



Uca jocelynae sp. nov., a new species of fiddler crab (Crustacea: Brachyura: Ocypodidae) from the Western Pacific

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Abstract

A new species of fiddler crab, *Uca jocelynae* sp. nov., belonging to the *U. vocans* complex, is described from the islands in Western Pacific on the basis of morphological and molecular data. The new species was previously identified with *U. neocultrimana* (Bott, 1973) (= *U. vocans pacificensis* Crane, 1975). The two species can be readily distinguished by characters of the male major chelae, carapace features, and the form of the vulvae. The molecular data of parts of the mitochondrial 16S rRNA and cytochrome oxidase I (COI) genes support that both are sister taxa but nevertheless distinct enough to be regarded as separate species. *Uca jocelynae* is widely distributed from the islands in the Western Pacific, while *U. neocultrimana* occurs in Fiji and eastwards.

Key words: *Uca jocelynae*, *U. neocultrimana*, *U. vocans* complex, Western Pacific islands, 16S rRNA, cytochrome oxidase I, taxonomy

Introduction

Fiddler crabs (genus *Uca*) are common on the intertidal of mudflats and mangroves in tropical and subtropical regions (Crane 1975). About 100 species have been recognized for the genus (Crane 1975; Beinlich & von Hagen 2006; Ng *et al.* 2008). It is also the only large brachyuran genus in which a large proportion of the species have been studied phylogenetically (see Rosenberg 2001). Crane's (1975) milestone monograph on fiddler crabs revised in detail the taxonomy of *Uca* from the world, and remains a landmark reference for all students of the group. Unfortunately, some of her names are junior synonyms of taxa which Bott (1973) described only a few years earlier (see von Hagen 1976; Rosenberg 2001; Beinlich & von Hagen 2006). While Crane's classification is not always in line with modern systematic thinking, many of her groupings are still useful, as is her *Uca lactea* complex ("subspecies" under *U. lactea* of Crane 1975, see Shih *et al.* 2009), "*Uca (Thalassuca)*" (= *Uca (Gelasimus)*) (left-handed taxa, except for *U. formosensis*, see Shih *et al.* 1999), *Uca (Afruca)* (for *U. tangeri*, see Spivak & Cuesta 2009), and Australian fiddler crabs (five species assemblages, see George & Jones 1982). Crane (1975) substantially stabilized the taxonomy of *Uca* and only six species have been added since 1975: three from North America, one from South America and two from Australia (Rosenberg 2001: Table 3); the latest new species being by von Hagen (1987).

The DNA sequences of the mitochondrial large subunit (16S) rRNA and cytochrome oxidase subunit I (COI) have proven to be useful markers for suggesting species boundaries and phylogeny of crustaceans (e.g., Shih & Suzuki 2008; Shih *et al.* 2009; Davie *et al.* in press for studies of intertidal crabs). A species formerly identified as *U. neocultrimana* (Bott, 1973), is herein described as new based on both morphological and molecular evidence.