



International Society for Behavioral Ecology

Newsletter

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Editorial

There are several things to highlight in the current issue of the Newsletter.

First, I would like to direct society members to the invitation (page 28) and advertisement (page 36) for the 11th Congress of the International Society for Behavioral Ecology to be held in Tours, France in July 2006.

Second, in addition to several insightful book reviews, this issue also contains an article on scientific misconduct that builds on the commentary by Montgomerie and Birkhead published in the previous Newsletter (ISBE Newsletter 17: 16-24). In his article "Improving the processing of scientific misconduct charges: an eyewitness perspective", Anders Pape Møller uses his own experience on this subject to review and recommend policies for handling accusations of misconduct. Due to the serious consequences on individuals' careers that can stem from charges of misconduct, it is imperative that judicious reviews of the allegations are conducted. I applaud Anders for sharing his experiences, and moreover for using these to analytically assess and provide recommendations for how such cases should be conducted.

Finally, there will be a special edition of the Newsletter distributed with the January/February issue of Behavioral Ecology. This Newsletter will contain information on candidates for election into the Society's executive. In the past, the ballots have been published in the Newsletter and mail-in voting used for elections. For the upcoming election, the ISBE will be making use of electronic voting, hosted by Oxford University Press.

Contents of this Issue

Editorial	25
Contributions to the ISBE Newsletter	26
Current Executive	27
Society News	28
ISBE 2006 Conference Announcement	28
Book Reviews	
Nature's Music: The Science of Birdsong (Marler & Slabbekoorn, eds. 2004) Review by Rupert C. Marshall	29-30
The Behavior of Animals: Mechanisms, Function, and Evolution (Bolhuis & Giraldeau, eds. 2005) Review by Dezene Huber	31-32
Animal Architecture (Hansell, 2005) Review by B. Staffan Lindgren	33
Commentaries	
Improving the processing of scientific misconduct charges: an eyewitness perspective Anders Pape Møller	34-35

Instructions for on-line voting will be published alongside the Candidate bios in the special edition of the Newsletter. Please keep an eye out for this and participate in voting.

I would like to thank all contributors to this issue, and encourage continued submission of ideas for book, workshop & conference reviews, and commentary articles (as well as cartoons). Deadline for the Spring issue of the Newsletter will be **1 March 2006**.

Ken Otter
Newsletter Editor

CONTRIBUTIONS TO THE ISBE NEWSLETTER

The ISBE Newsletter publishes Book Reviews, Conference and Workshop Reviews and Commentary Articles of interest to the *International Society for Behavioral Ecology*. *The ISBE Newsletter will only consider work that is not already published or intended to be submitted for publication elsewhere.*

Book Reviews: Reviews are generally solicited by the Editor as new books arrive at the office, and are deemed to be of interest to the society. Persons involved in the publishing of books who would like these to be considered for review in the Newsletter may contact the Editor and arrange for their publisher to forward a review copy to this office. Authors may submit a list of possible reviewers. Alternately, members who wish to review a particular text should contact the Editor. The Editor will provide reviewers with instructions and a style sheet. Reviews are typically 1500 Words.

Workshop/Conference Reviews: Workshop and/or Conference reviews should be prepared in one of the following two formats. **Brief synopses** (max 1500 words) may be submitted by either participants or conference organizers at the regular newsletter deadlines. These can include synopses of workshops that will be published in more detailed accounts (book or special journals), and should include information as to where the information will be published. **Longer reports** (max 2500 words) will be considered from large workshops/conferences for which other publications are not stemming. The purpose of the latter format is to provide a venue to disseminate information and discussions that would otherwise not be available to non-conference participants. Anyone attending such a workshop and wishing to publish in the Newsletter should contact the Editor at least **one month** prior to submission deadlines. Reports should aim at a critical assessment of the conference, as well as a synthesis of the convergent ideas presented. A synopsis of future directions of research that were reached at the end of the conference should also be included. Anyone attending the workshops may submit reports, but preference will be given to submissions not authored by conference organizers. A single application for a workshop will be considered, so it may be appropriate to agree upon a reporter at the conference. Graduate students and postdocs are strongly encouraged to consider contributing to writing these reports.

Commentaries: Responses to commentary articles published in the newsletter or articles eliciting discussion on topics relevant to the society will be considered for publication. Authors of such articles should contact the Editor at least **one month** prior to regular submission deadlines to outline the content of the article. The Editor may request submission of the article earlier than regular deadline should outside reviewing be deemed necessary.

Cartoons: Cartoonists and other artists are encouraged to submit artwork, either in hardcopy, or as TIFF or high resolution (300 dpi) GIF files. All cartoons published in the newsletter will be credited to the illustrator, and will appear on the Newsletter's website (web.unbc.ca/isbe/newsletter).

Deadlines for submission to the Spring/Summer newsletter will be 1 March 2005.



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Society News

Most Society News – workshops, conferences and job postings – is now publicized on our website (web.unbc.ca/isbe/newsletter). This allows ads and announcements to be posted shortly after receipt so that deadlines falling between newsletter distributions can be advertised. If you would like to advertise workshops, conferences or job postings of interest to the society, contact Ken Otter (otterk@unbc.ca) for posting.

CHANGES TO SPOUSAL MEMBERSHIP PROGRAM

Spousal memberships, whereby individuals could pay a nominal fee to join the society without subscribing to the journal if their spouse was also a society member, has been replaced. Everyone now has the option to join the society without taking a subscription to the journal. Such memberships will receive the Newsletter and announcements for the biennial conference. Information on this process is available on the society's (web.unbc.ca/isbe/ISBEmembership.htm) and Oxford University Press' *Behavioral Ecology* webpages (beheco.oupjournals.org).

DONATED SUBSCRIPTION PROGRAMME

Please help colleagues in need. Every donation will help increase scientific contacts across the world. In a time when nationalism is again raising its ugly head, this is more important than ever. For details, see the advertisement on the inside back cover of *Behavioral Ecology* volume 12(4).

WORKSHOPS AND OTHER MEETINGS (more detailed information is available on the website)

The 24th International Ornithological Congress will be held in Hamburg, Germany, 13-19 August 2006.
<http://www.i-o-c.org/>

ISBE 2006 Conference, Tours, France

The organizing committee would like to invite you to participate in the 11th Congress of the ISBE held in Tours, France, between 23rd and 29th of July 2006. Tours is located in the heart of the Loire valley, acknowledged for its outstanding cultural landscape of great beauty in the Unesco World Heritage List. The region is also known as the French castle capital.

The President of ISBE, Jack Bradbury, and the organizers decided to highlight the important contribution of Game Theoretical Models to Behavioural Ecology by inviting Geoffrey Parker to present the Hamilton Lecture, and Peter Hammerstein and Karl Sigmund to present plenary lectures. Other plenary conferences will be given by Tim Caro, John Endler, Luc-Alain Giraldeau and Alex Kacelnik. The last morning will be dedicated to symposia on 6 emerging themes, each hosting at most 60 people. Topics can be proposed to they@mnhn.fr and jerome.casas@univ-tours.fr

Tours has about 265 000 residents, among them 26 000 students. It is easily accessible from Paris, Roissy

international airport, London, Brussels and Geneva by high-speed train, as well as by motorways from Northern Europe, North-Eastern Europe, Spain, Italy and Switzerland. The Tours airport has daily direct flights from London, and is connected with most European capitals through Lyon.

Accommodation will be available at the university residence and in about 100 hotels in the vicinity of the Vinci convention centre. Thanks to the central location of Vinci, congress participants will enjoy the rich history and the various activities available in the town centre and its immediate surroundings. Excursions can also be arranged to visit the wonderful castles and gardens of Touraine. A gala dinner will be organized in a 13th century medieval setting, followed by music and dancing.

On behalf of the organizing committee,
Marc Théry and Jérôme Casas.

Website: <http://www.isbe2006.com>
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Book Reviews

Nature's Music: The Science of Birdsong

Peter Marler and Hans Slabbekoorn (eds.) Elsevier Academic Press, 2004. 513Pp.

ISBN 0-120473070-1 (hardcover)

Wallace (1889) declared that when it came to birdsong, *"the act of singing is evidently a pleasurable one and probably serves as an outlet for superabundant nervous energy and excitement, just as dancing, singing and field sports do for men"*. Readers of Marler & Slabbekoorn's book will discover that it is a whole lot else besides. The book contains 14 chapters, 11 of them contributed by authors other than the editors, and aims to cover most of what is known about the world of avian acoustics. Which is a lot, a fact to which the book's 513 pages attest – and having read it, the reader will be primed with a panoply of ideas as to how to move the field forward in the future.

Chapters cover Vocal fighting & flirting (their words, not mine), Learning to sing, Diversity & Plasticity, Bird Calls, the Ecology of birdsong, Audition, Song & Brains, How birds sing, Song & Evolution, Performance limits, Song & Conservation (e.g. census techniques), Speech in Parrots, and rounding off with Singing, socializing & music (a wide-ranging & thought-provoking inter-disciplinary discussion). There are no chapter summaries as such, although each chapter has a brief, chatty conclusion at its end. References are gathered together in a single, exhaustive bibliography at the end of the book. An extensive glossary is provided, useful for neuroscientists and physiologists unaccustomed to the terminology of ecology and vice versa. A complete species list is also included, although this does not contain page numbers – key species appear in the main index, itself running to nearly 30 pages. Contributions come from a total of 55 authors and, although the majority are US-based, the book is by no means US-song-centric in its coverage.

Marler's introductory chapter, subtitled "the good old days", provides a fascinating, historical (and at times autobiographical) introductory framework to the big themes and ideas in birdsong research. Indeed the nature of many of the chapters is to include an easy-reading historical overview. Key ideas are explained from first principles in many instances, aiding interdisciplinary understanding. At times the book as a whole appears a little disjointed, with little overall theme, other than the obvious, with chapters lacking a sense of linkage, and some aspects covered twice or more in different chapters. However, there are many between-chapter referrals which

aid synthesis in a multi-author volume such as this.

At first sight, the approach may appear fairly mechanistic, with an emphasis on the hows & whats of song, as opposed to the whys and wherefores. Deeper exploration, however, reveals a balance between the two.

The synergies that result work well, such as Roderick Suthers' chapter on the physiology of how birds sing which links with Jeffrey Podos and Stephen Nowicki's later offering on the performance limits of birdsong. In other cases, such as the (relatively) brief chapter on Audition ("can birds hear everything they sing") greater reference to the neuroscience literature would have been welcome, although many additional aspects of this theme are found in other chapters, ranging from the effect of noise pollution on signal reception to the nature of the sound environment.

Elsewhere, begging calls are covered in a reference-packed eight pages and sexual selection is touched on in many locations, although there is not the weighty discussion I had expected – but perhaps that is just as well, there being so much else to cover. Eric Jarvis' chapter on Brains and Birdsong provides an accessible background to avian neural circuitry together with its hormonal influences, effects on learning plasticity, neurogenesis and the role of immediate early genes. Even Mozart's starling gets a mention and comparative discussions incorporating perception and discrimination by humans, provide a useful branch along which the non-specialist can approach subjects throughout this book. Most chapters would provide ideal discussions for graduate seminars on themes such as learning, speciation and neurophysiology, particularly given the background and thought-provoking discussion provided by many of the authors.

The editors have drawn on a wide range of experience, not only for the chapters but also for the 48 boxes dotted throughout the book. These boxes are a pleasant diversion from the main text (although all are referred to therein) providing insights to particular themes, background to key areas and detailed knowledge of fields that might otherwise be briefly treated in a major review tome such as this. Examples include a rough guide to reading sonograms, whether birds sing in their sleep,

cross-correlation analysis of spectrographs, a mini-history of the song-brain system, the syrinx in a nutshell and several boxes on aspects of song's role in learning, selection and speciation by respected authorities in their fields. Indeed, these boxes would form a useful introduction and guide to the science of birdsong if published as a stand-alone pocket-book.

The density of the text is lightened by a vast array of graphs, diagrams and sonograms to the extent that 3 out of 4 pages contain a figure of some sort. 12 color plates (48 pictures in total) provide added interest, although many are not referred to in the text itself, being without further explanation and one or two are of poor quality. The text in the boxes varies in both font face and size, appearing in what might be described as "pianissimo" at times, being barely 8-point. Text size is also surprisingly small in some of the figures, giving the impression that otherwise clear diagrams have, on occasion, been shrunk to fit. Personally, I found the arrangement of the main text in two columns per page awkward and difficult to skim whilst searching, notwithstanding that this is common in some journals; perhaps I was distracted by the prospect of what lay amidst the text of neighboring columns.

One excellent innovation is the inclusion of 2 Compact Discs (one for the main text, one for the boxes) containing nearly 200 different recordings. These recordings are all referred to in the text, although if, like me, you're so excited that you stick it on the CD player as soon as you open it, you may be disappointed to find that the index to the CDs at the back of the book does not contain the page numbers where descriptions and referrals to the extracts may be found. Given that the index gives only a very brief description, I found this rather frustrating, although it's a minor point. And it's not all birds. The Beatles use of a blackbird song, and Duke Ellington's inspiration from the common mynah are amongst non-avian inclusions.

Generally the recordings are of good quality (field workers need no reminder of the difficulties of obtaining high quality recordings and cutting out background noise) although turning up the volume to hear the narrator (who I found difficult to understand at times) ensured that even my neighbors could clearly hear the song that followed. For those who have previously stared blindly at sonograms, the inclusion of CDs is a most welcome innovation which future books would do well to emulate.

At whom is the book aimed? In fairness, probably the professional scientist. When I first obtained this book I left it on the coffee table and flicked through it regularly – as did non-scientist friends and non-singing colleagues. However, the introduction and conclusion to each chapter aside, the general reader might struggle. For an introduction, background and basic reference I prefer Catchpole & Slater's "Bird Song" (Catchpole and Slater, 1995) for its more open, consistent text format, clear diagrams and clustering of subjects, notwithstanding its age. However, as a reference volume of up to date research incorporating wide-ranging discussion, Marler & Slabbekoorn provide a fine and innovative example. Birdsong researchers should ensure their library has one.

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References

- Catchpole CK, Slater PJB. 1995. Bird song: biological themes and variations. Cambridge: Cambridge University Press.
- Wallace A. 1889. Darwinism. London & New York: MacMillan.

**NOT SATISFIED WITH HIS PERFORMANCE IN THE DAWN CHORUS,
FRED DECIDED TO HIRE A HORN SECTION**



The Behavior of Animals: Mechanisms, Function, and Evolution

Johan J. Bolhuis & Luc-Alain Giraldeau (eds.) Blackwell Publishing Ltd., 2005. 515 Pp.

ISBN 0-631-23125-0 (paperback)

The Behavior of Animals: Mechanisms, Function, and Evolution, edited by Johan J. Bolhuis and Luc-Alain Giraldeau joins several other recent additions to the animal behavior textbook literature. It is, however, unique among other members of this genre on two counts. First, it is an edited volume, with each chapter written by one or two experts in each sub-specialty. Second, and mainly a result of the first point, this book may prove to also be a useful reference tool for experts wishing to acquaint or reacquaint themselves with other aspects of this diverse field.

The merits of an edited volume versus the traditional approach to textbook writing (i.e., one or several authors penning an entire volume) may be debated. Potential criticisms of such an approach include discontinuous style between chapters, lack of flow of ideas across the volume, poor cross referencing between chapters, unnecessary overlap of ideas and examples between chapters, and a disorganized approach to identification of keywords and concepts. On the other hand, the primary potential benefit to this approach is the fact that the author(s) of each chapter are among the top experts in their particular sub-specialty and are well placed to convey current ideas. Because of the complexity of behavioral ecology, which includes concepts as diverse as genetics, physiology, evolutionary biology, and ecology, the input of experts specifically in their own area of expertise is a goal worth striving for. However, even though the potential benefit is large, the creators of such a volume must avoid succumbing to the potential costs of the approach. The editors and the various authors of this volume did a fine job of reaping the benefit while managing the costs.

The chapters, if read in the order in which they are presented in the text, flow well from one to another. As in a traditional textbook, new terms and concepts are introduced in bold text and defined in a comprehensive glossary. Concepts and examples mentioned in each chapter are cross-referenced elsewhere by noting the other chapter(s) in which the idea also occurred. This serves to unify the book. However, along with the chapter numbers, it would be nice to have page number(s) included in each cross-reference.

While differences in authors' styles are perceptible between chapters, they are not jarring. The editors maintain the flow of the book by adherence to a logical ordering of concepts and to consistency in structuring

each chapter. The book begins with an introductory chapter (Chapter 1), by the editors, that outlines the history and current direction of behavioral ecology and introduces Tinbergen's "four whys" (Tinbergen 1963). The introduction establishes the organization for the book, which is broken up into three sections: "Mechanisms of Behavior", "Function and Evolution of Behavior", and "Animal Behavior and Human Society". The topics covered in the first two sections relate primarily to proximate and ultimate factors, respectively, although there is some overlap between sections. The final section is a brief discussion of applications of animal behavior research. The book contains a reference section, a glossary, an index of authors mentioned in the references, and a subject index. I did notice a number of typos, references that do not match between text and reference section (e.g. reference to a work by C. Barrette on page 200), and figures that I found to be somewhat convoluted (e.g. Figs. 8.1.b, 13.2, and a few others) or that were drawn originally for printing in color, but were in black and white (e.g. Fig. 13.7). Hopefully the problems are rectified in future editions.

Each chapter begins with an introduction that often relates a specific example from nature that exhibits the chapter's concepts. This is followed by the main text of the chapter, which is broken up into well-defined, subtitled sections. The references in the text generally point to a seminal and/or recent paper discussing the concept at hand, and are satisfactory for a textbook or for someone brushing up on an area. The minimal but relevant referencing means that chapters are not, nor were they intended to be, comprehensive reviews. Because this textbook was first published this year, the references and the conceptual elements of the chapters are very up-to-date. At the end of each chapter is a short "Summary and Conclusions" section and a short, helpful section that discusses further reading. Unlike many textbooks, no discussion questions are presented. Figures are, with some exceptions, well-drawn, well-labeled, and generally useful. The figures are all in black and white, which likely helped to keep the cost of the book to a reasonable level. However, while most of the figures are satisfactory, there are occasions where color would be helpful.

I enjoyed reading some chapters more than others, but my bias probably relates more to my personal interests than to the actual quality of contributions. Each chapter was well

written, comprehensive, and worthy of inclusion in the text. Instead of picking favorite chapters, I will present authors, titles, and a brief summary of each chapter.

Seven chapters comprise the first major section. Chapter 2, by Jörg-Peter Ewert, entitled "Stimulus Perception" covers sensory systems as they relate to behavior, including such concepts as sign stimuli, releasing mechanisms, and search images. Chapter 3, by Jerry A. Hogan, entitled "Motivation" discusses aspects of causal factors of behavior and includes a discussion of the effects of causal factors on both development and learning. Chapter 4, by Ralph E. Mistlberger and Benjamin Rusak, entitled "Biological Rhythms and Behavior" reveals how the inherent rhythm of nature influences behavior and discusses mechanisms of the observable behaviors that result. Chapter 5, by David F. Sherry, entitled "Brain and Behavior" discusses the input, neural processing, and behavioral output of information obtained by animals in their environment. Chapter 6, by Johan J. Bolhuis, entitled "Development of Behavior" discusses the role of genetics and environment in behavioral ontogeny, and uses specific examples including imprinting, development of attachments in primates, and development of song in birds. Chapter 7, by Kimberly Kirkpatrick and Geoffrey Hall, entitled "Learning and Memory" is specifically set out by the authors to discuss learning, not so much in terms of its behavioral and evolutionary results, but rather in terms of the mechanisms of learning. In Chapter 8, "Animal Cognition," Nathan J. Emery and Nicola S. Clayton, set out to tackle this tricky subject by providing examples of likely cognitive phenomena in taxa ranging from insects to primates and conclude that there is still a great deal to learn.

The second major section is made up of six chapters. Chapter 9, by Luc-Alain Giraldeau, entitled "The Function of Behavior" is an introduction to the ultimate-focused section of the book and discusses the concepts of optimality and reverse engineering in behavior research, specifically in terms of foraging and a game theoretical approach to conflict. Chapter 10, by Peter K. McGregor, entitled "Communication" discusses the roles, characteristics, and limitations of various forms of communication in behavior and touches on applications of communication research. Chapter 11, by Anders Pape Møller, entitled "Mate Choice, Mating Systems, and Sexual Selection" discusses such concepts as operational sex ratio, intra- and intersexual selection, sexual conflict,

and ornamentation. Chapter 12, by Mark A. Elgar, entitled "Polyandry, Sperm Competition, and Sexual Conflict" continues the theme of Chapter 11 to discuss the differing agendas of males and females in reproduction. Chapter 13, by Michael J. Ryan, entitled "Evolution of Behavior" covers behavior in an historical evolutionary context and includes discussions of co-evolution and the use of phylogenetic analyses of behavior. Chapter 14, by Anne E. Pusey, entitled "Social Systems" describes the costs and benefits of group living and the evolution of social systems and co-operation in terms of altruism, kin selection, reciprocity, and coercion.

The final section, "Animal Behavior and Human Society" is made up of three chapters that are intended to convey information about applied aspects of animal behavior research. David Fraser and Daniel M. Weary cover issues of care and management of domestic and wild animals in a behavioral context in Chapter 15, entitled "Applied Animal Behavior and Animal Welfare." Chapter 16, by Tim Caro and John Eadie, entitled "Animal Behavior and Conservation Biology" provides a good discussion of that emerging field. Finally, Chapter 17, by Martin Daly and Margo Wilson, entitled "Human Behavior as Animal Behavior" provides examples of use of concepts derived from the study of non-human animal behavior for a better understanding our own species.

Courses in animal behavior are inherently challenging because of the complex ideas that must be part of the knowledge foundation of the students prior to their commencing studies. It is for this reason that such courses typically are taught to upper-level students who possess the tools to understand and synthesize the information. *The Behavior of Animals: Mechanisms, Function, and Evolution* is a highly suitable textbook for such an upper-level course, as it exposes students and other non-experts to the cutting edge of this discipline by relying on the voices of experts and provision of good starting point references across this broad field.

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References

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Zeitschrift für Tierpsychologie 20:410-433.

Animal Architecture.

Mike Hansell, Oxford University Press, 2005, 322 pp.

ISBN 0-19-850751-8 (hardcover), ISBN 0-19-850752-6 (paperback)

Most people are familiar with natural structures created by animal activities, e.g., spider webs, ant and termite mounds, animal burrows etc. In this book, which is an extensively updated version of Hansell (1984), the author synthesizes research on a daunting array of topics relating to such structures. The result is a comprehensive and inclusive review of the science of animal architecture with respect to every conceivable aspect. For example, physical and chemical properties of various structures are discussed in detail throughout. Applicable ecological and behavioral terminology is also introduced and defined throughout the book. Of particular value are the author's efforts in identifying knowledge gaps, weaknesses and strengths of research, and even offering previously untested hypotheses which could stimulate further research.

The book comprises eight fact-packed chapters. Each chapter is highly structured with objectives, a review of all aspects relating to the objective, and a summary. Chapter 1 introduces animal architecture as driven by three basic functions: "to create a protected home, to trap prey, and for intraspecific communication." Hansell then discusses these functions in order to set the stage for the rest of the book. Chapter 2 discusses the exogenous and endogenous types of materials used by animal architects. Considerable space is justifiably devoted to silk, but other interesting materials are also covered in depth. Chapter 3 describes animal behaviors and anatomy, but also construction methods that are linked to these. For example, various means of connecting building components are described in great detail, and the process of building is discussed extensively. Chapter 5 deals with the essence of architecture as I think of it, namely design and mechanical elements, and how the design constrains or optimizes growth. Chapter 6 discusses costs, solutions and trade-offs of building, e.g., optimal horizontal segment-lengths of pocket gopher-burrows, and an interesting and detailed discussion of the responses by spiders to stimuli (prey availability and size) in the context of metabolic costs of web-construction. Chapter 7 discusses the role of animals as habitat engineers, including a discussion of the keystone species concept and its validity or lack thereof. The final chapter discusses the importance of animal architecture from an evolutionary perspective, including the potential for using architecture as phylogenetic evidence.

Most of the examples used in this book come from invertebrates, particularly spiders and social insects, but

the author has done an admirable job in covering all animal groups. If I had one disappointment, it would be a relative lack of information relating to ant nests (with a few notable exceptions), in spite of a considerable body of literature on this topic. A quick search of "nest architecture", for example, on the online ant bibliography Formis yielded 71 references (<http://cmave.usda.uff.edu/~formis/searches.html>). Despite this omission, one can not fault the breadth of the author's review of architecture literature, as is evidenced by 48 pages of references for the text. Hansell's grasp of this literature is evident throughout, and he discusses physical ecology with the same authority as animal behavior. This is truly an impressive book in that sense.

In spite of having a mere 255 pages of text, it took me a long time to get through this book, although perhaps that is more a reflection of my own limitations than those of the book! Examples in support of the discussion are numerous, and sometimes appear to be presented in a somewhat mechanical and unengaged fashion. The book has very few typographical errors, but it appears that even the proof readers were exhausted at the end, because the frequency of typos is clearly higher in the final three chapters than in the first five. Nevertheless, these errors do not detract from the value of the book. One of the author's objectives is to present animal architecture as "a coherent biological topic which gives us important insights." I believe Hansell has done an excellent job in that regard.

My interest in reviewing this book related mostly to my fascination with spiders and ants. I was very pleased and impressed with the extensive information on spiders, but somewhat less so with ants, as stated above. Nevertheless, I believe this book is well worth its price (\$124.50 US (new) hardcover from amazon.com, \$61.98 US paperback from walmart.com(!)), particularly for researchers interested in an extremely thorough and detailed reference book. At the very least, I think this book is a must for any self-respecting library at a university or research institution.

B. Staffan Lindgren

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References

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Commentaries

Improving the processing of scientific misconduct charges: an eyewitness perspective

Anders Pape Møller

Laboratoire de Parasitologie Evolutive, CNRS UMR 7103, Université Pierre et Marie Curie, Paris, France

In the last Newsletter, Prof. R. Montgomerie and Prof. T. R. Birkhead (Montgomerie & Birkhead 2005) raised a number of issues concerning scientific misconduct. This is a welcome point of view that is in dire need of discussion. Recently, I was accused and found guilty of scientific misconduct by a Danish ministerial committee. Subsequently, an independent committee established by, but completely outside the French National Centre for Scientific Research (CNRS) that is my employer, and composed of scientists completely independent of any of the persons involved in the case, concluded in the fall 2004 that they had found no evidence of scientific misconduct on my behalf. Their report can be found on the web site of the CNRS. With this in mind, I would like to consider what led to the differences in conclusions between these two tribunals, and whether this process can give us insight into how accusations of misconduct must be treated in future instances to ensure that hearings are judicious.

Brief Case Background

My own case was based on accusations of publishing falsified data in a manuscript on asymmetry in oak leaves appearing in the ecological journal, *Oikos*. The majority of the data in question was collected by a research technician; although I cross-confirmed a subset of the measurements initially, the majority of the measurements used in analysis for the resulting publication were made by the technician. When accusations that the data may have been falsified were made, I and an independent observer re-measured the original leaves, and found discrepancies between our measures (which concurred) and those in the original dataset. My co-authors and I withdrew the paper from *Oikos*, and the journal editor (Prof. N. Malmer), wrote a letter to the Danish committee investigating the case stating that I had behaved honorably in this case by retracting a paper that contained information based on measurements of poor quality.

Evaluating Accusations of Misconduct

Accusations of misconduct can have very dire consequences on the career of the accused. Thus, it is very important to consider not only the case made against the accused, but also consider potential ulterior motivations of those making the accusations. If the latter appears to be potentially biased, this should be taken into account during the progression of investigation. I have published papers with over 180 co-authors (32 of these papers in *Oikos*) and shared data files with them. Not once have I received complaints or questions that could raise doubts about the integrity of these files. By contrast, all five of the persons who raised accusations against me in the press or in emails to colleagues had previously published work in which they took theoretical or experimental positions contrary to my own. They could thus be argued to have potential conflicts of interest in evaluating the case against me. Whether or not this affected their judgment is not the issue: in modern science, any potential conflict of interest is routinely used to disqualify a potential reviewer of grants or submitted publications. That same standard must be maintained for reviewers of scientific misconduct cases.

If cases are to be fully investigated, there must be a clear code of ethical procedures that are followed to ensure a fair inquiry. The case made against me was based on legal practices that would be deemed unacceptable in most civilized societies and certainly throughout modern science. First, the original case against me was based on a data file that was never shown to be authentic by independent persons, not even by the committee that was deciding whether to raise the case in the first place. The data file had in fact remained in the hands of the accuser without ever having been validated. Second, a sub-committee of three persons eventually investigated the case, and only one was a biologist. Unfortunately, the biologist was known ahead of time to have an established view on the case. Committees investigating scientific misconduct should, by default, be composed of persons that have had no recent contact or conflict whatsoever with any of the parties involved. While I requested that

foreign scientists with no prior connection to me or the case should be included in the committee to insure impartiality, this was ignored. In addition to the procedural problems, there has been extensive harassment of students, colleagues and friends by unsolicited emails and phone calls, a successful attempt to have my bird banding license revoked, thereby eliminating the possibility for me to continue my 35 years time series of a barn swallow population, and explicit demands that I be fired from my current position. I find this entire series of unregulated actions inappropriate. What is worse is that the lack of proper practices has established a precedent that has subsequently been applied to another case. While many behavioral ecologists have publicly expressed concern about my specific case (Alatalo et al. 2004, Moreno & Mousseau 2004), this has unfortunately not led to a general review and critique of recent procedures

Montgomerie & Birkhead proposed a simple graphical model to understand scientific misconduct. I suggest that this model is simplistic because it does not consider the social context in which accusations are produced. Scientific misconduct protocols may be only a part of a larger need for agreed on ethics in science. Promotions, tenure, hiring, and grant and manuscript review can all be fraught with ethically dubious practices. Some of the models of (scientific) inbreeding depression, nepotism, and policing in social insects seem more appropriate to achieve a proper understanding of the situation! And even within the zone of ethics related to scientific misconduct, there is, as observed by Montgomerie & Birkhead, wide variation in what is criticized and what is not. During the last couple of years I have encountered a wide range of practices that most people would agree would comprise scientific misconduct ranging from misuse of a scientist in Eastern Europe as unpaid on-site manager without giving that person full credit for his efforts, over theft of scientific equipment, elimination of the name of a co-applicant from a multi-authored grant application, to theft of intellectual property. While I agree that these behaviors are abhorrent, I would not wish for anybody charged with even these offences to experience the level of unregulated criticism and harassment that I have encountered. I thus strongly endorse the above authors' call for better definitions of what is and is not acceptable, but I would

also argue for far more explicit and fair protocols for review, exoneration, and censure throughout our community.

Recommendations

My experiences raise questions about recommendations for changes in procedures. While it may be difficult or impossible to adopt standardized international guidelines regarding investigations of misconduct, it might be possible to agree on a set of minimum requirements. In my opinion, that would include the requirement that all members of overseeing committees are completely independent and impartial with respect to the case. Second, it would also include legal support not only for the investigating body, but also for the party being investigated. Otherwise, the superior resources and legal staff of governmental agencies may determine cases rather than the actual facts. Third, many national scientific communities are so small that an impartial evaluation of a case would require involvement of impartial scientists from abroad. Finally, the sanctions imposed in particular cases should show a reasonable relationship with the degree of the offence, and not be further aggravated by unregulated actions of parties directly or indirectly involved in a case. Such non-sanctioned punishment should themselves be subject to sanctions similar to those imposed in cases of scientific misconduct.

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