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New and poorly known species of *Neonesidea* (Bairdiidae, Ostracoda, Crustacea) from French Frigate Shoals, the Hawaiian Islands

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Abstract

Neonesidea tenera and four new species (*N. plumulosa, N. holdeni, N. bacata, N. edentulata*) are described from scrapings of spur and groove habitats on French Frigate Shoals and O'ahu, Hawaiian Islands. Some anatomical details have potential taxonomic significance for the genus *Neonesidea*, including the caudal setae of the carapace, the masticatory apparatus, and the antennal claw.

Key words: Ostracoda, Bairdiidae, *Neonesidea*, Hawaiian Islands

Introduction

The marine Ostracoda of the Hawaiian Islands are poorly known, and the Bairdiidae especially so. Although Bairdiidae contribute substantially to the diversity of shallow-marine tropical assemblages, especially on coral reefs, relatively few species have been described from the Hawaiian Islands. All of the existing records are based on empty valves and carapaces, and the taxonomic affinities of many species remain uncertain.

The present study describes five new and poorly known species of the genus *Neonesidea* collected from spur and groove habitats on French Frigate Shoals and O'ahu in the Hawaiian Islands (Fig. 1). These include *N. tenera* (Brady, 1886), which has been identified previously at scattered localities but never as a living population (Brady 1886, Maddocks 1969, Whatley *et al.* 2000).

In spite of the ubiquity and diversity of the Bairdiidae in modern faunas, the biology of the living animals is poorly understood. The schematic explanations of the digestive and reproductive systems by Müller (1894, summarized by Hartmann 1967) are based on only two or three species. Ontogeny has been documented for only a couple species (Müller 1894, Smith & Kamiya 2002). Population variability, age-class structure, and responsiveness to environmental influences remain largely uninvestigated. Potentially useful taxonomic characters are undocumented for many species.

Neonesidea is a diverse, cosmopolitan genus in shallow sublittoral and reefal environments with more than 100 named species (living and fossil). Maddocks (1969, 1995, Nosy Be), Titterton & Whatley (1988a, Solomon Islands) and Weissleader *et al.* (1989, Micronesia) each reported 8 co-occurring species of *Neonesidea* (some in open nomenclature). This level of diversity appears to be reasonable for larger atolls and well-sampled lagoons and platforms (contrary to Eagar 1998, 1999). Table 1 lists 38 species of *Neonesidea* for which appendage and genital anatomy has been described (incompletely for most). Although Maddocks (1995) clarified the taxonomic concept of the genus *Neonesidea* and provided additional detail about carapace structures, more comprehensive anatomical documentation is needed. This report is a small step in that direction.

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