

Integration of ecology and endocrinology in avian reproduction: a new synthesis

Compiled and edited by John C Wingfield, Marcel E Visser and Tony D Williams

Published May 2008

Special offer price: £47.50 (usual price: £59.50)



Birds are some of the most familiar organisms of global ecosystems. Changes in the visibility and abundance of birds are excellent indicators of population and physiological responses to habitat changes, and are a major focus for public concern about detrimental environmental changes.

In order to understand how birds respond to these challenges, it is essential to determine how the environment affects reproduction under natural conditions. The continuum from environmental signals, such as day length and temperature, to reproduction itself depends upon a cascade of neural and physiological processes which determine the extent and rate at which birds will be able to adapt to changes in their environment (such as global warming). For a full understanding of this ability to adapt, ecologists and endocrinologists need to collaborate and build a common framework.

The objective of this theme issue is to address how evolutionary ecologists and endocrinologists can collaborate directly using avian reproduction as a model system. This framework will ultimately apply to all organisms because the principles involved are universal.

Subscribers to *Philosophical Transactions of the Royal Society B: Biological Sciences* can access the full content online at: publishing.royalsociety.org/avian-endocrinology

Non-subscribers can purchase the print issue at the specially reduced price shown above. To place an order at the discounted price, please send payment by cheque (made payable to Portland Customer Services) or by Visa or MasterCard (quoting reference **TB 1497**) to:

Portland Customer Services, Commerce Way, Colchester CO2 8HP, UK
Tel: +44 (0)1206 796351 Email: sales@portland-services.com

For further information on related organismal, environmental and evolutionary biology issues please visit publishing.royalsociety.org/philtransb/environment-evolution

Contents

Introduction. Integration of ecology and endocrinology in avian reproduction: a new synthesis

John C Wingfield, Marcel E Visser and Tony D Williams

Neuroendocrine control of life histories: what do we need to know to understand the evolution of phenotypic plasticity?

C(Kate) M Lessells

Review. Do hormonal control systems produce evolutionary inertia?

Elizabeth Adkins-Regan

Review. Hormone-mediated suites as adaptations and evolutionary constraints

Joel W McGlothlin and Ellen D Ketterson

Review. Control of the annual cycle in birds: endocrine constraints and plasticity in response to ecological variability

Alistair Dawson

Review. Early growth conditions, phenotypic development and environmental change

Pat Monaghan

Review. Hormone-mediated maternal effects in birds: *mechanisms* matter but what do we know of them?

Ton GG Groothuis and Hubert Schwabl

Variation in maternal effects and embryonic development rates among passerine species

Thomas E Martin and Hubert Schwabl

Review. Meiotic drive and sex determination: molecular and cytological mechanisms of sex ratio adjustment in birds

Joanna Rutkowska and Alexander V Badyaev

Review. Individual variation in endocrine systems: moving beyond the ‘tyranny of the Golden Mean’

Tony D Williams

Review. Individual variation and the endocrine regulation of behaviour and physiology in birds: a cellular/molecular perspective

Gregory F Ball and Jacques Balthazart

Review. Sources of individual variation in plasma testosterone levels

Bart Kempenaers, Anne Peters and Katharina Foerster