Program
Abstracts
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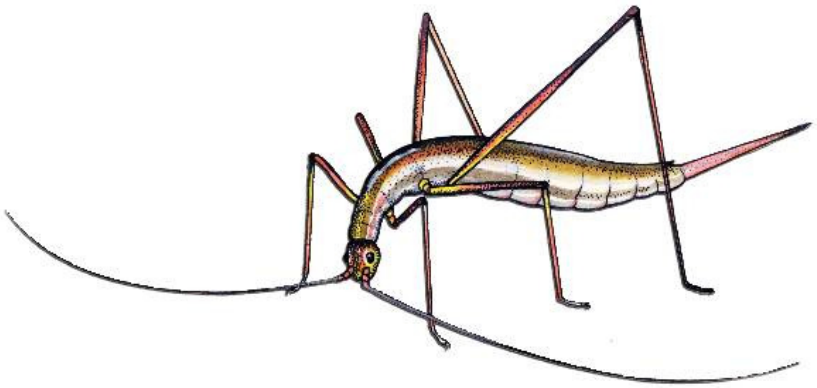
ABSTRACT BOOK



[075] DIRECTIONAL AND NON-DIRECTIONAL SEXUAL SELECTION IN MALE GUPPIES

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Male fitness is determined by traits that come into play before and after mating. The different shape of fitness functions of pre- and post-copulatory traits, and the differences between individuals in the absolute and relative amount of resources allocated to reproduction, make difficult to predict the pattern of allocation between these traits. Moreover, investment in life-history traits and genetic similarity between partners can further complicate the scenario. While it has been suggested that post-copulatory sexual selection increases the variance in male reproductive success, amplifying pre-copulatory sexual selection, experimental studies provided contrasting results. We investigated sexual selection pressures in *Poecilia reticulata*, a species with high level of sperm competition. We related variance in male reproductive success in 10 experimental replicates in which 6 males and 8 females could interact for one month. We collected one brood from each female and related the paternity of 542 offspring to the phenotype of their father. We considered pre- (attractiveness, mating behavior, colors), post-copulatory traits (sperm number and velocity), and genetic similarity between mates. This is the first attempt, to our knowledge, to determine the relative importance of pre- and post-copulatory traits on the one hand, and genetic similarity between mates on the other hand.

[112] SELECTION FOR AND HERITABILITY OF ALTERNATIVE BREEDING STRATEGIES IN THE COOPERATIVELY BREEDING SEYCHELLES WARBLER

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Different behavioural strategies may be employed to gain direct fitness benefits, and these strategies should be adapted to maximise lifetime fitness. Although, selection for different breeding strategies has been demonstrated in natural systems, heritabilities are difficult to estimate, requiring long-term study of individual behaviour, a multigenerational pedigree, and molecular and statistical techniques only recently adapted for natural systems. We evaluate selection for and heritability of breeding strategies using a 16-year data set, of 1,395 individually marked birds in a contained wild-living island-population of Seychelles warblers *Acrocephalus sechellensis*, which presents a rare opportunity to measure fitness accurately. Previous molecular genetic analyses of 59 chicks revealed that 38% of chicks were sired by extra-group dominant males, and 15% and 2% of chicks were assigned to co-breeding subordinate females, and subordinate males, respectively. We extend this analysis using 1,366 individuals that have been genotyped for 30 microsatellite loci. Using Bayesian methods we have built the most-likely pedigree and demonstrated individual variation in helping behaviour. We extend this to look at dominance, co-breeding and infidelity and test for heritability of these traits. We combine our findings to improve our understanding of the adaptive basis of reproductive decisions in the cooperatively breeding Seychelles warbler

[065] NUTRIENT COMPENSATORY FORAGING IN A MASS RECRUITING ANT

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The geometric framework model predicts that animal foraging decisions are influenced by their dietary history, with animals targeting a combination of essential nutrients through compensatory foraging. We provide the first experimental confirmation of nutrient-specific compensatory foraging in a natural, free-living population of animals. Colonies of the ant, *Iridomyrmex suchieri* were provided for seven days with a feeder containing either a protein-rich or carbohydrate-rich diet. On the seven day, each colony was provided with a feeder containing either the same or the alternative diet. Feeders with carbohydrate diet attracted more workers than those with protein diet; fewer ants visited feeders if the colony had prior access to protein than carbohydrates; and the relative recruitment to the two diets was less if the colonies had been previously fed carbohydrate than protein. These data are consistent with theory and earlier experiments on captive individuals. It is remarkable that experiments with free-living individuals reveal a similar pattern of compensatory foraging, despite alternative sources of food being available to workers in their natural environment.