

## Phylogenetic relationships among species of the genus *Bryodemella* (*s. str.*) (Orthoptera: Oedipodidae) based on a cladistic analysis

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### Abstract

In order to elucidate the phylogenetic relationships of genus *Bryodemella* (*s. str.*) and answer such question as whether *B. (s. str.)* is a monophyletic genus, all species of this genus were dealt with and a cladistic analysis was performed using thirty-four characters from external morphology in this paper. The result yielded only one most parsimonious tree of 55 steps, both consistency index and retention index of 0.80, indicating that the *B. (s. str.)* is a monophyletic genus. The phylogenetic relationships among species of *B. (s. str.)* can be denoted as: [*B. (s. str.) diamesum*, *B. (s. str.) xizangensis*] [[*B. (s. str.) gansuensis* [*B. (s. str.) xinjiangensis*, *B. (s. str.) elegans*]] [*B. (s. str.) nigrifemura* [*B. (s. str.) holdereri*, *B. (s. str.) tuberculatum*]]. All type specimens are deposited in the Museum of Hebei University, Baoding, China.

**Key words:** Orthoptera, Oedipodidae, *Bryodemella*, cladistic analysis, new species

### Introduction

The genus *Bryodemella* was erected by Yin (1982) with *B. holdereri* Krauss as the type species. This genus is similar to *Bryodema* Fieber, 1853, but differs from the latter by the following main traits: elytra without median intercalary vein in medial area, or if sometimes with a weak one in male, then the vein not elevated and serrated; upper keel of outer aspect of hind femora bluntly serrated as a part of stridulatory organ; and lower knee lobes of inner side of hind femora tilted inward. There are eleven species of the genus known worldwide and they are divided into two subgenera: *B. (s. str.)* Yin, 1982 and *B. (Angaridella)* Benediktov, 1998. Of which, *B. (s. str.)* includes eight species, i.e. *B. (s. str.) holdereri* (Krauss, 1901), *B. (s. str.) tuberculatum* (Fabricius, 1775), *B. (s. str.) diamesum* (Bei-Bienko, 1930), *B. (s. str.) xizangensis* Yin, 1984, *B. (s. str.) gansuensis* (Zheng, 1985),