SPATIAL DISTRIBUTION FOR THE SCORPIONS SPECIES IN 'BREJO DE ALTITUDE' IN PERNAMBUCO

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INTRODUÇÃO

Scorpions are primarily solitary and sedentary arthropods and live preferentially in microhabitats that are colonised by other arthropods on which they prey (Brownell and Polis, 2001). Intra- and heterospecific coexistence has been recorded in several species of scorpions (Shivashankar, 1994; Kaltsas *et al*., 2009) and produces different levels of sociability and aggregation. Species may either co-occur in the same habitat or co-occur in the same shelter (Warburg, 2000). These studies are conducted for species of the deserts (Polis, 1980) and only a few studies have addressed the ecology of scorpions in tropical forests (Cala-Riquelme and Colombo, 2011). This lack of previous study is particularly surprising in view of the high biodiversity of such environments and the evidence that environmental change is transforming the ecology of tropical forests (Lewis *et al*., 2009). The focus of the study was microhabitat preference of scorpions' species from Parque Natural Municipal João Vasconcelos Sobrinho. We tested the prediction that co-occurring species of scorpion would exploit different microhabitats to avoid intra-guild predation. Therefore, the findings of the present study of the ecology of the scorpions species can contribute to a greater understanding of the structure of arthropod communities in the tropical forests of Brazil that feature scorpions as predators

OBJETIVOS

The aim of the study was microhabitat preference, intra- and interspeci?c coexistence of scorpion's species.

MATERIAL E MÉTODOS

Study area Field work was conducted in the Parque Natural Municipal João Vasconcelos Sobrinho an area composed of a 359 ha of Seasonal Evergreen Forest Altitude and Position (08º22'09"S, 36º05'00"W) (Andrade-Lima, 1961), in the state of Pernambuco, in the northeast of Brazil. The area is characterised by a mean annual temperature of 24°C and an annual rainfall of 650-900 mm (CPRH, 1994). Microhabitat preference Were conducted three expeditions between September and November 2011. With each expedition lasting two days/month. The data were obtained by searching active with the assistance of UV lamps in the period between 19:00 and 01:00, the time spent in each collection was 6 hrs/night. Total at the end of the study 36 hours of observations. The spatial distribution was performed considering as the characteristics of the environment which

could be used as a microhabitat: stone, leaf litter, fallen log, bromeliad. Differences in microhabitat use were evaluated with a G-test on contingency table data. The vouchers specimens are deposited in the Arachnological collection of Universidade Federal da Paraíba.

RESULTADOS

A total of 23 scorpions; nine *Tityus brazilae* Lourenço & Eickstedt, 1984, four *Tityus neglectus* Mello-Leitão, 1932 and ten *Tityus pusillus* Pocock, 1893 were captured in this study. *Tityus brazilae* and *T. pusillus* was observed in two types of microhabitats, stone and log for *T. brazilae* and leaf litter and log for *T. pusillus*. Whereas T. neglectus was only found on bromeliads. Significant differences in preference indices were found between habitats in the scorpion species ($G(4,1)=24.73$; $p < 0.0001$), with relative preferences observed for stone (*T. brazilae*), leaf litter (*T. pusillus*) and bromeliad (*T. neglectus*). The spatial distribution in each microhabitat was highly dependent on the scorpion specie.

DISCUSSÃO

Information on microhabitat distribution is crucial for understanding the processes of species coexistence (Brown, 1984; Lankau, 2011). Although the co-occurrence of different species of scorpions is widely recognised (Polis and McCormick, 1987; Polis, 1990; Shehab *et al*., 2011), little attention has been given to microhabitat differentiation between species, particularly in tropical forests (Lira *et al*., 2013). In the present study, *T. brazilae, T. neglectus* and *T. pusillus* three sympatric species of scorpions occurring in the northeast of Brazil, were found together in the same habitat. The use of different substrates could reduce the possibility of contact and subsequent conflict between scorpions species, as proposed by Warburg (2000) for other scorpions. Smaller species and immature would feature quite achievable, since they are active at the same time that larger scorpions (Ramos, 2007). However larger scorpions are easy prey for predators, it would explain the preference for microhabitat most hidden part of the larger species, such *T. brazilae* and *T. neglectus*.

CONCLUSÃO

The colonization of different microhabitats allows different species of generalist predators like scorpions coexist in the same habitat.

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