

SHORT COMMUNICATION

Cytogenetics of six Brazilian species of Psocoptera

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ABSTRACT

The karyotypes of the following six species of Brazilian Psocoptera are reported: *Caecillius* sp. (Caecillidae), *Triplocania ? caudata* New (Ptiloneuridae), *Brachinodiscus cf. lepidus* (Banks) (Psocidae), *Psococerastis interrupta* New (Psocidae), *Ptycta nr reticulata* New (Psocidae) and *Trichadenotecnum sinuatum* New (Psocidae). All of them had males with $2n = 17$ and an X0 sex determining mechanism.

INTRODUCTION

Nearly 6,000 species of the order Psocoptera have been described. They are small insects found in different ecosystems around the world. Some species live in domestic habitats, such as species that live on papers in libraries, known as paper lice. Other species occur on dead leaves in the forest soil or on tree trunk surfaces. They are in general herbivorous or detritivorous, feeding on microflora or decomposing organic matter.

Few studies have been published on Psocoptera cytogenetics and the karyotypes of only 37 species are known. The first study was that of Boring (1913), followed by Goss (1954), Wong and Thornton (1966) and Jostes (1975). The largest contribution was that of Wong and Thornton with 21 species. A single study on Brazilian species was published by Mesa *et al.* (1991), in which the authors report the karyotypes of two species, both with $2n = 17$, X0 in males and $2n = 18$, XX in females. Meinander *et al.* (1974) published a paper on chromosome evolution of Psocoptera showing karyotypes of 11 species.

MATERIAL AND METHODS

The species studied were collected in Rio Claro (São Paulo, Brazil) and identified by Dr. T.R. New from La Trobe University, Bundoora, Victoria, Australia.

The following species were analyzed:

Family Caecillidae

Caecillius sp.: solitary individuals collected on house walls in June, 1990.

Family Ptiloneuridae

Triplocania ? caudata New: collected within the university campus as solitary individuals walking on log surfaces in February, 1992.

Family Psocidae

Brachinodiscus cf. lepidus (Banks): collected as solitary individuals on logs in October, 1990.

Psococerastis interrupta New: collected in small groups of individuals on tree trunks in May, 1991.

Ptycta nr reticulata New and *Trichadenotecnum sinuatum* New: collected as solitary individuals on tree trunks in January, 1992.

The slides were obtained from adult male testes, dissected in physiological solution and then

transferred to hypotonic KCl (0.075 M) for 5 min and squashed in a drop of 45% water solution of acetic acid. The slides were then warmed on a hot plate. When dry the slides were stained with a drop of 0.5% lacto-acetic orcein and covered with a cover slip.

RESULTS AND DISCUSSION

All six species had $2n = 17$ (m), with an X0 sex determining mechanism (Figures 1 to 6). The X-chromosome showed a typical univalent behavior during prophase. In *Cerastipsocus fuscipennis*, this chromosome at times appears as a normal univalent and at others has a small block, attached by a chromatin filament (Mesa et al., 1991).

This same karyotype has been found in the majority of Psocoptera species cytologically studied. Six species deviate from this general pattern: *Psoquila marginepunctata* with $2n = 19$ (m), *Psocatropus* sp. with $2n = 29$ (m), *Seopsis* sp. with $2n = 15$ (m) from Hong Kong (Wong and Thornton, 1966), *Metylophorus nebulosus* with $2n = 15$ (m), *Stenopsocus lachlani* with $2n = 23$ (m) and *Atropos pulsatorium* with $2n = 22$ (f) from Finland (Meinander et al., 1974).

Meinander et al. (1974) had noted the karyological uniformity of this group, although we still consider the number of species studied to be very low to be conclusive.

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RESUMO

São apresentados os cariótipos de seis espécies brasileiras de psocópteros: *Caecillius* sp. (Caecillidae), *Triplocania ? caudata* New (Ptiloneuridae), *Brachinodiscus* cf. *lepidus* (Banks) (Psocidae), *Psococerastis interrupta* New (Psocidae), *Ptycta* nr *reticulata* New (Psocidae) e *Trichadenotecnum sinuatum* New (Psocidae). Todas as espécies apresentaram $2n = 17$, com mecanismo de determinação do sexo do tipo X0 nos machos.

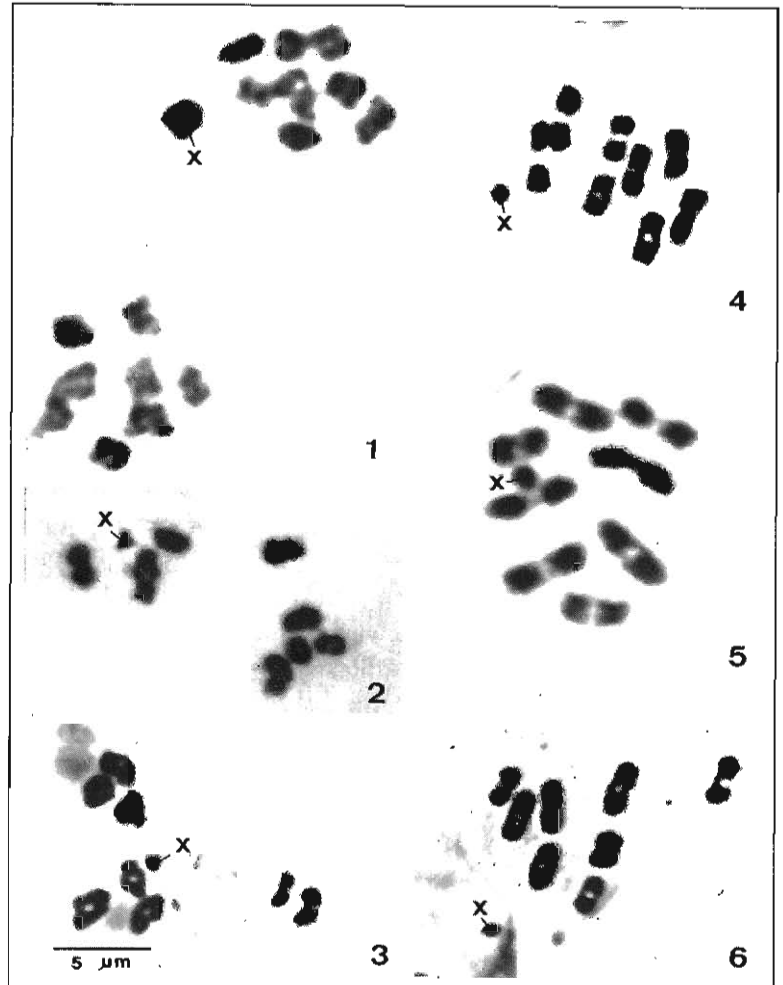


Figura 1-6 - 1, Metaphase II in *Brachinodiscus* cf. *lepidus*; 2, Metaphase I in *Caecillius* sp.; 3, Metaphase I in *Trichadenotecnum sinuatum*; 4, Metaphase I in *Psococerastis interrupta*; 5, Metaphase I in *Triplocania ? caudata*; 6, Metaphase I in *Ptycta* nr *reticulata*.

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