



MACROINVERTEBRATES FOUND IN THE PHYTOTELM OF *AECHMEA* SP. (BROMELIACEAE) OF OPEN RESTINGA HABITAT IN PITANGUI, EASTERN RIO GRANDE DO NORTE STATE (BRAZIL).

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INTRODUÇÃO

From the geomorphological viewpoint the term “restinga” designates several types of Quaternary coastal sediment deposits (from *circa* 2,000 to 6,000 years Before Present) (Suguio e Tessler, 1984). Dune and restinga habitats encompasses approximately 79% of the Brazilian coast and features an array of vegetation types. Restinga soils are mostly sandy, low in clay and organic matter, and show reduced capacity to store water and essential plant nutrients (Araujo e Lacerda, 1987). In such conditions phytotelm bromeliads represents a important source of free water available for drinking, oviposition and rearing of offspring (Leme e Marigo, 1993; Benzing, 2000.; Kitching, 2001; Rocha *et al.*, 2004; Santos e Coelho 2006, Santos *et al.*, 2009). Moreover, macroinvertebrates associated with phytotelmata in saprophyte - dependent bromeliads increase nutrients availability by processing leaf litter deposits within the cistern (Benzing, 2000). Romero *et al.*, (2007) showed that ejecta from salticid spiders associated with bromeliads increased nitrogen input for host bromeliad. Biotic inventories of bromeliad phytotelm associated fauna are scarce in Brazil (Santos *et al.*, 2009).

OBJETIVOS

The present study aims to help fill this gap in knowledge by a) surveying the macrofauna associated with bromeliad phytotelmata in an open restinga habitat

in Pitangui, Rio Grande do Norte State (northeastern Brazil), and b) identify feeding guilds among members of the assembly.

MATERIAL E MÉTODOS

Pitangui Beach is located 24 km north of Natal, Rio Grande do Norte State capital city, having a Köppen climate type AS, with yearly mean temperature of 27°C and yearly mean relative humidity of 77%. In a restinga area near Pitangui beach, northeastern coast of Rio Grande do Norte State (NE - Brazil) (Rocha - Neto, 2001). The study area is characterized by sand fields covered with patches of assorted psamophilous herbaceous vegetation interspaced with shrubs and small trees on the top and leeward side of sand dunes; specimens of *Pilosocereus* sp. and *Mellocactus* sp., (Cactaceae) found in the area represent further evidence of xeric conditions. The terrestrial specimens of *Aechmea* sp. growing in locations exposed directly to desiccating factors such as full insolation and winds were often small and had tubular impounding shoots with a narrow leaf crown aperture. The phytotelm water was sampled randomly from 20 specimens of *Aechmea* sp. growing in full insolation in sand dunes at Pitangui Beach. The content of the phytotelm was siphoned off and stored in plastic bags. In the laboratory, the material was sieved and preserved in 70% ethanol aqueous solution. The specimens were counted and identified to family and assigned to specific feeding guilds according to the specialized literature. The voucher specimens are de-

posited at the Laboratorio de Filogenia e Taxonomia (Departamento de Botanica, Ecologia e Zoologia, Universidade Federal do Rio Grande do Norte), Natal, Brazil. The bromeliad specimens were identified according to Smith and Downs (1979).

RESULTADOS

The taxa Annelida and Insecta were represented in the samples and the latter showed the highest diversity and abundance (number of individuals sampled showed parenthetically): Annelida Oligochaeta (56), Diptera, Chironomidae (27), Diptera Ceratopogonidae (104), Diptera Culicidae (10), Diptera Psychodidae (17), Coleoptera Scirtidae (11). All taxa inventoried are detritivores and, except for the aquatic oligochaetes, all were immature. The assemblage sampled comprised only detritivore organisms suggesting a detritus - based foodweb in this microhabitat, which may contribute significantly to the nutrient uptake of their host bromeliads. The presence of a small leaf crown aperture in bromeliads, while conserving phytotelm water during dry weather, reduces the area for intercepting falling leaf litter, and thus, may lead to deficits in nutrient intake (Benzing, 2000). However, exposed bromeliads are unlikely to obtain much nutrient input via litterfall anyway and, in these situations, metabolic waste products from animals associated with the leaf crown and phytotelmata might represent important contributions to the nutrient pool of the host bromeliad (Benzing, 2000; Nievola *et al.*, 001; Romero *et al.*, 2004)

CONCLUSÃO

The assemblage comprises mostly immature stages of insects with amphibious life cycles. The results corroborate the hypothesis that bromeliad phytotelm represent a breeding site and thus is relevant for the conservation of biodiversity in restinga habitats.

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