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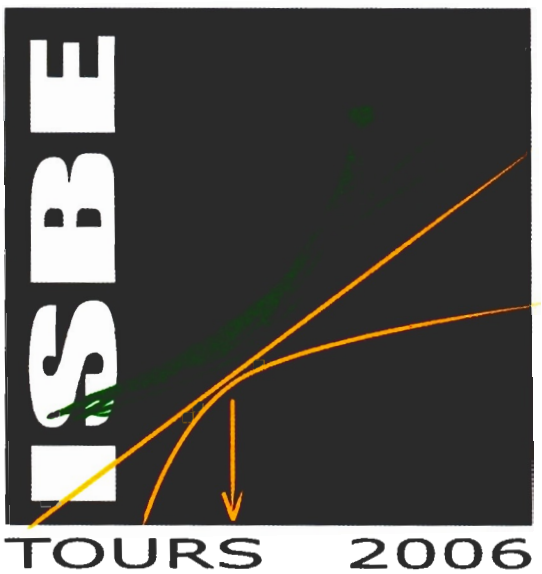

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MATING WITH OLDER MALES REDUCES INBREEDING RISK IN THE THORNBUG, *UMBONIA CRASSICORNIS* (HEMIPTERA: MEMBRACIDAE)

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The social environment of many species includes synchronous maturation of siblings in family groups, followed by limited dispersal of adults from their natal site. Limited dispersal can result in individuals experiencing high encounter rates with same-age siblings during mate searching, increasing their risk of inbreeding. One hypothesis to explain how females avoid inbreeding in such species is mate discrimination in favor of older males. Since siblings mature synchronously, a female that mates with an older male is ensured of outbreeding because such a male could not be part of her natal family. We tested this hypothesis in the thornbug, *Umbonia crassicornis*, a semelparous species with a social environment that exposes females to high levels of inbreeding risk with their same-age brothers. Furthermore, female thornbugs that mate with a brother suffer from inbreeding depression. We used a free-choice experiment that offered females simultaneous mating opportunities with males differing in age and relatedness. Results showed females were courted by, and mated with, a greater proportion of older males. Females did not discriminate between siblings and non-siblings of equal age, suggesting they were unable to identify siblings when age cues were held constant. These findings support the hypothesis that mating with older males facilitates outbreeding in thornbugs. Our results also suggest that female mating decisions may be influenced by variation in male courtship behavior, which might reflect differences in male genetic quality. Thus, female *U. crassicornis* may also be obtaining mating benefits from their mates independent of those acquired from outbreeding.

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SOCIAL INTERACTIONS IN THE ANT *CAMPONOTUS FELLAH*: IMMUNOLOGICAL CORRELATES

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Sociability is based on a trade-off between costs and benefits. Insect societies are exposed to a myriad of pathogens. In their life history, they should have developed strategies to face the risks of living in societies. These include physiological and behavioural mechanisms of defence. We studied the behaviour of the ant *Camponotus fellah* toward immune challenged workers. This species exhibits high levels of social interactions and dedicate particularly a great amount of time in trophallaxis and allogrooming behaviour. Such tasks can increase asepsy in the colony; but they expose the caring worker to a high risk of becoming infected and increasing the level of infection in the colony. Media workers were challenged by injection of 0.2 µl of peptidoglycan (0.5mg/ml) from *Staphylococcus aureus*, a pathogenic bacterium. This substance mimics a bacterial infection. Four hours after injury, the ants behaviour was observed inside the colony. Challenged workers received significantly less grooming than control workers treated with Ringer solution only. We hypothesized that workers of *C. fellah* can detect sick workers and minimize the contact with them. In order to examine this question more carefully, the activity of peptidoglycan from different types of bacteria (pathogenic or not) will be compared in other behavioural assays.

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COURTSHIP FEEDING BEHAVIOR IN THE HAWAIIAN SWORDTAIL CRICKET, *LAUPALA CERASINA*: AN INVESTIGATION OF SPERMLESS SPERMATOPHORE FUNCTION

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Orthopterans are known for their diverse courtship feeding adaptations such as specialized glandular secretions, body parts offered for consumption and extra spermatophore components. The swordtail cricket genus *Laupala* has an elaborate courtship and mating system consisting of multiple copulations and the transfer from males to females of many spermless "microspermatophores" and one larger, sperm-containing "macrospermatophore" which females subsequently eat. Nuptial gifts typically function to increase male mating effort, which results in increased mating opportunities or an increased proportion of eggs fertilized by a male for a given female. We tested the hypothesis that microspermatophores function to: 1) increase the likelihood of macrospermatophore transfer, thereby increasing male mating opportunity; 2) increase the amount of ejaculate transferred by protecting the macrospermatophore from premature consumption; 3) induce females to accept more ejaculate; 4) extend female latency to remating, thereby reducing sperm competition. Each mating experiment consisted of two treatment groups: 1) females that received microspermatophores and a macrospermatophore; 2) females that received only a macrospermatophore. We found that females do not require microspermatophores to accept a macrospermatophore; however, microspermatophores do affect female reproduction. Results demonstrate that microspermatophore transfer extends female latency to remate. Preliminary data also suggest that microspermatophores have a positive effect on sperm transfer. Microspermatophores may either represent a form of male manipulation or a character that females use in cryptic female choice.