

# The Beach-hopper Genus *Platorchestia* (Crustacea: Amphipoda: Talitridae) on Atlantic Ocean Coasts and on those of Associated Seas

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**ABSTRACT.** Five species of *Platorchestia* Bousfield, 1982, are described and figured from Atlantic Ocean shores (including the Caribbean, Baltic, and Mediterranean seas). Four of these are new to science. All five species had previously been illustrated in the literature but four of them had incorrectly been allocated to either *Orchestia platensis* Krøyer, 1945 or *O. monodi* Mateus, Mateus & Afonso, 1986.

## Introduction

The genus *Platorchestia* Bousfield, 1982, is widespread on shores of the Atlantic Ocean (including the Caribbean, Baltic, and Mediterranean seas) where it has been reported from South America, Central America, the Caribbean, the Gulf of Mexico, North America, Bermuda, Canada, the United Kingdom, the Baltic, the Mediterranean, Nigeria, and South Africa. All recorded examples attributable to the genus *Platorchestia* in the Atlantic had previously been assigned to either *Orchestia platensis* Krøyer, 1845 (including as *Platorchestia platensis*) or to *Orchestia monodi* Mateus, Mateus & Afonso, 1986. An examination of material from around Atlantic shores has revealed that in the Atlantic Ocean there is a complex of at least five cryptic species in the genus *Platorchestia*. These are *P. platensis*, *P. oliveirae* sp. nov., *P. exter* sp. nov., *P. negevensis* sp. nov. and *P. griffithsi* sp. nov. Males of these species develop an incassate pereopod 7 that only reaches its terminal development in hyperadult males. These are sexually mature males that have continued to develop secondary sexual characters to a complexity that is beyond that of the normal mature male. The terminal

morphology of the carpus of the male pereopod 7 is species specific, but since hyperadult males may be quite rare in a population, further character states need to be examined for the purposes of identification. *Platorchestia* also occurs on the Australian plate (*P. paraplatisensis* Serejo & Lowry, 2008 and *P. smithi* Lowry, 2012) the Pacific plate (*P. ano* Lowry & Bopiah, 2013) and the Asian plate (*P. munmui* Jo, 1988, *P. pachypus* Derzhavin, 1937, *P. pacifica* Miyamoto & Morino, 2004).

Hupalo & Grabowski (2018) present support for close genetic relatedness between populations of putative *P. platensis* on either side of the Atlantic, based on the mitochondrial cytochrome oxidase subunit 1 (CO1) gene. Falk *et al.* (2022) showed that CO1 sequences can be excellent at supporting the hypothesis that two taxa are different species, but can fail to reveal much difference between what are patently different, but closely related species. Falk *et al.* (2022) cite the case of two Nomad bees that are clearly separate species based on good morphological and ecological differences, but which cannot be distinguished by CO1. Henzler & Ingolfsson (2007) considered that there was little genetic distance, based on CO1, between Icelandic

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