999 and *H. regina* Ev. & Er. Marcus, 1970. Intraspecific variation in the arrangement of mantle glands in *H. jacksoni* prompted a pre- and post-fixation comparison of mantle glands in another chromodorid, *Chromodoris willani* Rudman, 1982. These results indicate these structures can vary significantly within a population (and thus species), and it is likely that too much emphasis has been placed on mantle glands for separating species in the recent literature.

Keywords: mantle glands, nudibranch, Opisthobranchia, Gastropoda, Mollusca

Introduction

Hypselodoris is a genus of anthobranch nudibranchs belonging to the numerically large family Chromodorididae. The definition and composition of *Hypselodoris* has been established following the nomenclatural, taxonomic and cladistic studies of Odhner (1957), Rudman (1984) and Gosliner and Johnson (1999). Approximately 66 species are presently recognised (Gosliner & Johnson 1999; Alejandrino & Valdés 2006), but much work is still required to elucidate the species groups, and on the relationship between *Hypselodoris* and *Risbecia*.

Species of *Hypselodoris* occur worldwide, predominantly in tropical seas. Gosliner and Johnson (1999) hypothesise that two clades are present within *Hypselodoris*; one in the Indo-Pacific Ocean and the other in the Atlantic and eastern Pacific Oceans. Although the Atlantic/eastern Pacific clade is monophyletic, the relationships between the included species are complicated with regard to biogeography (Alejandrino & Valdés 2006). The new species described here, *Hypselodoris jacksoni*, belongs to the Indo-Pacific clade (by possession of a minute receptaculum seminis), and occurs in subtropical and temperate south-western Pacific Ocean waters, south of the Tropic of Capricorn.

During our examination of *Hypselodoris jacksoni*, the paratype was noted to have an arrangement of mantle glands that disagreed with the current definition of the genus. As all the material for *H. jacksoni* was