SHORT COMMUNICATION

Cytogenetics of six Brazilian species of Psocoptera

Edison Zefa, Carmem Silvia Fontanetti and Alejo Mesa

ABSTRACT

The karyotypes of the following six species of Brazilian Psocoptera are reported: Caecilius sp. (Caecillidae), Triplocania ? caudata New (Ptiloneuridae), Brachinodiscus cf. lepidus (Banks) (Psocidae), Psocerastis interrupta New (Psocidae), Ptycta nr reticulata New (Psocidae) and Trichadenotectum 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 Bering (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

Caecilius 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.

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


The slides were obtained from adult male testes, dissected in physiological solution and then
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 chromatid 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: Psocitila marginepunctata with 2n = 19 (m), Psocotropus sp. with 2n = 29 (m), Seopsis sp. with 2n = 15 (m) from Hong Kong (Wong and Thornton, 1966), Metaphrophora nebulosa with 2n = 15 (m), Stenosoccus laclhani 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: Caecilius sp. (Caecillidae), Triplodon ? caudata New (Ptiloneuridae), Brachinodiscus cf. lepidus (Banks) (Psocidae), Psococerasis interrupta New (Psocidae), Phycia nr reticulata New (Psocidae) e Trichodongetum situatum New (Psocidae). Todas as espécies apresentaram 2n = 17, com mecanismo de determinação do sexo do tipo X0 nos machos.

REFERENCES


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