



New records of *Cosmarium* (Desmidiaceae) to Brazil¹

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Abstract

This study presents 14 specific and infra-specific pioneer citations of the genus *Cosmarium* for the Brazilian desmid flora. Sixty-three samples of planktonic and periphytic material studied were collected in three Environmental Protection Areas (Rio Capivara, Lagoas de Guarajuba and Litoral Norte), located in Bahia State, northeastern Brazil, during the Summer (January–March 2007 and 2009) and Winter (June–August 2007 and 2009), both in lotic and lentic environments.

Introduction

Cosmarium Corda ex Ralfs (1848: 91) has generally solitary cells, is free living, with a median suture that varies from a shallow and open depression to a linear and closed fissure; elliptical in apical view, oblong or reniform, but rarely circular; semicells vary from spherical to sub-pyramidal or conical; cell wall smooth, punctate, granulate, scrobiculate, with denticles more or less conical or with combinations of these elements; mucilage pores can sometimes occur; one or two axial chloroplasts per semicell or, in some cases, up to eight, parietal in each semicell (Prescott *et al.* 1981, Croasdale & Flint 1988, Bicudo & Menezes 2006).

Cosmarium is one of the largest (in number of species described) and most ancient genera in the family Desmidiaceae, but according to Bicudo & Menezes (2006), the characteristics that define the taxa are often fragile or poorly defined, making species identification more difficult. According to Croasdale & Flint (1988), the genus is polyphyletic and the grouping of the species is artificial, and very few specific works on *Cosmarium* of Brazil have been published (see Silva & Cecy 2004, Felisberto & Rodrigues 2004, Araújo & Bicudo 2006, Oliveira *et al.* 2010, Bortolini *et al.* 2010).

This work is a contribution to the taxonomy of the genus *Cosmarium* in three Environmental Protection Areas of the state of Bahia, and consequently of the Brazilian desmid flora.

Materials and methods

The study area is located in the coastal plains of northern Bahia State, Brazil, within three Environmental Protection Areas (EPA): Rio Capivara (1.800 ha), Lagoas de Guarajuba (230 ha) and Litoral Norte (144.000 ha) (Fig. 1).