Online journal ISSN - 1676-5680
GMR Genetics and Molecular Research
EVOLUTION AND TECHNOLOGY

Spermatogenesis and karyotypes of three species of water striders (Gerridae, Heteroptera)

M.M.U. Castanhole, L.L.V. Pereira, H.V. Souza and M.M. Itoyama

Departamento de Biologia, Laboratório de Citogenética e Molecular de Insetos,
Instituto de Biociências, Letras e Ciências Exatas,
Universidade Estadual Paulista Júlio de Mesquita Filho,
São José do Rio Preto, SP, Brasil

Corresponding author: M.M. Itoyama
E-mail: mary@ibilce.unesp.br

Genet. Mol. Res. 9 (3): 1343-1356 (2010)
Received March 18, 2010
Accepted May 14, 2010
Published July 13, 2010
DOI 10.4238/vol9-3gmr841

ABSTRACT. Although they are of economic importance, there have been few cytogenetic studies of the Gerridae (Heteroptera) in Brazil. We examined spermatogenesis (meiosis and spermiogenesis) and nucleolar behavior in three species of the family Gerridae. *Brachymetra albinerva* and *Halobatopsis platensis* were found to have a chromosome complement of 2n = 25 (24A + X0) and *Cylindrostethus palmaris* 2n = 29 (28A + X0) chromosomes. Fifteen individuals of these species were collected from the reservoir of São José do Rio Preto, SP, using screens and were transported in pots containing water to the laboratory, where cytogenetic preparations were made. The polyploidy nuclei are formed by several heteropyknotic regions; cells in meiotic prophase have a heteropyknotic region that is probably the sex chromosome, and the chromosomes from chiasmata. The spermatids are rounded and have a heteropyknotic region at the periphery of the nucleus; the sperm head is small, with a long tail. Silver impregnation of meiotic cells showed one or more disorganized bodies around the perichromosomal sheath. The round spermatids had two bodies next to each other, but these were elongated; one of the bodies remained in the head and the other migrated to the initial part of the tail at the end of spermagenesis, when the staining was no longer evident. The meiotic cells appear during

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spermatogenesis and have very similar silver-impregnation patterns in different species of Heteroptera.

Key words: *Brachymetra*; Chiasmata; *Cylindrostethus*; *Halobatopsis*; Holocentric chromosomes; Meiosis

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