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Short Communication

First record of *Chantransia macrospora* Wood, 1887 (Batrachospermales, Rhodophyta) in semi-arid northeastern Brazil

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Resumo

Primeiro registro de *Chantransia macrospora* Wood, 1887 (Batrachospermales, Rhodophyta) no semiárido do nordeste do Brasil. Este trabalho apresenta o primeiro registro de *Chantransia macrospora* do estado do Rio Grande do Norte na região do semiárido no nordeste do Brasil. Análises das algas perifíticas revelaram indivíduos de *C. macrospora* associados especialmente com conchas de *Melanoides tuberculatus*, uma espécie exótica, sugerindo que *C. macrospora* tenha sido introduzida nestes sistemas associads com o gastrópode. Neste contexto, novos registros de *C. macrospora* ainda são esperados para a região semiárida do Brasil nos próximos anos.

Palavras-chave: Espécie exótica; *Melanoides tuberculatus*; Região semiárida; Reservatório

Abstract

This study presents the first record of *Chantransia macrospora* in the state of Rio Grande do Norte, in the semi-arid region of northeastern Brazil. Analyses of periphytic algae revealed *C. macrospora* individuals associated in particular with shells of *Melanoides tuberculatus,* a non-native species, suggesting that *C. macrospora* have been introduced into systems associated with the gastropods. In this context, new records of *C. macrospora* are still expected for the Brazilian semi-arid region in the next years.

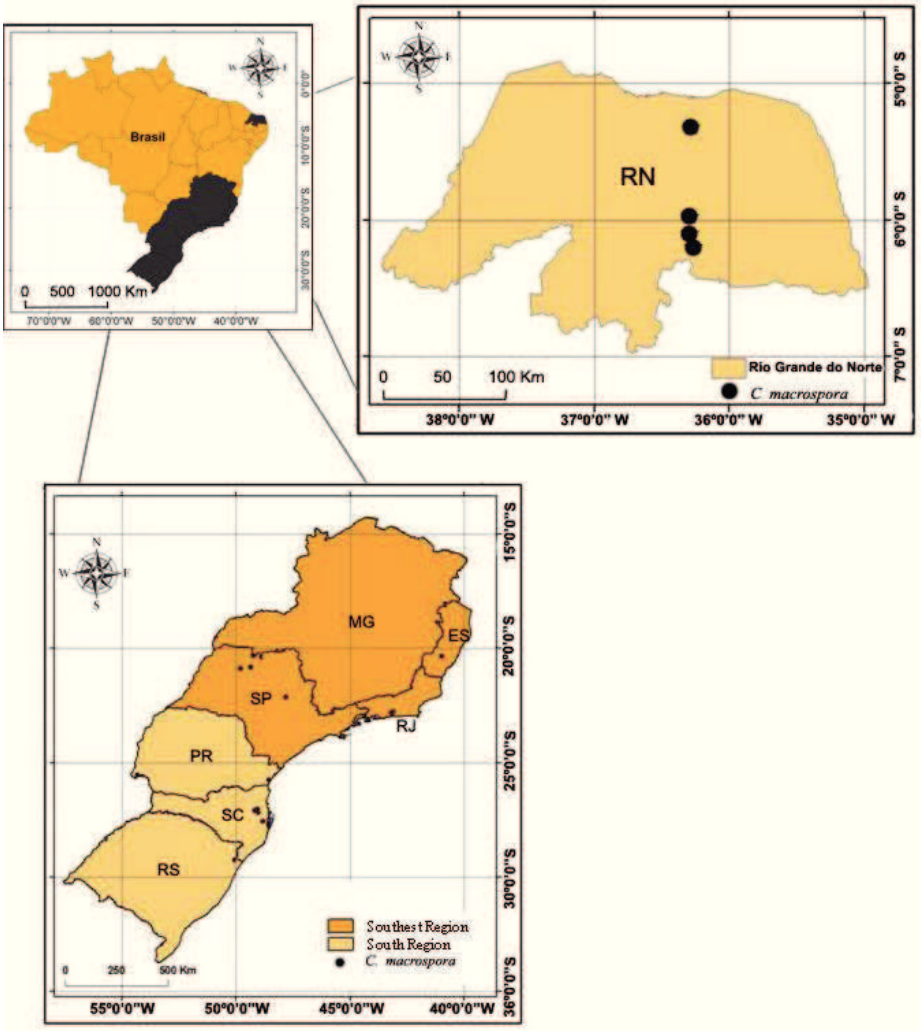
Key words: *Melanoides tuberculatus*; Non-native species; Reservoir; Semi-arid region

The approximately 150 freshwater Rhodophyta species have various morphological characteristics. *Chantransia macrospora* Wood 1887 is characterized primarily by its bluish-green thallus, and by erect, irregularly branched filaments with cylindrical to tapered cells (KATO et al., 2009). Molecular studies indicate that *C. macrospora* is the sporophyte, or 'chantransia stage', of *Batrachospermum macrospora* Montagne (NECCHI; ZUCCHI, 1997; PUESCHEL et al., 2000; CHIASSON et al., 2005; KATO et al., 2009).

Chantransia macrospora usually grows in streams and rivers in North and South America (NECCHI et al., 1993; NECCHI; ZUCCHI, 1995; KUMANO, 2002), yet no records exist for this species in lentic systems in the Brazilian semiarid northeastern region. *C. macrospora* can grow in highly eutrophic systems, although other species of *Chantransia* and *Batrachospermum* are typically reported in less polluted streams (NECCHI et al., 1993; NECCHI; ZUCCHI, 1995). This may indicate that *C. macrospora* has a high tolerance for polluted conditions. The discovery of tiny, freshwater algae such as *C. macrospora* indicates that currently unknown introduced organisms on which *C. macrospora* grows may also be present.

In Brazil, *C. macrospora* has been recorded in the southwestern and southern states of São Paulo (NECCHI; ZUCCHI, 1995), Paraná (BRANCO et al., 2009) and Santa Catarina (BRANCO et al., 2011) (Figure 1). Here, we present the first record of *C. macrospora* for the Brazilian semiarid region in Rio Grande do Norte

FIGURE 1: New records of *Chantransia macrospora* in Rio Grande do Norte state, and its recorded occurrence in southeastern and southern Brazil.



state (RN), thereby considerably extending the known geographical distribution of this species.

Periphytic algae were sampled in 10 reservoirs in Currais Novo Municipality, RN, in February 2012. We analyzed the algae associated with stones, aquatic macrophytes and shells of macroinvertebrates. *C. macrospora* (Figure 2) was recorded in 4 of the 10 reservoirs sampled: São Rafael (36°18'18.625"W; 5°59'45.426"S), São Francisco (36°17'1.991"W; 5°21'7.22"S), Estrada (36°17'40.308"W; 6°11'53.457"S) and Mulungu (36°18'56.943"W; 6°6'8.6"S).

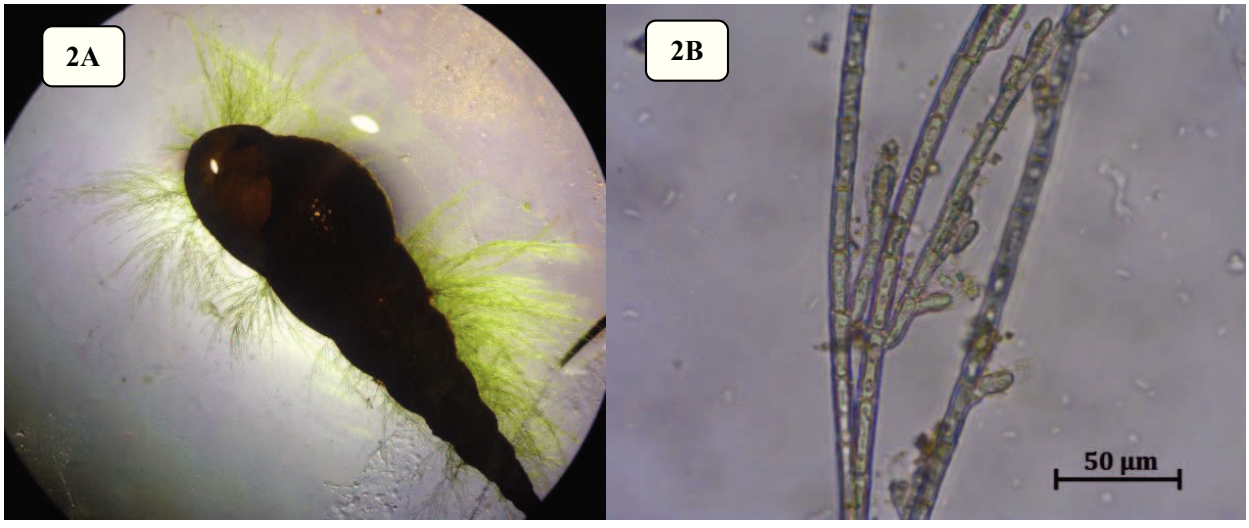
The observed organisms presented dense tufts and were 2.0-2.5 mm in height. The thallus was composed of uniseriate erect filaments, branching with narrow angles (Figure 2B). These filaments were cylindrical to tapered along their height. Axial cells of the erect filaments were 14-22 µm in diameter and 41-72 µm in height. Chloroplasts were discoid to elongate, with three to five pyrenoids (Figure 2B).

The highest organism densities were observed on macrophytes and on the shells of *Melanoides tuberculatus*. The sampled reservoirs have relatively low water transparency and high water temperatures (about 31°C), with neutral pH and eutrophic conditions. Interestingly, *C. macrospora* was found in reservoirs with lower Shannon-Weiner diversity indices, which suggests that this species could be competing with the other species of periphyton and consequently causing a decrease in local diversity.

Another aspect to considerer is that these organisms are perhaps introduced into systems associated with *M. tuberculatus*. The red-rimmed melania *Melanoides tuberculatus* is an Afro-Asian Thiaridae gastropod (PILSBRY; BEQUAERT, 1927), which was introduced into Latin America in the late 1960s and is now widespread in almost all regions (FERNANDEZ et al., 2003). The first record of this species in Brazil was in 1967, in Santos, São Paulo state (VAZ et al., 1986), the same region where *C. macrospora* was recorded (NECCHI; ZUCCHI, 1995). Furthermore, *M. tuberculatus* is frequently found associated with biofilm (BEESTON; MORGAN, 1979) and has been recorded in reservoirs in the Brazilian semi-arid region (SANTOS; ESKINAZI-SANT'ANNA, 2010).

No records of deleterious effects of *C. macrospora* exist for these ecosystems, however, the presence of non-native species should be widely discussed due to the potential effects related to competition with and parasitism upon native species, and the potential for subsequent decrease in local biodiversity and transformation of habitats (FACON et al., 2007). New records of *C. macrospora* are expected for the Brazilian semi-arid region in the next years.

FIGURE 2: Shell of *Melanoides tuberculatus* with *Chantransia macrospora* (2A), and sample preparation of *Chantransia macrospora* (2B) collected in Rio Grande do Norte State, Brazil.



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