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Study of nucleolar behavior during spermatogenesis in *Martarega brasiliensis* (Heteroptera, Notonectidae)

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ABSTRACT. Few cytogenetic studies have been undertaken using aquatic heteropterans and the nucleolar behavior of these insects has been described in only four species, *Limnogonus aduncus*, *Brachymetra albinerva*, *Halobatopsis platensis*, and *Cylindrostethus palmaris*. The nucleolus is a cellular structure related to biosynthetic

activity and it exhibits a peculiar behavior in the heteropterans of the Triatominae subfamily; it persists during all stages of meiosis. Thus, this study aims to analyze spermatogenesis in *Martarega brasiliensis*, with an emphasis on nucleolar behavior. Twenty *M. brasiliensis* adult males were used and collected from the Municipal reservoir in the city of São José do Rio Preto, São Paulo, Brazil. The species were fixed in methanol:acetic acid (3:1), then dissected, and the testicles were extracted, torn apart, and impregnated with silver ions. During prophase, the nuclei of *M. brasiliensis* were composed of the nucleolus and nucleolar corpuscles, which varied in number from one to four, emphasizing that this insect has great synthetic activity during meiosis. The analysis of cells in metaphase I showed that *M. brasiliensis* presents a nucleolar organizing region in at least one autosome. Furthermore, the phenomenon of nucleolar persistence was not observed. All spermatids presented nucleolar markings that varied in number and position according to the stage of elongation. Moreover, it was also possible to highlight the presence of a vesicle in spermatids. Thus, this paper describes the nucleolar behavior of *M. brasiliensis* and highlights important characteristics during spermatogenesis, thus, increasing the knowledge about the biology of these aquatic heteropterans.

Key words: Aquatic Heteroptera; Spermatogenesis; Meiosis

