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urn:lsid:zoobank.org:pub:1F0F4AFA-0CF7-476F-9691-59934FDD9E45

Two new species of land flatworms and comments on the genus *Pasipha* Ogren & Kawakatsu, 1990 (Platyhelminthes: Continenticola)

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Abstract

Two new species of Geoplaninae, *Pasipha backesi* Leal-Zanchet, Rossi & Seitenfus, **sp. nov.** and *P. brevilineata* Leal-Zanchet, Rossi & Alvarenga, **sp. nov.**, from southern Brazil are described herein. The two new sympatric species can be distinguished from each other by differences in colour pattern and the copulatory apparatus, especially regarding the prostatic vesicle. They show similar characteristics regarding the relative position of the ovaries and anteriormost testes in relation to body length, the position where ovovitelline ducts emerge from the ovaries, pharyngeal morphology and general morphology of the copulatory apparatus. Comments on the most important morphological characters of the 22 species originally assigned to the genus *Pasipha* are presented in order to highlight the heterogeneity of the genus as well as facilitate the comparative discussion of the new species. In addition, based on the current diagnosis of the genus, we propose the placement of *G. cafusa* into *Pasipha*.

Key words: Geoplaninae, taxonomy, land planarians, triclad

Introduction

The subfamily Geoplaninae currently encompasses 17 genera, besides the collective group *Pseudogeoplana* Ogren & Kawakatsu, 1990 (Ogren & Kawakatsu, 1990, Grau *et al.*, 2012). Many of these genera are based solely on an analysis of the literature, considering the informal groups outlined by E.M. Froehlich (1955) and Froehlich (1967) (Ogren & Kawakatsu, 1990, Grau *et al.*, 2012). This is the case, for example, of the genera split from *Geoplana*, which include *Amaga*, *Gigantea*, *Notogynaphallia* and *Pasipha*. The three former taxa have been discussed in recent papers (Froehlich & Leal-Zanchet, 2003, Leal-Zanchet & Froehlich, 2006, Carbayo, 2008, 2010, Grau *et al.*, 2012), whereas the situation of the genus *Pasipha* has yet to be adequately addressed.

The genus *Pasipha* was created for the Geoplaninae species that have an elongate body, a folded male atrium, a female canal approaching from the ventral side, and lack a (permanent) penis papilla. The absence of unique diagnostic features results in a heterogeneous group of 22 species. The known distribution of the genus includes localities in Brazil, Chile, Peru and Panama.

In our evaluation of the land planarian communities from areas of *Araucaria* Forest of three conservation units in Southern Brazil, we recorded the occurrence of five species that were tentatively assigned to the genus *Pasipha* (Leal-Zanchet *et al.*, 2011). Here we describe two of these species and comment on other species included in the genus in order to highlight its heterogeneity and facilitate comparative discussion of the species.

Material and Methods

Specimens of *P. backesi* Leal-Zanchet, Rossi & Seitenfus, **sp. nov.** and *P. brevilineata* Leal-Zanchet, Rossi & Alvarenga, **sp. nov.** were collected from São Francisco de Paula (National Forest of São Francisco de Paula) (29°23'–29°27'S; 50°23'–50°25'W), located in the state of Rio Grande do Sul, Brazil. Sampling took place in areas of Mixed Ombrophilous Forest, as well as in areas with *Araucaria* plantations, and in the neighborhood of man-made buildings in this National Forest.