ISBE
International Society for Behavioral Ecology
Newsletter
Editor: Ken Otter
Biology Program, University of Northern BC
3333 University Way, Prince George, BC, Canada, V2N 4Z9
phone: (250) 960 5019
fax (250) 950 5538
email: otterk@unbc.ca
Volume 13, Issue 1

From the president

FRANK A. PITELKA AWARD

I am pleased to announce that the winner of the Frank A. Pitelka Award is Dr. Maydianne Andrade. This prize is awarded biennially for what is judged to be the best paper published in the journal Behavioural Ecology during the past two years by a young investigator (defined as someone within five years of receiving their PhD). The decision is made by a vote of the officers, editors and editorial board of the society, and this award covers the two volumes published in 1998 and 1999.

Dr. Andrade's paper "Female hunger can explain variation in cannibalistic behavior despite male sacrifice in redback spiders" was published in volume 9 (pp. 33-42). Warmest congratulations from us all!

Nick Davies

Editorial

To begin, I would like to thank the ISBE for the privilege of being the newsletter's new editor. It is an honor to follow in the line of distinguished past editors, to whom the society must thank for the caliber of the ISBE Newsletter. I would personally like to extend that gratitude to Bart Kempenaers, who has worked hard to provide interesting book and forum reviews in the journal over the years.

I intend to continue in the tradition of the past editors and maintain the forum debates and book reviews for which the newsletter has become known. This is an important avenue of discussion and dispensation of information valuable to the society as a whole. As such, I invite anyone interested in submitting articles or willing to review books to contact me. *The standard rules of decorum and good taste will be asserted to any forum article.* If you are involved in the publication of books that you would like to see reviewed, please contact me and provide me with details. If you know of books that you would like to review, likewise please contact me.

In addition to continuing past traditions, I would like to initiate some new ideas for the Newsletter. The first of these is the **Student Forum.** As noted in Nick Davies' address in the November 2000 issue of the newsletter, students are often responsible for innovations within particular disciplines. It is sometimes difficult, however, for students to have a "voice" by which to express these ideas. The newsletter will begin accepting forum-style articles

written by students. Deadlines for submission of these articles, which should not exceed 2500 words (excluding references), will be **August 15** for the next issue of the Newsletter, approximately four weeks prior to the normal Newsletter deadline. Submissions will be reviewed by a subcommittee of the society's executive and the top submission published as a fully refereed article in the Newsletter.

The second initiative is slightly less formal. This is the invitation for budding cartoonist to submit their work for the newsletter. Cartoons should be either mailed to me, or scanned at high resolution (300dpi) and submitted via email, preferably as TIF files. Pending on the number of submissions, I will attempt to publish several cartoons per Newsletter.

Finally, Society information and the Newsletter will be posted on a webpage hosted by the University of Northern BC's server sometime this summer. The address for the website will be posted in the next newsletter.

Submission deadlines for the Nov/Dec Newsletter will be Sept 15, 2001 for all contributions (other than student forum articles, due Aug 15).

Ken Otter
Newsletter Editor

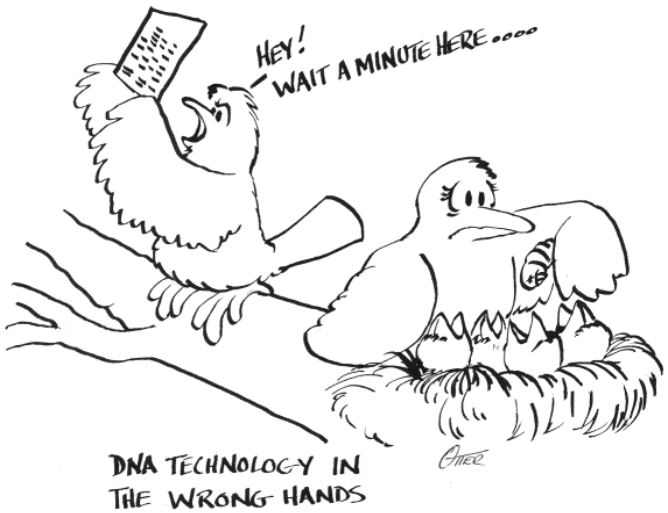
Society News

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 last page of this newsletter.

SPOUSAL MEMBERSHIP

For $5 per year spouses of full members can become members of ISBE. Spousal members receive the annual newsletter and information concerning biannual meetings, but do not receive a subscription to the journal.



Current Executive

President
Nick Davies
Department of Zoology
Downing Street
Cambridge CB2 3EJ U.K.
Tel.: +44 (0)1223 334405
Fax: +44 (0)1223 336676
E-mail: n.b.davies@zoo.cam.ac.uk

Past-President
Stephen T. Emlen
Neurobiology and Behavior
Cornell University
Ithaca, New York 14853-2702 U.S.A.
Tel.: +1 607 254 4327
Fax: +1 607 254 4308
E-mail: ste1@cornell.edu

President-elect
Malte Andersson
Animal Ecology
Department of Zoology
Göteborg University
Box 463, SE 405 30 Göteborg, Sweden
Tel: +46 31 773 3695
Fax: +46 31 416729
E-mail: malte.andersson@zool.gu.se

Secretary
Marion Petrie
Evolution and Behaviour Research Group
Department of Psychology
University of Newcastle
Newcastle-upon-Tyne NE1 7RU U.K.
Tel.: +44 (0)191 222 5126
Fax: +44 (0)191 222 5622
Email: marion.petrie@ncl.ac.uk

Treasurer
Walt Koenig
Hastings Reservation
38601 E. Carmel Valley Rd.
Carmel Valley, CA 93924, U.S.A.
Tel: +1 831 659 5981
Fax: +1 831 659 0150
Email:wicker@uclink4.berkeley.edu

Councillors
H. Jane Brockmann
Department of Zoology
University of Florida
Gainesville, FL 32611-8525 U.S.A.
Tel.: +1 352 392 1107 (1297)
Fax: +1 352 392 3704
E-mail: hjb@zoo.ufl.edu

Andre Dhondt
Cornell Laboratory of Ornithology
159 Sapsucker Woods Road
Ithaca, NY 14850 U.S.A.
Tel.: +1 607 254 2445
Fax: +1 607 254 2415
E-mail: aad4@cornell.edu

Marty Leonard
Department of Biology
Dalhousie University
Halifax, Nova Scotia
Canada B3H 4J1
Tel: +1 902 494 2158
Fax: +1 902 494 3736
E-mail: mleonard@is.dal.ca

Dr. Linda A. Whittingham
Dept. of Biological Sciences
Lapham Hall, P.O. Box 413
University of Wisconsin-Milwaukee
Milwaukee, WI 53201 U.S.A.
Tel: +1 414 229 2252
Fax: +1 414 229 3926
e-mail: whitting@csd.uwm.edu

Grants and Jobs

VOLUNTEER FIELD ASSISTANTS NEEDED FOR RADIOTRACKING TASMANIAN DEVILS: Enthusiastic volunteer field assistants are needed for a study of mating strategies in Tasmanian devils. Field trip dates are May 2001, November 2001, and mid-February to late March 2002. The study is located at Freycinet National Park on the east coast of Tasmania, Australia, a peninsula with mostly open, dry eucalypt forest, beautiful pink granite mountains and white beaches. Assistants are required to arrange travel to the field site; food and lodging will be provided at the site. Assistants will be radiotracking at night from fixed towers (involves camping on mountain tops) or from a vehicle. A good level of physical fitness is required, as well as willingness and ability to function at night, in all weather conditions, and with irregular hours. Volunteers will need own bushwalking equipment (e.g. tent, stove). We will be comparing mating and non-mating season home range sizes and trying to determine the order of male consorts with oestrous females to match with genetic paternity data. The February – March trips, in particular, could be demanding as we will be trying to keep track of a large number of individuals during the mating season. Please contact Dr. Menna Jones (Division of Botany and Zoology, Australian National University, Canberra) by email menna.jones@anu.edu.au.

Forum

We welcome humorous contributions to the new Forum section of this newsletter but we are concerned that the article in the last issue was interpreted by some to ridicule studies of Fluctuating Asymmetry. This is unfortunate because we both feel that this field will continue to be of great interest to our society. As Ken Otter says in his editorial, acceptance of contributions to the Forum section will be subject to the normal rules of good manners in scientific discussion.

Nick Davies, *President*

Marion Petrie, *Secretary*

Book Reviews

Social Foraging Theory

Luc-Alain Giraldeau & Thomas Caraco. Monographs in Behavior and Ecology. Princeton University Press, 2000. 362 pp.

To date, most of the comprehensive treatments of foraging behavior have dealt for the most part with the behavior of individual foragers. In most situations, however, the behavior of one foraging animal affects that of others. According to the criterion presented at the outset of *Social foraging theory*, social foraging simply requires that "two or more individuals concurrently influence each others' energetic gains or losses", which likely occurs in most situations. In what is certain to become a landmark publication, Luc-Alain Giraldeau and Thomas Caraco present a framework that links differing ecological questions that, to date, have rarely been related.

Social foraging theory is organized into five parts, or groups of chapters. Each chapter takes a different aspect of foraging research and then reexamines it from an economics approach, often through the infusion of game theory. As such, this book

provides a framework that unites concepts such as ideal-free theory, game theory, aspects of learning, and the evolution of various behaviors. Examples used throughout the book invoke a range of taxa that you might not be use to seeing in texts on foraging theory including, for example, killer whales (*Orcinus orca*) and Parasitic Jaegers (*Stercoarius parasiticus*) among many others.

The first part of *Social foraging theory* (Chapters 1 through 5) begins by defining social foraging theory and then addresses successively more complex issues: two individuals attempting to avert starvation and avoid predation; decisions about sharing food between individuals in the same foraging group; predictions of foraging group size when member's fitness relates to the size of the group; and group size when member's fitness declines as group size increases. Part 2 (Chapters 6 and 7) then considers the interactions between producers and scroungers in the foraging group context. Chapter 8 (Part 3) reviews models in social foraging theory that address issues of optimal prey decisions under competitive foraging conditions, thus expanding on classical foraging theory, which divides feeding by individuals into a number of decisions. Phenotypic variation within foraging groups is introduced in Part 4 (Chapters 9 through 11). This treatment includes a review of ecological methods for partitioning phenotypic diversity, an examination of variation in learned foraging traits within a group and an examination of efficiency (from an economic perspective) or diversity. *Social foraging theory* ends with a synthesis chapter the examines the book's recurring themes.

As the title suggests, *Social foraging theory* is a book about theory, and as such makes extensive use of mathematics and mathematical models. Although this book will not have a general readership, the authors employ a structure that makes the book accessible to a much broader audience than those just interested in mathematical models. For example, for the most part the mathematical models are provided in "Math Boxes" at the end of each chapter. These boxes provide an in-depth treatment of the mathematics involved for those interested, while increasing the readability of the rest of the book. For most models present in the book, you will also find a "Summary Box" summarizing the model's distinguishing assumptions and predictions. Many of the chapters in *Social foraging theory* contain a section examining the implications of the material presented in the chapter to future work. As such, the emphasis is often on the predictions of the models and on how those predictions can be tested. I believe that this approach helps to both pose new questions that need addressing and will certainly have an impact on the focus of new research in the field. As a whole, the layout of this book is excellent.

Early in the book, the authors indicate that they focus on modeling, rather than an emphasis on empirical results, because of the somewhat disorganized way social foraging has been studied. As you read the book, you quickly realize the merit of their approach. *Social foraging theory* is not for every reader, and likely is not suitable as a textbook except for a specialized graduate course related specifically to the topic of social foraging. If you work in the field of foraging theory, however, you should give this book careful consideration. Having read the book, it is difficult to argue why we should not all be considering foraging within a social context.

Michael Gillingham
Biology Program
Natural Resources and Environmental Studies
University of Northern British Columbia
Prince George, BC, Canada

The following reviews of the same book were solicited from two researchers whose research focuses, respectively, on the visual and auditory modalities of animal communication.

Animal Signals: Signalling And Signal Design In Animal Communication

Yngve Espmark, Trond Amundsen, & Gunilla Rosenqvist (editors) Tapir Academic Press. 2000. 496 pp.

Two of the greatest challenges to Darwin's theory of natural selection were the apparently altruistic

behaviors of eusocial insects and the gaudy display traits of many species of animals. The problem of eusociality was, for all intents and purposes, solved when Hamilton developed the concept of kin selection. In contrast, despite over a hundred years of effort, a comprehensive and widely accepted explanation for the evolution of ornamental traits has yet to be achieved. With the recent focus on ornamental traits as indicators of individual quality, a comprehensive explanation for ornamental traits now seems within view if not yet within grasp.

Ornamental traits as indicators of individual condition is the central theme of *Animal Signals: Signalling and signal design in animal communication* edited by Espmark, Amundsen, and Rosenqvist. This book is the result of a Kongsvoll Symposium sponsored by the Royal Norwegian Society of Sciences and Letters. Kongsvoll symposia have as their goal "to create a stimulating atmosphere for open discussions on the current state of knowledge and prospects for the future" of a chosen topic. Animal signaling was the topic chosen for the 1998 symposium and the resulting book.

As with any edited volume, and particularly one constructed of summaries of oral presentations, the twenty-five chapters in this book provide a mixed bag in terms of the thoroughness, approach, and originality. Some authors provide summaries or mini-reviews of topics of current interest in animal signaling. Others present new data and test specific hypotheses, and these chapters read rather like journal articles. Still others use the unrestricted format of the book to explore and develop new ideas related to animal signaling. All of the chapters have something worthwhile to add to the topic of animal signals. For me, however, it was the latter set of papers, exploring and developing new ideas, that were most interesting and of the greatest value. The most original of these papers push the frontiers of explanation for animal signals, like Endler's chapter on signal-environment interactions, Andersson's chapter on efficacy and content in color signals, Zuk and McKean's chapter on signals, parasites, and immunity, and Johnstone's chapter on conflicts in signal evolution, and make this a volume that every biologist interested in animal signals will want to read.

I think that *Animal Signalling* will have a lasting value not only through the impact of individual chapters, but especially by providing a snapshot of the current state of thinking about animal signals at the turn of the millennium. The twenty-five chapters in this book focus on a wide range of signals including color, song, elongated tails, olfactory displays, and behavioral displays. They focus on birds, fish, lizards, crustaceans, arachnids, insects, and mammals. Most chapters deal with ornamental traits as signals in the context of female mate choice or male-male competition, but signaling between parents and offspring and predators and prey is also covered. The breadth of topics is sufficient to give a reasonable overview of the entire field of animal signaling

If a volume with this same title and with the same focus on the signal function of ornamental traits had been produced 10 or 15 years ago, surely a dominant theme would have been whether these signals evolved as indicators of condition or as arbitrary markers of attractiveness through a runaway process. I find it fascinating that the focus in most chapters of this book is not whether traits evolved as indicators - that seems now to be taken for granted by many authors - but rather what specific information is being conveyed by the signal, what costs are involved in producing and maintaining the signal, and how the environment in which the signal is conveyed may inhibit or enhance transmission of the signal. It makes me wonder what the dominant theme of research on animal signals will be ten years from now.

Geoffrey E. Hill
Dept. Biological Science
Auburn University
Auburn, AL 36849-5414

Animal Signals: Signalling And Signal Design In Animal Communication

Yngve Espmark, Trond Amundsen, & Gunilla Rosenqvist (editors) Tapir Academic Press. 2000. 496 pp.

The field of animal communication has been enjoying a renaissance of late, fuelled by major

advances in both theory and experimental innovation. *Animal Signals - Signalling and Signal Design in Animal Communication* showcases much of the best and most provocative thinking on how animals manage their communication needs. The volume is based on 25 oral papers from the fifth Kongsvoll Symposium hosted by the Royal Norwegian Society of Sciences and Letters, The Foundation in September 1998. The editors, Yngve Espmark, Trond Amundsen and Gunilla Rosenqvist, have clearly imposed high standards for writing and production, and they are also to be congratulated for shepherding these papers to press in a timely fashion (no small feat, as editors of multi-authored works know all too well). The result is a diverse cornucopia of recent important advances in our understanding of signal production and perception.

All the papers deal (in the broad sense) with theoretical advances; about half are taxon-specific, with an emphasis on birds, but including contributions on spiders, fish, lizards, and mammals. The admittedly lop-sided taxonomic representation is a fair reflection of the state of the field, and the editors have wisely not attempted to impose equity on topic choice. On the other hand, there is some minor redundancy between chapters (for example, discussions of signal efficacy and content). The sheer length of the book dictates a selective assessment here. Readers will find cogent reviews of topics currently generating a lot of empirical work such as avian UV vision (Cuthill et al), communication networks (McGregor et al), and MHC-correlated sexual selection (Grahn; Wedekind et al), interspersed with cautionary tales about fluctuating asymmetry (Swaddle), genetic indicator mechanisms (Sheldon), receiver biases (Basolo), and conflicts of interest between senders and receivers (Johnstone). Particularly interesting to this reviewer were chapters discussing how sexual selection may lead to female song (Langmore), and to the "forgotten beauty" of female ornamentation (Amundsen). Vehrencamp's chapter provides a useful cost-based classification scheme of signals, developed for birdsong but which should be applicable to other signalling systems. Endler's chapter (which opens the book) makes a persuasive plea for behavioral ecologists to devote more effort to understanding how the environment and biophysics influence signal production and perception. While songbird researchers have arguably made some headway on this front, I found the two papers on color in reef fish (Marshall) and lizard dewlaps (Fleishman) to be fascinating demonstrations of the rich array of questions and approaches waiting to be mined in other taxa.

As with all multi-authored volumes, there is some variability in the quality of the papers, but the sheer density of ideas and data more than make up for this deficiency. And despite the editors' best efforts, there are a number of typographical errors - one of the perils, perhaps, of publishing from camera-ready disk versions. But these are minor quibbles. *Animal Signals* would be ideal for a graduate or even senior undergraduate seminar on behavior and communication. Budding behavioral ecologists will find an abundance of ideas for thesis projects, while time-crunched, established researchers will appreciate the condensed, cutting edge overviews. One potential drawback with symposium volumes can be a limited "shelf life"; however *Animal Signals* will not be eclipsed any time soon. This is a very useful book, well worth having.

Laurene Ratcliffe
Dept of Biology
Queen's University
Kingston, Ontario, Canada

If you know of, or are involved in the publication of books that you would like to see reviewed, please contact the Newsletter Editor (otterk@unbc.ca) with details.