Supplement to Behavioral Ecology

ISBE International Society for Behavioral Ecology Newsletter

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www.behavecol.com

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Editorial

Book & conference reviews

So many books, so many conferences and so little time! True, but thanks to the ISBE newsletter's book and conference reviews you can catch up on all the new ideas out there. The spermatozoa meeting, for example (page 9), must have been a cracker of a conference.

Although these reviews are incredibly helpful, it is not always easy to extract them from behavioral ecologists. To facilitate book reviews, I have added a new item in the newsletter (page 6, and hopefully also on the website) where I list the books that have recently come across my desk. Send me an email if you find these books interesting and you would like to write a review on them. But you do not have to wait for me to list anything. If you have read a new title and would like to review it, contact me – and the same goes for conferences!

Finally, a big thanks goes to Richard Peters, our web master, who tirelessly updates the ISBE website. Not only has he designed possible the funkiest of all society website, he also makes sure it is current with conferences and job adds.

Mariella Herberstein
Newsletter Editor

Contents of this Issue

Contributing 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 should 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 1500-2000 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 3000 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 (*www.isbe.com*).

Deadlines for submission to the Spring newsletter will be 1 February 2010.

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Society News

Most Society News – workshops, conferences and job postings – are publicised on our website (www.behavecol.com). 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 Mariella Herberstein (m.herberstein@bio.mq.edu.au).

NEW ADDRESS

Graziella Iossa has moved from Bristol University to join the British Ecological Society as a journal coordinator of their latest journal, Methods in Ecology and Evolution. Email: mee@britishecologicalsociety.org

Mark Hauber has moved from University of Auckland (NZ) to Hunter College CUNY, USA to take up a position as Associate Professor in the Department of Psychology's concentration on Animal Behavior and Conservation. Email: mhauber@hunter.cuny.edu

ISBE 2010 CONGRESS

The thirteenth congress of the International Society for Behavioral Ecology will be held in Perth, Australia, September 26th to October 1st 2010. http://isbeperth2010.com See page 7 for a call for Symposia.

WORKSHOPS AND MEETINGS

Conferences of other societies or workshops that may be of interest to the Society's members can be advertised on the Newsletter website (contact Mariella Herberstein for posting). Titles and dates of conferences are listed on page 14 and will be posted on the webpage (www.behavecol.com).

FELLOWSHIPS AT THE JACOB BLAUSTEIN CENTER FOR SCIENTIFIC COOPERATION

Fellowship applications are due February 2010 (http://www.bgu.ac.il/BIDR/bic/fellowships.htm). Contact Prof. Yael Lubin (lubin@bgu.ac.il) for projects related to spider sexual behavior, social behavior, maternal care or foraging.

JOB AND STUDENTSHIP POSTINGS

As the newsletter is only published twice a year, it is unsuitable to publish current job or student postings. Instead, these are published on the society's webpage: **www.behavecol.com**

If you wish to post an advertisement for faculty, postdoc, graduate student, or field assistant positions please email Mariella Herberstein (m.herberstein@bio.mq.edu.au).

MEMBERSHIP AND SUBSCRIPTION OPTIONS

Subscription to *Behavioral Ecology* is no longer required to be a member of the *International Society for Behavioral Ecology*. 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. For those who wish to continue their subscription to *Behavioral Ecology* as well as be a member of the society, this option is also available. Information on how to join the ISBE can be found on the ISBE website (www.behavecol.com) and Oxford University Press' *Behavioral Ecology* webpage (beheco.oupjournals.org).

DONATED SUBSCRIPTION PROGRAMME

Please help colleagues in need. Every donation will help increase scientific contacts across the world. For details, see the advertisement on the inside back cover of *Behavioral Ecology* volume 12(4).

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Selected papers:
Fromhage L, Elgar MA, Schneider JM. 2005. Faithful without care: the evolution of monogyny. Evolution 59:1400-1405
Fromhage L, McNamara JM, Houston AI. 2008. Sperm allocation strategies and female resistance: a unifying perspective. Am Nat. 172:25-33
Fromhage L, Reid JM, Kokko H. 2009. Evolution of mate choice for genome-wide heterozygosity. Evolution 63:684 694

Name: Angela M. White
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Selected papers:
White AM, Cameron EZ. 2009. Communal nesting is unrelated to burrow availability in the common warthog. Anim Behav. 77:87-94
White AM, Swaisgood RR, Czekala N. 2007. Ranging patterns in white rhinoceros (*Ceratotherium simum simum*): implications for mating strategies. Anim Behav. 74:349-356
White AM, Swaisgood RR, Zhang H. 2002. The highs and lows of chemical communication in giant pandas (*Ailuropoda melanoleuca*): the effects of scent deposition height on signaler discrimination. Behav Ecol & Sociobiol. 51:519-529

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Selected papers:
Kemp DJ, Alcock J. 2003. Lifetime resource utilization, flight physiology and the evolution of contest competition in territorial insects. Am Nat. 162:290-301
Kemp DJ, Rutowski RL. 2007. Condition-dependence, quantitative genetics and the potential signal content of iridescent ultraviolet butterfly coloration. Evolution 61:168-183
Kemp DJ, Reznick DN, Grether GF, Endler JA. 2009. Predicting the direction of ornament evolution in Trinidadian guppies (*Poecilia reticulata*). Proc R Soc Lond B. In Press

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Selected papers:
Baker L, Kelty EC, Jakob EM. 2009. The effect of visual features on jumping spider movements across gaps. J Insect Behav. 22:350-361
Baker L. 2007. The effect of corridors on the movement behavior of the jumping spider *Phidippus princeps* (Araneae, Salticidae). Can J Zool. 85:802-808.

Call for data: Meta-Analysis of Trivers-Willard hypothesis for human birth sex ratio

Gillian Brown, Jonathan Sayers, Joan Silk and John Lazarus are carrying out a meta-analysis of the Trivers-Willard hypothesis for the human birth sex ratio. They have virtually completed data acquisition from the journal literature but in order to be as inclusive as possible and to deal with the file-drawer problem (the potential under-reporting of negative findings) they are interested to hear from anyone who has relevant data, either unpublished or published in books, dissertations, theses, conference proceedings, etc.

They will of course acknowledge all contributors in the publication of this work.

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Books available for review in the ISBE newsletter

Several books have recently arrived at my desk, and I am now looking for reviewers, who will receive the book in exchange for a review to be published in the next edition of the newsletter (due February 2010).

Reinmar Hager & Clara B. Jones (Eds). 2009. Reproductive skew in vertebrates: Proximate and ultimate causes.

Stephen J. Mullin & Richard A. Seigel (Eds). 2009. Snakes: Ecology and conservation.

John Alcock. 2009. Animal Behavior: An evolutionary approach. 9th Edition.

Please email me if you are interested.

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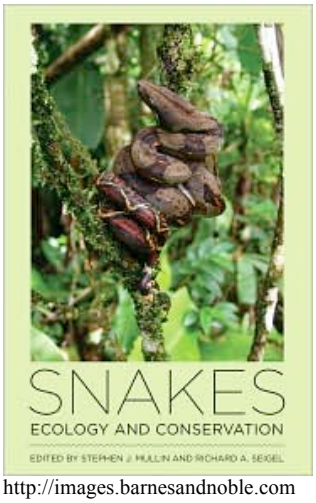
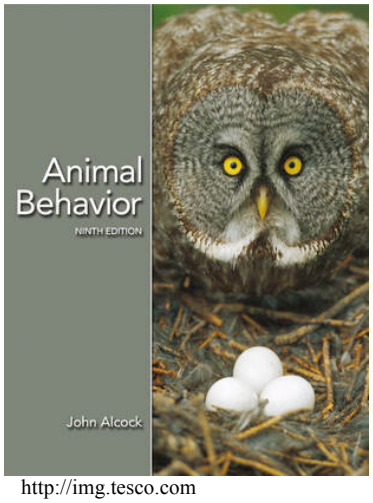


http://images.barnesandnoble.com

http://assets.cambridge.org



http://img.tesco.com

ISBE Conference 2010

CALL FOR SYMPOSIA

The organising Committee for the 13th International Behavioral Ecology Congress 2010 invites you to submit Symposia Topics for sessions following the main congress.

There will be the opportunity to convene up to 6 symposia, which will take place at the Perth Convention Exhibition Centre on the morning of Saturday October 2 from approximately 9:00 to 12:00 (including a coffee break). Each session will have space for up to 100 participants.

Please provide the organizers' names, affiliations, and email addresses, and a half to one page proposal for the project. Include a justification for why it is an important and timely topic.

A local committee will judge the most promising ones in the event that many proposals are submitted. The symposium organizers will be free to manage the session as they wish, but all participants must be registered ISBE 2010 delegates.

Applications can be sent to Leigh Simmons lsimmons@cyllene.uwa.edu.au by December 1 2009.

The call for symposia topics is now open. Deadline for submissions is December 1 2009.

Revamped *Forum* Section in *Behavioral Ecology*

Behavioral Ecology has just revamped its *Forum* section. We will now publish two kinds of pieces: 'Ideas' and 'Invited Reviews', both of which are to be peer-reviewed. 'Ideas' will be short pieces (normally less than 2000 words), and containing new ideas, approaches and perspectives of current or emerging interest. These pieces will be commissioned, following a review of the author's brief (300 word) proposal by the Forum Editor and one Member of the Editorial Board.

'Invited Reviews', which will take the form of reviews, syntheses and meta analyses that are both forward-looking and of exceptional significance. Broad, generic reviews, especially of an established or stagnant area, and reviews focusing on an author's own work will not be commissioned. The Forum Editor, drawing on advice from Members of the Editorial Board, will identify areas appropriate for review or synthesis and suitable authors from whom to commission a review.

Authors can suggest a review article by submitting a brief (500 word) proposal; the Forum Editor and one Member of the Editorial Board will evaluate the proposal and decide whether to commission the review. The usual deadline for submissions will be two months from date of commission.

'Invited Review' articles will be accompanied by 3-5 short (500-700 word) commentaries from leading researchers in the field, published at the end of the article with a short rejoinder (500-700 words total) if necessary from the 'Invited Review' author/s.

If you are interested in writing an Ideas piece or Invited Review, please send to the Forum Editor (Rob.Brooks@unsw.edu.au) a short proposal explaining not only the main points of your proposed piece, but the target audience and the main research groups or authors whose work you will be reviewing. If you would like to nominate an area that you would like to see reviewed, please notify the Forum Editor.

Rob Brooks
Behavioral Ecology, Forum Editor
University of New South Wales
Email: rob.brooks@unsw.edu.au

Conference Review

The glory of sperm: 10th Biology of Spermatozoa Meeting (BoS 09)

University of Sheffield UK

Most evolutionary biologist have been busy celebrating Darwin in various ways this year, and there is no need to delve into the contributions and importance of Charles Darwin to evolutionary biology. A lesser know fact, but one equally worthy of celebration, is that 2009 was also the year when the 10th Biology of Spermatozoa (BoS) took place in the Peak district (near Sheffield) in the UK. This conference is the Holy Grail for anyone interested in any aspect (including the evolutionary ecology) of spermatozoa. As Geoff Parker replied in a recent interview in *Current Biology* (Vol 17 No 4) in response to the question about whether he had a favorite conference "Yes, the `Biology of Spermatozoa´ conference organized by Tim Birkhead and Harry Moore: this is a relatively small meeting attended by just a few (50-60) people, with a delightful atmosphere and setting". I have been fortunate enough to have attended all the BoS meetings over the years (I must be getting old), and can corroborate Geoff's sentiments entirely. It's my favorite conference of all times. There are two reasons for this. First, the science is always stellar and exciting, encompassing researchers from disparate areas of sperm research, ranging from reproductive assistance in humans and other animals to conservational aspects of sperm biology. Second, and most importantly, the structure of the meeting is superb. There is ample time to discuss the results being presented in depth. In fact, as much time is devoted to the discussions as there is to the talks. In this day and age when there is so much emphasis on large mega-conferences, with little scope to comment on the research presented, this is a wonderful respite and a most stimulating aspect of the BoS meetings, which to me makes them unique and truly marvelous.

The format is based around a handful of plenary talks followed by an eclectic mix of shorter contributed talks from PhD students, post-docs and 'established' researchers. This year kicked off with a Sperm Quiz, which was both fun and partly embarrassing (for those of us that did not do so well). But the main activity was of course the talks. The first plenary was given by Ben Normark from the University of Massachusetts (USA), who explored the relationship between haplodiploidy and sperm evolution. A case was made that females can exert control over the fate of sperm cells, which may result in the elimination of the entire paternal genome (one form of haplodiploidy). Ben made the intriguing observation that the origin of haplodiploidy seem to coincide with the occurrence of traumatic insemination in several invertebrate species, and speculated that this may have arisen as one way males can bypass females' control over sperm. In his plenary on microgametophytes and pollen competition in plants, Andy Stephenson from Penn Sate University (USA) argued that we sperm fanatics can learn a lot from examining the well characterized interactions between pollen tube growth (male function) and stigma (female function) for the outcome of pollen competition and male - female interactions over fertilization. Simon Fishel from CAREfertility (UK) gave a fascinating and slick overview of the origins and current state-of-the-art of human fertility treatment. What can be achieved with modern technological advances in terms of aiding successful conception is absolutely mesmerizing. We were staggered by his description of the man who successfully fathered 2 girls after only being able to produce 6 sperm! A long discussion followed about the possible risks of such technologies for future health of children stemming from assistant conceptions. On the final day Jean-Pierre Brillard from INRA (France) gave us an overview of the evidence and possible mechanisms for sperm selection in birds. He summarized several decades of painstaking and meticulous research to provide us with a tantalizing glimpse into how female birds may exert some control over which males' sperm are used in fertilization. The last plenary was given by myself (Nina Wedell from the University of Exeter, UK), where I suggested that male fertility is at risk from the action of various selfish genetic elements that target sperm as an efficient way to get transmitted to subsequent generations. Because males that harbor such selfish genes frequently have reduced fertility and sperm competitive ability, this can favor female multiple mating as a way to allow females to bias paternity against males carrying such selfish genes. I elaborated on this point by demonstrating the dramatic impact of a genetic sex ratio distorter in promoting evolution of increased female remating rates in fly populations.

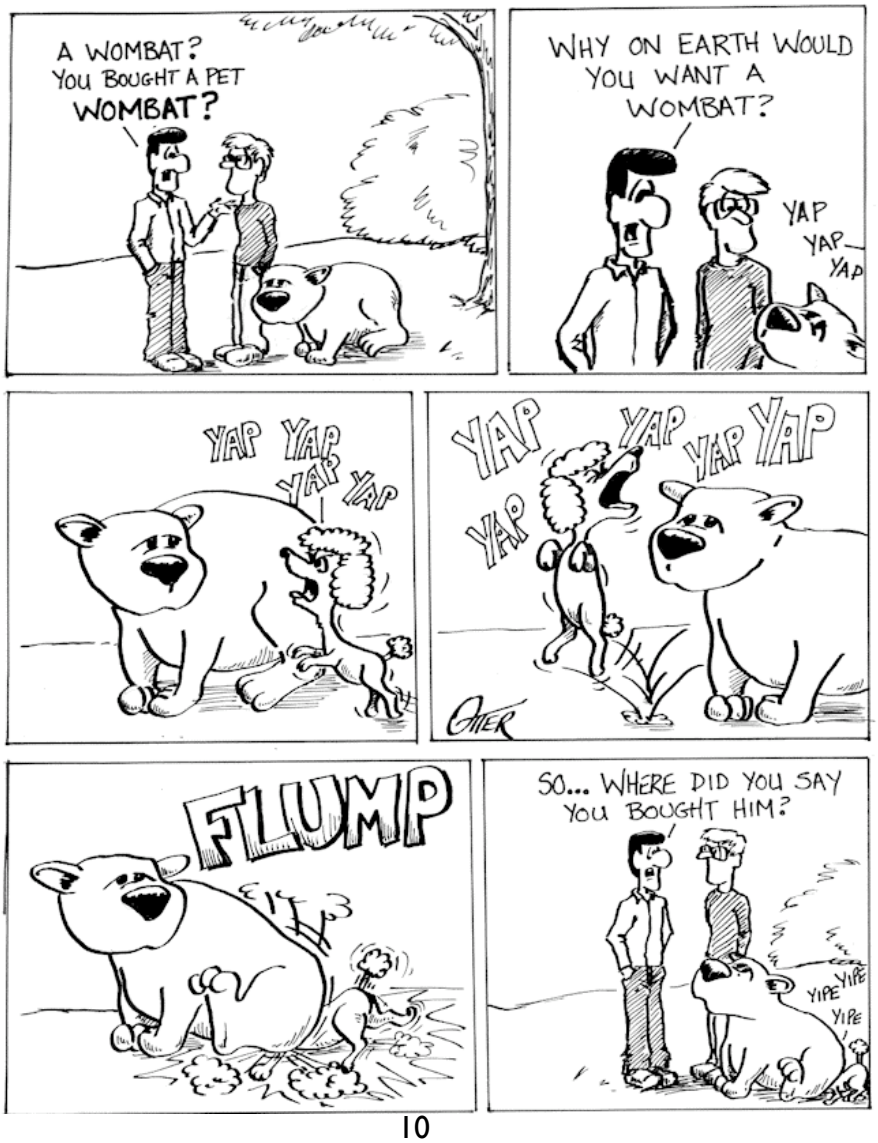
There were several other great non-plenary contributions. One of the more visually dramatic talks was forcefully delivered by Patricia Brennan (Yale University). She graphically displayed the problems faced by male water ducks of having a greatly elongated phallus that is explosively everted upon ejaculation. Her video clips evoked both gasps and exclamations. Lukas Schärer and colleagues from Basel University (Switzerland) introduced us to his marvelous transparent hermaphroditic flatworms. These humble creatures display a remarkably elaborate and varied sperm design, which Lukas argues may have evolved through sexual conflict over

fertilization. His videos of the 'sucking behavior' of recently mated worms in an attempt to remove sperm (his suggestion) left little to the imagination. We also learned from Stewart Nicol from University of Tasmania (Australia) that male Australian echidnas actively seek out and copulate with torpid females, potentially as a way to get a head start in competition over fertilization with rival males. There were also intriguing talks by Nicola Hemmings and Stephan Lüpold from the University of Sheffield about patterns of sperm variation and its possible links to infertility in birds. Boris Baer from the University of Western Australia gave us a flavor of the largely untapped potential of applying recent proteomic approaches to the study of semen and illustrated this with his work on ejaculates of bees and ants. The meeting ended on a high with amazing videos of sperm swimming real-time inside female *Drosophila*, given by Molly Manier from Scott Pitnick's lab at Syracuse University (USA), which completely blew everyone's mind. These clips were also beautiful and it is totally astounding to be able to watch sperm from different males (dyed in different colors) swim around and do their stuff inside a female fly. Incredible!

At each BoS meeting there is frequently an emerging theme. This year was the year of sperm length/number trade-off revisited, which sparked off a rather heated and fun debate. Watch out for some excellent theory and new empirical work soon to appear by Parker, Birkhead, Immler, and Pitnick, and by Gomendio and Roldan on this topic. For anyone interested in more information, including some cracking photos of eminent biologist climbing mountains, playing musical instruments, and generally thoroughly enjoying themselves, I urge to have a look at the Biology of Spermatozoa webpage: www.shef.ac.uk/aps/staff/acadstaff/bos.html.

I'll just end by thanking Tim and Harry for a thoroughly fun BoS – you've done it again.

Nina Wedell
University of Exeter, UK



Review of the European Society for Evolutionary Biology 2009 Meeting, where a rich diet of talks on sexual selection, social evolution and the best of modern evolutionary biology could be found in Turin Italy.

Numerous symposia and plenary lectures at the 2009 meeting of the European Society for Evolutionary Biology (ESEB) were of interest to wide range of behavioral ecologists. We started off the week with an excellent plenary by Hanna Kokko on how feedbacks between individual and population-level processes enhances our understanding of a variety of topics, from the maintenance of asexual mollies to the evolution of sex roles and parental care. Later in the week, John Thompson's plenary on the importance of coevolutionary dynamics and Massimo Pigliucci's plenary on new perspectives in evolutionary biology challenged us to allow for more complexity in the way we think about how trait evolution really works. Ian Tattersall reminded us all of our own evolutionary history in his discussion of hominid intelligence, while Christina Vieira emphasized the importance of 'junk DNA' for understanding interactions between genes and the environment.

While talks relevant to behavior could be found throughout the meeting, two major themes were the focus of multiple symposia: sexual selection and social evolution. In fact, sexual selection and social evolution were brought together 'under one roof' in the Symposium "The Evolution Of Conflict And Cooperation" (organized by Suzanne Alonzo and Stuart West). This symposium included researchers studying sexual conflict, cooperative breeding, and social evolution, and challenged them to explore how these fields examine conflict and cooperation and the potential benefits to be gained from greater integration and synthesis across these topics. This symposium also emphasized the theme of synergy between theory and data as a way of enhancing our understanding of social evolution in empirical systems, on topics ranging from cooperation among relatives to conflict between the sexes. For example, invited speaker Allen Moore, extolled the virtues of the charismatic carcass burying beetle as a model system for understanding the interplay between conflict and cooperation during mating and parental care, and Clare Andrews added parent-offspring and sibling conflict to the problems these burying beetles must face. In an exceptionally clear talk responding to a 'levels of selection' symposium, Andy Gardner outlined how interactions between relatives and within and among groups affect the evolution of conflict and cooperation. Invited speaker Michael Cant told us about the not-so-nice side of reproductive skew in mongoose social living and Amotz Zahavi challenged us to view altruism as a handicap indicative of just how much we are able to give up to look good to our social partners.

Sexual selection was also the central focus of a number of other symposia. For example, in the symposium 'Are Good Genes Theories Of Sexual Selection Finally Sinking Into The Sunset' (organized by Mike Ritchie and Nathan Bailey), speakers examined the evidence for good genes in taxa ranging from stalk-eyed flies to voles. Amidst abundant sunset images and references, a consensus seemed to rise that the evidence for good genes is less common, but also more subtle, than originally formulated. Locke Rowe presented fruitfly gene expression data that supported the idea of good genes existing in the form of condition-dependence, and invited speakers Adam Chippendale and Anna Qvarnstrom emphasized the importance of ecological genetics and environmental influences for both understanding and testing for good genes. Other symposia focusing on 'Intra-Locus Sexual Conflicts' (organized by Adam Chippendale and Steve Chenoweth) and 'Male-Female Coevolution' (organized by Claudia Fricke and Tracey Chapman) included talks on how interactions between the sexes change our understanding of trait evolution in both males and females. For example, we learned from Mariana Wolfner that understanding intersexual interactions can require detailed knowledge of the underlying biochemical processes, and from Lukas Schärer that simultaneous hermaphrodites exhibit as much, if not more, evidence of sexual conflict than do species with separate sexes. Intra-locus conflict, and its resolution, was the focus of a number of talks covering everything from seed-beetles to barn owls; among these talks, Ryan Calsbeek informed us of how brown anoles experience sexually antagonistic selection on a number of shared traits, and Paulo Innocenti discussed how fruitflies exhibit sexually antagonistic gene expression at a genomic level.

For those not fixated on sexual selection and sexual conflict, a stimulating diversity of talks on social evolution were also available. The symposium on 'Levels of Selection in Evolution' (organized by Daniel Rankin and Kevin Foster) included not only the expected debate, but also a diverse sample of studies examining levels of selection from selfish genetic elements to species-level selection in aphids, ants, fungi, and microbes. The debate was more subdued in the symposium on 'Recent Advances In Kin Selection' (organized by Francisco Ubeda and Andy Gardner) as participants worked to keep up with Geoff Wild, Francois Rousset and others as they explored, at a sometimes dizzying pace, new theoretical perspectives on kin selection. In the Symposium

'Selective Forces Shaping Transitions To Social Life' (organized by Trine Bilde and Patrizia d'Ettore), the evolution of sociality was explored in insects, spiders, birds and mammals. Invited speakers Jacobus Boomsma and Ashleigh Griffin delved into the role of multiple mating by females on transitions from solitary to social living in insects and birds respectively, while speakers such as Kevin Foster (microbes), Ben Hatchwell (birds), Yael Lubin (spiders) and Sofia Stathopolous (voles) demonstrated the amazing diversity of study systems that now inform our understanding of the exciting but puzzling question of how social systems evolve.

Although sexual selection and social evolution dominated the talks on behavior, symposia on ecological genomics, the fitness-phenotype map, and evolutionary transcriptomics challenged us to take our study of the evolution of behavior to a higher level. For example, the topic of the Symposium 'The Phenotype-fitness Map Revisited' (organized by Alexis Chaine and Erik Svensson) was nicely summarized in the final talk by Ben Sheldon, as his examination of temporal synchrony between three species (great tits (*Parus major*), their prey the winter moth larvae and the oak tree habitat of the larvae) clearly illustrated the importance of ecology, as well as careful consideration of measurement scale (local and global). Finally, the winner of the John Maynard Smith prize, Tanja Schwander, offered a brilliant example of the promising future in store for our field, and countless other examples of exciting young scientists were to be found among the sea of posters. After this rich diet of stimulating talks and posters, the only thing to do was to take our conversation off to a scenic piazza in central Turin for a superb and lengthy Italian meal. Excellent food for mind and body could be found with ease at the recent meeting of the European Society for Evolutionary Biology.

Acknowledgements: Many thanks to the conference organizers, Gabriella Sella and Maria Cristina Lorenzi, everyone involved in the organization of the meeting and the European Society for Evolutionary Biology.

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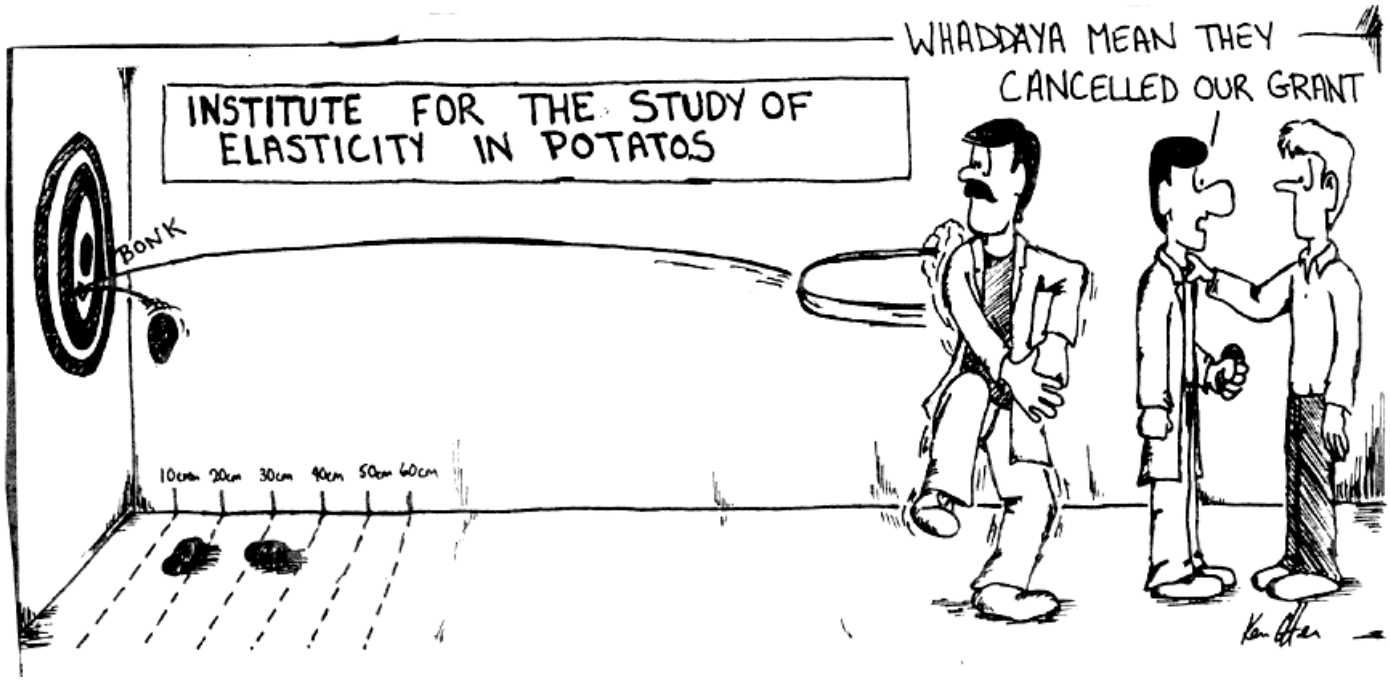

Ken Otter Vintage Cartoon

Book/DVD Reviews

Methods for Animal Behavior Research

DVD produced by the Wildlife Conservation Society and the AZA Behavior Advisory Group.

'To get started, all you need are curiosity, patience, and a set of tools' is one of the first sentences of the movie *Methods for Animal Behavior Research* by the Wildlife Conservation Society and the AZA Behavior Advisory Group and it is exactly this set of tools that this movie deals with. In a narrative style, and primarily based on examples from captive (zoo) animals, it addresses young students interested in conducting behavioral research. The movie is divided into six chapters: (1) *Bibliographic Research* providing an overview of methods for literature search, including popular and scientific journals, and online search engines, (2) *Forming a Question and a Hypothesis*, (3) *Creating an Ethogram*, (4) *Experimental Design*, (5) *Collecting Data*, and finally (6) *Data Analysis*, emphasizing the importance of rigorous statistical testing. Beside these main chapters, additional material (such as details on statistical methods) is available in pdf format. Noteworthy, several exercises are included in chapter (5) - video sequences showing animals 'in action', from which data are to be collected in a predefined fashion (like continuous focal animal sampling, scan sampling etc.).

The authors surely do a great deal of advertisement for the behavioral sciences. It is a pleasure to see how all major steps involved in a typical research program, from the formulation of a question, over a testable prediction, choosing the appropriate experimental design etc., are outlined in an easily understandable way, while repeatedly referring to practical examples introduced early on in the movie. Zoos may indeed be an interesting starting point for student education. However, everybody who has ever supervised a class of enthusiastic students conducting their first behavioral observations in a zoo knows about one fundamental problem: there are always many more questions than can be answered. As the authors fittingly phrase it, 'a good question forms the backbone of our research'. A core aspect of teaching behavioral biology (like any other discipline) should, therefore, be to provide students with a concept of which question(s) are really worth pursuing, and which not. Though highly stimulating in itself, presenting the movie to completely inexperienced students (for which it is intended) bears the risk of misleading the students to believe that *just about any* question about an animal's behavior is also a good one (i.e., just because nothing is known about a specific behavioral pattern is not a valid scientific criterion for investigating it). When using this DVD for teaching, it clearly requires experienced teachers to guide students through the process of choosing the right question(s) to examine.

The behavioral sciences are nowadays an exhaustively large field, and admittedly no movie and no textbook will ever be able to cover all possible methods, especially the huge variety of experimental designs routinely used in several labs around the world. Having said that, a title like 'An Introduction to Animal Behavior Research in Zoos' might have been more appropriate for this movie. Overall then, *Methods for Animal Behavior Research* represents a nice contribution to familiarize first semester students with the behavioral sciences while using the behavior of zoo animals as a starting point. The DVD is available from David Powell (dpowell@wcs.org), Wildlife Conservation Society/Bronx Zoo, 2300 Southern Boulevard, Bronx NY, 10460, USA (at a more than moderate price of only US$5).

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Control of Pests and Weeds by Natural Enemies. An Introduction to Biological Control

Van Driesche R, Hoddel M and Center TD. 2008. Blackwell Publishing, Oxford. 473 pp.
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Many of the examples used to teach general and behavioral ecology derive from the study of biocontrol. This volume, co-authored but with two chapters contributed by outside authors on population ecology (J. Elkington) and molecular techniques (R. Stouthamer) is an excellent summary of the field as it is generally conceived and practiced from the inside of USA land-grant institutions. I strongly recommend this book for behavioral ecologists suffering from existential anxiety and looking for systems where pure questions can be funded, and theory can be developed and tested in systems that can have clear present and future societal benefits. The challenge for readers (including this one) is to see what is needed in the applied field of biocontrol that behavioral ecology, and not just behavioral ecologists, can benefit from pursuing.

The book is divided into 29 chapters in 11 parts, but really six sections. The first is an introduction to general ecology and invasion biology, including an outstanding chapter on population ecology, which takes students clearly from basic population models to stage-based models that can recreate more complex dynamics like the *Aphytis melinus* control of red scale (*Aonidiella aurantii*) system on citrus. Close to half of the book is dedicated to classical biological control (Chapters 11-20); the discovery of natural enemies from invasive species' home range and introduction in the invasive species' range. Chapters 13-15 cover techniques for identifying potential biocontrol agents, chapters 16-18 guide the assessment of risks of novel introductions wreaking mischief on non-target species, and chapters 19-20 discuss how to measure natural enemy effectiveness. There are three shorter units, on managing natural enemy populations in the field, using microbial and fungal biopesticides, and augmentative (repeated supplementary) use of macroscopic natural enemies. The book ends with conclusions and future directions.

The most critical environmental safety issue in biocontrol is the host- or prey- specificity of each natural enemy to be introduced. Biological control raises the question of the utility of foraging theory as it is usually presented to undergraduate behavior students. Does the generalist/specialist research program of early optimal foraging study yield any insight on this issue whatsoever? The question of specialist and generalist foraging choice has been taken over by evolutionary biologists most concerned with the role of specialization on speciation (Henry et al. 2008). At the same time, the research attention of many behavioral ecologists might fruitfully be focused on how specialist and generalist preferences are shaped by experience, and especially on how much they vary within populations, with consequences for how evolutionarily stable specialist preferences are. These kinds of questions have been addressed more from the perspective of phytophagous insects (eg Prokopy and Papaj 1988) than in parasitoids. An interesting question is whether host preference patterns that have been described in herbivores apply to predators and parasites, which may have fewer defensive chemicals to deal with, but who share many host finding cues with herbivores. Finally, I'd like to think that behavioral ecologists will be interested in some of the practical effects of learning and artificial selection, such as whether parasitoids or herbivores are more or less likely to be specialists in the lab, and how their behaviors might evolve.

There is little discussion of evolutionary changes in host rage following release of a natural enemy. There is discussion of lab effects (which could be plastic or selected) during rearing prior to release, especially in cases of lab selection for pesticide resistance in the natural enemy (Chapters 19 and 21). There is also the recommendation that biocontrol parasites be moved from artificial media to the target host for rearing at least one generation prior to release in order to recover or enhance pathogenicity on the target species (Chapter 19).

This book is aimed primarily for entomology students whose mission is to identify candidate bio-control species and evaluate the ecological and environmental risks associated with their novel release, as well as their potential as control agents for target species. There are a number of potentially fruitful collaborations that can take place between behavioral ecologists and those working on natural-enemy identification, rearing, and release programs. However, those opportunities will be limited to large institutions with the infrastructure and biological containment to identify and rear new natural enemies for release. Perhaps a more fruitful target for behavioral ecologists looking to contribute to sustainable practices is the development of cultural practices to enhance the ability of both native and already-introduced natural enemies to control plant and animal pests. This is covered in Chapter 22, and it is interesting that the authors in the preface weigh in that this topic is one that researchers are excited by but that has not made an impact in agriculture yet. Some of this might have to do with the actual potential of natural enemy enhancement, some may stem from the scale of agriculture served by

Entomology or Plant and Soil departments, where large monocultures severely limit the range of environmental manipulations most growers would consider. It is possible that a level of behavioral realism is needed to develop cultural practices fully that has not yet been sufficiently pursued. There is no discussion of the role of spatial scale of natural enemy enhancements such as nectar or pollen sources or shelter habitat for natural enemies. This is a field where behavioral ecologists could contribute a good deal by filling in the movement in the field somewhere between long-distance migration and immediate orientation towards hosts. I appreciate the authors frank evaluations of the contributions of different research programs, but we should take it as a challenge.

The entomological focus of the authors may have caused them to miss some vertebrate examples, such as training livestock to feed on (often invasive) weeds, for example (Popay and Field 1996). The book is also stronger on the insect side of any interaction than on the plants being preserved from invasive pests or controlled by natural enemies, but then so are most behavioral ecologists.

A critical question for behavioral ecologists (at least those interested in this book) is how the field of behavioral ecology can be moved forward by studying biocontrol systems. One question already mentioned is the role of learning and evolution on habitat choice. The extent and fitness benefits of natal habitat preference induction is an important current topic (Davis and Stamps 2004), and highly relevant to biocontrol. Another is the study of searching behavior and dispersal on appropriate spatial scales. We know more about movement on the Y-maze scale and on the wing-polymorphism scale, and less at intermediate scales. One subject that can and already has benefitted from biocontrol examples is sex ratio evolution and alteration: Parasitoid systems are the model for studying sex ratio allocation decisions and the host-parasite interactions that alter sex ratio and segregation. Practical application of segregation distortion and vertically, as well as horizontally, transmitted secondary symbionts and parasites are one hoped-for target of this research. There are also some more straightforward applications of sex ratio theory such as adjusting rearing conditions to favor female-biased sex ratios in cultures of natural enemies for release (Ode et al. 2002).

The book is well written and edited. I found only a few typos in the book; a benefit/cost ratio was written as cost/benefit on page 345. I wish the authors had the budget to include book-page listings in the index. Mostly this book was a stimulating reminder of how much basic behavioral ecology has been studied in biocontrol systems, how much remains to be learned, and a challenge to apply behavioral ecology to support sustainable agriculture and conservation biology. The missing connections between behavior as it is usually taught and biocontrol in the book and as practiced are part of a larger disconnect between qualitative and quantitative questions, and pure and applied research, which is not specific to behavioral ecology.

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Conferences and Workshops 2009-2010

VII. Göttinger Freilandtage
"Long-term field studies of primates"
8-11 December 2009, Göttingen, Germany
www.soziobio.uni-goettingen.de/welcome.html

Society for Integrative and Comparative Biology (SICB) Annual Meeting
3-7 January 2010, Seattle, WA, USA
www.sicb.org/meetings/2010/

Sustainable Conservation:
Bridging the gap between disciplines
15-18 March 2010,Trondheim, Norway
www.biodivconf.ccb2010.no/

Annual Conference of the Australasian Society for Study of Animal Behaviour
6 - 10 April 2010, Narrabri, Australia
http://assab2010.eriophora.com.au/

Cooperation: an interdisciplinary dialogue
18-20 April 2010, Budapest, Hungary
www.incore.ich.ucl.ac.uk

Association for the Study of Animal Behavior, Easter Meeting & Postgraduate Workshop
7 – 9 April 2010, Exeter, UK
http://asab.nottingham.ac.uk/meetings/asab.php

Canadian Society for Ecology & Evolution
10-12 May 2010, Université Laval, Canada
www.ecoevo.ca/en/meeting.htm

5th International Frugivory and Seed Dispersal Symposium & Workshop (FSD 2010).
10-13 June 2010, Montpellier, France
www.fsd2010.org

Annual Meeting of the Society for the Study of Evolution & Society of Systematics Biologists
June 25-29, 2010 in Portland, Oregon, USA
www.evolutionsociety.org/awards.asp

XVIII International Congress of Arachnology
11-17 July 2010, Siedlce, Poland
www.arachnologia.edu.pl/congress.html

European Societies for Behavioural Biology (ECBB)
18 – 20 July 2010, Ferrara, Italy
http://asab.nottingham.ac.uk/meetings/asab.php

International Union for the study of Social Insects XVI Congress
August 8-14 2010, Copenhagen, Denmark
www.iussi.org/IUSSI2010/index.htm

International Primatological Society XXIII Congress
12-18 September 2010, Kyoto, Japan
www.ips2010.jp/

14th Evolutionary Biology Meeting
21-24 September 2010, Marseilles, France
http://sites.univ-provence.fr/evol-cgr/

13th Congress of the International Society for Behavioral Ecology
26 September - 1 October 2010, Perth, Australia
www.isbeperth2010.com

Association for the Study of Animal Behavior, Winter Meeting: Interspecific communication
2 - 3 December 2010, London, UK
http://asab.nottingham.ac.uk/meetings/asab.php

…..and beyond 2010

International Ethological Conference
25-30 July 2011. Bloomington IN, USA
http://www.indiana.edu/~behav11

13th European Society for Evolutionary Biology Congress
August 2011, Tübingen in Germany
www.eseb.org/

International Congress of Entomology
19-25 August 2012
http://www.ice2012.org/

14th Congress of the International Society for Behavioral Ecology
Aug 11-17, 2012, Lund, Sweden