p-28

(p-28)NEURAL CONTROL OF PHEROMONE INHIBITION IN TWO *Choristoneura* SPECIES

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This study examines the control of pheromone inhibition following mating in *Choristoneura fumiferana* and *C. rosaceana*, by interrupting mating at regular intervals during the 3 hours of mating. Just the insertion of male genitalia (after 30 min) induced a slight decline of the pheromone titre 24 h later, in both species. Following the transfer of a spermatophore (after 90 min), pheromone titre in *C. fumiferana* did not change while in *C. rosaceana*, there was a further decline. However, in both species, it was the presence of a full ejaculate in the bursa that caused the most marked drop in pheromone titre. As this decline coincided with the migration of sperm to spermatheca, this process was further investigated by severing the ventral nerve cord (VNC) prior to and after the appearance of sperm in the spermatheca. In *C. fumiferana*, a sperm-filled spermatheca was required to turn-off pheromone production. In *C. rosacena* this was not the direct cause, as transection of the VNC 3 h after mating, just prior to sperm entering the spermatheca, still inhibited pheromone synthesis. As sperm is moving along seminal and/or spermathecal ducts at this time, it may provide a cue for permanent pheromonostasis. These findings suggest a somewhat different mechanism operating in the two species, possibly related to differences in their reproductive biology.

[< < Previous | Index | Next > >]