



Wood-boring limnoriids (Crustacea, Isopoda) including a new species from mangrove forests of the Tukang Besi Archipelago, Indonesia

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Abstract

In a survey of the fauna inhabiting fallen wood in *Rhizophora*-dominated forests of an archipelago of small islands to the south of Sulawesi, in Indonesia, four species of limnoriid (*Limnoria insulae*, *L. pfefferi*, *L. sellifera* new species and *L. unicornis*) were found feeding on the wood. *L. sellifera* is characterised by a saddle-shaped pleotelson that is smaller than pleonite 5, transverse rows of teeth-like tubercles dorsomedially on pleonites 2–4 and a uropod with relatively small exopod, two rows of pointed tubercles on the peduncle, and one row on the endopod. *L. sellifera* is the second species of *Limnoria* to be found exclusively on mangrove wood. The cephalon and pereon of the four species of limnoriids are anatomically similar, but they differ markedly in features of pleonite 5, the pleotelson and the uropods.

Key words: Limnoriidae, *Limnoria insulae*, *Limnoria sellifera* new species, *Limnoria pfefferi*, *Limnoria unicornis*, *Rhizophora*, *Bruguiera*

Introduction

The isopod family Limnoriidae contains three genera of borers that feed upon plant and algal materials that grow in or drift into the sea. *Paralimnoria* is the most plesiomorphic genus with two species of wood borers, *Lynseia* has three species of seagrass borers, and the 54 described species of *Limnoria* include wood borers (28 species), algal borers (21 species) and seagrass borers (5 species) (Cookson 1991; Cookson & Poore 1994; Castelló 2011). Wood boring species can cause significant damage to man-made structures in the sea (Cookson 1999; Cragg 2003). The seagrass borers may also cause widespread damage to seagrass, although their presence is not necessarily detrimental to healthy seagrass communities (Brearley *et al.* 2008).

Despite widespread distribution of wood-boring limnoriids in tropical waters, wood from mangrove forests appears to be underrepresented as a substrate for Limnoriidae. The tropical Central American species *Limnoria clarkae* (Kensley & Schotte, 1987) has been found in dead mangrove wood and soft uncorticated mangrove roots (Ellison & Farnsworth 1990), while *Limnoria cristata* Cookson & Cragg 1991 was found in a wooden plank within a mangrove forest in Singapore, so may also live in fallen mangrove wood. Non-mangrove-specialist limnoriids have been found in mangrove wood in New Guinea (Cragg 2007). Here we report the presence of four species of limnoriid, one of which is new to science, in mangrove wood.

During an extensive study of fallen wood in mangrove forests of the Tukang Besi Archipelago, Indonesia and of the role of marine wood boring invertebrates in mangrove ecosystem functioning (Cragg & Hendy 2010), specimens of Limnoriidae were collected. The well-known species *Limnoria pfefferi*, *L. unicornis* and *L. insulae* were identified along with an undescribed limnoriid. This paper describes the new species collected and shows features of the other species that are not apparent in the published descriptions. Types are deposited with the Museum Zoologicum Bogoriense, Indonesia (MZB) and the Museum Victoria, Australia (NMV).

Specimen collection sites. Five small mangrove forests within the central islands of the Tukang Besi Archipelago were investigated for this study. The Langira mangrove is on the island of Kaledupa and the Kaluku, Loho, Gili and One Onitu mangroves are on the islands of Derawa. The forests were dominated by members of the Rhizo-