

MACROINVERTEBRATES ASSOCIATED TO THREE SPECIES OF AQUATIC MACROPHYTES IN A LAKE OF BAIXADA DO MACIAMBÚ, PARQUE ESTADUAL DA SERRA DO TABULEIRO, PALHOÇA, SC.

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Introduction

Baixada do Maciambú is located at Parque Estadual da Serra do Tabuleiro, with 87.405 hectares, around 1% of the total area of Santa Catarina State. This Parque is located in the center-south coast of Santa Catarina, covering some parts of the districts of Florianópolis, Palhoça, Santo Amaro da Imperatriz, Águas Mornas, São Bonifácio, São Martinho, Imarú, Paulo Lopes and Garopaba. According to Reitz (1960), an area of plane topography presents formation of Quartenário Recente, with a circular alignment of sand scrub forming lagoons, lakes, swamps and fields temporarily soaked. Aquatic macrophytes are plants from wash water whose photosynthesized parts are total or partially submerged during certain period of the year, so much in lotics as in lentic environments (Cook et al., 1974). Those plants play an important role in aquatic ecosystem, propitiating feed and refuge for a diversity of aquatic and partially aquatic organisms (Collart, et al., 1966; 1998; Tavares 1997; 1998). Submerged or partially emerged structures are essential elements for the maintenance of the ecological balance and the preservation of fauna in lakes, lagoons, rivers, streams and swamps (Cabrera et al., 1948). Among all organisms that live in these environments, macroinvertebrates make use of plants as feed, refuge and substratum. In agreement with their morphology, they can live adhered to vegetative or reproductive structures, or on any other substrata. From among associated fauna, some families from Class Insecta show their development cycle in aquatic environment, especially in immature forms, and they are excellent bioindicators for the quality of the water (Callisto et al., 2001; Junqueira et al. 2000, Galdean et al., 2000). It was analyzed the association of macroinvertebrates with *Potamogeton* sp. (Potamogetonaceae); *Chara*, section Grovesia, subsection Willdenowia (Characeae) and *Polygonum hidropiperoides* Michaux (Polygonaceae) occurring in a lake at Baixada do Maciambú.

Objectives

Relate macroinvertebrated fauna associated to three species of aquatic macrophytes, *Potamogeton* sp. (Potamogetonaceae); *Chara*, section Grovesia, subsection Willdenowia (Characeae) and *Polygonum hidropiperoides* Michaux (Polygonaceae) occurring in a lake at Baixada do Maciambú, Parque Estadual da Serra do Tabuleiro, Palhoça, SC.

Methodology

In order to evaluate the interactions between aquatic macrophytes and macroinvertebrates, three species of perennial, fixed and submerged plants were collected. *Potamogeton* sp. (Potamogetonaceae), *Chara*, section Grovesia, subsection Willdenowia (Characeae) and *Polygonum hidropiperoides* Michaux (Polygonaceae) were the investigated species. Collected samples were packed in plastic bags and kept in alcohol 70%. Macroinvertebrates selection was accomplished on vegetative structures, sediment and decanted and filtrated material. The samples of plants and associated fauna were analyzed and identified with stereoscopic magnifying glass, and by specialized bibliographies (Buzzi & Miyazaki, 1999; FIC; 1965-2004; Hepp, 2003). In order to complement the information, it was examined fresh samples for microalgae analysis to the optical microscopic (Beaked & Bicudo, 1970; Bourrelly, 1970).

Results and Discussion

In three species of aquatic macrophytes were identified five Orders of Class Insecta. For Mollusca were recognized two Orders associated to *P. hidropiperoides* and one for both *Potamogeton* and *Chara*. For *Potamogeton* sp. it was observed: Diptera (Culicidae, Musidae, Chironomidae), Hirudinae, Odonata (Libelulidae), Plecoptera, Tricoptera (Hydroptilidae) and Gastropoda. For *Chara*: Diptera (Culicidae, Chironomidae, Ceratopogonidae), Coleoptera (Elmidae, Carabidae), Plecoptera, Hirudinae, Tricoptera (Hydroptilidae) and Gastropoda. For *P. hidropiperoides*: Odonata (Anisoptera, Zigoptera), Coleoptera (Elmidae), Diptera (Tupulidae, Culicidae, Chironomidae), Lepdoptera (Pyalidae), Tricoptera (Hydroptilidae), Gastropoda and Bivalve. Diptera, Hirudinae and Gastropoda families have appeared in clean water; however they show tolerance to antropized environment. Plecoptera nymphs live in waters with high concentrations of oxygen, and they are sensitive to pollution; Odonata, dragonflies, have extremely sensitive species to organic pollution (Hepp, 2002; Callisto et al. 2001; Junqueira et al. 2000, Galdean et al. 2000). Trichoptera larvae live in lotics and lentic environments, predominantly in waters with good oxygenation, however Order Coleoptera (beetles) has species which develop all their life cycle in the water, living in

variable concentrations of oxygen (Galdean et al., op. cit.). Just a small part of Lepidoptera has adapted to aquatic environment, where the larvae feed themselves with aquatic plants (Hepp, op.cit.). It was observed the microalgae Cyanobacteria (*Spirulina* sp., *Calothrix* sp. and *Oscillatoria* sp.), Chlorophyceae-Desmidiaceae (*Cosmarium* spp., *Scenedesmus* spp., *Pediastrum* sp., *Staurodesmus* spp.) and Bacillariophyceae (*Cocconeis* sp., *Gomphonema* spp., *Alaucoseira* spp., *Synedra* sp., *Rhopalodia* sp. and *Actinella* sp.). That analysis demonstrated that macroinvertebrates finds in aquatic macrophytes as much refuge as good food for immature forms. Associated fauna to aquatic macrophytes suggests that the researched lacustre environment shows optimal conditions for the maintenance of the communities in the ecosystem.

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