

All's fair in love and war? Lifetime mating success in New Zealand giraffe weevils (*Lasiornychus barbicornis*)

Rebecca Le Grice ^{*1}, Chrissie Painting ¹, Greg Holwell ¹

¹ School of Biological Sciences, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand

Eligible for student prize

Exaggerated traits such as elaborate ornaments and weaponry evolve in animal populations under the influence of sexual selection. These traits are used (almost exclusively by males) to compete for and gain access to mates. However, reproductive success is not weighted entirely on a single mating opportunity, but varies throughout an individual's lifetime. Consequently, lifetime reproductive success is a more definitive measure of an individual's fitness, revealing any trade-offs during their life history. The New Zealand giraffe weevil (*Lasiornychus barbicornis*) provides an ideal study subject for the investigation of reproductive success in the field. Males bear an elongated rostrum used as a weapon in male-male contests over females. Furthermore, extreme variation in male body size potentially influences lifetime reproductive success, through its effect on individual lifespan and use of alternative reproductive tactics in a population. Together these factors create a fascinating framework for the investigation of lifetime reproductive success. This study investigates mating success as a proxy for lifetime reproductive success using mark and recapture observational studies in the field to determine the effect of age and body size on individual reproductive success. Lifetime reproductive success is challenging to study, especially in wild populations, where information is extremely scant. This research focus aims to contribute to our understanding of the reproductive ecology of wild animal populations and draw a clearer picture of the way in which sexual selection drives trait exaggeration in the giraffe weevil.

