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New and poorly known species of *Bairdoppilata* and *Paranesidea* (Bairdiidae, Ostracoda) from French Frigate Shoals and O'ahu, the Hawaiian Islands

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Abstract

Bairdoppilata scaura, n. sp. and five species of *Bairdoppilata* and *Paranesidea* in open nomenclature are described from encrusting communities on French Frigate Shoals and Kane'ohē Bay, Oahu, Hawaiian Islands. Some poorly documented anatomical traits (carapace setae, hingement, antennal claws, genitalia) are examined for their potential taxonomic significance, in order to confirm the coherence of the Genus *Bairdoppilata* and to explore its diversity.

Key words: Ostracoda, Bairdiidae, *Bairdoppilata*, *Paranesidea*, Hawaiian Islands, chaetotaxy, zygum

Introduction

The relationships of Pacific Bairdiidae (Ostracoda, Podocopida) are poorly delineated at present, because most species have been described on the basis of empty carapaces from dried sediment samples, and little is known of their soft anatomy and life habitats. The taxonomic status of species of Bairdiidae reported from the Hawaiian Islands was summarized by Maddocks (2013), who also redescribed *Neonesidea tenera* (Brady, 1886) and described four new species of *Neonesidea* from French Frigate Shoals. The following report describes six additional species of Bairdiidae from the same suite of samples, which are assigned to the genera *Bairdoppilata* and *Paranesidea*.

The samples represent spur and groove environments on the barrier reefs of French Frigate Shoals, as well as patch reefs and coastal fouling communities of Kane'ohē Bay, O'ahu. The specimens were collected by hand scraping from hard surfaces, coralline rubble and macroalgae. The sampled localities are described in Appendix I and Figure 1. For more maps of the localities and description of collecting methods see Coles *et al.* (2002a, 2002b), DeFelice *et al.* (2002), and Kornicker *et al.* (2007). The samples are part of the same collection from which Kornicker *et al.* (2007) reported the Myodocopina Ostracoda.

French Frigate Shoals is an atoll, consisting of a 32-km long, crescent-shaped reef and lagoon on an almost submerged seamount in the Hawaii-Midway chain, 900 km northwest of Honolulu and about the same distance southeast of Midway Island (Fig. 1). It is part of the Hawaiian Islands National Refuge and a National Marine Sanctuary within the Papahānaumokuākea Marine National Monument.

Kāne'ohē Bay is a sheltered embayment of about 55 km² behind a barrier reef, located on the northeast shore of the island of O'ahu. This ecosystem has been influenced over the last century by coastal population growth, a Marine Corps base, shipping and aquaculture, and it now includes a substantial number of invasive, nonindigenous invertebrate and algal species (Coles *et al.* (2002a).

Four species of *Bairdoppilata* and two species of *Paranesidea* are represented in these collections (Table 1, Fig. 2). The number of individuals per sample is small, and many are females and juveniles. Unfortunately, all specimens are partly or entirely decalcified by storage in preservative, and many have secondary crystalline encrustations and infillings (Figs. 13A, 17K, 20A, 21A). None could be observed dry or by SEM. The identification of such material is troublesome, but it is unwise to ignore the fragmentary information that they can provide. It is hoped that entering these incomplete observations into the published record will facilitate more informed comparisons in the future.