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## Nephtyidae (Annelida: Phyllodocida) of Lizard Island, Great Barrier Reef, Australia

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### Abstract

Seven species of the family Nephtyidae are recorded from Lizard Island, none previously reported from the Great Barrier Reef. Two species of *Aglaophamus*, four species of *Micronephthys*, one new and one previously unreported from Australia, and one species of *Nephtys*, were identified from samples collected during the Lizard Island Polychaete Workshop 2013, as well as from ecological studies undertaken during the 1970s and deposited in the Australian Museum marine invertebrate Collections. A dichotomous key to aid identification of these species newly reported from Lizard Island is provided.

**Key words:** Taxonomy, Queensland, polychaetes, dichotomous key

### Introduction

The family Nephtyidae is a group of benthic polychaetes which commonly occurs worldwide at all depths (Wilson 2000; Ravara *et al.* 2010a, b), although more species have been recorded burrowing subsurface in sandy and muddy bottoms from shallow waters than in other habitats. They are mostly considered to be carnivorous predators but a few species may be subsurface deposit feeders (Wilson 2000; Rouse & Pleijel 2001; Jumars *et al.* 2015). Currently, there are five accepted genera found worldwide: *Aglaophamus*, *Inermonephthys*, *Micronephthys*, *Nephtys* and *Bipalponephthys*, with 129 described species (WoRMs 2015). Although there is some ambiguity about the validity of *Bipalponephthys* (Dnestrovskaya & Jirkov 2010; Ravara 2011; Jirkov & Dnestrovskaya 2012; Dnestrovskaya 2013; Read 2015), and acceptance of synonymy of the genus *Dentinephthys* with *Nephtys* by Ravara *et al.* (2010a) (Alalykina & Dnestrovskaya 2015) there appears to have been no resolution to date. The most diverse genera both worldwide and in Australia are *Aglaophamus* and *Nephtys*, with eight and seven species now known in Australia respectively. *Micronephthys* is represented in Australia by three species and *Inermonephthys* by two species (Dixon-Bridges *et al.* 2014) whereas *Bipalponephthys* has not yet been reported from Australia.

The first recorded Australian species of nephtyid was *Nephtys longipes* Stimpson 1856 described from Botany Bay, New South Wales (NSW). Subsequent studies by Augener (1913, 1922), Benham (1915, 1916), Fauchald (1965), Rullier (1965), Knox & Cameron (1971), Paxton (1974), Rainer & Hutchings (1977) and Rainer & Kaly (1988) described additional Australian species. Most recently, Dixon-Bridges *et al.* (2014) described another two species—a species of *Micronephthys* from NSW, and a species of *Nephtys* from sandy beaches of NSW and Queensland—bringing the total number of nephtyid species recorded from Australia to twenty.

However, although some studies have recorded nephtyids from along the tropical Queensland mainland coast (Stephenson *et al.* 1970, 1974; Rainer & Hutchings 1977), no publications have yet recorded nephtyids from Lizard Island, or indeed, anywhere on the Great Barrier Reef. Hartmann-Schröder (1991) reported no nephtyids from Heron Island (located in the southern Great Barrier Reef) in her publication of polychaetes from Queensland.

Some previous ecological studies undertaken at Lizard Island by Australian Museum (AM) staff have led to the deposition of specimens into the AM collections (including nephtyid polychaetes), e.g., Jones & Short's benthic study in 1977–78 (Jones 1984). These specimens, as well as the recent collections made during the Lizard Island Polychaete Workshop in August 2013, were examined to provide the basis for the species reported in this present paper.