



New *Cardiodactylus* species from unsuspected places in Southeast Asia (Orthoptera, Grylloidea, Eneopterinae)

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Abstract

Two new species of *Cardiodactylus* crickets are described from unsuspected places in Southeast Asia: *C. singapura* **n. sp.**, from within the island-city of Singapore, and *C. thailandia* **n. sp.** from Thailand. Descriptions focus on male and female genitalia, forewing venation and coloration. Data are provided for *C. singapura* **n. sp.** fine-scaled habitat and calling song. Consequences in terms of distribution of the genus and conservation are discussed.

Key words: Eneopterinae, Lebinthini, *Cardiodactylus*, Southeast Asia, Singapore, Thailand, new species

Introduction

The genus *Cardiodactylus* is part of the tribe Lebinthini, a speciose and diverse cricket tribe of the subfamily Eneopterinae, which is widely distributed from Southeast Asia to many archipelagos in the Western Pacific, to Northern Australia and New Caledonia (Robillard and Desutter-Grandcolas, 2004a, 2006, 2008; Robillard, 2010). This genus occupies an important part in the acoustic diversity of Eneopterinae (Robillard & Desutter-Grandcolas, 2011). Based on the analysis of the frequency spectra of the calling song, previous studies showed that *Cardiodactylus* species use high-frequency calling songs (Robillard & Desutter-Grandcolas 2004b), with a dominant frequency corresponding to the third harmonic of their song spectrum (Robillard *et al.* 2007).

In terms of species richness, *Cardiodactylus* has recently grown by a factor of about 500% (Otte, 2007: 39 new species; Robillard, 2009: 4 new species; Ma & Zhang, 2010: 1 new species), but the continued fieldwork and museum studies indicate that the diversity of this genus still remains undescribed, while its precise distribution boundaries have to be determined.

In this study two new species of *Cardiodactylus* are described from unsuspected places in Southeast Asia: *C. singapura* **n. sp.** from within the island-city of Singapore, and *C. thailandia* **n. sp.** from Thailand, far north from the previously hypothesized northern limits of the genus distribution. Descriptions focus on male and female genitalia and forewing venation. Based on recent fieldwork in Singapore followed by laboratory studies, the life habits and calling song of *C. singapura* **n. sp.** are described. Consequences in terms of distribution of the genus and conservation are discussed.

Material and methods

Material. Fieldwork was made in several localities in Singapore in June and July 2009. Specimens were collected by sight only, by night and day, in order to observe their habitat and type of activity. Most specimens of *C. singapura* were collected as juveniles or sub-adults and kept in captivity until adulthood. Newly collected specimens are deposited in the collections of the Zoological Reference Collection of Singapore, in Osaka Museum of Natural History and in the Muséum national d'Histoire naturelle, Paris. In the lists of material, square brackets are used for additional information not mentioned on specimen labels.