



## A new species of *Oecanthus* and *Oecanthus lineolatus* Saussure, 1897 from Southern Brazil: species description, including phallic sclerites, metanotal glands and calling song (Orthoptera: Gryllidae: Oecanthinae)

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### Abstract

We characterized and compared taxonomic features of two species of tree crickets *Oecanthus* in tobacco plantation and adjacent native trees and bushes at Southern Brazil. The marked differences between species included *Oecanthus* n. sp. with pale-green body, pale-yellow head, greenish-white eyes, file teeth number  $32.8 \pm 1.2$  (31–34,  $n = 6$ ) and hindwings caudate. *Oecanthus lineolatus* is slightly darker as pale-green, with pale-green head, yellow eyes, hind femur variegated with translucent and pale-green, file teeth number  $47 \pm 2.2$  (42–51,  $n = 18$ ) and hindwings non caudate. Both species also differ in calling song dominant frequency and temporal parameters, as well as in the morphology of metanotal gland.

**Key words:** Insect, Ensifera, tree crickets, tobacco plantation, bioacoustics, taxonomy

### Introduction

The slender-bodied tree crickets *Oecanthus* are distributed around all regions of the world, living on trees, shrubs and herbaceous plants (Eades *et al.* 2012). The genus was proposed by Serville (1831), and currently there are 62 valid species, 12 occurring in South America, four recorded for Brazil: *O. lineolatus* Saussure, 1897, type locality: state of Rio Grande do Sul; *O. minutus* Saussure, type locality: state of Pernambuco; *O. pictipes* Rehn, 1917, type locality: state of Rio Grande do Norte, city of Natal and *O. tenuis* Walker, 1869, type locality: state of Pará, city of Santarém (Walker 1967; Eades *et al.* 2012).

Since the original description, little information has been added both in taxonomy as in other biological aspects of the South American species of *Oecanthus*. Nothing is known of calling song, seasonality, distribution, as well as metanotal glands. The latter is an Oecanthidae conspicuous feature related to the reproductive process, providing nutrients to female during copulation (Hancock 1905; Walker & Gurney 1967), and its morphology may be employed as a significant taxonomic character (Walker & Gurney 1967; Toms & Otte 1988; Metrani & Balakrishnan 2005).

The taxonomic status of the North America species of *Oecanthus* is rather advanced, due to the pioneering works of Fulton (1915, 1925, 1926a, b), added to other researchers (see Blatchley 1920), as well as the acoustic analysis improvement for the characterization of the calling song parameters (Walker 1962a,b, 1963, 1969; Walker & Moore 2012).

We found individuals of tree cricket on a tobacco plantation and adjacent vegetation in Southern Brazil. According to descriptions of the South American's species, we are dealing with *O. lineolatus* and a new species. The aim of this work was to describe the new species highlighting structures direct or indirectly related to cricket's reproductive isolation, such as phallic sclerites, metanotal glands, tegmen morphology and calling song. We also characterized and compared these structures on *O. lineolatus* since both populations occur at the same habitat.