First record of the occurrence of *Ceratium furcoides* (Levander) Langhans (Dinophyceae) in the Upper Paraná River Floodplain (PR/MS), Brazil

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Genus *Ceratium* Schrank (Dinophyta) is among the plankton species regarded as exotic in Brazil. The species presents asymmetry and flattening mesophyll cell, as well as an elongated apical horn and two to three antapical and cingulate equatorial with spiral dislocation. *Ceratium furcoides* (Levander) Langhans differ from the remaining best represented species due to its conical apical horn formed with four plates, these three extending to the apex, whereas the fourth plate (4') has its reduced size and does not reach the apex (Popovský and Pfiester, 1990).

This taxon was detected in samples of total and net phytoplankton. These samples were collected at several lotic and lentic environments of the Upper Paraná River Floodplain (53°10´W 22°40´S – 53°21´W – 22°50´S), as part of the Ecological Long-Term Research Programme (CNPq/PELD - site 6) sampling, in December 2012 and June 2013 (Table 1). The individuals identified presented metric thresholds, morphology and tabulating of the thecal plates (Figure 1) in accordance with the diagnosis by Popovský and Pfiester (1990). The measurements recorded for the specimens were 147.6 to 184.5 µm long and 36.9 to 49.2 µm wide.

The occurrence of this genus is regarded as rare in the country (Oliveira et al., 2011), although the genus dispersion and development in several Brazilian watersheds have already been recorded, indicating an expansion process of geographical distribution. The occurrence of taxon *Ceratium furcoides* in Brazil was recorded in studies by Santos-Wisniewski et al. (2007) and Silva et al. (2012), for the Furnas reservoir in Minas Gerais, Matsumura-Tundisi et al. (2010), for Billings Dam, state of São Paulo, Oliveira et al. (2011), in rivers and reservoirs of the states of Alagoas, Bahia, Pernambuco and Sergipe, and Cavalcante et al. (2013), for rivers and reservoirs of Paraná and Rio Grande do Sul.

Since the Upper Paraná River Floodplain is the last stretch free of impoundments in this river, there are preservation areas with high aquatic biodiversity. The record of this species in natural environments and in conservation areas is unprecedented and a cause for concern. Although it occurred in low densities and biomass, its monitoring is necessary for a better understanding of the dynamics of its population in order to prevent and manage potential environmental issues.

Table 1. Location of sampling sites, occurrence and relative density of *Ceratium furcoides* (Levander) Langhans in the Upper Paraná River Floodplain.

Sampling sites	Geographic coordinates	Occurrence date	Density (% total)
Osmar Lake	22°46'26.64"S; 53°19'56.16"	December/2012	57 ind.mL^{-1} - 0,14%
Garças Lake	22°43'27.18"S; 53°13' 4.56"W	December/2012 June/2012	Occurred only in the net sample
Pau -Véio Lake	22°44'50.76"S; 53°15'11.16"W	December/2012	Occurred only in the net sample
Paraná River	22°45'39.96"S; 53°15' 7.44"W	December/2012	Occurred only in the net sample
Guaraná Lake	22°43'16.68"S; 53°18' 9.24"W	June/2013	Occurred only in the net sample
Fechada Lake	22°42'37.92"S; 53°16'33.06"W	June/2013	24 ind.mL^{-1} - 0,43%

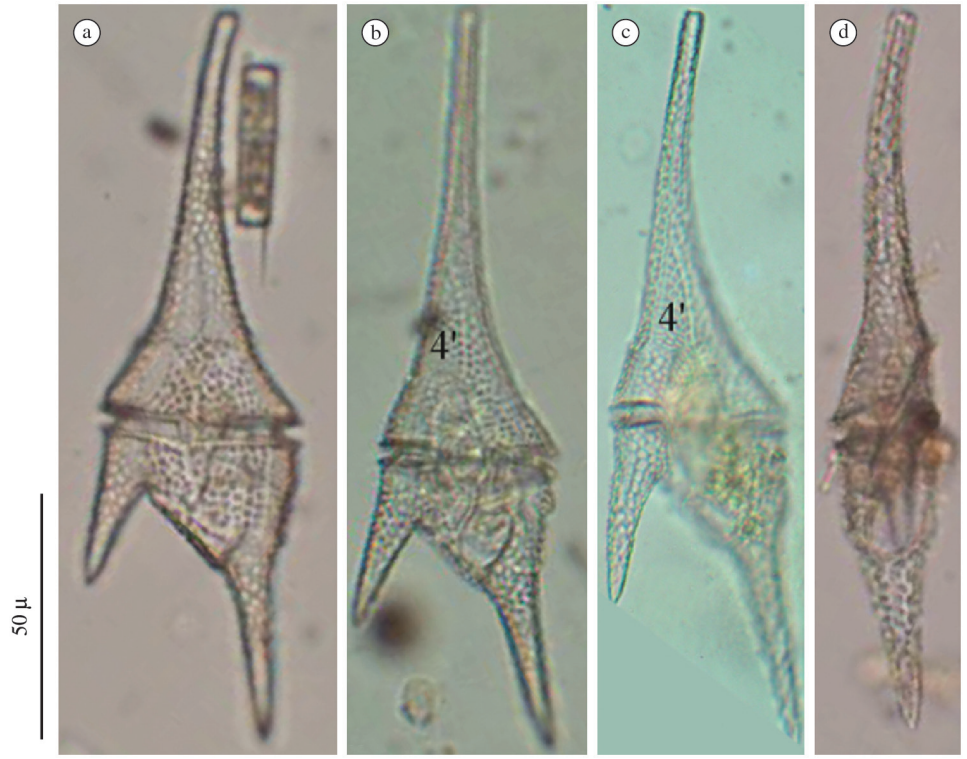

Figure 1. *Ceratium furcoides.* a: Dorsal view showing the short plate 4'; b-c: Ventral view showing the short plate 4'; d: Lateral view.

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