

Stress response in the social, parasitic insect *Copidosoma floridanum* (Hymenoptera).
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Environmental stress in insects can have major ecological impacts. Endoparasitic insects face a unique set of challenges because their environment is defined by their host during at least a portion of their life. *Copidosoma floridanum* is an endoparasitic, polyembryonic, social wasp that can lay its eggs in the eggs of the moth host, *Trichoplusia ni* (cabbage looper). *T. ni* is a common crop pest in the Southeastern United States. From a single *C. floridanum* egg, thousands of genetically identical offspring develop. From these clonal siblings, two larval castes arise, a sterile soldier caste and a reproductive caste. Previous research indicates that soldier number increases in response to competition from other parasites that share the same host. It is unclear if this increase in soldier number is specifically a result of competition or a response to stress in general. Heat is a common stressor experienced by insects in Georgia. To mimic summer temperature conditions, we reared *T. ni* hosts parasitized by *C. floridanum* at 43°C for 2 hours. Hosts were then dissected to count the number of *C. floridanum* soldiers produced. An increase in soldier number would suggest a general response to stress, while no change in soldier number may indicate a specific response to competition. There was no significant difference in soldier number between control and heat shock groups (df=1, F=0.90, p>0.34) indicating that soldier number increase may be a specific response to competition. This research was funded by the UNG Biology Department and the UNG CURCA FUSE program.

Key words: *Copidosoma*, polymembryony, endoparasite, stress response, castes