

Accepted Manuscript

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

D. Caldwell Hahn, John C. Wingfield, David M. Fox, Brian G. Walker, Jill E. Thomley

PII: S0016-6480(16)30308-2

DOI: <http://dx.doi.org/10.1016/j.ygcen.2016.10.004>

Reference: YGCEN 12508

To appear in: *General and Comparative Endocrinology*

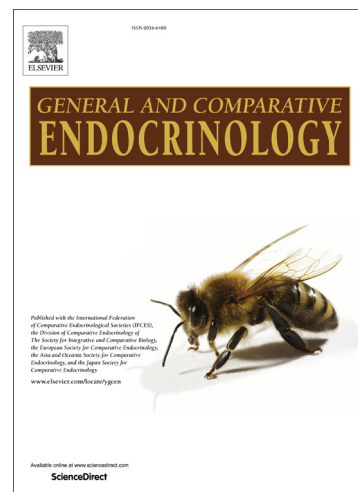
Received Date: 24 June 2013

Revised Date: 10 October 2016

Accepted Date: 12 October 2016

Please cite this article as: Caldwell Hahn, D., Wingfield, J.C., Fox, D.M., Walker, B.G., Thomley, J.E., Maternal androgens in avian brood parasites and their hosts: responses to parasitism and competition?, *General and Comparative Endocrinology* (2016), doi: <http://dx.doi.org/10.1016/j.ygcen.2016.10.004>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



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

3
4 D. Caldwell Hahn^{1,*}, John C. Wingfield², David M. Fox³, Brian G. Walker⁴, Jill E. Thomley⁵

5
6 ¹ US Geological Survey, Patuxent Wildlife Research Center, Laurel, MD, USA 20708;

7 chahn@usgs.gov

8 ² Dept. of Neurobiology, Physiology and Behavior, University of California,

9 Davis, CA, USA 98195; jcingfield@gmail.com

10 ³ US National Parks Service, Jean Lafitte National Historical Park and Preserve,

11 Marrero, LA 70072; david_m_fox@nps.gov

12 ⁴ Dept. Biology, Fairfield University, Fairfield, CT 06824; bwalker@fairfield.edu

13 ⁵ Dept of Mathematical Sciences, Appalachian State University, Boone, NC 28608;

14 thomleyje@appstate.edu

15
16 * Author for correspondence (chahn@usgs.gov); telephone 703-785-9395

17
18
19 ABSTRACT

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

Download English Version:

<https://daneshyari.com/en/article/8631557>

Download Persian Version:

<https://daneshyari.com/article/8631557>

[Daneshyari.com](https://daneshyari.com)