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## Wing sexual dimorphism of pathogens-vector culicids

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**S** exual differentiation in Culicidae and its implications on epidemiological importance have been extensively studied. Although only females bear blood-sucking organisms and have vectorial capacity for pathogens, they lack conspicuous taxonomic diagnostic characters in some species. Mosquito wings also play sex-specific roles (courtship sound production by males and precise appetent flight of females). Even though, wing sexual dimorphism (SD) is poorly investigated. Aiming to further the knowledge on this filed, we used geometric morphometrics to comparatively characterise the SD of eleven Neotropical medically-important culicids: *Culex quinquefasciatus, Culex nigripalpus, Aedes aegypti, Aedes albopictus, Aedes scapularis, Anopheles darlingi, Anopheles albitarsis, Anopheles homunculus, Anopheles cruzii and Anopheles strodei.* The amount of SD, estimated by nonparametrical shape disparity, variated according to the species and was not correlated to phylogenetic relationships. Additionally, SD levels did not correlate to the habitat (sylvatic or urban) and appeared to be species-specific. *An. darlingi* presented the lowest SD score (4.7) whereas *Cx. quinquefasciatus* reached the highest score (SD>34.0). Remarkably, its score was nearly three times the mean SD score of all species. We hypothesized that such discrepancy is partly due to the hostile habitat of *Cx. quaquefasciatus* (highly polluted urban river). Phenogram of wing shape including the two sexes and all species revealed that only the cluster of females was topologically similar to the phylogenetic tree, suggesting that male and female wings undergo distinct evolutionary histories. Pragmatically, sexes and species can be diagnosed by wing characters. Phylosophically, we should further investigate the possibility of Darwin's sexual selection on wing traits.

## Biography

Flávia Virginio Fonseca has completed her graduation in Biological Sciences at the age of 21 years (2010) in the Universidade do Sul de Santa Catarina. Currently is Science Ph.D. student at the Universidade de São Paulo acting on the following topics: geometric morphometrics and genetic population studies using mosquitoes.

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