

SPERM MORPHOLOGY OF TINGIDAE Laporte, 1833 (MIROIDEA: CIMICOMORPHA)

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March 11, 2024

Abstract

Here, we describe for the first time the sperm morphology of Tingidae (Heteroptera). They are small insects presenting lacy patterns on their pronotum and hemelytra and are exclusively phytophagous, with many economically important species. We studied five species of the tribe Tingini (Tinginae): *Teleonemia scrupulosa*, *Vatiga illudens*, *Gargaphia lunulata*, *Leptopharsa* sp., and *Corythucha arcuata*. Their spermiogenesis process is similar to other Heteroptera, with some differences in the formation of the centriole adjunct. This structure extends in the anteroposterior spermatid axis, flanking the nucleus, possibly contributing to nucleus remodelling and sperm elongation. The mature sperm of Tingidae is also similar to that of other Heteroptera, with features that corroborate the group's monophyly. Our data support previous results for their sister family, Miridae, which exhibits some characteristics exclusive to this taxon, not present in Tingidae or other Heteroptera. They also support the sister relationship of the genera *Gargaphia* and *Leptopharsa* and suggest closer relationship between *Vatiga* and *Corythucha*. Overall, this study sheds light on the sperm ultrastructure of Tingidae and provides information for understanding the evolution and diversity of Heteroptera.

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