Social Insects
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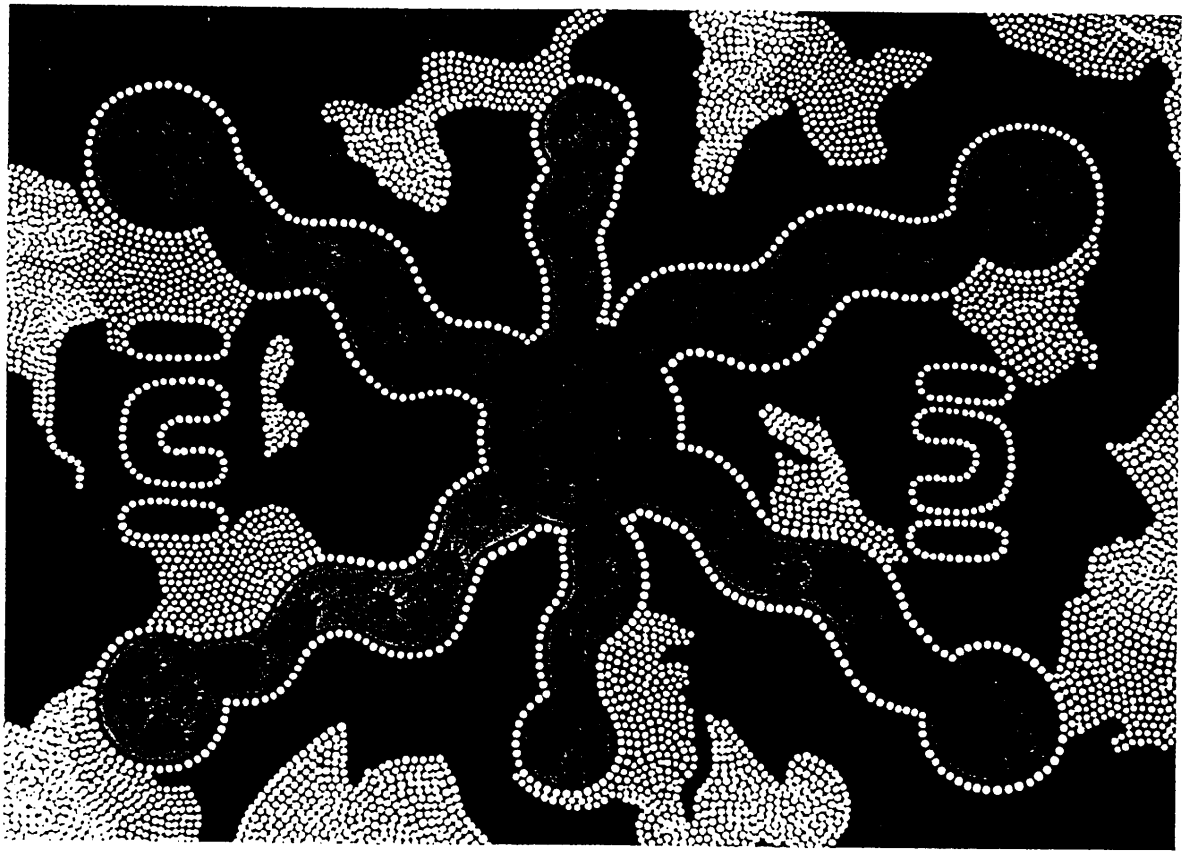

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EFFECTS OF TOPICAL JUVENILE HORMONE AND PRECOCENE TREATMENTS ON SEXUALLY MATURE *Solenopsis invicta* FEMALE ALATES AND THE COMPARISON OF THE RATES OF DEALATION OF ALATES OF DIFFERENT AGES

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Topical treatments of JH III induced wing casting in sexually mature *Solenopsis invicta* female alates. One hundred percent dealation occurred within 24hr of applying 1ng of JH III in 1ul of acetone, while longer time periods were observed for smaller doses. Topical applications of precocene I and II (100ug/ul of acetone) prevented dealation in disinhibited alates. Since precocene destroys the corpora allata, the source of JH, these results strongly suggest that JH is the natural inducer of wing casting in *S. invicta.*

Similar rates of dealation were observed in sexually immature (newly-eclosed) and mature (7-day- and 14-day-old) *S. invicta* female alates that were released from queen pheromonal control. One hundred percent dealation occurred within four days of disinhibition. The results of this study suggest that the quantities of JH produced in *S. invicta* do not increase with age; hence, once freed from pheromonal control, sexually mature female alates do not shed their wings more readily than sexually immature individuals. These findings also suggest that the corpora allata of alates become active within four days of pheromonal liberation, regardless of sexual maturity.

Keywords: DEALATION, JUVENILE HORMONE, PRECOCENE