



Tanaidacea (Crustacea: Peracarida) from Japan. IV. Shallow-water species from Akajima with notes on the recolonization potential of tanaids

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Abstract

Two new species of tanaids were collected from colonization traps deployed in a shallow water, sandy habitat off Akajima, Nansei Islands. One new parapseudidaen, *Parapseudes arenamans*, and one new nototanaidaen genus and species, *Paranesotanais longicephalus*, are described herein. A preliminary phylogenetic analysis of the closest genera confirms the validity of the new genus and suggests a close affinity between the Leptocheliidae and Nototanaidae. *Paranesotanais longicephalus* was by far the most abundant species in the habitat. *Parapseudes arenamans* is faster in colonization of vacant substrate (opportunistic species), while being an inferior competitor to *Paranesotanais longicephalus* later in succession. A key to *Nesotanais* and *Paranesotanais* is provided.

Key words: Tanaidacea, Nototanaidae, Parapseudidae, *Parapseudes*, *Paranesotanais*, Colonization potential, Japanese fauna

Introduction

This is the fourth of a series of taxonomical and systematical papers on the Tanaidacea from Japanese waters. This study reports on the shallow water infauna from Akajima, Nansei Islands, see Larsen and Shimomura (2006, 2007) for an overview of the shallow water tanaids in Japanese waters along with previously published literature.

Previous in situ recolonization experiments on soft bottom have been conducted using different techniques. Either using natural (Rees et al. 1977) or artificially induced (Sherman & Coull 1980) defaunations, either of whole patches of sea bed or smaller experimental areas using various types of sediment trays as collector (Levin & Smith 1984). Unfortunately most experiments have either excluded tanaids or used sampling techniques unsuitable for recording tanaid colonization.

Some experiments used artificial sediment in some form or another; either ‘completely’ artificial such as ‘drill mud’, glass beads (Scheibel & Rumohr 1979), or sediment collected from a different habitat (Desbroyères et al. 1980) or sediment which have been frozen (Grassle & Grassle 1974, Grassle 1977, Levin & Smith 1984, Grassle & Morse-porteous 1987). Artificial sediment obviously does not reflect the natural situation and sediment from different habitat have inherent biases. Factors such as sediment grain size, nutrition value, and other physical parameters, varies greatly from microhabitat to microhabitat, and can have a profound influence on the composition of the fauna (Snelgrove & Butman 1994). This condition is particularly important for the tanaids which selects particles for both feeding and tube construction (Krasnow & Taghon 1997). Frozen sediment is not ideal either because the presence of dead animals will favours scavengers and is also introducing an ‘unnaturally’ high nutrition value to the sediment (Smith 1985). This possibility is con-