**Fluctuating asymmetry in specialized mouthparts of *Xeromelissa rozeni* (Hymenoptera: Colletidae)**

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Fluctuating asymmetry (FA), random deviations from perfect symmetry in bilateral traits, is a common measure of developmental stability (DS), which is defined as ones ability to buffer against environmental and genetic perturbation. There is a widespread hypothesis that heterozygosity grants an increased ability to compensate for genetic variation caused by genetic and environmental factors, rendering homozygous individual less symmetric. This hypothesis is especially well tested in haploidiploid organisms, which present a clear distinction between “homo”zygosity (males) and heterozygosity (females). Relatively few FA studies looked at this relationship in Hymenopterans or in haplodiploid organisms in general and the results are rather inconsistent.  In addition to this, if natural selection on FA is common, non-essential traits should exhibit higher asymmetry than functionally essential traits. This study compares FA measurements of seven maxillary palp segments (taken to the nearest 0.1 um) between males and females of the Chilean bee, *Xeromelissa rozeni.* The results showed no sign of FA difference between sexes for any of the traits (*P*>0.05). Although a significant difference in FA variation among traits was noted with an exceptionally high levels of FA in membranous and apical (non-functional) parts (*P*<0.01). The results of this study suggest that there is an equally strong selection force for maxillary palp symmetry in both males and females leading to a relatively low FA in both sexes, and that less functional traits exhibit higher FA due to relaxation of selection.