

Symposium number: 01

Title: AVIAN PERSONALITIES

Principal organizer: Claudio Carere

Center for Cellular and Molecular Neurobiology, Behavioural Endocrinology
Research Group, University of Liège, 17 Place Delcour B-4020 Liège, Belgium
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Second organizer: Irene M. Pepperberg

Brandeis University, Dept. of Psychology, Waltham, MA 02454, USA

First keynote speaker: Piet J. Drent

Netherlands Institute of Ecology, P.O. Box 40, 6666 ZG, Heteren, The
Netherlands

Title of first keynote paper: The impact of heritable personalities on
life-history traits in the Great tit

Second keynote speaker: Irene M. Pepperberg

Brandeis University, Dept. of Psychology, Waltham, MA 02454, USA

Title of second keynote paper: Behavioural Differences in Grey Parrots: Studies
on Cognition and Communication

Symposium description: Individuals of the same species and sex have behavioural and physiological differences, even in standard conditions. In humans, many of these differences are treated as expressions of individual variation in personality. Yet in other animals, such explanations have often been neglected, the differences interpreted instead as either the consequence of inaccurate measurements or as non-adaptive variation around an adaptive mean.

Recent studies in birds suggest that animal personality can be studied objectively. Such work has used four approaches in parallel: (1) descriptive ‘longitudinal’ studies, including the investigation of links among several behaviours and their specificity across situations, (2) genetic and physiological research on causal mechanisms underlying relations among several behaviours of the same profile, (3) ontogenetic studies on plasticity and environmental malleability, and (4) field studies on survival and reproduction towards understanding how different types of personality are maintained.

This symposium addresses this research and its implications. So far, results indicate that different personality types may react differently to identical experimental treatments and may show differential vulnerability to stress, leading to differences in welfare. Ultimately, such differences can have major impacts on individual fitness, response to environmental change, geographic distribution, and even rates of speciation.

Symposium Number: 02

Title: NEW INSIGHTS INTO THE SENSE OF SMELL IN BIRDS: FROM FORAGING BEHAVIOUR TO INDIVIDUAL RECOGNITION

Principal organizer: Francesco Bonadonna
Behavioural Ecology Group, Centre d'Ecologie Fonctionnelle et Evolutive, CNRS, 1919 route de Mende, F-34293, Montpellier, Cedex 5, France
email: francesco.bonadonna@cefe.cnrs.fr

Second organizer: Gabrielle Nevitt
Center for Animal Behavior, Section of Neurobiology, Physiology and Behavior, University of California, Davis, Davis, California, 95616, USA

First keynote speaker: Timothy Roper
School of Biological Science, University of Sussex, Brighton BN1 9QG, UK

Title of first keynote paper: Olfaction in birds: what do we know and what do we need to find out?

Second keynote speaker: Gabrielle Nevitt
Center for Animal Behavior, Section of Neurobiology, Physiology and Behavior, University of California, Davis, Davis, California, 95616, USA

Title of second keynote paper: Seeing the world through the nose of a sea-bird

Symposium description: The notion that birds are anosmic is deeply rooted among scientists and laymen alike. Growing evidence, nevertheless, suggests that the sense of smell is of fundamental importance among birds. Interest in avian olfaction has emerged from studies conducted in unrelated laboratories on different bird orders, including columbiform pigeons (homing orientation) and procellariiform seabirds (large olfactory bulbs highly responsive to odors in foraging). Such research has extended to species long considered almost or completely anosmic, such as blue tits and parrots which have relatively small olfactory bulbs. Increasing research effort is providing new insights into the importance of olfaction in a variety of behaviours, even in social behaviour and individual recognition.

The purpose of this symposium is to highlight new work in this area by exploring the sensory biology and ecology of olfaction in a wide variety of species. The work highlighted draws on a phylogenetically wide range of taxa and explores this fascinating sense in a variety of disciplines, including foraging ecology, social behaviour and neuro-ethology.

Symposium number: 03

Title: EMERGING ISSUES IN COOPERATIVE BREEDING RESEARCH

Principal organizer: Jeff Walters

Virginia Tech, Department of Biological Sciences, Virginia Tech,
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Second organizer: Jan Komdeur

University of Groningen, Animal Ecology Group, University of Groningen, PO
Box 14, 9750 AA, Haren, The Netherlands

First keynote speaker: Ben Hatchwell

University of Sheffield, Department of Animal and Plant Sciences,
University of Sheffield, Sheffield S10 2TN, England

Title of first keynote paper: Kin selection and recognition mechanisms in avian societies

Second keynote speaker: Jan Ekman

Uppsala University, Evolutionary Biology Centre, Uppsala University,
Norbyv 18D, 752 36, Uppsala, Sweden

Title of second keynote paper: The route to cooperative breeding: a sequential approach

Symposium description: The objective of the symposium is to explore the implications of recent work for long-standing questions about the evolution of cooperative breeding, focusing on research on kin recognition and dispersal decisions. Indirect fitness benefits accrued by subordinates that are constrained from breeding may explain helping behaviour, and may influence decisions by individuals to remain in a group as subordinates rather than disperse. The advent of powerful molecular genotyping techniques make it possible to measure indirect fitness benefits more precisely than previously; and experimental studies of kin recognition mechanisms reveal the extent to which behaviour may be kin-directed.

The dispersal decisions that result from group formation in most cooperative breeders also involve direct fitness benefits. In this case, new understanding is based on conceptual advances resulting especially from studies of species in which delayed dispersal, but not helping behaviour, occurs. The broad interpretive perspective emerging sees helpers along with floaters and early dispersers as outcomes within the same evolutionary framework. In this symposium we hope to highlight these and other recent avenues of investigation that promise to increase our understanding of the evolution of cooperative breeding.

Symposium number: 04

Title: MALE AND FEMALE CONTRIBUTIONS TO BIPARENTAL CARE

Principal organizer: Keith Hamer

University of Leeds, School of Biology, University of Leeds, Leeds LS2
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Second organizer: Douglas Mock

University of Oklahoma, 730 Van Vleet Oval, Room 314,
Norman, OK73019, United States

First keynote speaker: Tamas Szekely

University of Bath, Department of Biology and Biochemistry, University of
Bath, Bath BA2 7AY, United Kingdom

Title of first keynote paper: Sexual conflict over parental care

Second keynote speaker: Keith Hamer

University of Leeds, School of Biology, University of Leeds,
Leeds LS2 9JT, United Kingdom

Title of second keynote paper: Biparental care in seabirds: sex matters but not size

Symposium description: Over 85% of bird species are socially monogamous, both parents investing substantially in parental care to ensure that offspring are reared successfully. This mating system is commonly considered dull in comparison with those involving polygamy or co-operative breeding. Yet recent studies of monogamous species have revealed a surprisingly rich array of strategies and complex variation involving the relative contributions of male and female to incubation and food provisioning, the consistency or otherwise of individual parental effort, and the quality of the parents.

This symposium aims to draw this work together to provide a broader, more coherent perspective, to identify common principles emerging from different studies, and to highlight key research directions for the future. The first keynote speaker will use recent phylogenetic comparative analyses and field experiments to address the question of why parents of some species cooperate to raise their young, but not others. The second keynote speaker will consider the relative contributions of male and female parents to offspring care, using seabirds as a model for long-lived species with low annual reproductive output and high levels of social and genetic monogamy.

Symposium number: 05

Title: FLEXIBILITY IN MATING SIGNALS AND MATE CHOICE: ULTIMATE AND PROXIMATE BASES

Principal organizer: Keith Sockman

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Second organizer: Elizabeth MacDougall-Shackleton

University of Western Ontario, Department of Biology, London, Ontario N6A
5B7, Canada

First keynote speaker: Elizabeth MacDougall-Shackleton

University of Western Ontario, Department of Biology, London, Ontario N6A
5B7, Canada

Title of first keynote paper: Geographic song variants as indicators of genetic quality and compatibility

Second keynote speaker: Keith Sockman

University of North Carolina, Department of Biology, Chapel Hill, NC
27599-3280, USA

Title of second keynote paper: Mechanisms of variation in female mate choice

Symposium description: Sexual selection theory has traditionally assumed that mating signals and preferences are fixed, with only minimal input from factors such as experience, condition, or the environment. This perspective predicts strong directional selection for trait expression and is therefore difficult to reconcile with observations of individual flexibility in expression of sexually selected courtship traits and mating preferences. Despite several studies pertaining to the variable nature of courtship and mate-choice, many questions remain concerning how variation in these behaviours arises and what the fitness consequences of such variation might be. For example, why do males vary so much in their ability to produce successful courtship signals? What are the fitness consequences of females preferring one courtship strategy over another, and under what environmental conditions do these consequences change? What neural substrates in the female are sensitive to variation in male courtship signals? How does this sensitivity arise? How is it modulated by the environment, and how does it eventually lead to the motor programs that precipitate a context-dependent choice? This symposium integrates ultimate and proximate perspectives on individual flexibility in avian courtship and mating preferences, with the goal of determining how and why such flexibility may have evolved.

Symposium number: 06

Title: INFORMATION AND POWER: HOW ARE CONFLICTS AT THE NEST RESOLVED?

Principal organizer: Rebecca Kilner

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CB2 3EJ, UK
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Second organizer: Hugh Drummond

Instituto de Ecologia, Universidad Nacional Autonoma de Mexico, AP 70-275,
04510 D. F., Mexico

First keynote speaker: Rebecca Kilner

Department of Zoology, University of Cambridge, Downing Street, Cambridge,
CB2 3EJ, UK

Title of first keynote paper: Information and power in conflict resolution at the nest

Second keynote speaker: Hugh Drummond

Instituto de Ecologia, Universidad Nacional Autonoma de Mexico, AP 70-275,
04510 D. F., Mexico

Title of second keynote paper: Modes of aggressive control of nestmates

Symposium description: Evolutionary conflicts of interest within the family arise when family members disagree over the optimal division of parental investment. In theory, conflicts should be commonplace, yet evidence of their existence in nature is scarce. One theoretical explanation is that the conflicts have long been resolved, concealing any disparity in parental investment optima.

This symposium will consider how conflicts at the nest might be resolved in practice. Our theme is that conflict resolution depends on the balance of physical power within the family and the control of information about the costs and benefits of parental investment. We will explore the extent to which both parents and young control information and power within the family in a range of avian taxa, including brood parasites. For example, parents are more physically powerful than their young, and can also determine levels of investment in each sex or each egg. But some offspring overpower their brood-mates, even killing them, so influencing their success at obtaining food. Similarly, offspring have private information about the benefits they stand to gain from parental investment, which they may advertise with their begging display. Yet parents have better information than their young about the quantity of care on offer after hatching, which they may choose to signal through differential hormonal deposition in the egg.

Symposium number: 07

Title of Symposium: RESPONSES OF BIRDS TO (OVER)FISHING

Principal organizer: Bruno Ens

Alterra-Texel, P.O. Box 167, NL-1790 AD, Den Burg (Texel), The Netherlands
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Second organizer: Bob Furness

University of Glasgow, Graham Kerr Building, G12 8QQ, Glasgow, United Kingdom

First keynote speaker: Bruno Ens

Alterra-Texel, P.O. Box 167, NL-1790 AD, Den Burg (Texel), The Netherlands

Title of first keynote paper: Responses of sea- and shore- birds to (over)fishing,
and their modelling

Second keynote speaker: Bob Furness

University of Glasgow, Graham Kerr Building, G12 8QQ, Glasgow, United Kingdom

Title of second keynote paper: Responses of seabirds to prey depletion

Symposium description: Many key foods for sea- and shore- birds are harvested by fisheries. Examples include cockles, mussels, sand-eels, capelin, herring, walleye pollock and anchoveta. Stocks of some of these key foods have been over-exploited severely, and falls in prey abundance have had dramatic impacts on sea- and shore- bird populations. There has been a 90% mortality among Common Guillemots in the Barents Sea following the collapse of the capelin population there, as well as mass mortality of Common Eiders in the Wadden Sea consequent on over-exploitation of mussel stocks, and breeding failure of some sea-birds in the North Sea and at Shetland following major falls in local abundance of sand-eels. Although fishery managers may aim to include ecosystem considerations within management of fisheries, the mechanisms are not yet in place to effect them. A major impasse stems from the coincidence that the stocks of seafood harvested by both birds and fishermen are also subject to natural fluctuations and ecosystem changes caused by, for example, eutrophication and climate change. As a result, it is often difficult to assign declines in sea- and shore- bird populations to a single cause. Accordingly, the aim of this symposium will be to review the ecological relationships between sea- and shore- birds and their food resources, together with the models describing them, and from this to canvass how the needs of these top predators can be incorporated into fishery management.

Symposium number: 08

Title of Symposium: BIRDS AS INDICATORS OF THE ENVIRONMENT

Principal organizer: David Noble

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Second organizer: Michel Louette

Royal Museum for Central Africa, Department of Zoology, Leuvensesteenweg 13, 3080 Tervuren, Belgium

First Keynote speaker: Richard Gregory

European Bird Census Council, The Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire, SG19 2DL, United Kingdom

Title of first keynote paper: Bird Indicators for Europe: influencing conservation policy

Second Keynote speaker: Michel Louette

Royal Museum for Central Africa, Department of Zoology, Leuvensesteenweg 13, 3080 Tervuren, Belgium

Title of second keynote paper: Using sentinel bird species to assess environmental quality

Symposium description: The main aim of this symposium is to critically review recent developments in avian indicators, focusing on their use as measures of environmental quality or change (e.g. agricultural intensification) and as surrogates for other taxonomic groups. The scope will range from using the presence of sentinel species in vulnerable habitats to assess environmental conditions, to the development of composite indicators generated from aggregated annual population trends for a suite of characteristic species (e.g. the European Farmland Bird Index). Potential topics include the use of species diversity indices, the abundance of keystone and umbrella species, and demographic measures such as productivity or survival. A further aim is to draw together scientists with experience in the development of bird indicators to address issues of suitability, representativeness, spatial scale, sensitivity, and practicality. Drawing on examples from across the globe, speakers will be asked to provide any evidence that bird indicators can be used as surrogates for other species, that changes in the indicators can be related to changes in environmental quality and how indicators can be linked to conservation policies and targets.

Symposium Number: 09

Title: NEW TOOLS AND CONCEPTS IN AVIAN CONSERVATION GENETICS

Principal organizer: Gernot Segelbacher

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Second organizer: Jacob Höglund

EBC, Uppsala University, Norbyvägen 18D, SE-752 36 Uppsala, Sweden

First keynote speaker: Stuart Piertney

University Aberdeen, Tillydrone Avenue, Aberdeen AB24 2TZ, UK

Title of first keynote paper: The use and abuse of neutral, adaptive and quantitative genetic diversity in avian conservation genetics

Second keynote speaker: Lukas Keller

University Zürich, Winterthurerstrasse 190
CH-8057 Zürich, Switzerland

Title of second keynote paper: Genetic consequences of small population size in birds

Symposium description: Molecular techniques are currently used widely to infer kinship, to study in-breeding and to estimate dispersal and connectivity between populations; so molecular methods have become standard in genetic studies of threatened populations. At the same time, the number of studies using molecular markers to address the diverse problems involved is increasing rapidly; and these studies can vary in the choice of marker systems and analytical tools according to the problem.

In this symposium we will review recent methodological advances in molecular studies of bird populations and discuss how different techniques and methods affect conclusions relating to the conservation genetics of birds. Our aim is to bring together researchers working on different species with different methods to share knowledge of recent methodological and statistical developments. We are particularly interested in bringing together work using neutral markers and research investigating genes/traits under selection.

Symposium number: 10

Title: THE STATUS OF THE HOUSE SPARROW *Passer domesticus* IN THE URBAN ENVIRONMENT

Principal organizer: Jenny De Laet

Terrestrial Ecology Unit, Department of Biology, Ghent University,
Ledeganckstraat 35, B 9000 Ghent, Belgium
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Second organizer: J. Denis Summers-Smith

Thames Avenue 79, Guisborough TS14 6AJ, England

First keynote speaker: J. Denis Summers-Smith & Jenny De Laet

Thames Avenue 79, Guisborough TS14 6AJ, England;
Terrestrial Ecology Unit, Ghent University, Ledeganckstraat 35, B 9000
Ghent, Belgium

Title of first keynote paper: The current status of the House Sparrow: a review

Second keynote speaker: Will Peach

RSPB, The Lodge, Sandy, Beds. SG19 2DL, England

Title of second keynote paper: Environmental causes of the decline of urban House Sparrows: a review of the evidence.

Symposium description: The House Sparrow is unique among wild birds in its close association with, indeed virtual dependence on, man. It might be expected that, with man's dominance of the world, the future would be bright for the bird, not only in the agricultural environment where presumably its commensalism first evolved, but also in built-up areas where it has been a dominant species. It is now becoming evident that this is not so, particularly in highly developed western Europe. Any significant change in the population of a species, particularly a dramatic decrease such as has occurred recently in urban House Sparrows in western Europe, is clearly of deep environmental concern. This decline has been the subject of much speculation, but the reasons for it are still not properly understood.

The aim of this symposium is to provide a base-line summary of the present status of the House Sparrow in urban areas, and from it to identify the areas of research needed for elucidating underlying causes of the sparrow's decline. Application of the precautionary principle demands that we prioritise such research in urban areas, because of the possibility that what is affecting the House Sparrow today may impact on human populations tomorrow.

Symposium Number: 11

Title: THE EFFECTIVENESS OF AGRI-ENVIRONMENT SCHEMES FOR FARMLAND BIRDS

Principal organizer: Juliet Vickery

The British Trust for Ornithology, The British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU, United Kingdom
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Second organizer: David Kleijn

Nature Conservation and Plant Ecology Group, Wageningen University, Nature Conservation and Plant Ecology Group, Wageningen, University, Bornsesteeg 69, 6708 PD, Wageningen, The Netherlands

First keynote speaker: David Kleijn

Nature Conservation and Plant Ecology Group, Wageningen University, Nature Conservation and Plant Ecology Group, Wageningen, University, Bornsesteeg 69, 6708 PD, Wageningen, The Netherlands

Title of first keynote paper: Ecological effects of agri-environment schemes on birds in different European countries

Second keynote speaker: Andy Evans

The Royal Society for the Protection of Birds, The RSPB, The Lodge, Sandy, Bedfordshire SG19 2DL, United Kingdom

Title of second keynote paper: An evidence-based approach to designing successful agri-environment schemes to recover declining farmland bird populations in the UK

Symposium description: The widespread decline and range contractions in farmland birds throughout Europe have become a major issue in conservation science today. So far, much research has focussed on diagnosing the causes of these changes; and now that the underlying mechanisms have been identified for a number of species, new research is required to develop and test solutions designed to stem the changes and ultimately reverse them. Modifications of agricultural practices and habitat management within agri-environment schemes are likely to provide some of the most important means for delivering solutions, *inter alia* compensating farmers financially for income loss associated with measures designed to benefit the environment or biodiversity. Such schemes exist in almost 60% of European countries, but concerns have been raised about the lack of rigorous monitoring to assess their effectiveness in delivering environmental targets. The cost effectiveness of agri-environment schemes depend on scientific underpinning in both developmental and monitoring phases; yet there is a worrying lack of information about measurable benefits for biodiversity.

This symposium will review the effectiveness of AESs in Europe, and present detailed case studies of their evolution and delivery of conservational outcomes for both individual species and suites of species.

Symposium number: 12

Title: AVIAN CONSERVATION IN THE TROPICS: A GLOBAL PERSPECTIVE

Principal organizer: Kimberly Smith
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Second organizer: Navjot Sodhi
University of Singapore, Department of Biological Sciences,
Singapore, Singapore

First keynote speaker: Barry Brook
Charles Darwin University, Key Centre for Tropical Wildlife Management,
Darwin NT, 0909, Australia

Title of first keynote paper: Population viability analysis of tropical birds

Second keynote speaker: Kimberly Smith
University of Arkansas, Department of Biological Sciences,
Fayetteville, AR 72701, USA

Title of second keynote paper: Conservation of tropical birds: mission possible

Symposium description: There is a pressing need to address conservation issues in the tropics of the world. In some regions, such as the Atlantic forest of eastern Brazil, the situation is dire and immediate action is necessary due to habitat destruction and urbanization; in others, the situation is less critical but may still need quick action; and in yet other areas, such as Africa, bird conservation is simply low on the agenda. Our symposium will offer 5 presentations that compare and contrast conservation issues in 5 tropical areas: north Australia, southeast Asia, central Africa, and equatorial America. Based on our experiences in southeast Asia (Sodhi), Latin America (Smith) and Australia (Brook), we anticipate that such a synthesis will reveal some similarities among regions in terms of conservation issues but, more importantly, also striking differences that heretofore have not been addressed on a global scale. Discovering the regional differences will be vital in constructing a global plan for avian conservation in the tropics.

Symposium number: 13

Title: DETECTING ECOLOGICAL TRAPS: AVIAN AND HUMAN PERSPECTIVES

Principal organizer: Marc-André Villard

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Second organizer: Tomas Pärt

Swedish University of Agricultural Sciences, Department of Conservation
Biology, Box 7002, SE-750 07, Uppsala, Sweden

First keynote speaker: Luc Lens

Ghent University, K.L. Ledeganckstraat 35, 9000, Gent, Belgium

Title of first keynote paper: New unconventional methods for estimating habitat quality: strengths and weaknesses

Second keynote speaker: Tomas Pärt

Swedish University of Agricultural Sciences, Department of Conservation
Biology, Box 7002, SE-750 07, Uppsala, Sweden

Title of second keynote paper: Avoiding the trap: is density so misleading as an indicator of habitat quality?

Symposium description: The study of “habitat quality” is at the core of avian ecology and conservation. Just as birds need to respond to the right environmental cues when selecting their territories, avian ecologists strive to develop reliable indices of habitat quality, both from an evolutionary and a conservational perspective. Human activities have created a variety of habitats that may be preferred by species but where productivity is low. Such ecological traps have to be identified to avoid faulty conservation actions. In general, conservation biologists quantify habitat quality as the productivity per unit area of focal species; and a variety of indices of habitat quality have been used, from presence - absence or density to recruitment of locally-born individuals. Even so, habitat-specific productivity is notoriously difficult to measure, especially for species with cryptic nesting habits.

We believe that the time is right to reexamine traditional indices of habitat quality and to develop new, accurate, and more time-efficient indices. Because such initiatives are unlikely to converge on a single, all-purpose index, this symposium aims to identify specific contexts for which particular indices are most appropriate. Speakers will address such challenges in estimating habitat quality, distinguishing ecological traps from truly productive habitat in the process.

Symposium number: 14

Title: THE EFFECT OF CLIMATE CHANGE ON AVIAN POPULATION DYNAMICS

Principal organizer: Marcel E. Visser

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Second organizer: Marcel M. Lambrechts

CEFE, UMR 5175, 1919 route de Mende, 34293 Montpellier Cedex 5, France

First keynote speaker: Bernt-Erik Saether

Norwegian University of Science and Technology, Realfagsbygget,
N-7491, Trondheim, Norway

Title of first keynote paper: Climatic impacts on avian population dynamics:
processes and some general patterns

Second keynote speaker: Vladimir Grosbois

CEFE, UMR 5175, 1919 route de Mende, 34293 Montpellier Cedex 5, France

Title of second keynote paper: The use of large- and local-scale indices for investigating
climatic pressures on the demography and population dynamics of birds

Symposium description: Climate is changing at an unprecedented rate. This has clear ecological consequences, causing shifts in distributional ranges and phenological cycles (dates of egg laying etc.). Although modelling has predicted mass extinctions due to these changes, there have been very few studies up to now that have demonstrated effects on population dynamics from climatic change. In this symposium, we aim to present state of the art overviews on the effect of local and large-scale influences of climate change on different aspects of avian population dynamics. One keynote-speaker, Bert-Erik Saether, has collected a large number of long term studies on individually marked birds to obtain estimates for parameters for extinction models. His work on the Dipper is one of the few examples that links population dynamics and climate change directly. Our other keynote-speaker, Vladimir Grosbois, will analyze a number of long-term data sets to determine specific impacts of climate change on population dynamics. We hope to attract further speakers who will provide exiting examples of how climate change has influenced bird species living at different latitudes (north vs. south), which occupy distinct habitats (marine vs. terrestrial), and have different life-history strategies (long-lived vs. short-lived).

Symposium number: 15

Title: BIRDS AND THEIR USE OF VARIED LANDSCAPES: INSIGHTS FOR INTEGRATED CONSERVATION PLANNING

Principal organizer: Richard Loyn

Arthur Rylah Institute for Environmental Research, Arthur Rylah Institute,
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Second organizer: Lucia Severinghaus

Institute of Zoology, Academia Sinica, Institute of Zoology, Academia
Sinica, 128 Yen-chiu-yuan Road, Sec.II, Taipei, 115., Taiwan

First keynote speaker: Andrew Bennett

School of Ecology and Environment, Deakin University, School of Ecology
and Environment, Deakin University
221 Burwood Highway, Burwood, Victoria 3125., Australia

Title of first keynote paper: Landscape planning for wildlife conservation: how much habitat is enough?

Second keynote speaker: Ralph MacNally

Australian Centre for Biodiversity, School of Biological Sciences,
Monash University, Clayton, Victoria 3800., Australia

Title of second keynote paper: It won't happen overnight: time-lags in rebuilding varied landscapes

Symposium description: Birds are more mobile than many organisms, and this empowers them to use landscapes in complex ways to meet their needs during each day, season or year. People also use landscapes in complex ways, and need to allow for such complexity in planning present and future land use. Recent studies in various parts of the world have provided new insights into the ways that birds use varied and modified landscapes at different spatial and temporal scales. This symposium provides an overview of these studies, along with selected case studies that illustrate important new directions.

The papers emphasize the roles that research on the landscape ecology of birds can play in informing human planning decisions and on biodiversity conservation more generally, including the strengths and limitations of these approaches. Global conservation demands a broad perspective, and the rapidly developing science of landscape ecology seeks to fulfill that need. Work on birds is making major contributions to its development.

Symposium number: 16

Title: DEMOGRAPHIC MECHANISMS IN POPULATION CHANGE AT LARGE SPATIAL SCALES

Principal organizer: Fernando Spina

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Emilia (BO), Italy
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Second organizer: Stephen Baillie

British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU,
United Kingdom

First keynote speaker: James Nichols

Patuxent Wildlife Research Center, U.S. Geological Survey, 2100 Beech
Forest Road, Laurel, MD 20708-4017, United States

Title of first keynote paper: Adaptive harvest management of waterfowl populations
- recent successes and future prospects

Second keynote speaker: Stephen Baillie

British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU,
United Kingdom

Title of second keynote: to come

Symposium description: There is much interest in addressing bird conservation issues at large spatial scales; and it is increasingly recognized that problems involving the rapid decline of widespread species can only be handled at governmental or supra-governmental (e.g. EU) levels. Understanding demographic mechanisms at these scales is the key to developing effective conservation policies. Not only for these reasons, a symposium on this subject is timely also because of the coincidence of improved technology in data gathering, analytical methods and policy requirements. Advances in the management of ringing data have facilitated the analysis of a number of large-scale data sets, demonstrating the value of such analyses for identifying demographic mechanisms. Comprehensive ringing has developed rapidly on both sides of the Atlantic since the early 1990s, producing systematic survival and productivity data for terrestrial breeding birds on both continents. Recent analytical developments, including use of the Kalman filter and Bayesian approaches (MCMC), now offer powerful analytical techniques that can be applied to such data. Adaptive management approaches to systems such as the harvest management for waterfowl in North America have been operating for sufficient time to allow evaluation of their usefulness for providing conservation management advice in the presence of uncertainty. The coming-together of such datasets and analytical approaches should allow ornithologists to make rapid advances in understanding demographic processes at large spatial scales and, accordingly, to provide more effective conservation advice.

Symposium number: 17

Title: FROM TREND ANALYSIS TO POPULATION ALERT

Principal organizer: Mark Rehfisch

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Second organizer: Ruud Foppen

SOVON Dutch Centre for Field Ornithology, Rijksstraatweg 178,
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First keynote speaker: Les Underhill

Avian Demography Unit, University of Cape Town, Department of Statistical
Sciences, University of Cape Town, Rondebosch 7700, South Africa

Title of first keynote paper: Are there analogies between wildlife and stock market indices?

Second keynote speaker: Graham Austin

British Trust for Ornithology, The Nunnery, Thetford, IP24 2PU, United Kingdom

Title of second keynote paper: Alerts for wildlife conservation

Symposium description: The symposium will review recent developments in population trend analysis and describe the costs and benefits of different approaches to conservation monitoring. Prof. Les Underhill will describe major new approaches being applied to this field, some of which involve Bayesian mathematics and the application of econometric techniques. For example, econometricians have developed the "Market Model" as a means for analysing relationships between the index for a stock market as a whole and the individual stocks that comprise the index. These methods decompose the "risk" of a share in the "market" and "unique" risk. Analogous analyses can be carried out for waterbirds, measuring the extent to which fluctuations at a site relate to factors unique to the site rather than to changes in the overall index. These "unique" factors can be used to set "alerts" for a site. Dr Graham Austin will explain how one approach to trend generation, Generalized Additive Models, has formed the basis of an "alerting" mechanism that is being used to inform governmental conservation policy in the UK.

Symposium number: 18

Title: INTEGRATED ECOLOGICAL STUDIES OF DISEASES AND PARASITES IN BIRDS

Principal organizer: André Dhondt

Cornell University, Laboratory of Ornithology, 159 Sapsucker Woods Road,
Ithaca, NY 14850, USA
email: aad4@cornell.edu

Second organizer: Heinz Richner

University of Bern, Zoology Institute, Evolutionary Ecology Lab,
Baltzerstrasse 6, 3012 Bern, Switzerland

First keynote speaker: Heinz Richner

University of Bern, Zoology Institute, Evolutionary Ecology Lab
Baltzerstrasse 6, 3012 Bern, Switzerland

Title of first keynote paper: Ecological studies of ectoparasites

Second keynote speaker: André Dhondt

Cornell University, Laboratory of Ornithology, 159 Sapsucker Woods Road,
Ithaca, NY 14850, USA

Title of second keynote paper: Ecological studies of pathogens

Symposium description: Over the last two decades or so, an unusually large number of new diseases has appeared around the world, some of them having dramatic impacts on bird populations. Diseases are typically caused by micro-parasites and, like macro-parasites, they challenge the immune system, affecting their hosts in diverse ways (survival, reproduction, development, behaviour etc.). In this symposium we aim to provide an overview of the recent work in this field. A number of examples of ecological studies of diseases and of ectoparasites in birds will be presented, in the course of which the need for integration of descriptive field work, experimental studies and modeling will be emphasized.

Symposium number: 19

Title: MACROECOLOGY

Principal organizer: Carsten Rahbek

Center of Macroecology, Zoological Museum, University of Copenhagen,
Universitetsparken 15, DK-2100 Copenhagen O, Denmark
email: crahbek@zmuc.ku.dk

Second organizer: Katrin Böhning-Gaese

Institut für Zoologie, Abt. V, Johannes Gutenberg-Universität Mainz,
Becherweg 13, D-55099 Mainz, Germany

First keynote speaker: Robert E. Ricklefs

Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge Road,
St. Louis, MO 63121-4499, USA

Title of first keynote paper: Time, space, and the origin of macroecological patterns

Second keynote speaker: Katrin Böhning-Gaese

Institut für Zoologie, Abt. V, Johannes Gutenberg-Universität Mainz,
Becherweg 13, D-55099 Mainz, Germany

Title of second keynote paper: Extending macroecology beyond patterns of abundance, distribution and body size.

Symposium description: Macroecology is a rapidly developing field of research, for which ornithology is eminently suited. At any one scale, observed patterns of diversity - or the variation in distribution of any biological trait - are dependent on processes operating at different scales. Most ecological studies in ornithology are carried out at local scales. Although broad-scale factors are recognised contributors to the patterns observed, there is a dearth of studies focusing on them. Hence the development of macroecology, a discipline concerned primarily with understanding the division of resources and space at multispatial and multitemporal scales.

Macroecological research is both empirical and theoretical, both inductive and deductive. It is concerned with the relationship between pattern and process. It seeks to discover and describe these patterns and to develop and test hypotheses to account for them. Being a young field, macroecology currently fosters a lively debate affecting the validity of its approaches and methods. Accordingly, the aim of the symposium is to highlight this field of research, to spread its grand theme and potential, to warn that much ground has still to be covered, and to inspire new directions of research based either on the vast amount of existing ornithological data and knowledge or through generation of new information.

Symposium number: 20

Title: ECOLOGICAL PLASTICITY IN BIRDS: MECHANISMS AND CONSEQUENCES

Principal organizer: Claudia Mettke-Hofmann
MPI for Ornithology, Dept. of Biological Rhythms and Behaviour,
Von-der-Tann Str. 7, 82346 Andechs, Germany
email: mettke@orn.mpg.de

Second organizer: Russell Greenberg
Smithsonian Migratory Bird Center, National Zoological Park, Washington,
DC 20008, USA

First keynote speaker: Eulalia Moreno
Estacion Experimental de Zonas Aridas (CSIC), General Segura, 1, 04001
Almeria, Spain

Title of first keynote paper: Ecological plasticity and morphological design:
mechanisms and evolutionary consequences.

Second keynote speaker: Russell Greenberg
Smithsonian Migratory Bird Center, National Zoological Park, Washington,
DC 20008, USA

Title of second keynote paper: Behavioural plasticity: mechanisms and
evolutionary consequences.

Symposium description: Bird species differ diversely from one another in such ecologically-related attributes as abundance, distribution, habitat use, feeding preferences, sexually selected and other life-history traits, competitive abilities and predator avoidance. This symposium aims to show that specific differences in these attributes are manifestations of a more general phenomenon: ecological plasticity. Ecological plasticity can be defined broadly as the ability of organisms to respond to changes in their environment. So it is related, in turn, to degrees of specialization on resources and habitat. It may be assumed that ecologically more plastic species are better able to cope with changes in environmental constraints. Thus, under conditions of socially-mediated competition, ecologically more plastic species can compensate for subordinate status and denial of resources better than less plastic species. Furthermore, species-rich families comprise more ecologically plastic species than species-poor families.

What makes one species more plastic than another? As diverse as differential ecological plasticity are its underlying causes. Differences in morphology, brain structure, personality traits, and specific behavioural/cognitive patterns such as neophobia, or propensity towards innovation, are all related to inherent degrees of ecological plasticity. The symposium will give an overview of the mechanisms and consequences of differences in ecological plasticity by combining results from various disciplines, and will outline directions of future research.

Symposium number: 21

Title: BIRD-MICROBE INTERACTIONS: COMPETITION, COMMENSALISM AND CO-EVOLUTION

Principal organizer: Edward Burt
Ohio Wesleyan University, Department of Zoology,
Delaware, OH 43015-2390, U.S.A.
email: ehburt@owu.edu

Second organizer: Philipp Heeb
University of Lausanne, Department of Ecology and Evolution, Biology
Building, CH-1015 Lausanne-Dorigny, Switzerland

First keynote speaker: Edward Burt
Ohio Wesleyan University, Department of Zoology,
Delaware, OH 43015-2390, U.S.A.

Title of first keynote paper: Plumage micro-organisms and the evolution of
maintenance behaviour

Second keynote speaker: Philipp Heeb
University of Lausanne, Department of Ecology and Evolution, Biology
Building, CH-1015 Lausanne-Dorigny, Switzerland

Title of second keynote paper: Behavioural ecology of plumage micro-organisms

Symposium description: Attention has been drawn recently to the influence of micro-organisms on the ecology, behaviour, and evolution of birds. The combined approaches of experimental and environmental microbiology have generated new insights and new questions concerning the interactions between the two groups. Enteric micro-organisms in the cloaca of nestlings are influenced by ecological factors and can affect nestling growth. Cloacal bacteria transferred through copulation may affect the reproductive behaviour of adults. The presence of feather degrading bacilli in the plumage varies seasonally and with foraging ecology; and variations in microbial community composition affect *in vitro* feather degradation. The presence of melanin, which darkens feathers, reduces the rate of bacterial degradation, which may be a factor in the dark coloration of birds that inhabit humid regions. As yet unpublished data suggest that changes in the chemical composition of preen oil and the choice of nest materials may be the products of selection to reduce microorganisms in the plumage and on the skin. Data to be presented at this symposium, both published and new, will provide the framework within which we consider bird-microbe interactions and address the different ways in which micro-organisms affect the evolution of behaviour and life history traits in birds and their populations.

Symposium number: 22

Title: THE PROCESS OF NATAL RECRUITMENT IN LONG-LIVED BIRDS

Principal organizer: Peter H. Becker

Institut für Vogelforschung "Vogelwarte Helgoland", An der Vogelwarte 21,
D-26386 Wilhelmshaven, Germany
email: peter.becker@ifv.terramare.de

Second organizer: Stuart Bradley

School of Biological Sciences and Biotechnology, Murdoch University,
Murdoch 6150, Western Australia

First keynote speaker: Daniel Oro

Instituto Mediterráneo de Estudios Avanzados (CSIC-UIB), Miquel Marques 21,
07190 Esporles, Mallorca, Spain

Title of first keynote paper: Environmental determinants of recruitment

Second keynote speaker: Peter H. Becker

Institut für Vogelforschung "Vogelwarte Helgoland", An der Vogelwarte 21,
D-26386 Wilhelmshaven, Germany

Title of second keynote paper: The role of intrinsic factors in the recruitment process

Symposium description: Recruitment into a breeding population is one of the most important steps during life. Yet this complex process is poorly studied and understood, despite its enormous consequences for the reproductive career of long-lived birds and for population growth. Recently, however, innovative concepts and analytical methods have shed new light on it.

This symposium will focus on natal recruitment, with the aim of not only providing an overview of recent approaches and findings but also of addressing questions still open. We shall approach recruitment from two perspectives. The first is extrinsic and concerns the environment and general population. Here recruitment might be expected to be influenced by such determinants as dispersal, survival and state of cohorts, population size and growth, nesting density, availability of mates, sex ratio, foraging and breeding conditions and reproductive success. The second approach is intrinsic, and concerns the individual. Here such factors as age, sex, individual quality, arrival date, and length of the prospecting period affect the probability of recruitment and reproductive success in the initial years of a breeding career. The point will be made that understanding the interplay of these factors in attracting young birds to breeding sites, and in determining the age of recruitment, has important consequences for evolutionary and population ecology and for conservation.

Symposium number: 23

Title: NATURAL HOLES: THE MISSING DIMENSION IN UNDERSTANDING HOLE-NESTER ECOLOGY

Principal organizer: Tomasz Wesolowski

Department of Avian Ecology, Wroclaw University, Sienkiewicza 21,
50335 Wroclaw, Poland
email: tomwes@biol.uni.wroc.pl

Second organizer: Kathy Martin

Department of Forest Sciences, University of British Columbia, 2424 Main Mall,
Vancouver, British Columbia V6T 1Z4, Canada

First keynote speaker: Tomasz Wesolowski

Department of Avian Ecology, Wroclaw University, Sienkiewicza 21,
50335 Wroclaw, Poland

Title of first keynote paper: Lessons from long-term hole nester studies in a
primeval temperate forest

Second Keynote speaker: Kathy Martin

Department of Forest Sciences, University of British Columbia, 2424 Main Mall,
Vancouver, British Columbia V6T 1Z4, Canada

Title of second keynote paper: Hole nester communities of old growth forests in
British Columbia

Symposium description: Secondary hole nesters (SHN) are birds that are critically dependent on holes for nesting and roosting. The absence of holes renders habitat uninhabitable for them; and in man-managed woods, their populations are known to increase with the provision of nest boxes, suggesting that SHNs are limited by shortage of holes and must compete for them.

This symposium will investigate this assumption, and the questions arising, with data collected in undisturbed (primeval) forests on different continents under totally different biological settings. Such a broad geographical coverage, involving different ecological/taxonomic systems, will allow comparisons of SHN communities of independent origin. The papers will present well-documented case studies from each continent, supplemented by information from other studies within their regions, to focus on the following questions: (1) does hole supply differ across forests under natural conditions on different continents? (2) what are the major hole-making agents in the different systems? (3) how frequently do SHNs face a shortage of holes and what is the relative importance of nest site competition?, and (4) what is the relative importance of other factors in shaping hole nester populations and their community ecology?

Symposium number: 24

Title: THE PHYSIOLOGY OF LIFE-HISTORIES: COMPARING TROPICAL AND TEMPERATE ZONE BIRDS

Principal organizer: Martin Wikelski
Princeton University, 303 Guyot Hall, Princeton, NJ 08544, USA
email: wikelski@princeton.edu

Second organizer: Jeff Brawn
University of Illinois, Dept. of Animal Biology, 505 S. Goodwin Ave,
Urbana, IL, 61801, USA

First keynote speaker: Jeff Brawn
University of Illinois, Dept. of Animal Biology, 505 S. Goodwin Ave,
Urbana, IL, 61801, USA

Title of first keynote paper: High survival of tropical birds: has the dogma survived?

Second keynote speaker: Michaela Hau
Princeton University, 307 Guyot Hall, Princeton, NJ 08544, USA

Title of second keynote paper: The endocrine control of life-histories: possible constraints on the diversification of avian life-history

Symposium description: Most of the variance in avian life-history spreads along a slow-to-fast gradient, with low reproductive rate, slow development and long life span at one end and the opposite traits at the other. In general, alternative combinations of life-history variables are lacking, indicating that the diversification of life-history is constrained. The actual mechanisms underlying these constraints, nevertheless, are largely unknown. We suggest that only a multi-disciplinary approach combining analyses of proximate and ultimate constraints on avian life-history diversification will be able to tackle this long-standing problem in ecology.

As this is truly a global phenomenon, with birds in the tropical areas tending towards slower life cycles, we shall bring together a diverse group of researchers to address the physiology of life-histories on different continents in diverse biotas. On the one hand, the symposium will try to synthesize what is currently known about the survival and population dynamics of bird populations at different latitudes and in different habitats. On the other, it will suggest that physiological mechanisms limit the scope of life-history diversification, particularly endocrine control mechanisms that can create incompatible physiological states. Overall, the symposium will aim for a synthetic outcome that links the proximate and ultimate factors affecting life-histories.

Symposium number: 25

Title: ADVANCES IN MOLECULAR SYSTEMATICS AND PHYLOGEOGRAPHY OF NEOTROPICAL BIRDS

Principal organizer: Cristina Miyaki

Dept. Biologia, Inst. Biociencias, University of Sao Paulo, Rua do Matao 277,
05508-900 Sao Paulo - SP, Brazil
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Second organizer: John Bates

Dept. of Zoology, Field Museum of Natural History, 1400 S. Lake Shore Drive,
Chicago - IL 60605-2496, USA

First keynote speaker: Alexandre Aleixo

Dept. Zoologia, Museu Paraense Emilio Goeldi, Caixa Postal 399,
66040-170 Belém - PA, Brazil

Title of first keynote paper: Using molecular systematics to test models of species diversification in the Amazon basin

Second keynote speaker: John Bates

Dept. of Zoology, Field Museum of Natural History, 1400 S. Lake Shore Drive,
Chicago - IL 60605-2496, USA

Title of second keynote paper: Biogeographic implications of genetic structure in five co-occurring neotropical antbirds

Symposium description: The Neotropical avifauna is one of the most diverse in the world. Accordingly, this symposium aims to evaluate how molecular data have and can improve our understanding of the evolutionary history and processes underlying that diversification. Results from investigations of birds occurring in a variety of regions and habitats will be presented, and will incorporate advances in types of data and analytical tools. Gaps in information will also be highlighted. The symposium hopes to stimulate interest about why the Neotropics are so bird speciose and why the elements of the bird fauna are distributed in the way they are. It will also draw attention, from the molecular aspect, to priorities and prospects for the future of the avifauna.

Symposium number: 26

Title: NEW APPROACHES, NEW DATA, AND NEW FINDINGS IN AVIAN PHYLOGENY AT AND ABOVE THE ORDINAL LEVEL

Principal organizer: Shannon Hackett

Field Museum of Natural History, 1400 South Lake Shore Drive, Chicago, IL, USA
email: shackett@fieldmuseum.org

Second organizer: Gerald Mayr

Forschungsinstitut Senckenberg, Division of Ornithology, Senckenberganlage 25,
D-60325 Frankfurt/M, Germany

First keynote speaker: John Harshman

Field Museum of Natural History, 1400 South Lake Shore Drive, Chicago, IL, USA

Title of first keynote paper: Early Bird, an international collaboration in deep molecular phylogenetics of birds: can assault by masses of DNA sequences and sampled species breach the wall of death?

Second keynote speaker: Gerald Mayr

Forschungsinstitut Senckenberg, Division of Ornithology, Senckenberganlage 25,
D-60325 Frankfurt/M, Germany

Title of second keynote paper: The renaissance of avian paleontology and its bearing on the higher-level phylogeny of birds: are there morphological links between modern higher-level taxa?

Symposium description: Despite the vast natural history and ecological data on birds and their importance in the development of evolutionary and ecological biology, ornithologists are just beginning the task of determining comprehensive phylogenetic relationships. A well-supported and well-resolved phylogeny will allow avian biologists to address questions in ecology, evolution, physiology, and behavior by using the phylogeny as a comparative framework. Current knowledge of higher-level avian phylogeny is determined more by what we don't know than what we do. Although a few superordinal groups are well-supported, for example the Paleognathae, Neognathae, Galloanseres, Neoaves and the Phoenicopteriformes - Podicipediformes lineage, most other reliable phyletic nodes in non-passerines comprise pairs of closely-related families (e.g. Casuariidae and Dromaiidae). Thus the deep structure of the avian tree remains largely unknown.

The goals of the symposium are to canvass the new approaches being used to address this major phylogenetic problem, and to report on the results of new data and new analyses using a broad range of sources: molecular and morphological, neontological and paleontological.

Symposium number: 27

Title: MOLECULAR SYSTEMATICS AND EVOLUTION

Principal organizer: Dorit Liebers

German Oceanographic Museum, Deutsches Meeresmuseum,
Katharinenberg 14/20, D-18439 Stralsund, Germany
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Second organizer: Allan J. Baker

Royal Ontario Museum, Centre for Biodiversity and Conservation Biology,
100 Queen's Park, Toronto, Ontario M5S 2C6, Canada

First keynote speaker: Allan J. Baker

Royal Ontario Museum, Centre for Biodiversity and Conservation Biology,
100 Queen's Park, Toronto, Ontario M5S 2C6, Canada

Title of first keynote paper: Rare genomic events as phylogenetic markers to help resolve the avian tree of life

Second keynote speaker: Andreas J. Helbig

University of Greifswald, Vogelwarte Hiddensee,
Zum Hochland 17, D-18565 Kloster/ Hiddensee, Germany

Title of second keynote paper: The molecular phylogeny of birds: where do we stand and where are we going?

Symposium description: This symposium intends to cover a broad range of topics in molecular systematics. Principal among them are problems associated with the analysis of DNA sequence data, such as biased representation of taxa, conflicting trees for different genes, positive or negative selection acting on certain sites, long branch attraction, and homoplasy at deep phylogenetic levels. Some methods, notably partitioned Bayesian analysis for codon positions or different genes, seem to fit data much better than others, solve many of the above problems, and provide more strongly supported trees. Such approaches largely obviate the old concern about combining disparate gene partitions because each one has the most appropriate model of sequence evolution applied to it before all are combined. Y/R coding in third positions of mtDNA genes also seems to help in overcoming representational bias as well as reducing homoplasy. Because of such methodological advances, the tools are now in place to construct trees of relationship among large numbers of taxa, including a tree of life for birds, within a reasonable time frame. The symposium also aims to include contributed papers addressing molecular aspects of speciation (e.g. ring species model, role of sex-chromosomal loci in the evolution of reproductive isolation) as well as the use of molecular phylogenies in reconstructing character evolution and biogeography.

Symposium number: 28

Title: DISPERSAL AND GENE FLOW IN POPULATIONS: LINKING MOLECULAR METHODS TO DIRECT OBSERVATIONS

Principal organizer: Arie J van Noordwijk
Netherlands Institute of Ecology, Boterhoeksestraat 48,
6666ZG Heteren, The Netherlands
email: a.vannoordwijk@nioo.knaw.nl

Second organizer: Erkki Korpimäki
Section of Ecology, Department of Biology, University of Turku,
FIN-20014 Turku,, Finland

First keynote speaker: Judith M. Rhymer
Associate Professor, Department of Wildlife Ecology, University of Maine,
Orono, ME 04469, USA

Title of first keynote paper: How to infer population structure from molecular data.

Second keynote speaker: Juan José Negro
Estación Biológica de Doñana, Pabellón del PerúAvda.
de María Luisa s/n 41013 Sevilla,, Spain

Title of second keynote paper: Comparing capture-recapture data and molecular estimates of dispersal

Symposium description: One of the major unsolved problems in evolutionary theory is an understanding of the extent of genetic variation present in populations and the processes that affect it. In particular, the role of interactions among population size, population sub-structure and spatial heterogeneity on gene flow is poorly understood. It is known, nevertheless, that small populations with too little gene flow incur the risk of extinction through in-breeding depression, and that too much gene flow between rare and common forms can lead to loss of the former. Birds are well suited to studying such processes. On one hand, ringing allows direct observation of net distances moved between site of birth and site of reproduction. New methods for analyzing such data now largely eliminate previous problems of interpretation. On the other hand, the relative ease with which large quantities of DNA can be obtained from bird blood has led to extensive use of molecular methods to illuminate population structure at scales from breeding pairs to species populations.

The aim of this symposium is to connect knowledge of dispersal behaviour obtained from observed movements of individuals to the resulting patterns in population structure as revealed by various molecular methods. If this goal is not yet entirely possible, the symposium hopes to stimulate work to bridge the gap.

Symposium number: 29

Title: CAUSES OF GEOGRAPHIC VARIATION IN AVIAN LIFE-HISTORIES

Principal organizer: Wesley Hochachka

Laboratory of Ornithology, Cornell University, 159 Sapsucker Woods Rd,
Ithaca, NY 14850, U.S.A.
email: wmh6@cornell.edu

Second organizer: Francisco Pulido

Max Planck Institute for Ornithology, Vogelwarte, Schlossallee 2,
D-78315 Radolfzell, Germany

First keynote speaker: Caren Cooper

Laboratory of Ornithology, Cornell University, 159 Sapsucker Woods Rd,
Ithaca, NY 14850, U.S.A.

Title of first keynote paper: Thermal environment and physiological constraints
on embryo viability as influences on geographic variation in clutch size

Second keynote speaker: Timothy Coppack

Vogelwarte Helgoland, Institut für Vogelforschung, Inselstation,
D-27494 Helgoland, Germany

Title of second keynote paper: Using common garden and split-brood experiments
to determine the photoperiodic basis for timing of breeding, moult, and migration

Symposium description: Geographic variation in the life histories of birds has long been a topic of research in ornithology. Concern for the abilities of birds to adapt to rapid environmental change has now added urgency to this research, as variation in life histories along broad environmental gradients is a potential predictor of responses to changes in environments at specific locations. Nevertheless, the degree to which geographic gradients are a consequence of phenotypic plasticity or local genetic adaptation is not yet clear. Phenotypic plasticity, where it exists, may explain all geographic variation; or it may reinforce local genetic adaptation (co-gradient selection) or even run counter to local genetic adaptation (counter-gradient selection).

This symposium has two objectives. First, it will identify patterns and potential causes of geographic variation in avian life-history traits. Second, it will evaluate different methods for studying the links between genes and phenotype, identifying constraints on adaptation to specific environments. By integrating knowledge from different fields within ornithology, we hope to make general predictions about the range of life-history traits for which simple linkage between genotype and phenotypic expression cannot be assumed.

Symposium number: 30

Title: MHC IN BIRDS: GENOMIC ORGANIZATION AND EVOLUTIONARY IMPORTANCE

Principal organizer: Ralph Tiedemann

Institute of Biochemistry and Biology, University of Potsdam,
Karl-Liebknecht-Strasse 24-25, Haus 26, D-14476 Potsdam, Germany
email: tiedeman@rz.uni-potsdam.de

Second organizer:

Helena Westerdahl
Department of Animal Ecology, Lund University, Ecology Building, SE-22362
Lund, Sweden

First keynote speaker: Ralph Tiedemann

Institute of Biochemistry and Biology, University of Potsdam,
Karl-Liebknecht-Strasse 24-25, Haus 26, D-14476 Potsdam, Germany

Title of first keynote paper: MHC evolution in ducks and allies

Second keynote speaker: Helena Westerdahl

Department of Animal Ecology, Lund University, Ecology Building, SE-22362
Lund, Sweden

Title of second keynote paper: Passerine MHC genetic variation and disease resistance in the wild

Symposium description: The Major Histocompatibility Complex (MHC) is of primary importance in specific immune defence in all vertebrates. MHC genes are the most variable coding genes known, and they are among the most famous examples of adaptive genetic variation maintained by balancing selection. Not surprisingly, the MHC has received increasing attention in evolutionary biology and conservation genetics. Specifically, MHC variability and certain MHC alleles are related to individual fitness. In the maintenance of such adaptive genetic variation are to be found keys for understanding, *inter alia*, the genetics of mating systems and dispersal, and the impact of inbreeding. Apart from its evolutionary importance, MHC variability is of considerable relevance in conservation.

While studies on MHC genetic variation are increasing in mammals, they are still scarce in birds. By covering the molecular organization of MHC genes in birds, MHC evolution, and the utility of the MHC as a molecular marker in behavioural ecology and conservation genetics, it is the aim of this symposium to further promote research on the avian MHC.

Symposium number: 31

Title: MAGNETIC ORIENTATION AND MAGNETORECEPTION

Principal organizer: Roswitha Wiltschko

Zoolog. Institut, J.W.Goethe-Universität Frankfurt, Siesmayerstrasse 70,
D-60054 Frankfurt am Main, Germany
email: wiltschko@zoology.uni-frankfurt.de

Second organizer: Susanne Åkesson

Dept. of Animal Ecology, Lund University, Ecology Building, S-22362 Lund, Sweden

First keynote speaker: Susanne Åkesson

Dept. of Animal Ecology, Lund University, Ecology Building, S-22362 Lund, Sweden

Title of first keynote paper: Behavioural evidence of magnetic orientation and navigation

Second keynote speaker: Cordula Mora

Biology Department, University of North Carolina, Chappel Hill,
N.C. 27599-3280, USA

Title of second keynote paper: Conditioning birds to magnetic stimuli

Symposium description: Every year, millions of birds migrate long distances between their wintering destinations and back, often returning to the very same sites as before. Many of them travel alone, guided first by a genetic program and later, in addition, by navigational abilities. Information from the Earth's magnetic field plays an important role in their orientation: the magnetic vector provides directional information for the migrants' compass, and magnetic field intensity may be used as well for navigating between distant geographical sites. Today, we are just beginning to understand how birds perceive and process such geomagnetic information.

The aim of this symposium is to present recent scientific advances in the field of magnetic orientation, with special focus on how geomagnetic information is perceived and processed and how birds use geomagnetic information in the field. The symposium will start with a keynote address by Susanne Åkesson, who will summarize current behavioural evidence involving magnetic orientation and navigation. In the second keynote address, Cordula Mora will present the results of conditioning experiments demonstrating that birds perceive magnetic fields. We hope for contributed papers presenting new evidence on how birds acquire and use geomagnetic information for orientation and navigation.

Symposium number: 32

Title of Symposium: UNDERSTANDING THE CAUSES OF RECENT CHANGES IN MIGRATORY BEHAVIOUR

Principal organizer: Timothy Coppack
Institute of Avian Research "Vogelwarte Helgoland", Inselstation, PO Box
1220, 27494 Helgoland, Germany
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Second organizer: Charles M. Francis
National Wildlife Research Centre, Canadian Wildlife Service, Ottawa,
Ontario, K1A 0H3, Canada

First keynote speaker: Charles M. Francis
National Wildlife Research Centre, Canadian Wildlife Service, Ottawa,
Ontario, K1A 0H3, Canada

Title of first keynote paper: Climatic influences on the timing and rate of spring migration in North America

Second keynote speaker: Francisco Pulido
Max Planck Institute for Ornithology, Vogelwarte Radolfzell, Schlossallee 2,
78315 Radolfzell, Germany

Title of second keynote paper: Recent changes in the timing of migration: adaptive evolution or phenotypic plasticity?

Symposium description: Involved in bird migration are behavioural, morphological, and physiological adaptations that have co-evolved to achieve successful reproduction and survival under given environmental circumstances in breeding and non-breeding areas and en route between. Climate change may alter these adaptations, both directly and indirectly through changes in the phenology of plants and invertebrate food resources. Inter-species variation, particularly between short- and long-distance migrants in directions and rates of migratory behaviour, has so far been attributed to differences in selection regimes and exposure to climatic variables, without taking into account potential genetic or physiological constraints. Nevertheless, such constraints on adaptability are to be expected, particularly for migratory traits that are correlated genetically with other life-cycle events.

This symposium will present an overview of recent shifts in the timing and extent of bird migration, and will elaborate a conceptual framework for understanding the mechanisms underlying the changes, both from behavioural and genetic perspectives. Its aim is to resolve apparently contradictory results and to stimulate ornithologists to make the step from reporting observations to drawing inferences about causes.

Symposium number: 33

Title of Symposium: MIGRATORY CONNECTIVITY: BIOLOGICAL SIGNIFICANCE AND MODERN TECHNIQUES

Principal organizer: Frank Moore

The University of Southern Mississippi, Department of Biological Sciences,
118 College Drive [5018], Hattiesburg, MS 39406-0001, USA
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Second organizer: Franz Bairlein

Institut fuer Vogelforschung, Vogelwarte Helgoland, An der Vogelwarte 21,
D-26386 Wilhelmshaven, Germany
phone: + 49 (0) 4421 96890; email: franz.bairlein@ifv.terramare.de

First keynote speaker: Rudolf Drent

Biological Centre, P.O. Box 14, 9750 AA Haren, Netherlands
phone: + 31 50 363 2021; fax: + 31 50 3635205; email: Drent@biol.rug.nl

Title of first keynote paper: Migratory connectivity in Arctic Geese, looking for the weakest link.

Second keynote speaker: Keith Hobson

Canadian Wildlife Service, 115 Perimeter Road, Saskatoon, SK S7N 0X4, Canada
phone: 301.975.4102; email: Keith.hobson@ec.gc.ca

Title of second keynote paper: Migratory connectivity: modern tools of the trade

Symposium description: Cross-seasonal connectivity is crucial to understanding the biology of migratory birds. The population biology of migratory species, not to mention their morphological, behavioural and physiological adaptations, cannot be understood unless the effects of the different phases of their annual cycles are integrated across seasons. So the objective of this symposium is two-fold: to explore the implications of connectivity for understanding the biology of migratory birds, and to examine the practical tools available for studying cross-seasonal connectivity. The first keynote speaker, Rudolf Drent, will address the importance of connectivity by focusing on a cross-seasonal study of Arctic Geese. Keith Hobson, the second keynote speaker, will consider the strengths and weaknesses of tools used to study migratory connectivity.

Symposium number: 34

Title: ENDOCRINE BASES OF REPRODUCTION: MECHANISMS AND DIVERSITY

Principal organizer: Pierre Deviche
Arizona State University, School of Life Sciences, Tempe,
Arizona 87287-4501, USA
email: deviche@asu.edu

Second organizer: Alistair Dawson
Centre for Ecology and Hydrology (CEH), Monks Wood, Abbots Ripton,
Huntingdon, Cambridgeshire PE28 2LS, United Kingdom

First keynote speaker: George Bentley
Department of Integrative Biology #3140, 3060 Valley Life Sciences Building,
University of California Berkeley, Berkeley, CA 94720-3140, USA

Title of first keynote paper: Gonadotropin - inhibitory hormone in
seasonally-breeding songbirds: form and function

Second keynote speaker: Kazuyoshi Tsutsui
Faculty of Integrated Arts and Sciences, Hiroshima University,
Higashi-Hiroshima 739-8521, Japan

Title of second keynote paper: Discovery of gonadotropin-inhibitory hormone in a
domesticated bird, and its mode of action and functional significance

Symposium description: This symposium will review recent progress in our understanding of the mechanisms that control avian reproduction and their diversity. Day length plays a major role in the initiation and termination of avian reproductive cycles, but the mechanisms that mediate its role are not fully understood. Moreover, although the relative importance of photic vs. nonphotic information in the control of reproduction varies among species, we know little about the integration of nonphotic information by neuroendocrine systems or its transduction into physiological changes.

The symposium will present new methods and approaches to address these issues. It will combine presentations by researchers investigating reproduction in various species and integrate analyses at multiple levels, from whole organisms in their natural environment to laboratory studies at the molecular level. The information emerging will be of particular interest to researchers involved in biodiversity, the effects of endocrine disruptors and global climate change at individual and population levels, behaviour, ecological constraints on reproduction, environmental control of ontogenic development, and avian husbandry.

Symposium number: 35

Title: NEUROENDOCRINE CONTROL OF BEHAVIOUR

Principal organizer: Stefan Leitner

School of Biological Sciences, Royal Holloway University of London
Egham, Surrey, TW20 0EX, United Kingdom
email: leitner@orn.mpg.de

Second organizer: Wolfgang Goymann

Max-Planck-Institute for Ornithology, Von-der-Tann Str. 7
D-82346 Andechs, Germany

First keynote speaker: Manfred Gahr

Department of Developmental and Behavioural Neurobiology, Institute of
Neuroscience, Faculty of Life Sciences, Vrije Universiteit Amsterdam
De Boelelaan 1087, 1081 HV Amsterdam, The Netherlands

Title of first keynote paper: Hormone dependent song pattern generation and
perception

Second keynote speaker: Stefan Leitner

School of Biological Sciences, Royal Holloway University of London
Egham, Surrey, TW20 0EX, United Kingdom

Title of second keynote paper: Genetic and environmental influences on song
development

Symposium description: Although research on behavioural and evolutionary biology has achieved great success, there is now a need to integrate it with studies on underlying neural and hormonal mechanisms. Towards that end, this symposium will address hormone-mediated modulation of reproductive signals in both songbirds and non-songbirds. One excellent example is vocal behaviour controlled by the song control system in the forebrain via the action of steroid hormones that are affected by environmental factors such as day-length and the availability of food and mating partners. The extent to which environmental and physiological factors influence this system need teasing out. Complex signals should be costly to produce; and as a consequence there are neuronal costs in maintaining any such signals that are essential in a reproductive context. These costs are borne by both the sender (mostly males) and the receiver (mostly females). Exceptions are species in which both sexes sing or in which conventional sex roles are reversed. In this symposium, we aim to compare and describe the effect of these systems in different bird species.

Symposium number: 36

Title: COPING WITH SEASONAL CHALLENGES: THE ROLE AND REGULATION OF MOLT

Principal organizer: Barbara Helm
Max-Planck-Institute for Ornithology, Von-der-Tann Str. 7
D - 82346 Andechs, Germany
email: helm@orn.mpg.de

Second organizer: Les Underhill
Avian Demography Unit, University of Cape Town, Rondebosch 7701, South Africa

First keynote speaker: Ian Newton
Centre for Ecology and Hydrology, Monks Wood, Abbots Ripton,
Huntingdon, Cambridgeshire PE28 2LS, Great Britain

Title of first keynote paper: Timing strategies for molt and migration

Second keynote speaker: Anders Hedenström
Department of Animal Ecology, Ecology Building, Lund University,
223 62 Lund, Sweden

Title of second keynote paper: On feather quality, molt and migration

Symposium description: Molt is an obligatory part of avian life, and uniquely involved in bird flight. As such, finding a suitable time and place to molt is a major challenge for birds. Avian solutions to this problem have far-reaching consequences for most aspects of ornithology, in particular for the study of reproduction, migration, energetics and flight mechanics. Although molt has long been known to be a crucial stage in the life cycle, its full implications are only just beginning to be explored. Exciting new developments are now emerging from a variety of perspectives, including ecology, life-history theory, flight mechanics, physiology, statistical theory, and annual timing research. This symposium aims to bring together expertise from such different fields towards gaining a fuller understanding of the processes and selection pressures that shape molting under the knock-on effects of annual cycles.

Symposium number: 37

Title: VISION AND ITS FUNCTION

Principal organizer: Graham Martin

University of Birmingham, School of Biosciences, Edgbaston, Birmingham
B15 2TT, UK
email: g.r.martin@bham.ac.uk

Second organizer: Luz Marina Rojas

Universidad de Oriente, Instituto de Investigaciones en Biomedicina y
Ciencias Aplicadas, Avenida Universidad, Cerro del Medio. Apartado de
correos 094, Cumana, Sucre, Venezuela

First keynote speaker: Andy Bennett

University of Bristol, School Biological Sciences,
University of Bristol, Bristol BS8 1UG, UK

Title of first keynote paper: Colour vision and its functions

Second keynote speaker: Graham Martin

University of Birmingham, School of Biosciences, Edgbaston, Birmingham
B15 2TT, UK

Title of second keynote paper: The topography of vision

Symposium description: Vision is the prime sense through which birds gain information about their environment. Although vision is a complex and multifaceted sense and difficult to investigate, recent research has revealed remarkable differences between the visual world of birds and mammals, including humans. Such understanding is vital for research into bird behaviour and ecology where insight is needed into the information that birds have available to them through their senses. It is moreover essential for constructing sound evolutionary hypotheses regarding avian senses and their functions in life. Recent comparative research has provided new insights into the functions of vision in birds, especially with respect to how vision is used in conjunction with other senses to build a picture of the sensory world that birds inhabit. Connecting the avian sensory world to both behaviour and ecology will be the main theme of this symposium, a theme exemplified in the two key note addresses. The first of these will cover, *inter alia*, UVA sensitivity and its functions in foraging and mate choice, and the second binocular and panoramic vision and their functions in foraging and flight.

Symposium number: 38

Title: COMPARATIVE AVIAN IMMUNOLOGY, FROM POULTRY TO PASSERINE

Principal organizer: Lynn Martin

Program in Neuroscience, Department of Psychology, Ohio State University,
Columbus, OH, USA
email: lmartin@mail.psy.ohio-state.edu

Second organizer: Dennis Hasselquist

Department of Animal Ecology, Ecology Building, Lund University,
223 62 Lund, Sweden

First keynote speaker: Dennis Hasselquist

Department of Animal Ecology, Ecology Building, Lund University,
223 62 Lund, Sweden

Title of first keynote paper: Comparative immunoecology in wild birds:
hypotheses and tests.

Second keynote speaker: Henk Parmentier

Wageningen Institute of Animal Sciences, Department of Adaptation Physiology,
Marijkeweg 40, PO Box 338, 6700 AH Wageningen, The Netherlands

Title of second keynote paper: Environmental effects on immune competence of poultry,
with special emphasis on natural immunity

Symposium description: Studies of wild birds have yielded extensive insights in the growing field of ecological immunology. Likewise, studies of domestic birds have provided fundamental knowledge of how the vertebrate immune system works. The goals of this symposium are to begin uniting these two bodies of work, and to promote the development of a comparative framework for understanding the immune defenses of all avian species in an ecological and evolutionary perspective. Dr. Dennis Hasselquist will review studies on inter- and intra-specific variation in the immune defenses of wild birds and the ecological and physiological factors that mediate this variation. Dr. Henk Parmentier will provide a summary of work on the effects of environment (husbandry, temperature, food, and stress) on immune activity in three lines of domestic chickens divergently selected for specific antibody responses. Three additional speakers will discuss new findings from their own eco-immunological systems. Through these examples, the symposium hopes to provide useful guidance in avian ecological immunology and ornithologists in general with stimulating and relevant information on an important and growing field of avian biology.

Symposium number: 39

Title: DIVERSE RESPONSES OF BIRDS TO EXCESS WATER AND SODIUM CHLORIDE UPTAKE

Principal organizer: Maryanne Hughes

University of British Columbia, Department of Zoology, 6270 University Blvd,
Vancouver, B. C., Canada, V6T 1Z4, Canada
email: Hughes@zoology.ubc.ca

Second organizer: Erik Skadhauge

Institut og Fysiologi, Sektion of Veterinary Physiology, KVL, Denmark

First keynote speaker: Erik Skadhauge

Institut og Fysiologi, Sektion of Veterinary Physiology, KVL, Denmark

Title of first keynote paper: Interactions among osmoregulatory organs of birds without salt glands

Second keynote speaker: Maryanne Hughes

University of British Columbia, Department of Zoology, 6270 University Blvd,
Vancouver, B. C., Canada, V6T 1Z4, Canada

Title of second keynote paper: Interactions among osmoregulatory organs of birds with salt glands

Symposium description: For birds, habitat temperature, humidity, and available water and its salinity can vary greatly. Avian morphology, physiology, and behaviour reflect these stresses. Function and mass of osmoregulatory organs may even vary between the sexes in some birds, yet the hormones that regulate water and osmolytes are the same in all species. Despite extreme intakes of water and/or osmolytes, the osmoregulatory organs (gut, kidneys, and salt glands) of such disparate groups as nectar feeders and marine birds maintain relatively constant internal environments.

So this symposium has two goals. The first is to describe intriguing recent findings. Interactions of organs, and of the hormones that regulate them, will be compared in birds that lack (Skadhauge) or have (Hughes) salt glands. Aldosterone, for example, stimulates gut sodium uptake in both chickens on a low sodium diet and ducks on a high sodium diet. How is the release of aldosterone elicited under these disparate conditions? Melatonin inhibits secretion in salt glands. Is melatonin an osmoregulatory hormone, and does it affect gut or kidney function or other hormones in birds? Such questions, which are amenable to genetic, cellular, organismal level, and whole animal research, underpin the second goal: to encourage more investigative interaction among geneticists, cellular biologists, physiologists, systematists, and field biologists.

Symposium number: 40

Title: BEHAVIOUR AND PHYSIOLOGY OF UNDER-WATER FORAGING IN DIVING BIRDS

Principal organizer: Patrick Butler

University of Birmingham, School of Biosciences, Birmingham B15 2TT, United Kingdom
email: p.j.butler@bham.ac.uk

Second organizer: Akiko Kato

National Institute of Polar Research, National Institute of Polar Research,
Itabashi, 173-8515 Tokyo, Japan

First keynote speaker: Sarah Wanless

CEH Banchory, Banchory, Kincardineshire AB31 4BY, United Kingdom

Title of first keynote paper: Behavioural adaptations and constraints on avian diving - a northern hemisphere perspective

Second keynote speaker: Yves Handrich

Centre d'Ecologie et Physiologie Energetiques, CNRS, 23 rue Becquerel,
67087 Strasbourg Cedex 2, France

Title of second keynote paper: Strategies and constraints in diving birds - an ecophysiological review

Symposium description: The foraging behaviour of diving water birds may be constrained by capacity to manage limited stores of oxygen optimally. So a major objective of this symposium will be to review recent advances in the behaviour and physiology of aquatic birds, integrating this knowledge into clearer insights into how different species are able to forage at the diverse depths for the diverse durations that they do. The two keynote speakers, international experts in their fields, will focus respectively on behaviour (Sarah Wanless) and physiology (Yves Handrich), yet will co-ordinate their presentations to provide a general overview of the extent to which physiology may limit foraging behaviour in aquatic birds. The coverage will include (1) the role of sensory systems in prey location, particularly vision; (2) the quality and density of the prey species; (3) behavioural and physiological adaptations for conserving oxygen during dives, e.g. changing buoyancy, limiting the delivery of oxygenated blood to certain parts of the body, adjusting regional hypothermia; (4) problems of diving in very cold water; and (5) how penguins, in particular, have the capacity to dive to great depths.

Symposium number: 41

Title: CIRCADIAN RYTHMS AND PHOTOPERIODISM

Principal organizer: Vinod Kumar

Department of Zoology, University of Lucknow, Lucknow, 226 007 India
email: drvkumar11@yahoo.com

Second organizer: Shizufumi Ebihara

Division of Biomodeling, Graduate School of Bioagriculture Sciences,
Nagoya University, Chikusa, Nagoya 464-8601, Japan

First keynote speaker: Shizufumi Ebihara

Division of Biomodeling, Graduate School of Bioagriculture Sciences,
Nagoya University, Chikusa, Nagoya 464-8601, Japan

Title of first keynote paper: The Avian Circadian System: the past, the present and the future

Second keynote speaker: Thomas Hahn

Section of Neurobiology, Physiology and Behaviour, Division of Biological Sciences,
University of California, One Shields Avenue, Davis, CA 95616-8519, USA

Title of second keynote paper: Avian Photoperiodism: mechanisms facilitating and constraining reproductive flexibility

Symposium description: This symposium will address new findings emerging from integration of two regulatory mechanisms on the life of birds: circadian and photoperiodic rhythms. Many overt rhythmic functions in birds are governed by underlying circadian clocks, which also appear to be involved in the regulation of seasonal events, viz. migration and seasonal reproduction. Long an area of great interest in ornithology since the 1920s, avian photoperiodism has recently undergone a broadening of perspective in the way it interacts and integrates with responses to other types of cues in the avian environment. Molecular studies, moreover, have brought unexpected but important results to the biological clock, revealing, for example, that many peripheral tissues can have circadian oscillators. The recent finding of a gene involved in photoperiodic regulation of gonadal development may potentially open the way towards a better understanding of the mechanisms involved in avian photoperiodism. Because of the ubiquity of circadian rhythms and the importance of photoperiodism in regulating seasonal events in birds, this symposium makes the point that the class Aves is one of the best, if not the best, model for both circadian and photoperiodic research among vertebrates.

Symposium number: 42

Title: BIOACOUSTICS: PURE AND APPLIED ASPECTS

Principal organizer: Peter McGregor

Centre for Applied Zoology, Cornwall College, Wildflower Lane, Trenance Gardens,
Newquay TR7 2LZ, Cornwall, UK
peter.mcgregor@cornwall.ac.uk

Second organizer: Georg Klump

Zoophysiology and Behaviour Group, Institute for Biology and Environmental Science,
Oldenburg University, D-26111 Oldenburg, Germany
georg.klump@uni-oldenburg.de

First keynote speaker: Vincent Bretagnolle

Beauvoir sur Niort, France

Title of first keynote paper: to be advised

Second keynote speaker: Ulrike Langemann

Institute for Biology and Environmental Science, Oldenburg University,
D-26111 Oldenburg, Germany

Title of second keynote paper: Auditory perception and communication limits

Symposium description: Birds use acoustic signals as their main means of communication, and have evolved many adaptations in signal production and perception which play an important role for their reproduction and survival. So an understanding of the evolution of acoustic signal patterns used, and the mechanisms of auditory perception, can contribute to conservation efforts. This symposium offers examples of how basic bioacoustic research has applications in conservation. For example, birds have developed mechanisms that enable them to cope with environmental noise. Knowing the perceptual limits of the mechanisms that allow birds to detect communication sounds among background noise will enable evaluation of the impact of traffic noise and other acoustic disturbances from human activity. Knowing how birds habituate to sounds will help in assessing potential disturbance from particular sources. And knowing the variation in the patterns of sounds within and between individuals of a certain species will allow us to evaluate the suitability of bird vocalizations as "tags" for individual identification. The two keynote talks will provide reviews on both the perception and the sound production sides of the issue. Further contributed papers that connect bioacoustics with conservation are welcome.

Symposium number: 43

Title: AVIAN SENESENCE

Principal organizer: Pat Monaghan

University of Glasgow, Environmental and Evolutionary Biology, Graham Kerr
Building, Glasgow G12 8QQ, Scotland, UK
email: P.Monaghan@bio.gla.ac.uk

Second organizer: Carol Vleck

Iowa State University, Department of Ecology, Evolution and Organismal Biology,
Ames, IA 50011, USA

First keynote speaker:

Carol / Mark Vleck

Iowa State University, Department of Ecology, Evolution and Organismal Biology
Ames, IA 50011, USA

Title of first keynote paper: Senescence in birds 1: underlying mechanisms

Second keynote speaker: Pat / Robert Monaghan¹ / Robert Ricklefs²

¹ Environmental and Evolutionary Biology, Graham Kerr Building, University of Glasgow,
Glasgow G12 8QQ, Scotland, UK

²Department of Biology, University of Missouri at St. Louis,
8001 Natural Bridge Road, St. Louis, MO 63121-4499, USA

Title of second keynote paper: Senescence in birds 2: evolution and life history
trade-offs

Symposium description: Birds have been one of the most important groups of organisms for developing and testing life history theory. One of the least understood life history traits is senescence, both with respect to its evolution and its underlying mechanisms. In general, birds have long life-spans relative to similar sized mammals, despite their higher metabolic rates, body temperatures and blood glucose levels, all of which would be expected to increase the rate of ageing. There is now much interest in both the mechanisms underlying the pattern and tempo of senescence in birds, and in the evolutionary processes involved. Research in this area has been greatly facilitated by the many long-term field studies of marked individuals made possible through ringing programs.

Topics to be addressed in this symposium include 1) the causes of ageing in general, and how birds in particular may have slowed the aging process; and 2) the evolution of senescence in avian taxa and the ecological, developmental and life history trade-offs that may account for differences in rates of senescence. These two aspects will form the basis of the keynote addresses.

Symposium number: 44

Title: THE AVIAN INTEGUMENT: MOLECULAR DEVELOPMENT AND FUNCTIONAL-ECOLOGICAL MORPHOLOGY

Principal organizer: Dominique G. Homberger
Louisiana State University, Dept. of Biological Sciences,
202 Life Sciences Building, Baton Rouge, LA 70803-1715, USA
email: zodhomb@lsu.edu

Second organizer: Cheng-Ming Chuong
University of Southern California, Dept. of Pathology,
Los Angeles, CA 90033, USA

First keynote speaker: Cheng-Ming Chuong
University of Southern California, Dept. of Pathology,
Los Angeles, CA 90033, USA

Title of first keynote paper: Development and Evolution of Feathers

Second keynote speaker: Dominique G. Homberger
Louisiana State University, Dept. of Biological Sciences,
202 Life Sciences Building, Baton Rouge, LA 70803-1715, USA

Title of second keynote paper: Intraorganismal and interspecific similarities and differences among keratinized structures in birds

Symposium description: Among vertebrates, birds have evolved the greatest diversity of integumentary structures and specializations, such as feathers, bristles, filaments, powder downs, rhamphothecae of beaks, claws, spurs, scales, casques, colored skin, wattles, caruncles, etc. After a 30 - year lull due to the definitive treatise of the avian integument by Lucas & Stettenheim (1972, Avian Anatomy - Integument, U.S. Dept. of Agriculture, Washington, DC), renewed interest in the avian integument has been spurred by momentous discoveries in paleontology, developmental and molecular biology, and functional-ecological morphology. The symposium aims at presenting overviews of recent advances in our understanding of the avian integument, from organismal to molecular levels, and within a functional and evolutionary context. Integrative contributions that conceptualize new connections between different structures, different biological processes, different levels of complexity, and different taxa will be of special interest.

Symposium number: 45

Title: WHAT 'ANIMAL MODELS' CAN TELL ORNITHOLOGISTS ABOUT THE GENETICS OF WILD POPULATIONS

Principal organizer: Erik Postma

Institute of Ecology (NIOO-KNAW), Centre for Terrestrial Ecology, P.O. Box 40,
6666 ZG Heteren, The Netherlands
email: e.postma@nioo.knaw.nl

Second organizer: Anne Charmantier

Edward Grey Institute, Department of Zoology, University of Oxford,
South Parks Road, Oxford OX1 3PS, United Kingdom

First keynote speaker: Erik Postma

Institute of Ecology (NIOO-KNAW), Centre for Terrestrial Ecology, P.O. Box 40,
6666 ZG Heteren, The Netherlands

Title of first keynote paper: Predicting breeding values in natural populations
from an animal model: possibilities and pitfalls

Second keynote speaker: Anne Charmantier

Edward Grey Institute, Department of Zoology, University of Oxford,
South Parks Road, Oxford OX1 3PS, United Kingdom

Title of second keynote paper: Estimating genetic and environmental variance components
from an animal model

Symposium description: For natural populations, good estimates of genetic parameters such as heritability are essential both in understanding how genetic variation is maintained and for estimating evolutionary potential. Long-term studies on birds are especially amenable to such estimates because of the ease with which pedigrees can be inferred. Recently 'animal model' methodology, originally developed by animal breeders to identify animals of high genetic merit, has since been applied to natural, pedigreed bird populations. Animal models are more powerful than traditional analyses such as parent-offspring regression projections because they use all the available pedigree information simultaneously. They can therefore accommodate common phenomena like selection and inbreeding, and are especially suitable for the complex and incomplete pedigrees typical of natural populations. Animal models not only provide a better way of estimating genetic and non-genetic variance components, but also allow individual phenotypes to be separated into their genetic and environmental components. This symposium will provide both an outline of the possibilities that animal models offer to those interested in the estimation of genetic parameters in the wild, and an up-to-date overview of the rapidly developing and exciting field of evolutionary genetics of wild bird populations.

Symposium number: 46

Title: STRUCTURAL BASIS OF SONG

Symposium number: 47

Title: HOW DO BIRDS SENSE THE EARTH'S MAGNETIC FIELD?
MAGNETORECEPTION MECHANISMS IN BIRDS

Principal organizer: Henrik Mouritsen

University of Oldenburg, AG Animal Navigation, IBU, D-26111 Oldenburg, Germany
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Second organizer: Thorsten Ritz

University of California, Irvine, Dept. of Physics and Astronomy,
4129 Frederick Reines Hall, Irvine, CA 92697-4575, USA

First keynote speaker: Thorsten Ritz

University of California, Irvine, Dept. of Physics and Astronomy,
4129 Frederick Reines Hall, Irvine, CA 92697-4575, USA

Title of first keynote paper: The magnetic compass of birds: a chemical sensor
in the eye?

Second keynote speaker: Henrik Mouritsen

University of Oldenburg, AG Animal Navigation, IBU, D-26111 Oldenburg, Germany

Title of second keynote paper: Linking molecules and cognition to magnetic
orientation behaviour

Symposium description: The long-distance navigational abilities of birds have fascinated ornithologists for centuries and challenged scientists for decades. Even though it has been shown behaviourally that the Earth's magnetic field is one of the key cues used by birds to find their way, we still do not know how birds sense, perceive and process magnetic information. Recently, however, the search for the avian magnetoreceptors and the cognitive processes integrating magnetic information into the avian orientation system has begun gathering momentum.

The aim of this symposium is to review the considerable progress that has been made in this field since the 23rd International Ornithological Congress in 2002. The symposium will open with a keynote address presenting the theoretical background for visual perception of the magnetic field. And a later keynote address will summarize, in a behavioural context, the physiological and molecular evidence for and against vision-mediated magnetic sensing in birds. Contributed papers will then be chosen from those that shed new light on the enigmatic mechanisms which allow birds to derive information from the geomagnetic field.