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BODY SIZE AND ABUNDANCE OF *Pseudohypocera kerteszi* (DIPTERA, PHORIDAE) IN NESTS OF STINGLESS BEES (APIDAE, MELIPONINI)

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Phorid flies are a group of Diptera that feeds on decomposed matter, also acting as parasites and parasitoids of several groups. Many bee species are parasitized by phorids, which hinders their breeding; however, despite their importance, there are few studies about their ecology. In this work it was studied if there are differences among the body size of phorid flies that parasitize three species of stingless bees, and if there is any relationship the body size and abundance of phorid flies and the monthly variations of rainfall. The experiments were performed from April 2010 to September 2011 in the meliponary of Embrapa Amazônia Oriental, Belém/PA, Brazil. Inside each bee colony studied (only already infested nests; *Melipona flavolineata*, 4 nests; *M. fasciculata*, 13 nests, and *M. seminigra*, 26 nests) phorids were captured by the use of two traps that consisted of vials containing 30ml of white wine vinegar and the other with 30ml of red wine vinegar, which had an orifice on their lids to allow the phorids but not the bees enter them. The traps remained inside the colonies during seven days, and from the captured phorids were measured the maximum head width (HW) and interorbital distance (ID). Only females of *Pseudohypocera kerteszi* were used on the analyses, since it was the only species captured and the females represented 99% of the individuals. *Pseudohypocera kerteszi* females (n=21) that parasitized the *M. flavolineata* nests were significantly smaller (median \pm standard error) on their HW (0.781 ± 0.016) and ID (0.402 ± 0.009) than those that infested *M. fasciculata* (Kruskal-Wallis – Multiple comparison test: $p < 0.0001$; n=533; HW: 0.862 ± 0.003 ; ID: 0.448 ± 0.002) and *M. seminigra* colonies (Kruskal-Wallis - Multiple comparison test: $p < 0.0039$; n=100; HW: 0.919 ± 0.009 ; ID: 0.448 ± 0.007). Our results might be explained by the fact that the *M. flavolineata* nests were stronger than the other bee species, thus having a larger number of workers, which could block the infestation of large phorid flies. In this way, smaller phorids could enter and infest the *M. flavolineata* colonies more efficiently. The abundance (Spearman $R=0.13$) and the measures of head width ($R^2=0.50$) of *P. kerteszi* females inside bee colonies showed a positive relationship with monthly rainfall, probably because in the rainy season the worker populations normally decrease.

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