



***Staurastrum pantanale* sp. nov. (Zygnematophyceae, Desmidiaceae), a new desmid species from the Brazilian Pantanal**

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Abstract

Staurastrum pantanale is proposed new to science and is characterized by its crenate cell wall and cell dimensions. The species was collected from the metaphyton of a shallow tropical lake (Salitrada Campo Dora Lake, 18° 58' 02" S, 56° 38' 59" W) with transparent water and pH 5, located in the Nhecolândia Pantanal, Mato Grosso do Sul State, Brazil. The new species' morphology and relationship with morphologically close species are discussed.

Key words: biodiversity, desmid, new species, Pantanal wetland, shallow lake

Introduction

Staurastrum Meyen ex Ralfs includes from 800 (Gerrath 1993) to 1200 (Bicudo & Menezes 2006) known taxa, and represents approximately 20–30% of all known desmid species (Bicudo & Menezes 2006, Gontcharov 2008).

Traditionally, desmid taxonomy at the generic and infrageneric levels is based on morphological and metric characteristics, mainly those related to the cell wall and the semicell shape (Kouwets 2008). According to classical taxonomy, *Staurastrum* is considered largely polymorphic and polyphyletic (Prescott *et al.* 1982). However, recent molecular studies have suggested that this genus is in fact monophyletic (Gontcharov & Melkonian 2005, 2008).

Despite the already vast number of species found in the literature, new species and taxonomic varieties of *Staurastrum* are still being described, even for the temperate zone (Ricci 1990, Scharf 1995, Coesel & Joosten 1996, Kusber & Scharf 2009). This number tends, however, to be greater in the tropical region due to greater habitat differentiation and considerable lack of taxonomic studies (e.g. Yacubson 1977).

The Pantanal sub-region examined in this paper is known as Nhecolândia and it is mainly characterized by the presence of thousands of shallow lakes (up to 2 m deep) that may differ substantially in their limnological features (wide conductivity and pH spectra) (Calheiros & Oliveira 1999).

Taxonomic studies of the algae and cyanobacteria from such lakes started in 2004, unveiling its unique algal flora composition (Santos *et al.* 2004, Malone *et al.* 2007, Santos 2008, Santos & Sant'Anna 2010). During these studies, different populations of the *Staurastrum* species here described were studied, showing a set of very peculiar morphological characteristics that made it unique and distinct from all those previously described in literature. This paper aims to describe and propose a new *Staurastrum* species based on its morphological and metric features.