

# The ecological interactions between the New Zealand Giraffe weevil (Coleoptera: Brentidae) and associated mites

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Eligible for student prize

Many mite species hitchhike on other arthropods in order to disperse to a new food source or where they can successfully complete their life cycle. The relative load of mites on hosts can be affected by sexual selection. According to this theory male hosts, already bearing physiological costs of a sexually selected trait, are more likely to be infected with ecto-parasites. Thus the load, prevalence and incidence of ecto-parasites tend to be more skewed toward male hosts. The New Zealand endemic giraffe weevil (*Lasiorrhynchus barbicornis*) displays incredible sexual dimorphism; a male rostrum makes up half its body length and is used as a weapon to fight with other males and defend females. An assemblage of mites has been found on the bodies of these weevils, and there appears to be at least 4 different mite morpho-types observed on an average weevil. It is of interest to determine whether these mites are parasitizing the weevils in order to survive and reproduce, or using the weevils as a vehicle of dispersion (phoresy). Using data collected over 3 years for a single wild population of giraffe weevils, we explore whether mite load corresponds to host sex, size, time of year, and eco-habitat the host was initially found. We also aim to determine if a high density of hosts at a given location correlates to a high incidence of mites. To determine whether these mites are specialised 'hitchhikers' or not, we will be examining the assemblage of mites found on different body parts of the host, other potential host insects and possible sources of where the mites come from. We will discuss the findings in relation to host and parasite interactions and the possible reasons why giraffe weevils are a suitable candidate for mite dispersion

