

First records of Collembola (Ellipura) from the State of Paraíba, Northeastern Brazil

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³CNPq fellowship.

RESUMO. A fauna de Collembola é pouco conhecida no Brasil. Estudos indicam, no entanto, que a fauna brasileira para esse táxon é muito rica, sendo uma das mais diversas encontradas no planeta. No atual trabalho estão listados os primeiros registros do grupo para o Estado da Paraíba. Esses registros incluem uma espécie e seis gêneros, anteriormente não listados para o Brasil. Ainda, foram encontradas treze espécies novas.

PALAVRAS-CHAVE. Brasil; Collembola; fauna de solo; microartrópodes; Paraíba.

ABSTRACT. This paper presents the first records of the Collembola fauna in four localities of State of Paraíba, Northeastern Brazil. These records represent the first list of species of Collembola for the State of Paraíba. The research adds new records for Brazil of six genera and one species. Furthermore, thirteen undescribed species are presented.

KEYWORDS. Brazil; Collembola; microarthropods; Paraíba; soil fauna.

Recent studies indicate that the greatest diversity of Collembola is found in tropical areas. MARI-MUTT & BELLINGER (1990) also have pointed out that it is likely that Brazilian Collembola are among the most diverse in the world. However, the collembolan fauna in Brazil is poorly known and only 199 species have been recorded. When this number is compared with the size of the country and diversity of environments existing in Brazil, it highlights the need of further systematic studies on this group in this country. The list of the Collembola of Brazil (CULIK & ZEPPELINI 2003) has shown that there are several Brazilian States with no records of Collembola. Paraíba is one of them and this is a first set of records of this fauna.

The goal of this work is to present the first records for the collembolan fauna in the State of Paraíba, Northeast Brazil, Good's biogeographical region 27 (GOOD 1947; CHRISTIANSEN & BELLINGER 1995; BELLINGER *et al.* (1996-2004), and new Brazilian records of six genera and one species.

MATERIAL AND METHODS

The collections were made in João Pessoa, Cabedelo, Araruna and Cacimba de Dentro Municipalities. In João Pessoa, the material was collected in the Campus of the Universidade Federal da Paraíba (UFPB), in Cabedelo, at the seashore in the Mar do Macaco beach; in Araruna, in the Parque Estadual Pedra da Boca, at the surface and in the cave Loca Fedorenta and in Cacimba de Dentro, the collections

were made on the bank of a dry river (Rio Capivaras).

The specimens were caught with pit-fall traps and soil samples processed in Berlese-Tullgren funnels. The Collembola specimens were mounted in Hoyer's medium. The slides were prepared following CHRISTIANSEN & BELLINGER (1980, 1998).

RESULTS AND DISCUSSION

The taxa obtained during this study are listed on table I, followed by the locality where each one was found.

The present study gives the first records of Collembola for the State of Paraíba, and some of the records are new for Brazil. The occurrence of *Cryptopygus thermophilus* Axelson, 1900 is recorded for the first time from Brazil. *Lepidonella* Yosii, 1960; *Paronella* Schott, 1893; *Denisiella* Folsom & Mills, 1938; *Prorastriones* Delamare Deboutteville, 1947 and *Dicyrtoma* Bourlet, 1941 found in Paraíba are also the first records for these genera in Brazil. The genus *Lepidocyrtus* Bourlet, 1839 was listed in CULIK & ZEPPELINI (2003) as *L. pallidus* Reuter, 1890. However, this record is questionable (BELLINGER *et al.* 1996-2004). This implies that the species *L. nigrosetosus* Folsom, 1927 found in Paraíba is the first confirmed occurrence of this genus in Brazil.

The large number of undescribed species reflects the lack of studies of Collembola in Brazil. According to CULIK & ZEPPELINI (2003) and MARI-MUTT & BELLINGER (1990), there are 43 species of Collembola occurring in the Northeast region.

Table I. Collembola recorded for the first time in Paraíba State, Brazil (* in Loca Fedorenta cave).

Taxa	Localities			
	João Pessoa	Cabedelo	Cacimba de Dentro	Arurana
Cyphoderidae		X		
<i>Cyphoderus</i> sp.		X		
Entomobryidae	X	X	X	X
<i>Entomobrya</i> sp.	X			
<i>Lepidocyrtus nigrosetosus</i> Folsom, 1927	X	X		X
<i>Seira nigrans</i> Arlé, 1960				X
<i>Seira mirianae</i> Arlé & Guimarães, 1981			X	X
<i>Seira</i> sp. 1			X	
<i>Seira</i> sp. 2				X
<i>Seira</i> sp. 3	X			
Isotomidae	X			
<i>Cryptopygus thermophilus</i> Axelson, 1900	X			
Paronellidae	X			X
<i>Lepidonella</i> sp.				X
<i>Paronella</i> sp.	X			
<i>Trogolaphysa</i> sp.				X*
Brachystomellidae	X	X		
<i>Brachystomella agrosa</i> Wray, 1953	X	X		
Hypogastruridae	X			
<i>Xenylla</i> sp.	X			
Neanuridae	X			
<i>Neotropiella</i> sp.	X			
Bourletielidae			X	
<i>Prorastriones</i> sp.			X	
Dicyrtomidae	X			
<i>Dicyrtoma</i> sp.	X			
Sminthuridae	X		X	
<i>Denisiella</i> sp.			X	
<i>Sphaeridia heloisae</i> Arlé, 1984	X			

The diversity of environments and the size of the region, however, make it very likely that a much higher number of species exists. The thirteen undescribed species shown in table I corroborate this.

The specimens were collected in four different substrates. Leaf litter of tropical rain forest (UFPB and Pedra da Boca), seashore sand banks (Mar do Macaco), the inside of a cave (Loca Fedorenta, Araruna) and caatinga (Cacimba de Dentro). In Araruna, specimens were collected in soil, leaf litter and roots and in water pools inside the cave. In Cacimba de Dentro, only leaf litter and soils were generally collected, but *Denisiella* was collected on water pools, manually. As Table I shows, the largest number of species were found in the rain forest, where diversity is rather high.

CONCLUSIONS

Additional studies are needed to understand the diversity of this region. The large number of undescribed species indicates a need for more taxonomic work. This would enable researchers and environmental agencies to develop strategies for their conservation.

Acknowledgements. We thank Dr. K. Christiansen and Dr. F. Soto Adames for helping to identify the *L. nigrosetosus* species. Dr. J. Mari-Mutt, Dr. J. Palacios-Vargas and Dr. Christiansen, for providing literature to identify the species. Martin L. Christoffersen revised the manuscript.

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Received 07.V.2004; accepted 30.VIII.2004