Supplement to Behavioral Ecology

ISBE International Society for Behavioral Ecology

Newsletter

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Editorial

Newsletter Editor

The main reason researchers join scientific societies is to subscribe to their journal. With the easy online access to many journals, however, there are now even fewer incentives to join a society. I believe this edition of the newsletter presents two cases where members of ISBE benefit from their member status. In 2005, Joanna Rutkowska used the ISBE newsletter to make a call to contribute zebra finch DNA samples for a meta-analysis. The result of this initiative has just been published in Molecular Ecology (see page 7 for a review and page 6 for a similar call for comparative data on parasitism). The other benefit of ISBE membership is that more recent members (PhDs and early post-docs) now have the opportunity to publish their short research profile in the newsletter (page 8). The aim of this initiative is to introduce and involve newer members of the society. So, if your colleagues are not members of ISBE, do encourage them to join!

I am also very pleased to announce that past ISBE president, Stephen Emlen, has just been inducted into the American Academy of Arts and Science (see page 4).

Finally, I would like to thank our cartoonists, Ken Otter and Mike Seddon for submitting their cartoons to the ISBE newsletter. If you want to see more of Mike's work, please visit his website (http://groups.msn.com/seddon-cartoons/shoebox.msnw).

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 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 1500-2000 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 (*web.unbc.ca/isbe/newsletter*).

Deadlines for submission to the Spring newsletter will be 1 February 2008.

Spotlight on....

A newsletter item for advanced postgraduate students and recent post-docs.

Introduce yourself, your research and research interests to the society.

Nominate for the spring 2008 issue by 1 February 2008 (m.herberstein@bio.mq.edu.au). ISBE membership is essential!

If multiple nominations are received, 3-4 entries will be selected randomly.

Current Executive

Society News

Most Society News – workshops, conferences and job postings – are now publicised 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 Mariella Herberstein (m.herberstein@bio.mq.edu.au) for posting.

PROFESSOR STEPHEN EMLEN MEMBER OF AMERICAN ACADEMY OF ARTS AND SCIENCE

Stephen T. Emlen, Jacob Gould Schurman Professor at Cornell University and former ISBE president has been inducted into the American Academy of Arts and Sciences at a ceremony on October 6th, 2007. Founded in 1780, the Academy honors excellence each year by electing to membership the finest minds and most influential leaders of the day. A complete list of new members is available on the Academy's website at: www.amacad.org

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 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).

ISBE 2008

The twelfth congress of the International Society for Behavioral Ecology will be held at Cornell University in Ithaca, New York, 9th-14th August 2008.
http://www.isbe2008cornell.org/

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:
http://web.unbc.ca/isbe/newsletter

- **select "Ads and Positions" to see all currently available jobs**

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

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 20 and will be posted on the webpage.

ISBE Cornell 2008

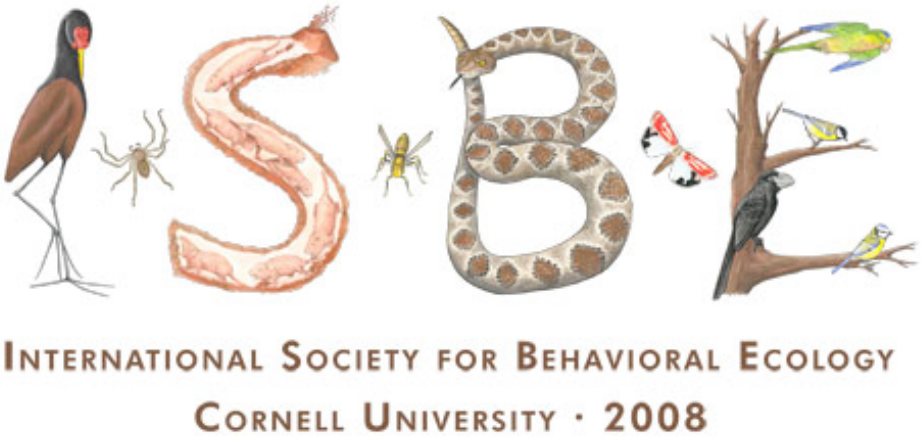
Planning for the 12th biennial ISBE congress is progressing well. You can now view the basic information about the meeting on the website at www.isbe2008cornell.org. The welcome reception will take place on Saturday August 9th, and the traditional 5-day schedule of plenaries, oral presentations, posters, and excursions will run from August 10th -14th , culminating in a congress banquet. Due to the great success of the post-congress symposia at the Tours meeting, we will offer optional symposia at the Cornell meeting during the morning of August 15th. If you are also planning to attend the ABS meeting in Utah, which begins on August 15th, you will need to travel there on the 15th and may not be able to attend the symposia. The call for symposium topics is now open, please submit proposals through the website above.

We have an exciting line-up of invited speakers. Ken Catania will speak about sensory strategies in star-nosed moles and water shrews, Suzanne Alonzo will present theoretical and empirical insights into the evolution and ecology of reproductive behavior, Ruth Mace will review human behavioral ecology, Nico Michiels will discuss sexual conflict in hermaphrodites, Yael Lubin the evolution of sociality in spiders, and Ben Hatchwell the evolution of cooperative breeding in birds. The Hamilton lecture will be given jointly by Alasdair Houston and John McNamara. We are curious how they will decide to organize their talk – perhaps as a debate?

A few points to note. We are encouraging everyone to stay in the residence halls on campus. The entire campus will largely be ours at this time. Hotel rooms will be extremely difficult to obtain because our meeting overlaps with the NASCAR auto racing event in a nearby town. We could only reserve a few hotel rooms for our meeting participants, so if you really want to stay in a hotel, book it early. Several qualities of residence hall rooms and apartments will be available, in many cases with hotel-like room service. All evening social events will take place close to the residence hall area, as well as the soccer tournament and a mid-week barbeque. The website outlines travel, hotel, day care, and excursion options. Online registration and housing sign-up will open in February 2008, with a deadline for submitting abstracts on April 1st.

We hope to see you at Cornell next summer!

The Organizing Committee
info@isbe2008cornell.org
http://www.isbe2008cornell.org/



Call for data

Meta-Analysis Seeking Data on Group Size and Parasitism

A National Evolutionary Synthesis Center (NESCent: www.nescent.org) working group is exploring ways to enhance meta-analyses and syntheses through broader requests for data. Here, we present one pilot request for data for a proposed synthetic work.

Data Requested

Charles Nunn and László Garamszegi seek unpublished results and "pointers" to published results involving the association between group size and parasitism in wild vertebrates. The data will be used in a meta-analysis to investigate the links between sociality and parasitism. The last meta-analysis conducted on this topic was published over 10 years ago (Cote & Poulin 1995). Since then, new data have emerged, along with new questions concerning the factors that link group size and parasitism. The current study will also broaden the taxonomic coverage of hosts examined.

Desired Format of Data

Results or data can be in the form of population-level data, such as differences in infection levels in differently sized groups, or comparative data relating group size and parasitism across species. All types of macro- and microparasites are of interest, including arthropods, helminthes, protozoa, viruses and bacteria, as are all vertebrate hosts, including terrestrial and aquatic species. The researchers will also examine multiple measures of parasitism, including prevalence, intensity and parasite richness. Results can be from observational studies or experiments. The meta-analysis will examine these and other factors, including publication bias.

Statistical results should be provided in a form such that effect sizes can be calculated. An example would be a correlation coefficient between group size and parasitism, along with sample size. Means and standard errors of rates of parasitism among categorical group sizes (e.g. small versus large groups) would also be useful, again with sample sizes for the categories, as would raw data from which these and other statistics can be calculated.

In addition to unpublished data, the researchers would appreciate "pointers" to published articles relevant to the study.

Timeframe

Please provide us with the data or references by December 15th 2007, or if you have data that may be available soon thereafter, please let us know that it is coming.

Use of Unpublished Data

All published studies will be cited in resultant publications, and unpublished work may be given credit through consortium coauthorship for the person providing the data.

Contact Information

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References

Côté IM, Poulin R. 1995. Parasitism and group size in social animals: a meta-analysis. Behav Ecol. 6:159-165.

Genealogy of zebra finch lab populations: Results from call for DNA samples

Two years ago, in the ISBE Newsletter I reported about a workshop 'Zebra finches – *status quo* and where we go' (Rutkowska 2005). Workshops that focus on a single study organism typically lead to lively discussions about why research findings often differ between the various research labs. Is it the details of the experimental procedure, the conditions of how the birds are kept and reared, or could it be that the different lab populations have diverged genetically due to inbreeding and drift? To address the latter possibility, Wolfgang Forstmeier (Max Planck Institute for Ornithology, Seewiesen Germany) made a call, which I announced in the ISBE newsletter, to contribute DNA samples for a study of genetic differentiation of the various captive zebra finch populations. The call was very successful and as a result, he was able to compare 1000 zebra finches from 2 wild Australian and 18 captive populations used in behavioral research. The findings have just been published in Molecular Ecology (Forstmeier at al. 2007).

The authors used 10 microsatellite markers to provide a tree of the genetic similarity of zebra finch populations and to study the possible genetic bottlenecks that captive populations might have gone through. For the two natural zebra finch populations the research revealed the highest allelic richness and heterozygosity in microsatellites ever reported for wild bird populations. Consequently, most of the alleles present in these natural populations had very low frequencies and captive populations have lost different alleles therefore significantly diverging from each other. However, the process of zebra finch domestication did not cause dramatic bottlenecks. The loss of genetic diversity in captive as compared to wild populations is comparable to what is expected to occur in an isolated island population bottlenecked for 50 generations with an effective population size of 200 individuals.

These findings have important implications for interpretation and planning of research. First, disparities in results from different populations may be explained by different origin of birds and should be especially pronounced between populations from continents that markedly differ in allelic content. Interestingly, the Vancouver population is very 'cosmopolitan' as its individuals cluster to Europe to the same extent as to North America. Second, information on genetic differences may be purposely used to design crosses between populations to ultimately map quantitative trait loci.

Here is zebra finch *status quo*. Where we go? The genome of the zebra finch is expected to be published some time next year. It will be (after the chicken) the second bird genome sequenced, and this will open exciting possibilities for studying genes that affect, for example, sexually selected ornaments, personality traits or genetic compatibility. Thus, while already serving as a model organism in neurobiology and behavioral ecology, the zebra finch is now entering the world of genomics.

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References

Forstmeier W, Segelbacher G, Mueller JC, Kempenaers B. 2007. Genetic variation and differentiation in captive and wild zebra finches (*Taeniopygia guttata*). Mol Ecol. 16: 4039-4050, doi:10.1111/j.1365-294X.2007.03444.x

Rutkowska J. 2005. Maternal effects in zebra finches - status quo and where we go. ISBE Newsletter. Supplement to Behavioral Ecology 17:14–5

Spotlight on….. Research profiles of ISBE members

Name: Theodore Stankowich
Education: BA Honors (1996) Cornell University; MSc (2002) University of California Davis; PhD (2006) University California Davis
Current Address: Darwin Postdoctoral Fellow, Organismic and Evolutionary Biology, University of Massachusetts Amherst, Morrill Science Center South, 611 N. Pleasant St., Amherst, MA 01002 USA
email: teds@bio.umass.edu
Research Interests: Evolution of antipredator responses, risk assessment, flight decisions, escape behaviour.
Selected papers:
Stankowich T, Coss RG. 2007. Effects of risk assessment, predator behavior, and habitat on escape behavior in Columbian blacktailed deer. Behav Ecol. 18:358-367.
Stankowich T, Coss RG. 2007. The re-emergence of felid camouflage with the decay of predator recognition in deer under relaxed selection. P Roy Soc B. 274:175-182.
Stankowich T, Coss RG. 2006. Effects of predator behavior and proximity on risk assessment in Columbian blacktailed deer. Behav Ecol. 17:246-254.

Name: Antje Engelhardt
Education: Diploma (1997); Free University of Berlin; PhD (2007) Free University of Berlin
Current Address: Department of Reproductive Biology, German Primate Centre, Kellerweg 4, Goettingen D-37077 Germany
Email: aengelhardt@dpz.eu
Research Interests: My research interest is in primate evolutionary biology focussing on sexual selection. I am also interested in the evolution of primate social systems.
Selected papers:
Engelhardt A, Hodges JK, Heistermann M. 2007 Post-conception mating in wild longtailed macaques (*Macaca fascicularis*): characterization, endocrine correlates and functional significance. Horm Behav. 51:3-10.
Engelhardt A, Heistermann M, Hodges JK, Nürnberg P, Niemitz C. 2006. Paternity determination in wild long-tailed macaques (*Macaca fascicularis*) - alpha male mate guarding, direct female mate choice or postcopulatory mechanisms? Behav Ecol Sociobiol. 59:740-752.
Engelhardt A, Pfeifer JB, Heistermann M, Niemitz C, van Hooff JARAM, Hodges JK 2004 Assessment of female reproductive status by male long-tailed macaques (*Macaca fascicularis*) under natural conditions. Anim Behav. 67: 915-924.

Name: Hangkyo Lim
Education: BSc (1993) Seoul National University; Masters (1999) Seoul National University; PhD (2006) University of Kansas
Current Address: Research Associate, Dept of Fisheries, Wildlife, and Conservation Biology, University of Minnesota, 200 Hodson Hall, 1980 Folwell Ave., St. Paul, MN 55108, USA; email: limxx148@umn.edu
Research Interests: Mating behaviour, (chemical) communication, sexual selection, mating system evolution, behavioural genetics of mating behaviour.
Selected papers:
Lim H, Greenfield MD. 2008. Female arctiid moths (*Utetheisa ornatrix*) orient toward and join pheromonal choruses. Anim Behav. in press
Lim H, Park KC, Greenfield, MD, Baker TC. 2007. Perception of conspecific female pheromone generates communal calling in an arctiid moth, *Utetheisa ornatrix*. J Chem Ecol. 33:1257–1271.
Lim, *H*. and Greenfield, M. D. 2007. Female pheromonal chorusing in an arctiid moth, *Utetheisa ornatrix*. Behav Ecol. 18, 165–173

Name: Amanda Bretman
Education: BSc (1999) York; MRes (2000) York; PhD (2004) Leeds
Current Address: School of Biosciences, University of East Anglia, Norwich, Norfolk, NR4 7JT, UK
email: a.bretman@uea.ac.uk
Research Interests: My research is focussed on sexual selection. I am interested in the evolution and consequences of female multiple mating and the interaction between male and female traits which could take the form of sexual conflict. I use molecular techniques and behavioural studies to answer questions using insect systems.
Selected papers:
Rodríguez-Muñoz R, *Bretman A*, Hadfield J, Tregenza T. (in press) Sexual selection in the cricket *Gryllus bimaculatus*: No good genes? Genetica
Bretman A, Rodríguez-Muñoz R, Tregenza T. 2006. Male dominance determines female egg laying rate in crickets. Biol Let. 2:409-411.
Bretman, *A*. & Tregenza, T. 2005 Measuring polyandry in the wild: a case study using promiscuous crickets. Mol Ecol. 14:2169-2179.

Book Reviews

Comparative Mammalian Life History: What Have We Learned From Baboons. Reproduction and Fitness in Baboons: Behavioral, Ecological, and Life History Perspectives

Larissa Swedell and Steven R. Leigh (eds), Springer, 2006, 322 Pp.
ISBN 0-387-30688-9 (hardcover)

Baboons (Primates, Cercopithecoidea, *Papio*) are among the most thoroughly investigated African mammals. The distribution, genetics, physiology, behaviour, and socioecology of baboons are comparatively well known, in part, because of the relative accessibility of their habitats, facilitating the establishment of long-term research sites, notably those at Amboseli (Kenya), Awash (Ethiopia), Moremi (Botswana), and Drakensberg (South Africa). Larissa Swedell and Steven R. Leigh, editors of *Reproduction and Fitness in Baboons*, have assembled contributions by 25 primatologists "to evaluate how patterns of behavior associated with rank attainment, mating, and reproduction interdigitate with ecology and life history attributes, particularly those involving allocation of reproductive effort and rearing of offspring" (p. 2). Apparently, the editors' intentions were to accentuate the ways in which individual strategies of reproductive allocation influence and are influenced by population-level (life history) phenomena. Unfortunately, the Introduction (Chapter 1) does not provide clear definitions of terms, concepts, questions, or problems (see, for example, the editors' discussion of parental investment) and fails to provide a consistent, cohesive conceptual framework for contributors or readers. Nonetheless, this book has many strengths, and my goal in the present review is to highlight why theoretical and empirical behavioural ecologists at any stage of their careers may find this volume useful.

Reproduction and Fitness in Baboons is divided into two parts. In 5 chapters, Part I addresses "reproductive behavior and mating strategies". These chapters primarily provide descriptive information of females living in polygynous societies of Hamadryas baboons (Swedell and Leigh, Chapter 2), of female tactics and reproductive success of hybrid baboons (Beehner and Bergman, Chapter 3), of hybrid male reproductive tactics (Bergman, Chapter 4), of social flexibility in Guinea baboons living in unpredictable regimes (Galat-Luong, Galat, and Hagell, Chapter 5), and of the adaptive significance of inbreeding for the maintenance of high copy numbers of baboon endogenous virus (BaEV) within groups (Uddin, Jolly, and Phillips-Conroy, Chapter 6). While all of these chapters contribute new information to the literature on *Papio*'s subspecies, Chapters 3, 4, and 6 are most likely to be helpful to behavioural ecologists seeking examples of covariations among biological factors likely to impact life history parameters (e.g., size of reproductive unit, alternative reproductive behaviours, genetics). Since group size is a key variable for the findings of each of these noteworthy chapters, it is unfortunate that their authors failed to point out that, for most primate species, relative reproductive success (or, group productivity) is a decreasing function of group size, all other things being equal (see, for example, Kuester and Paul 1996). Most primates, thus, fail to exhibit the Allee effect (positive relationship between population density and mean growth rate of population) suggesting that the reproductive success of primate females is negatively impacted by increasing group size. This consistent finding raises questions about costs to primate females of male residence in groups (e.g., sexual conflict, social parasitism).

Part II of *Reproduction and Fitness in Baboons* presents 5 chapters discussing "life history, development, and parenting strategies". Again, primarily descriptive evidence is presented about factors influencing and influenced by female survival, reproduction, and dominance rank in Chacma baboons (Cheney and nine colleagues, Chapter 7; Johnson, Chapter 8) emphasizing the effects of predation, competition for food, and infanticide, a type of intrasexual competition. In an attempt to increase the rigor and the relevance to life history research of these and other chapters, $l(x)$ (age-specific survivorship) and $m(x)$ (number of female births at age x) might have been calculated from the authors' descriptive data. These life history functions are expected to be maximised by selection unless constrained by tradeoffs such as predation and competition (Roff 2002). In Chapter 9, Barrett, Henzi, and Lycett, studying South African Chacma baboons at DeHoop (low altitude) and in the Drakensberg Mountains (high altitude), provide descriptive data suggesting "both offspring independence and probability of survival are contingent on both timing of birth and habitat predictability" (p. 199). These authors

exhibit important information on differential offspring survival and correlates of these patterns for both habitats. Although correlations between births and rainfall are provided for both localities, covariations between and among life history and environmental variables are not provided (see, for example, Glazier 2000). Leigh and Bernstein (Chapter 10) review evidence for and against the schema of the slow-fast continuum of life-history tactics (Gaillard et al. 2003; also see Bielby et al. 2007), rejecting the applicability of the slow-fast continuum for primates. This conclusion is markedly premature since few primate studies have quantified the functions necessary to test the ideas inherent in the slow-fast formulations (e.g., the F/alpha ratio).

In Chapter 11, Jolly and Phillips-Conroy investigate the relationship between testicular size and development and allocation of mating effort in two subspecies of baboons, discussing the implications of their findings for sociobiology. This chapter highlights the importance of morphometric studies for testing hypotheses related to the evolution of life history. Harvey and Clutton-Brock (1985) have pointed out that "variation in most life-history measures is highly correlated with variation in body size, and differences in body size are associated with differences in behavior and ecology" (p. 559). It is important, also, to recall Stearns' (1984) *caveat* that life history evolution is a function of "extrinsic age- and size-specific shifts in mortality rates that interact with…the intrinsic constraints and potentials of organisms" (p. 694). Thus, covariations of factors associated with life history parameters require fine-grained measurements of abiotic and biotic (including social) variables, and it is not clear from the data provided in Chapter 11 and elsewhere in this volume whether such data exist.

Alberts and Altmann (Chapter 12) discuss phenotypic plasticity of baboons, emphasizing behavioral flexibility in an essay designed to highlight the importance of baboon studies to primatology. These authors discuss, as well, the limits of behavioral flexibility (see Jones, 2005), an important topic since the fitness costs or benefits of behavioural flexibility will vary with environmental predictability and other factors (e.g., phylogeny, degree of genetic buffering or canalization). While Alberts and Altmann wish to establish baboons as a paragon of phenotypic plasticity, in particular, behavioural flexibility, it is important to understand that, as Roff (2002) has stated: "Phenotypic plasticity is ubiquitous." (p. 464). The extent to which primates, indeed, mammals (see Hernández Fernández and Vrba 2005), are plastic and/or flexible compared to other animals requires the collection of appropriate cross-taxa, cross-continental data and calculation of the necessary functions. Differential phenotypic plasticity is likely to be a relative set of characteristics depending significantly upon generation time (*T*) relative to limiting exogenous patterns, especially, temporal ones (e.g., rainfall, food periodicity). Furthermore, enhanced behavioural flexibility is only one route to managing the challenges of temporal and spatial heterogeneity. The relatively monomorphic genotype of mantled howler monkeys (*Alouatta palliata*), for example, is probably a buffer to the vagaries of temporal, and, possibly, spatial, environmental heterogeneity, although, by several other measures, these monkeys display notable pohyphenisms (environmentally switched alternative responses: see Jones 2006).

In sum, *Reproduction and Fitness in Baboons* is a useful overview of current research projects on the primate genus, *Papio*. This volume suffers, in particular, from the narrative and descriptive approach to primatology still characterising most theoretical and empirical work in this field. Most unfortunate, perhaps, is the widespread belief that scientific primatology "mandates multigenerational, longitudinal data" (Swedell and Leigh 2007, p. 4). As Roff (2002) points out, "A critical tool for the study of the pattern and evolution of life histories is mathematical analysis." (p. 1), an approach (e.g., matrices, simulations, graphical techniques, and modelling) that Roff's book highlights in addition to those of genetic and phenotypic correlations and experimental manipulations. All of these methods, in addition to comparative analyses (e.g., cladistics), bootstrapping procedures (e.g., to enhance the utility of small data sets), as well as cross-sectional and quasi-experimental research designs, are available to behavioural ecologists studying mammals, including primates. Finally, despite the many compelling empirical studies that have been conducted on the genus *Papio*, primatologists and others should weigh Clutton-Brock's (1989) *caveat*: "As our understanding of mammalian mating behaviour has developed, it has come to rely increasingly on the results of a small number of long-term studies. As the costs and benefits of different forms of mating behaviour are likely to vary widely within and between species, extrapolations based on these studies may well be less secure than is often assumed." (p. 363). Upon final analysis and despite limitations, for patient and forgiving readers, Swedell and Leigh's volume will provide many fruitful ideas for informal and structured discussions and for theoretical and empirical, including experimental, investigations.

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References

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Glazier DS. 2000. Smaller amphipod mothers show stronger trade-offs between offspring size and number. Ecol Let. 3:142-149.

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Hernández Fernández M, Vrba ES. 2005. Macroevolutionary processes and biomic specialization: testing the resource-use hypothesis. Evol Ecol. 19:199-219.

Jones CB. 2005. Phenotype as developmental bridge: Whither nature and nurture? Am J Psychol. 118:141-148.

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Kuester J, Paul A. 1996. Female-female competition and male mate choice in Barbary macaques (*Macaca sylvanus*). Behaviour 133: 763-790.

Roff D. 2002. Life history evolution. Sunderland, MA: Sinauer Associates, Inc.

Stearns SC. 1984. Adaptations of colonizers. Science 223:694-695.

BLUEROOM SET AT THE BBC WILDLIFE

Bird Coloration: Vol. 1, Mechanisms and Measurement; Vol. 2, Function and Evolution

Geoffrey E. Hill and Kevin J. McGraw. (eds.) Harvard University Press, 2006. 589 Pp. (Vol. 1), 477 Pp. (Vol. 2).

ISBN 0-674-01839-1 (Vol. 1), ISBN 0-674-02176-2 (Vol. 2)

Bird colouration has captured the imagination of naturalists and researchers since Darwin (1871) first published on sexual selection. Recently, new insights into sexual selection (e.g. Hamilton and Zuk 1982), and advances in understanding avian vision (Cuthill et al. 2000) and measurement of colour (Endler 1990) have brought a renewed and vibrant interest to studying colouration, both from mechanistic and evolutionary viewpoints. With this renewed interest have come large numbers of recent studies, and Geoffrey Hill and Kevin McGraw assert that "an approach combining the studies of proximate control, function and evolution is becoming the paradigm in research on bird coloration" but no work had brought all of these approaches and recent developments together. It is this task of an up-to-date, comprehensive review of bird colouration that the editors of *Bird Coloration* undertake along with other leading authors in the field.

Bird Coloration is divided into two volumes, the first of which focuses on the perception and measurement of colour, and also the mechanisms of colour production and control. The second volume treats the function and evolution of colour, often, but not exclusively, focusing on sexual selection. Each volume contains more than 30 colour plates that illustrate examples in the chapters and remind us of the diversity, complexity and beauty found in the plumage and soft parts of birds. Although more than 20 authors were involved in the book, this collaboration benefits, rather than suffers, from the inclusion of so many different voices. Each author's particular strengths are evident in their chapters, and the treatments of the main themes are sufficiently strong enough to unite all of the chapters in each volume.

Volume 1 begins with a review of the avian visual system by Innes Cuthill. This chapter is a thorough introduction to the tetrachromatic colour vision of birds and also serves to remind us of three key points, which are sometimes overlooked when discussing bird vision. First, it is useful to keep in perspective that a tetrachromatic visual system is the ancestral state in vertebrates, and that the trichromatic visual system of humans and dichromatic visual system of most mammals are the exceptions rather than the norm. Second, we are reminded that colour vision is not identical across birds, and there appear to be multiple independent changes from a violet-tuned short wavelength sensitive opsin to a UV-tuned short wavelength sensitive opsin. Finally, Cuthill points out that even though it has been demonstrated that UV-vision is important in functions as diverse as mate choice and foraging, it is not yet clear whether the UV portion of the spectrum is more important than other bird-visible wavelengths.

Chapters 2 and 3 offer constructive overviews on measuring and analyzing colour. Chapter 2, by Staffan Andersson and Maria Prager, reviews the equipment available for reflectance spectrometry and offers practical advice on choosing and using different pieces of equipment. Chapter 3, by Robert Montgomerie, covers the various ways to summarise and analyse the copious amounts of data obtained using spectrophotometers. The explanation of the different methods of analysis is essential, because the relative newness of portable reflectance spectrometers means that there is not yet a clear consensus of a single best method in the literature. Taken together, chapters 2 and 3 are a valuable resource for investigators as they design their studies.

In chapter 4, Marc Théry asserts that if the purpose of an investigation is to gain insight into signal evolution, the researcher must account for the light environment in which the bird and its predators are signalling and receiving signals. This topic clearly deserves more attention than it has received thus far, though the relative paucity of studies can be attributed to the apparent complexity of examining colour patterns and light environment.

The mechanics of different types of colouration are covered in chapters 5-9. Chapters 5 and 6, by Kevin McGraw, review the chemical structure, modification, deposition and biological function of carotenoid and melanin pigments, respectively. Richard Prum, in chapter 7, surveys the production of structural colours and suggests that these colours may be less sensitive to individual condition than pigmented colours. Chapter 8, also by Kevin McGraw, treats the expanding ranks of avian pigments that are not classified as either melanin or carotenoid. Five different classes of pigment are treated in the chapter, but more examples and types of

these rarer pigments are sure to be discovered as further biochemical analyses are carried out. Chapters 5-8 offer a solid synthesis, but can be too technical for more casual readers lacking an extensive background in biochemistry and physical light scattering. In chapter 9, Robert Montgomerie reviews rarer examples of cosmetic colours. These include colours that are applied to the plumage, the colour of objects used in displays, or adventitious colour that results from either passive or deliberate wear of the feathers.

Chapters 10-12 cover the proximate control of colouration through hormonal, genetic and environmental regulation. Chapter 10, by Rebecca Kimball, reviews the effects of hormones such as oestrogens and androgens on the expression of colouration. Kimball suggests that hormone-dependent traits could play a role in sexual selection and the evolution of sexual dichromatism by providing females with information about male quality and condition. Nicholas Mundy reviews the need for greater understanding of the genetic basis of colouration in Chapter 11. Particular loci accounting for colour polymorphisms have only been identified for melanistic traits, and additional quantitative genetic studies are needed to determine the heritability of colour traits. In chapter 12, Geoffrey Hill reviews studies of the environmental factors that may affect the expression of colouration. That carotenoid colours are condition dependent and affected by variables such as food limitation and parasites is well established, but the link between melanin and condition is less clear and requires further investigation.

The chapters in volume 2 are divided into two sections - chapters that focus more on the current function of colour, and chapters that look further back into the evolution of colouration. Gary Bortolotti begins volume 2 with a chapter about the influence natural selection may have on colour patterns, and posits two different hypotheses. The first hypothesis states that natural selection has contributed to the evolution of colour specifically for functions such as crypsis or mimicry. The second hypothesis postulates that natural selection could favour colours that are important not for their colour, but for another function such as the protective effects of certain pigments. Bortolotti finds more support for the first hypothesis, but fewer investigations have been conducted on the latter hypothesis.

In chapter 2, James Dale explores the question of why some species have highly variable plumage and other species show very little intraspecific variation in plumage colour. Dale examines several different types of information that variable plumage could signal, including quality or genetic compatibility. Interestingly, he concludes that it is highly uniform plumage that most requires further study and explanation.

While most of the signals in chapter 2 are intersexual signals, chapter 3, by Juan Carlos Senar, focuses on intrasexual signalling, specifically of dominance. Senar concludes that each of several different hypotheses about how badges convey an honest signal of status has some support, and there may be different answers for different species.

Chapter 4 focuses on sexual selection and female mate choice for colour. Geoffrey Hill argues that despite a large number of correlative studies that support female choice of certain colour characteristics, more controlled experimental manipulations of colour are needed to fully resolve questions of female mate choice. Contrary to Hill, I would argue against drawing a strict division between the potential signals of carotenoid versus melanin colours. However, I agree with his suggestion that for colour manipulations to be informative, they should be made within the natural range of variation.

Rebecca Kilner in chapter 5 discusses nestling coloration which, though more constrained than the coloration of adults, can still carry informative signals of identity, sex, health and hunger. This chapter is well written and informative, but feels somewhat out of place in between several chapters that deal primarily with sexual selection.

Chapter 6, by Simon Griffith and Sarah Pryke, returns to the theme of sexual selection and the potential benefits females may receive from their mates. Even though the authors call for more research into this area, they reach the convincing conclusion that ornamental traits such as colour are ideal indicators for females to use in mate choice and, in contrast to chapter 4, that the type of coloration or ornament is not particularly critical.

In chapter 7, Trond Amundsen and Henrik Pärn review conspicuous coloration in females. After examining the support for two hypotheses about the evolution of female colouration, the authors conclude that female colouration more likely evolved under the influence of intra- and inter-sexual signalling instead of as a by-product of selection on male coloration.

Chapters 8-10 focus on the evolution of colour. Alexander Badyaev, in chapter 8, argues for the need of a framework that brings together environmental, genetic and behavioural components that together could better explain the variation in the expression of colour both

within and between species. Chapter 9, by Ian Owens, picks up the theme of interspecific variation in colour and investigates differences between species using comparative methods. Finally, chapter 10, by Kevin Omland and Christopher Hofmann, treats the usefulness of ancestral character state reconstruction, or mapping characters onto a phylogeny, to examine past evolutionary changes in colour traits.

Although there is some overlap and occasional disjointedness between chapters, most notably in volume 2, this does not severely affect the readability of either volume, and each chapter can stand alone as a comprehensive review of its particular topic. The editors have produced a unified body of knowledge that will well serve any researcher interested in avian colouration, and that will be especially helpful for graduate students and others just beginning investigations into the fascinating world of bird colour.

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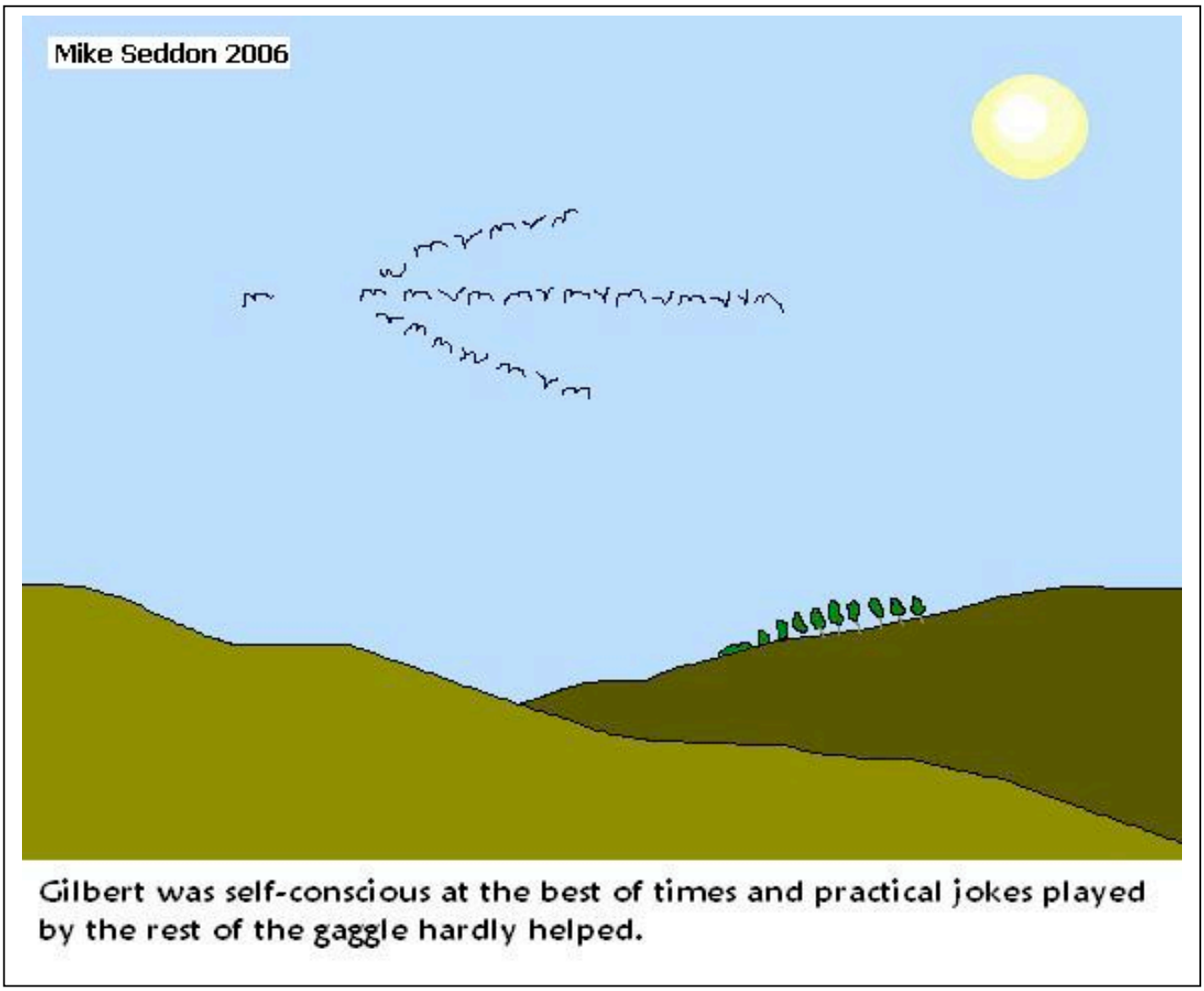

Wild Goose Dilemmas

Jeffrey M. Black, Jouke Prop & Kjell Larsson. Branta Press, 2007. 254 Pp.

ISBN 978-90-811501-1-8 (paperback)

Jeff Black, Jouke Prop and Kjell Larsson have produced a unique description of natural history, social behaviour, life-history (done properly using modern methods), migration behaviour and foraging behaviour-nutrition for five populations of Barnacle Geese (*Branta leucopsis*) breeding from Greenland to arctic Russia. Geese are remarkable animals, with unique personalities, and the ability to mark them and follow them throughout their annual cycle makes them ideal study animals for questions in behavioural ecology and life history evolution. The temporal and geographic scales described in this book are truly amazing. Detailed demographic and behavioural data are presented from the coast of Sweden, Svalbard, coastal Norway, Scotland, Ireland and the Netherlands. Data for one of the study populations include > 400,000 sightings of uniquely marked individuals. Unique among life-history studies, the authors tie variation in life-history strategies back to foraging ability and nutrient intake. I am unaware of another study that has attempted such a comprehensive analysis of a wild species. The book provides detailed underpinnings for behavioural and life-history strategies, creating rich scenarios for the interaction between natural selection and individuals' environments. As with any such effort, careful readers will no doubt recognise paradoxes and dilemmas (which, I suspect, contributed to the title of the book), in which following different lines of evidence leads to seemingly opposite conclusions. The authors were well aware that their book, while providing among the most detailed pictures of a species in the wild, would leave many questions unanswered. They expressly invite close examination of their book and suggest it will provide inviting fodder for graduate seminars and discussion by behavioural ecologists, those interested in life history evolution and goose specialists. Aside from its technical content, the book is a visual delight, with numerous photographs, drawings by Mark Hulme and the figures by Dick Visser, well known in publications from Groningen. Many of the technical figures contain drawings, which serve to highlight the points being made by the data presented in the figure. The authors have placed details of statistical analyses at the end of chapters or at a website and they summarise the key points of each chapter.

The book contains 15 chapters, loosely organized into four sections. The first section, containing chapters 1-3, provides a brief introduction to geese in general, introduces the five populations of Barnacle Geese, and their breeding, migration and wintering areas, and describes the basic approaches to collecting the data presented in the book.

The second section (four chapters) broadly covers social behaviour, with chapters covering pair formation and mate choice, family dynamics, long-term pair bonds, and nest parasitism, adoptions and kin clustering. This section is especially rich because the long-term pair bonds characteristic of geese, extensive parental care (continuing through the first year of life), and the importance of family structure for social status (Raveling 1970, Loonen et al. 1999), create opportunities for complex social strategies, including divorce and adoption of unrelated young. The authors show that most pairs associate with each other during their first year of life and pair bonds lasted up to 15 years. Pairs in which both individuals were similar in size and in their middle years (7 – 11 years old) had the highest reproductive success, as measured by accompanying young the following winter. Pairs of longer duration had greater reproductive success. They demonstrate the importance of extended parental care, in that goslings accompanied by parents were in better condition during winter than goslings on their own, and male goslings that spent more time with their parents were more likely to breed.

The third section includes chapters covering life-history details, foraging ecology and nutrition, population biology, and migration dynamics. I would probably have ordered these chapters slightly differently than the authors but the detail provided linking the various topics together is, nonetheless, truly impressive. In this section the authors establish relationships between social status and nutrient intake, and between nutrient intake and reproductive performance and fitness of young. They also provide support for the hypothesis that timing of migration reflects an individual optimisation process, which balances individual social status and nutritional state and seasonal phenology of food quality and abundance on migration areas against selective pressures favouring early breeding in geese (Black and Owen 1989, Sedinger et al. 1995, Lepage et al. 1998). An important strength of this section is the use of large samples of marked animals observed and multiple breeding and wintering locations, combined with modern capture-mark-recapture methods (e.g., Williams,

Nichols, & Conroy 2002) to estimate key demographic parameters. These approaches allow the authors to more clearly assess the fitness consequences of particular strategies and to better understand dynamics of the study populations. Here, the authors show that body size is heritable in the broad sense and larger individuals have substantial fitness advantages compared to smaller individuals. The authors demonstrate a clear cost of breeding: failed breeders survive at higher rates than successful breeders. They also show that Barnacle Geese experience senescent decline in both survival and reproduction. Barnacle Geese generally time migration to coincide with peak availability of the highest quality foods, and individual foraging ability influences timing of departure from spring stopover areas.

The last section contains a single chapter, which describes the evolving relationship between Barnacle Geese and agricultural landscapes in Europe. This chapter describes the role that agriculture has played in reducing the historical winter food limitation experienced by geese throughout northern latitudes but also discusses the increasing conflict between geese and farmers caused by increasing numbers of geese in Europe. This chapter is certainly also relevant to North America, where similar dynamics between geese and agriculture have played out.

Any book tackling the breadth and complexity as this one will certainly leave some questions unanswered and provoke some new ones. The authors certainly recognised this, as evidenced by their understated challenge in the Preface, "Perhaps the 'unanswered questions' will encourage students to choose geese and their habitats for study." A common finding in studies of geese is that body size is heritable but does not respond to selection for larger size. One explanation is that antagonistic pleiotropy prevents an increase in body size. To date, however, such genetic covariance has not been identified. An alternative is that the substantial environmental and maternal effects on body size (Larsson & Forslund 1991, 1992) account for most of the parent-offspring covariance. Because daughters and mothers tend to share the same social status and be reared in the same habitats, large maternal and environmental effects on body size are certainly feasible. As is true for any observational study the authors cannot fully separate the effects of individual quality from consequences of a particular strategy. For example, females that nest later in spring suffer reduced annual survival. This pattern could result from reduced time late nesting females have to restore nutrient reserves before fall migration, but it is also possible that poorer quality females nest later and also have lower annual survival. Some cases of confounding with individual quality lend themselves to experimentation but several others will not.

Such limitations are widely recognized in studies of behavioural ecology and life-history evolution and in no way detract from the value of this book. I enjoyed this book thoroughly and highly recommend this delightful and stimulating work.

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Chemical Ecology of Vertebrates

Dietland Müller-Schwarze, Dietland, Cambridge University Press, 2006, 563 Pp.
ISBN - 13 978-0-521-36377-9

Chemical ecology, as Dietland Müller-Schwarze points out in the preface to his book, is necessarily a highly collaborative field that draws expertise from behavioral ecology, physiology and anatomy, chemistry, genetics, and other fields. In addition, research in chemical ecology may be basic, applied, or a combination of both. Because the field is also highly active, the state-of-the-art is also constantly and rapidly evolving; thus capturing the growth and the diversity of chemical ecology knowledge and research in a book is a difficult assignment.

Insects and plants have always been the darlings of chemical ecology both because these groups rely heavily on chemicals for communication and defense, and because both are comparably easy to work with compared to vertebrates. As such, chemical ecological work in vertebrates, while generally of high quality, makes up a rather small proportion of published research (according to the author, about 10 - 19% of research published in the *Journal of Chemical Ecology* since 1975). The rich diversity of the field, the increasing interest in operational use or detection of semiochemicals as tools in pest management or conservation strategies, and the general interest that people have in "pheromones" make chemical ecology a highly teachable course in undergraduate and graduate biology, ecology, and zoology degrees. However, resources for teaching such courses, in the form of textbooks, are scant at best. And, of course, as the author points out and a quick search at Amazon.com will confirm, an extant text on the sub-field of general vertebrate chemical ecology is non-existent.

The book is set out to be "a hybrid of textbook and review," and in this the author mainly succeeds. In chapters one through three and chapter five Müller-Schwarze progresses from fairly basic principles of transmission of chemical signals through various media and under various conditions, to physiochemical aspects of vertebrate pheromones, and on to behavioral, anatomical, and physiological aspects of semiochemical production and reception in vertebrates. For some reason that is not immediately apparent, chapter four covers the use of chemical communication and information gathering for navigation, migration, and orientation. This may have been because this topic lends itself, to some extent, to providing examples relevant to the basics of chemical ecology. However, this topic is no better than some of the following topics at that task; and, in any case, it was not made obvious what it was supposed to accomplish by being including at that point.

The following chapters cover diverse aspects of: signaling pheromones, including kin recognition, trail pheromones, alarm pheromones, and sex pheromones (chapters six and seven); intraspecific priming pheromones (chapter eight); ontological considerations in chemical communication (chapter nine); allomones used as defense against predators (chapter ten) or by plants against herbivores (chapter eleven); and the reception and use of kairomones and synomones in predatory, parasitic, and other interesting interactions, such as use of plant material in nests by birds (presumably as antibiotics to ward off diseases), self-medication by chimpanzees, and self-anointing by various animals as chemical camouflage or as insect repellent (chapter 12). The final chapter brings to light a number of potential and actual applications of semiochemicals for management of various vertebrates in natural and agricultural settings. This chapter even has a very short section on potential applications of semiochemicals in humans, including the use of odors in movies.

Obviously, from this list, one can see that the author had a great deal of ground to cover in only 563 pages. As such, while some topics are very well-covered (e.g., feeding on and avoiding plants, section 11.4), others are, at best, vignettes (e.g. the above-mentioned self-anointing, section 12.4). In instances such as the latter case, there may simply be a dearth of information available on that topic, necessitating a very small amount of coverage. In any case, however, referencing is generally quite good - the reference section of the book extends 102 pages - so interesting tidbits can generally be tracked down elsewhere by an interested reader.

This book would be applicable as a text for a class specialized on its subject matter. Two particular items would, however, make it even better for such a use. First, as any good text does, this book includes a glossary of terms. However, the glossary is really very short - only five pages long - and terms in the glossary are not highlighted in the text. In fact, in a number of instances that I checked (e.g., anosmia, allomone, releaser pheromones, venom), a glossary word is not even present in the index. Thus a student would not

know, while reading, if they could find the definition of a technical word in the glossary. Nor could they in many cases, upon browsing the glossary, expect the index to point them back to a relevant page for an example of the use of the word in the text.

Second, most of the chapters end rather abruptly, as does the entire book, with no summary section at all. Each chapter introduction partially serves as a summary, but these, too, are rather short in many cases. This does give the reader the overall impression of a dynamic field with a great deal of ground to cover (as is, of course, the case). As a review of the field that succeeds in covering a great deal of ground, this is definitely fine, but as a textbook it is not as satisfactory because neophyte students generally appreciate being told either where they are going or where they've been.

In general, however, the fact that the vertebrate subset of chemical ecology demands such a large, fast-moving book with some of the many topics only getting very short coverage, speaks to the volumes of information present in the discipline as a whole. Müller-Schwarze should be commended for completing the difficult task of knowledgeably bringing together a diverse array of information and references in an approachable volume. This book is a worthy addition to the reference bookshelf of chemical ecologists and could well be used in specialized upper-level undergraduate or graduate courses on vertebrate chemical ecology.

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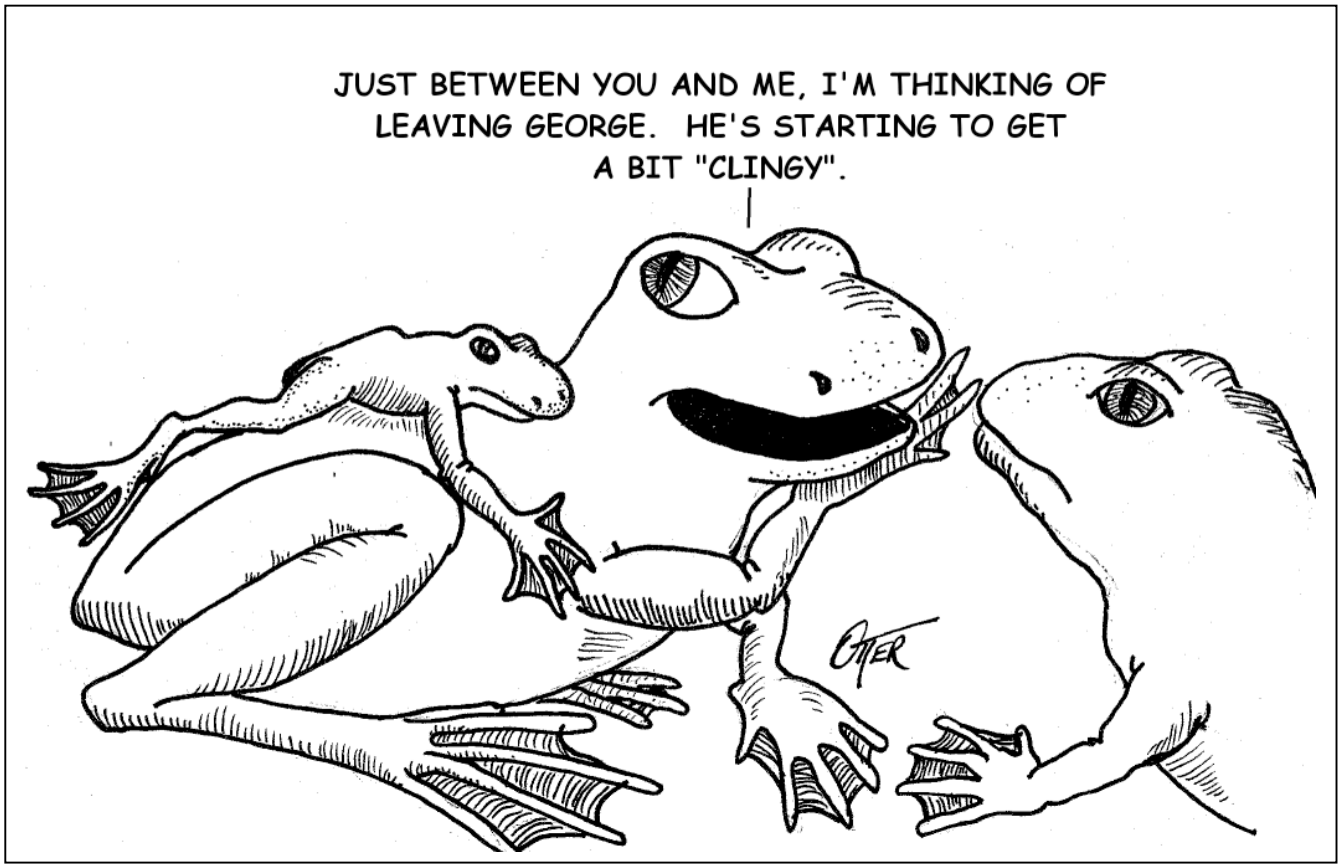

Conference Reviews

EVOLUTION 2007 & Australasian Evolution Society

New Zealand and Australia were rewarded for their long-standing Antipodean contribution to evolutionary biology this year. The annual joint meeting of the Society for the Study of Evolution, the American Society of Naturalists and the Society of Systematic Biologists (Evolution 2007) was held in Christchurch, New Zealand this June, the first time ever outside of North America. Preceding it was the bi-annual meeting of the Australasian Evolution Society, held in Sydney, Australia. Although broad in their scope, both meetings were well-attended by behavioural ecologists. Both meetings benefited from their relatively close proximity, both geographically and temporally, and there was enough variety between the two conferences to provide a stimulating and social week of evolutionary biology.

EVOLUTION 2007: Whilst in the scientific program, there was a definite emphasis on phylogeography, speciation and phylogenetics, behavioural ecology was also well-represented with contributions on sexual selection, the evolution of polyandry and perspectives on social behaviour. Among the highlights of the sexual selection talks, Megan Higgie described how the processes of reinforcement and sexual selection have collided in sympatric *Drosophila* populations, Nalini Puniamoorthy presented some very elegant phylogenetic comparisons of mating behaviour and reproductive morphology in sepsid flies, and Russell Bonduriansky successfully dismantled some of our assumptions about the allometry of sexually selected traits. The evolution of polyandry was again a hot topic with talks including studies of natural levels of multiple paternity in sharks (Toby Daly-Engel) and tuatara (Jennifer Moore) and experimental evidence for the role of polyandry in inbreeding avoidance in mice (Renee Firman).

The poster session was vibrant with the provision of a well-stocked bar helping the flow of intellectual discussion. Generally, the quality of the posters was excellent but one stand-out presentation was Yasuoki Takami's thorough treatment of genital evolution and mating strategies in ground beetles.

The social and cultural program was impressive, especially the welcome reception including an atmospheric welcoming ceremony from the local Maori. Throughout the week there continued to be formal and informal social events that made this meeting one of the more social and enjoyable we have attended, and the proximity of the venue to Christchurch's arts and restaurant precinct facilitated this greatly.

Australasian Evolution Society (AES): The 5th Australian Evolution Society Meeting was hosted this year by the University of New South Wales, and was similarly well-represented by behavioural ecologists. Speakers spanned the breadth of evolutionary biology and although most were from Australasia, a number of international visitors enhanced the diversity of presentations and the delegates' enjoyment of the meeting. Of particular note was the lack of peacocks at this years' meeting, with the bird appearing on only two slides out of the many hundred shown.

Despite the breadth of research under the AES umbrella, the behavioural ecologists were well represented. A small selection of stand outs include Lee Ann Rollins who presented some fascinating results suggesting evidence of evolution in progress via range expansion, Mylene Mariette showed interesting nest site selection in wild zebra finch, the charismatic megafauna award was taken out by Merel Dalebout with her work on sexual selection in beaked whales, Stuart Baird, Ben Phillips, and P. Biro reported on the cane toad invasion, Tobias Uller described how climate conditions experienced by skinks during gestation can effect offspring sex ratio, and Erik Postma gave us insight into the impact factor of multidisciplinary journals.

The poster display was widely varied. Joshephine Reyes provided a display of evolution in host-pathogen systems, Simon Robson presented methods for biomechanically determining insect ages, and Troy Day exhibited work on coral bleaching resistance. The social scene was well catered for in the form of the conference functions and due to the many great restaurants both on and close to the campus. This provided for a relaxed and fun atmosphere, overcoming the surprise Sydney cold snap.

Evolution 2008 will be held in Minneapolis, Minnesota and the 6th meeting of the AES will be in Canberra in 2009.

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Natural history: a fruitful meeting of cultures

The tri-centenary of Buffon's birth, September 2007

One of the great naturalists of the eighteenth century was George-Louis Leclerc, Comte de Buffon. Mathematician, anthropologist and a naturalist, Buffon is now best known for 36-volume *Histoire Naturelle*, a monumental intellectual and publishing achievement that impressed Darwin among many others.

To celebrate the tri-centenary of Buffon's birth, Frank Cezilly – a behavioural ecologists at the University of Burgundy in Dijon - organised a four-day meeting (3-6 September 2007) in Dijon, including a visit to the small town on Montbard where Buffon was born and spent much of his life. The aim of the meeting was celebrate the scientific career of Buffon by bringing together a range of academics interested in discussing the role of natural history in modern biology. The most extraordinary aspect of this meeting was the range of interests covered by the plenary speakers. They included biologists, science historians and science philosophers and each spoke about some aspect of how Buffon's work related to their own. The meeting was arranged as two parallels sessions, one primarily for the scientists, the other for the historians and philosophers, with some common plenary talks. Plenary speakers included Doug Futuyma, Geoff Parker, Pietro Corsi, François Duchesneau and myself. The two sessions took place in adjacent rooms such that should one wish, one could alternate between the two. Opportunity for interdisciplinary discourse was provided by communal coffee breaks, by lunch and by dinner, which as one might expect was invariably a gastronomical experience – reflecting a cultural difference of a different kind for those from Britain and the United States.

Cezilly's meeting, entitled 'The Buffon Legacy' was a bold concept and one of which I heartily approve. Without such ventures we risk stagnating within our own intellectual microcosms and remaining ignorant of the way other academics in other disciplines undertake their research.

One of the most striking outcomes of this meeting was seeing how academics in different disciplines convey the results of their intellectual endeavours: how they give presentations. The greatest contrast is between the humanities (here, history and philosophy of science) and science. The historians and philosophers invariably read their presentations, usually sitting down, and with no Powerpoint or other visual aids. Their presentations were prepared so that they could be submitted to a journal or as part of a book with no further tinkering – an efficient system indeed. They also pointed out to me that by reading their paper they could ensure perfect time-keeping, and certainly, no-one over-ran. The other striking aspect of their approach, reflected in their talks was that historians and philosophers look out onto the world, drawing in influences from elsewhere. The scientists in contrast seem to be forever looking inwards, advancing along tunnels of ever-decreasing dimensions.

The scientists stood (sometimes walked, or paced) during their Powerpoint performances invariably speaking without notes and using everyday language. Those in the humanities I fear must have been appalled at the apparently casual nature of these talks (and their bewildering statistics and formulae). I think too that they must have been horrified that the scientists' presentations were so obviously transitory in nature. I could imagine them asking themselves why scientists should expend so much effort and energy on presentations that were not going to be published – at least, not in that form. The scientists I think felt the historians and philosophers to be old-fashioned, while they in turn must have considered the scientists brash, flash and insubstantial. There were other differences too. First, most of the history and philosophy presentations were given in French – this was predominantly a French meeting after all – thereby excluding all but the better-educated non-natives. Second, although I have lumped the historians and philosophers together, there was a huge difference between them. The historians at least spoke in intelligible sentences, coherent paragraphs and had a point to make. The philosophers on the other hand generally did something entirely different, something so different it was beyond the grasp of even the smartest scientists present. The really bizarre thing about this was that at breakfast, coffee or dinner, one could have a perfectly normal, informative conversation with a philosopher. But put them behind a podium and the most remarkable linguistic metamorphosis took place: their sentences merged into long – and as it seemed to the scientists - structureless paragraphs with no obvious goal. To be fair, the philosophers must have felt just as bewildered by some of the scientific talks in which researchers launched directly into mathematical models. The difference I think was that while not all scientists spoke in riddles, to the philosophers, those that spoke 'normally' probably seemed superficial, flippant and inconsequential.

For all this, the meeting was exhilarating. There was no sense of frustration, just occasional bewilderment or

wonder that academics in different disciplines could conduct themselves so differently. Any bewilderment was more than offset by the rewards of meeting new people anxious to chat about their work and to exchange ideas. As always, the informal aspects were the most productive: conversations over dinner or coffee, or during our visit to Buffon's cabinet in Montbard. The meeting grounded us, and brought us to a common point. Most importantly it highlighted the benefits of recognising that not everyone thinks in the same way, and that to convey a particular point, whether it be the dangers of Genetically Manipulated Organisms, the subtleties of sexual selection, or the wonders of Buffon's books, we need to be open to different viewpoints.

Buffon was a great polymath, but the surge in new knowledge since the eighteenth century has resulted in increasingly specialisation and fragmentation of natural history. This was a wonderful opportunity to regain our perspective.

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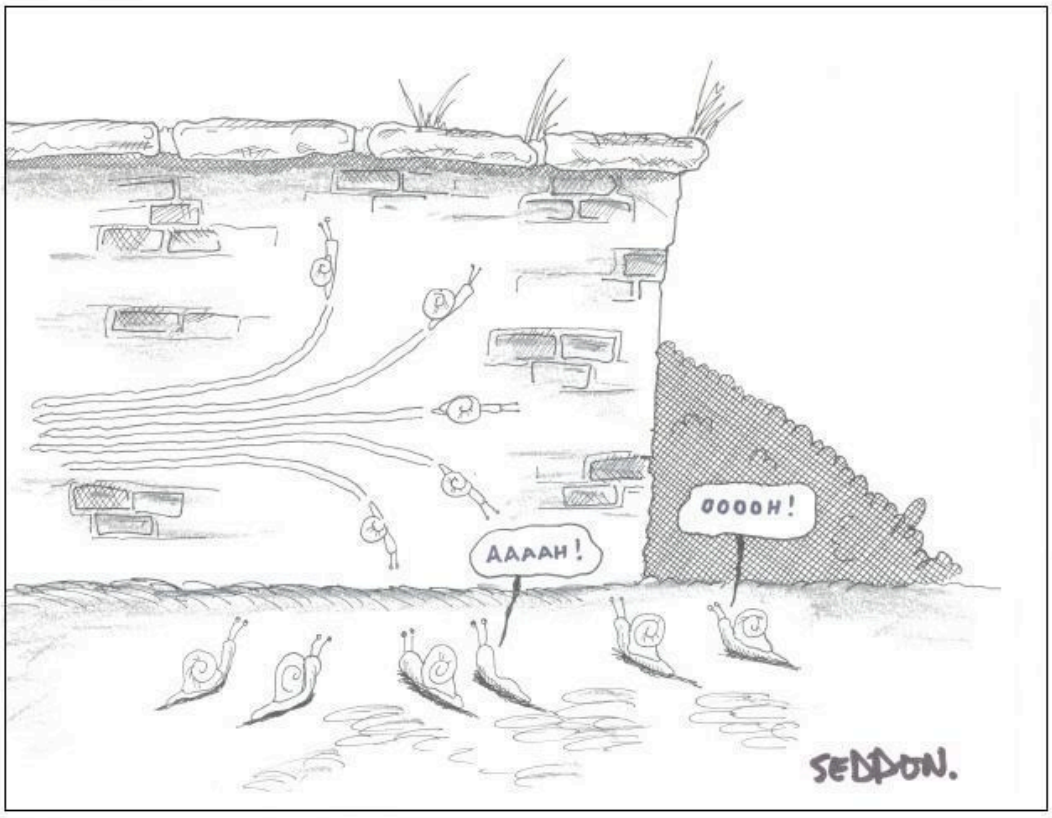

Snail display team.

Conferences and Workshops 2007/2008

17th Conference Biology of Marine Mammals
Nov 29 - Dec 3 2007 Cape Town, South Africa
http://www.marinemammalogy.org

4th Biennial Australasian Ornithological Conference
December 3-5, 2007 Perth, Australia
www.birdswa.com.au/aoc2007

Society for Integrative and Comparative Biology
January 2-6, 2008, San Antonio, Texas
http://new.sicb.org/meetings/2008/
SICB Division of Animal Behaviour:
http://new.sicb.org/divisions/dab.php3

15th Annual International Conference on Comparative Cognition
March 19-22, 2008, Melbourne Beach, Florida, USA
http://www.pigeon.psy.tufts.edu/ccs/default.htm

3rd European Conference of Poeciliid Biologists
March 26-28 2008, Chioggia (Venice), Italy
http://cprg.psy.unipd.it/poeciliids.html

Joint scientific meeting of The Wilson Ornithological Society and the Association of Field Ornithologists
April 17 – 20 2008, Mobile, Alabama
http://wosafo2008.org

Evolution Society
June 20-24 2008 Minneapolis, Minnesota, USA
http://www.evolutionsociety.org/meetings.asp

10th International Conference on the Simulation of Adaptive Behavior (SAB'08)
July 7-13 2008, Osaka, Japan
http://www.sab08.org/

Joint meeting of the American Ornithologists' Union, the Cooper Ornithological Society, and the Society of Canadian Ornithologists/Société des ornithologistes du Canada
August 6-9 2008, Portland, Oregon, USA
http://www.pdxbirds08.org

12th Congress of the ISBE
August 9-14 2008, Ithaca, NY, USA
http://www.isbe2008cornell.org/

45th Animal Behavior Society Meeting
August 14-19, 2008, Snowbird, Utah, USA
Scheduled to follow ISBE
www.animalbehavior.org

International Primatological Society XXII Congress
August 3-8, 2008, Edinburgh, Scotland, UK
http://www.ips2008.co.uk/Registration.html

Student membership awards for the American Ornithologists' Union
The Council of the AOU has voted to provide one-year student membership awards to qualified undergraduate or graduate students interested in pursuing a career in ornithology.

To apply send materials by email to: Dr. Daniel Mennill. Email: membershipawards@aou.org (please use subject heading "AOU Student Membership Award"). Applications for 2008 membership awards are accepted up until January 1, 2008. More information on the AOU website: http://www.aou.org/