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Description of eleven new *Triplectides* species (Trichoptera: Leptoceridae) from New Caledonia

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Table of contents

Abstract

The Oceanian country of New Caledonia has been shown to have a great diversity of Trichoptera, but prior to this work only 3 species from the large Leptoceridae genus *Triplectides* were known from there. Extensive sampling on the main island, Grande Terre, revealed 11 new species in the genus, as well as a male of the seemingly widespread species *Triplectides australis*. These 11 new species are here described and illustrated, and a key to males of the New Caledonian *Triplectides* species is provided. The new species are: *T. mouiensis*, new species; *T. abnormalis*, new species; *T. minutus*,

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new species; *T. noumeiensis*, new species; *T. tigrinus*, new species; *T. koghiensis*, new species; *T. wardi*, new species; *T. nathaliae*, new species; *T. mariannae*, new species; *T. dawnae*, new species; *T. aequalichelatus*, new species. Fifteen species within the genus are now known from New Caledonia; relative to land mass, this is a high diversity compared to the 25 species recorded from Australia.

Key words: Trichoptera, Leptoceridae, *Triplectides*; new species; New Caledonia

Introduction

The Leptoceridae are divided into the two subfamilies Leptocerinae Leach and Triplectidinae Ulmer. *Triplectides* Kolenati, 1859 is the most species-rich genus within the Triplectidinae. The genus is classified in the tribe Triplectidini Ulmer, 1906 together with the genera *Lectrides* Mosely, *Notoperata* Neboiss, *Symphitoneuria* Ulmer, *Symphitoneurina* Schmid, *Triplectidina* Mosely and *Westriplectes* Neboiss, a classification that is supported by a phylogenetic study by Morse & Holzenthal (1987). These authors suggested that *Lectrides*, *Symphitoneuria*, *Symphitoneurina* and *Triplectidina* should be synonymised with *Triplectides*, on the basis of overall similarity and the shared character state of a long forewing thyridial cell indicating an evolution of each of these genera within the *Triplectides*, rendering this genus paraphyletic. This view has not been widely adopted, but future phylogenetic studies may shed light on this matter. So far more than 60 species have been described or subsequently placed in *Triplectides* based mainly on wing and genitalic characteristics (Mary & Ward 2001). The extant species of the genus occur over large parts of the Southern Hemisphere e.g. Central and South America, Southern-East Asia (India to Japan), with the highest diversity recorded in the Oceanian Region, with 25 species described from Australia (Morse & Neboiss 1982).

The genus is most easily distinguished from the other Triplectidini genera by an apically broad and usually posterad extending discoidal cell, a thyridial cell twice or three times as long as the discoidal cell in the forewing, together with the inferior appendages having mesal and basoventral processes/lobes. The tibial spur formula is mostly 2:2:4, but reductions in number of spurs is not uncommon. Fork 1 is usually present in the hind wing, except in a few species, e.g. *Triplectides volda* Mosely and *Triplectides chilensis* Holzenthal (Morse & Neboiss 1982; Holzenthal 1988)

The New Caledonian *Triplectides* fauna has so far been shown to include the three species described by Mary & Ward (2001), namely *Triplectides sasali*, *Triplectides smithi* and *Triplectides winstanleyi*. Adding to these, we here describe 11 new species of the genus, and present a record of the seemingly widespread *Triplectides australis* Navás, 1934 formerly known from large parts of Australia as well as from Vanuatu (Espeland, leg.) (see also Morse & Neboiss 1982). Many of these new species lack the typical *Triplectides* characteristics of posteriorly extended apical part of the forewing discoidal cells and presence of fork 1 in the hind wings.

Material and methods

This study is based on rigorous sampling on the New Caledonian main island, Grande Terre, during the years 2001, 2003–2004 and 2006. Samples were collected using Malaisetraps and light traps and by hand netting, in more than 130 separate localities spanning the entire island. The collected specimens were stored in 80% alcohol.

The males were determined and sorted for description. Wing and genitalic characters were used for discerning the species as well as number of tibial spurs. For illustration, wings were removed and transferred from ethanol to glycerol and mounted on slides. Whole abdomens were macerated in proteinaseK for 2.5 hours and subsequently heated in KOH solution before being mounted temporarily in Euparal on microscope