



Two new species of *Okenia* (Gastropoda: Nudibranchia: Goniodorididae) from eastern Australia and Tanzania

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Abstract

Two new species of the nudibranch genus *Okenia* Menke, 1830 (Goniodorididae) are described, one from eastern Australian waters and one from the western Indian Ocean. *Okenia atkinsonorum* **sp. nov.** is the third Australian species reported to feed on the bryozoan *Pleurotoichus clathratus* (Harmer, 1902) and is very similar in external shape and colour to the other two species, *O. hallucigenia* Rudman, 2004 and *O. stellata* Rudman, 2004. *Okenia rhinorma* **sp. nov.** is reported from Tanzania and the Red Sea. Its body shape and anatomy suggest it is related to the ascidian-feeding group in the genus characterised by *O. aspersa* (Alder & Hancock, 1845).

Key words: Mollusca, Bryozoa, *Pleurotoichus*, Indo-West Pacific

Introduction

In recent years, species of the goniodorid genera *Okenia* Menke, 1830, *Sakishimaia* Hamatani, 2001, *Hopkinsiella* Baba, 1938 and *Hopkinsia* MacFarland, 1905 have been studied by a number of authors and Gosliner (2004) synonymised all genera with the oldest name, *Okenia*. In that year, fifteen new species of *Okenia* were described and the anatomy of another twenty five species re-examined (Camacho-Garcia & Gosliner 2004, Gosliner 2004, Gosliner & Bertsch 2004, Rudman 2004). Although these studies have advanced our knowledge of the anatomy and biology of these animals considerably, we still have much to learn about their phylogenetic relationships to each other. For example, the genera *Sakishimaia*, *Hopkinsiella* and *Hopkinsia* were all proposed for representatives of a group of pink species with very unusual radular morphology, including two pairs of species with the same food bryozoan (Rudman 2004). In subsequent studies of one of these species pairs in eastern Australia (*O. hallucigenia* Rudman, 2004 and *O. stellata* Rudman, 2004), a third species has been discovered feeding on the same food bryozoan, *Pleurotoichus clathratus* (Harmer, 1902).

Although very little is known about the biology of most species of *Okenia*, those for which we have information (Rudman 2004) are specialist feeders on particular species of bryozoan. There is a small group of species, with relatively high bodies, similar in shape to species of *Goniodoris* Forbes & Goodsir, 1839, that feed on ascidians. Although nothing is known of the biology of the second species described here, its very similar shape and anatomy, suggests it is most probably an ascidian feeder.

Material and methods

Both species were seen by me alive and were photographed alive. Full dissections of the general anatomy, and in particular the alimentary canal and reproductive system, were conducted. The morphology of the radular