



Systematics of cryptic species of *Lebinthus* crickets in Mount Makiling (Grylloidea, Eneopterinae)

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Abstract

In the present study, we address *Lebinthus* cricket species from Luzon (Philippines) being sympatric in Mount Makiling. We describe *Lebinthus puyos* new species and redescribe the species *Lebinthus sanchezi* Bolívar, 1889 and select a neotype series. The species *Lebinthus makilingus* Otte, 2007 is synonymized under *Lebinthus sanchezi*. For each species we provide complete descriptions of morphology, including male and female genitalia and forewing venation and we describe calling song for *L. sanchezi*.

Key words: *Lebinthus*, new species, redescription, neotype, Philippines, sympatry

Introduction

The crickets of the subfamily Eneopterinae (sensu Robillard & Desutter-Grandcolas 2008) show original traits relative to acoustic communication (e.g., Robillard & Desutter-Grandcolas 2004a, b; Robillard & Desutter-Grandcolas 2011; Robillard *et al.* 2007, 2013). As observed in several cricket groups, they tend to speciate quickly, especially in islands (Shaw 1999; Otte 2007a; Oneal *et al.* 2010). As demonstrated by Nattier *et al.* (2012) in the eneopterine genus *Agnotecous*, diversification often takes place through allopatric speciation. However, allopatric speciation can be followed by range expansion in available habitats, which may cause secondary contacts between closely related species, resulting in sympatric distribution between endemic species.

We document here a case of multiple sympatries in Mount Makiling (Luzon, Philippines). Three eneopterine genera are present in the area: the apterous long-legged *Paranisitra*, represented by the species *P. longipes* Chopard, 1925 (review in Gorochoy 2009), the long-winged *Cardiodactylus*, represented by *C. kondoi* Otte, 2007, a species widespread in the Philippines (Robillard *et al.* in prep.), and the brachypterous genus *Lebinthus*. Three species of this genus are currently known in Luzon island: *L. bitaeniatus* Bolívar, 1889, redescribed in Robillard & Tan 2013), *Lebinthus sanchezi* Bolívar, 1889 and *Lebinthus makilingus* Otte, 2007, all being described from the same geographical area, Mount Makiling and its surroundings.

Field work in Mount Makiling and in the University of the Philippines Laguna Land Grant, east of Mt. Makiling, followed by morphological and taxonomical studies, revealed that there are indeed three species of *Lebinthus* in this area corresponding to the yellow striped *L. bitaeniatus* and to two brown species. However, careful examination of original descriptions, type localities, newly collected material and specimens from natural history collections show that *L. makilingus* should be synonymized under *L. sanchezi* while a new species occurs in the lower part of Mt. Makiling. *L. sanchezi*'s type has not been found in Madrid, where Bolívar's collection is located (Mercedes Paris pers. com.; Paris 1993), but the original description and type locality allow relating *L. sanchezi* to our series of collected specimens found both in Mt. Makiling and in UP Land Grant. We redescribe *L. sanchezi* and define a neotype series for this species, deposited in Los Baños, Madrid and Paris.