DOES POST-COPULATORY MATE GUARDING INFLUENCE THE FEMALE FORAGING BEHAVIOUR IN A SOLITARY BEE?

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Mate guarding can impose costs to females, like reduced moving ability, feeding and survival. Females can prevent frequent copulation attempts by segregating spatially from males. We investigated post-copulatory mate guarding in the polyandrous solitary bee *Arhysosage cactorum* (Andrenidae). After copulation, males remained associated with their partners being carried by females during pollen foraging. Here we verify if male guarding reduces pollen foraging efficiency of females in terms of duration of pollen collection, and if the presence of males on flowers of *Parodia* (Cactaceae) influences the movement of females. The study was conducted in the Pampa region of South Brazil during two flight seasons. We measured the duration of post-mating associations and pollen foraging of females alone and while mating, using video recordings in the field. Females and males caught during copulation were weighed individually with a portable microbalance. Copulations lasted from 2 s to 900 s (89.61 ± 150.25s; N=59). During mating, females in pair became circa 80% heavier and expended twice the foraging time per flower than females alone. When presenting dead conspecific males in host-flowers, females visited preferentially flowers without males (83% of the visits; F= 10.87, df=41, P< 0.001, N=44) than those containing ambushed males. In *A. cactorum*, male guarding reduces pollen foraging efficiency of females. We suggest, therefore, that the changes in female foraging behaviour is a strategy to diminish the costs imposed by the male mating behavior on the females' gain of food resources.

HORMONAL REGULATION OF ECDYSIS INNATE BEHAVIOR IN THE HEMIMETABOLOUS INSECT *Rhodnius prolixus*

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In insects, ecdysis sequence is a series of stereotyped innate behaviors performed at the end of each molting period, in order to shed the old cuticle and to emerge as the following stage in the vital cycle. The hormonal regulation of ecdysis has been studied in holometabolous insects; it includes the participation of ecdysteroids and peptidic hormones. However, in spite of the fundamental differences in ecdysis between holometabolous and hemimetabolous, the hormonal regulation of this process has not been characterized in the latter. We studied the neuropeptidergic network controlling ecdysis in the model insect *Rhonius prolixus*, using RNAi-mediated gene silencing and related techniques. Our results showed conservation of some components of this network throughout the class Insecta. Remarkably, we found the central participation of Orcokinins, a poorly studied neuropeptide family whose role in post-embryonic development is reported for the first time.