

**NOTES ON THE PREDATORY BEHAVIOR AND HABITAT OF  
*Trechalea biocellata* (ARANEAE, LYCOSOIDEA, TRECHALEIDAE)**

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**ABSTRACT**

The predatory behavior and habitat preferences of *Trechalea biocellata* Mello-Leitão, 1926 are reported for the first time. Both, field and in the laboratory observations were made. This species exhibits a preference of rocky environments; the adults are only found at night and also present a predatory behavior similar to *Thalassius spinosissimus* (Karsch, 1879) a Pisauridae species that shares the same kind of habitat with others Trechaleidae species that inhabit rocky environments near small rivers.

**Key words:** Araneae, Trechaleidae, behavior, habitat, Neotropical region.

**RESUMO**

O comportamento predatório e habitat de *Trechalea biocellata* Mello-Leitão, 1926 são registrados pela primeira vez. Foram realizadas observações em campo e no laboratório. Esta espécie exibe preferência por ambientes rochosos; os adultos são somente vistos durante a noite e também apresenta comportamento predatório similar ao de *Thalassius spinosissimus* (Karsch, 1879), uma espécie da família Pisauridae, que também compartilha o mesmo tipo de habitat com outras espécies de Trechaleidae que ocorrem em ambientes rochosos às margens de pequenos córregos.

**Palavras-chave:** aranhas, Trechaleidae, comportamento, habitat, região Neotropical.

**INTRODUCTION**

The genus *Trechalea* Thorell, 1869 comprises 19 species, all with occurrence in the Neotropical region (PLATNICK, 2005). The species of Trechaleidae are distinguished from those of the genus *Hesydrus* by the presence, on the median apophysis of the males palpus, of a simple, small and rounded projection; females by a pair of small posterior-lateral scapes on the epigynum (CARICO, 1993, figs. 7-10). This genus comprises relatively large spiders with carapace length ranging from 6.1 to 11.0 millimeters (CARICO, 1993).

The predatory behavior and habitat preferences of the spiders belonging to the family Trechaleidae were never been described before. CARICO et al (1985), reports the ecology and behavior of *Trechalea manauensis* (= *T. amazonica*). This species exhibit a

predatory behavior similar to the one of *Thalassius spinosissimus* (Karsch, 1879) of the family Pisauridae which is close related to the family Trechaleidae (GRISWOLD, 1993). This Pisauridae species was reported by SIERWALD (1988) to hunt insects on the surface of freshwater and to catch fishes.

The present paper reports the predatory behavior and habitat preferences observed in *T. biocellata*.

**MATERIAL AND METHODS**

A small population of *T. biocellata* was observed during a period of one year (March, 2004 to March 2005) at the Feitoria river located in the Sapiranga county, state of Rio Grande do Sul, Brazil.

The observations took place once a month, for 10 hours per visit, from which 5 hours on the day and

Recebido em: 05.04.05; aceito em: 29.06.05.

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5 hours on the night. For the observations it was given preference for sunny days. On the night, observations it was used a cephalic-lamp covered with a cellophane red paper in order not to disturb the spider during observations.

A total of ten individuals of *T. biocellata*, four males and six females, were collect and maintained in the laboratory for observations, in a terrarium measuring 35×25×50 cm, with a recipient (20×10×5 cm) with water. The spiders were fed with live crickets once a week. The specimens were photographed with a Nikon Coolpix 8700 digital camera.

## RESULTS

*Trechalea biocellata* inhabits vertical rock faces, stones at margins of small rivers (Fig. 1) and also occurs on logs and on the vegetation near those rivers. During the day, only juveniles were seeing moving around rocks and hunting at the vertical rock faces, and were observed eating butterflies (Lepidoptera), beetles (Coleoptera), ants (Hymenoptera), flies (Diptera) among other invertebrates. The spider was collected together with the prey item for further analysis in the laboratory in order to determine the insects Order.

During the daily observations, no adults were found because they remain hidden in the rocks fissures. They start running, moving to new sites and foraging at nightfall and are more active at night. This species seems to share his habitat with other Trechaleidae species, such as *Trechalea keyserlingi* F.O.P.-Cambridge, 1903 and *Trechalea cezariana* Mello-Leitão, 1931 at some others areas, in Rio Grande do Sul state, such as São Francisco de Paula, Maquiné and Terra de Areia.

## HUNTING POSITION AND PREY CAPTURE

The hunting position of *Thalassius spinosissimus*, reported by SIERWALD (1988), is very similar to *T. biocellata*. The spider anchors itself to a stone, log or vegetation using the two hind legs. The other legs are forward extended, touching the surface of the water in places where the current of it are not too strong or fast (Figs. 3 e 4).

The spiders used to adopt this position also in the laboratory, the adults during the night and the juveniles during the day. The prey items, usually a cricket, were dropped in the water and through the vibrations on the water surface the prey item were caught in conditions

of poor lightning or at night (Fig. 6). CARICO et al (1985) mentioned that *Trechalea amazonica*, in laboratory conditions, do not catch dead preys and this was also observed with *Trechalea biocellata*. During the day the preys were caught by one or both of two ways, by seeing the prey or by movement or vibrations on water (Fig. 2). The most evident difference in the predatory behavior of *T. biocellata* is that this species do not hunt actively through the surface of water like *T. spinosissimus* do that can hunt on the surface of the water. *T. biocellata* only display the behavior of moving on the surface of the water when the spider changes the hunting site or is disturbed.

## DIVING BEHAVIOR

When the spider was disturbed by touch or close movement, it submerges by hanging itself along the substrate, sometimes even against the current of water (Fig. 5). The spiders remained under water for an average of 10 to 20 minutes, although longer periods of up to 50 minutes were observed.

This diving behavior was also observed in *Thalassius spinosissimus* (SIERWALD, 1988). Other Trechaleidae as *Trechalea ornata* Mello-Leitão, 1943 and species of *Dolomedes* also demonstrate this capacity to dive to catch small fishes (CARICO, 1973).

The prey catching behavior of *T. biocellata* is similar of that one of *Thalassius spinosissimus* and some *Dolomedes* species which can hunt on the surface of water like *Dolomedes triton*: BLECKMANN, 1982, BLECKMANN; BARTH, 1984, BLECKMANN; ROVNER, 1984; *D. aquaticus* and other New Zeland species: WILLIAMS, 1979).

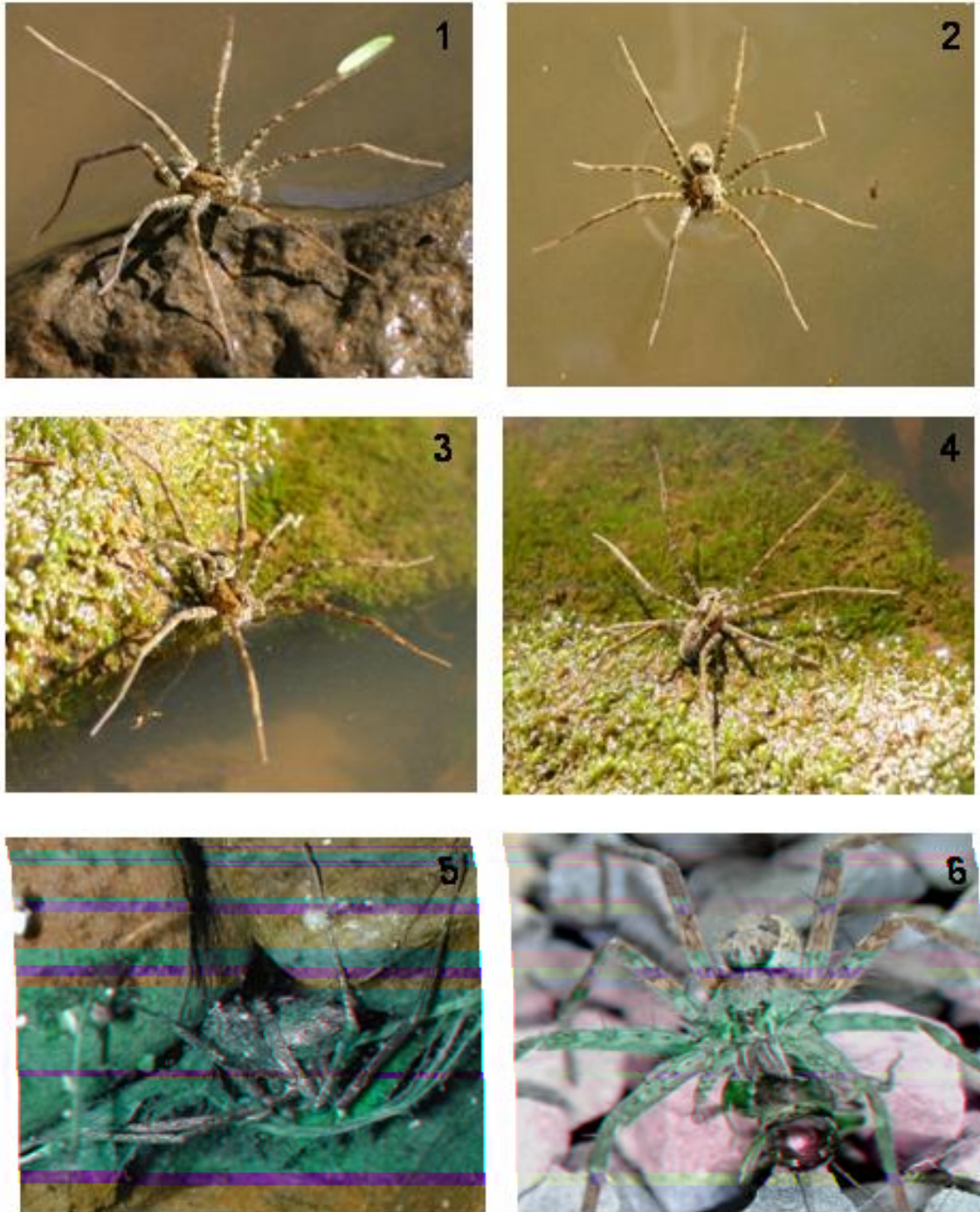
## ACKNOWLEDGMENTS

We would like to thank Dr. James E. Carico for the suggestions on the manuscript, Jorge and Sandra Cruz da Silva for the help and support on the field work and to Dr. José Willibaldo Thomé for the permission of using the digital camera.

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**Figs. 1-6.** *Trechalea biocellata*: **1.** in the natural habitat; **2.** hunting on the surface of water; **3-4.** hunting position; **5.** diving; **6.** feeding in the laboratory. Photos: Juliane Picanço.