



## ***Denticulobasis* and *Tuberculobasis*, new genera close to *Leptobasis*, with description of ten new species (Odonata: Coenagrionidae).**

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## Abstract

Two new genera, *Denticulobasis* and *Tuberculobasis*, are described. *Denticulobasis* contains three species: *D. dunklei* **sp. nov.** from Loreto, Peru, and *D. garrisoni* **sp. nov.** and *D. ariken* **sp. nov.** from Rondônia, Brazil. *Tuberculobasis* includes 12 spp., all from South America, seven of which are new, viz.: *T. arara* **sp. nov.** from Rondônia, Brazil, *T. geijskesi* **sp. nov.** from Suriname, *T. guarani* **sp. nov.** from São Paulo, Brazil, *T. karitiana* **sp. nov.** from Rondônia, Brazil, *T. macuxi* **sp. nov.** from Roraima, Brazil, *T. tirio* **sp. nov.** from Pará, Brazil, and *T. williamsoni* **sp. nov.** from Colombia and Venezuela. Five species are herein transferred from *Leptobasis* Selys, 1877 to *Tuberculobasis*: *L. cardinalis* (Fraser, 1946), *L. costalimai* Santos, 1957, *L. inversa* Selys, 1876, *L. mammilaris* Calvert, 1909, and *L. yanomami* De Marmels, 1992. The new genera are close to *Leptobasis*; differences between them are analyzed and their diagnostic characters are described. In addition, diagnostic characters of females of three species of *Tuberculobasis*, most likely new, are illustrated but they are not named. A key for males and females of *Tuberculobasis* is provided, and an attempt to understand their life cycle is made.

**Key words:** Odonata, Zygoptera, new genus, new species, South America

## Introduction

Genus *Leptobasis* Selys, 1877 currently contains nine species described by Selys (1876), Calvert (1909), Williamson (1915), Fraser (1946), Santos (1957), Alayo (1968a, b), De Marmels (1992), and Gonzalez-Soriano (2002). It is distributed in South and Central America, with one species reaching Texas in the USA (Westfall & May, 2006). *Leptobasis* is a poorly understood genus, literature pertaining to its species is scattered and there is no comprehensive treatment for it. In order to review this group, I obtained 400 specimens from different sources that had been identified or tentatively identified as *Leptobasis*. Study of these specimens revealed that *Leptobasis* is a heterogeneous assemblage of species that can be assigned to three genera: *Leptobasis* Selys, 1877, *Denticulobasis* **gen. nov.**, and *Tuberculobasis* **gen. nov.** Four species remain in *Leptobasis sensu stricto*: *L. vacillans* Selys, 1877, *L. raineyi* (Williamson, 1915), *L. candelaria* Alayo, 1968, and *L. melinogaster* González-Soriano, 2002. Five species are herein transferred to *Tuberculobasis*, viz: *L. inversa*, *L. mammilaris*, *L. cardinalis*, *L. costalimai*, and *L. yanomami*. Three new species are described in *Denticulobasis*: *D. dunklei* **sp. nov.**, *D. garrisoni* **sp. nov.**, and *D. ariken* **sp. nov.**, and seven in *Tuberculobasis*: *T. arara* **sp. nov.**, *T. geijskesi* **sp. nov.**, *T. guarani* **sp. nov.**, *T. karitiana* **sp. nov.**, *T. macuxi* **sp. nov.**, *T. tirio* **sp. nov.**, and *T. williamsoni* **sp. nov.** In addition to these, three females of *Tuberculobasis*, most probably belonging to new species, are illustrated but not named. Ten of the 13 new or likely new species herein treated came from the Amazon region, most of them collected within forests. This finding shows that there is a lot to be known about odonata biodiversity in Tropical Rain Forests whose importance for dragonflies has been emphasized by Paulson (2005).

## Methodology

Specimens studied are deposited in following collections:

Angelo B. M. Machado personal collection, Belo Horizonte, Brazil (ABMM).

Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA (CMNH).

Dennis R. Paulson, personal collection, Seattle, Washington, USA (DRP).

Florida State Collection of Arthropods (FSCA).

Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (IRSN).

Museo del Instituto de Zoología Agrícola, Maracay, Venezuela (MIZA).

Museu Nacional, Rio de Janeiro, Rio de Janeiro, Brazil (MNRJ).