



***Grania* (Annelida: Clitellata: Enchytraeidae) of the Great Barrier Reef, Australia, including four new species and a re-description of *Grania trichaeta* Jamieson, 1977**

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Abstract

This study describes the fauna of the marine enchytraeid genus *Grania* at two locations on the Australian Great Barrier Reef: Lizard and Heron Islands. Collections were made from 1979 to 2006, yielding four new species: *Grania breviductus* sp. n., *Grania regina* sp. n., *Grania homochaeta* sp. n. and *Grania colorata* sp. n.. A re-description of *Grania trichaeta* Jamieson, 1977 based on new material is also included, along with notes and amendments on *G. hyperoadenia* Coates, 1990 and *G. integra* Coates & Stacey, 1997, the two latter being recorded for the first time from eastern Australia. COI barcode sequences were obtained from *G. trichaeta* and *G. colorata* and deposited with information on voucher specimens in the Barcode of Life database and GenBank; the mean intraspecific variation is 1.66 % in both species, while the mean interspecific divergence is 25.54 %. There seem to be two phylogeographic elements represented in the Great Barrier *Grania* fauna; one tropical with phylogenetic affinities to species found in New Caledonia and Hong Kong, and one southern (manifested at the more southerly located Heron Island) with affinities to species found in Southern Australia, Tasmania and Antarctica.

Key words: *Grania*, taxonomy, Great Barrier Reef, Australia, Oligochaeta, Clitellata, Enchytraeidae, meiofauna, interstitial fauna, biogeography

Introduction

The clitellate genus *Grania* (family Enchytraeidae) has a history similar to that of many other marine meiofaunal organisms. Established in 1913 for the marine taxon *G. maricola* Southern, 1913, the genus was long considered monospecific until Lasserre (1966) transferred *Michaelsena postclitellochaeta* Knöllner, 1935 to *Grania*. The same year, Kennedy (1966) transferred *Enchytraeus macrochaeta* Pierantoni, 1901 to *Grania*, while also adding a new species, *G. americana*, to the genus. Subsequently, *G. macrochaeta* and *G. postclitellochaeta* were both considered as consisting of several subspecies (Lasserre, 1967; Erséus, 1974; Erséus & Lasserre, 1976; Jamieson, 1977). In the late 1970s, with increasing numbers of species being described from many different locations in the world and increasingly refined studies of morphological variation within and between species and subspecies, it became clear that the differences between the subspecies warranted that they be elevated to separate species (Erséus, 1977; Erséus & Lasserre, 1977; Coates & Erséus, 1980; Coates, 1984; Coates & Erséus, 1985). With increasing awareness of the need for greater morphological detail in species determination, the number of species in the genus increased, and today it is clear that *Grania* is composed of a high number of species, most of which with a limited geographical range. To date, 67 species have been described, with many more waiting to be found.