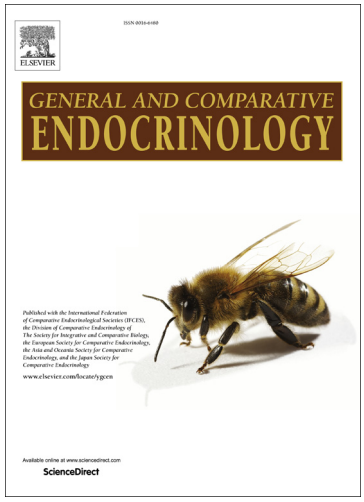

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Maternal androgens in avian brood parasites and their hosts: responses to parasitism and competition?

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ABSTRACT

In the coevolutionary dynamic of avian brood parasites and their hosts, maternal (or transgenerational) effects have rarely been investigated. We examined the potential role of elevated yolk testosterone in eggs of the principal brood parasite in North America, the brown-headed cowbird, and three of its frequent host species. Elevated maternal androgens in eggs are a common maternal effect observed in many avian species when breeding conditions are unfavorable. These steroids accelerate embryo development, shorten incubation period, increase nestling growth rate, and enhance begging vigor, all traits that can increase the survival of offspring. We hypothesized that elevated maternal androgens in host eggs are a defense against brood parasitism. Our second hypothesis was that elevated maternal androgens in cowbird eggs are a defense against intra-specific competition. For host species, we found that elevated yolk testosterone was correlated with parasitized nests of small species, those whose nest success is most reduced by cowbird parasitism. For cowbirds, we found that elevated yolk testosterone was correlated with eggs in multiply-parasitized nests, which indicate intra-specific competition for nests due to high cowbird density.