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Kin recognition

Kin recognition, the ability to identify and respond differentially to ones genetic relatives, is one of the fastest growing and most exciting areas of ethology. Dr. Hepper has brought together leading researchers in the field to create a thought-provoking and critical analysis of our current knowledge of the phenomenon, with particular emphasis on the underlying processes involved, and their significance for the evolution of social behaviour. Students of animal behaviour and evolutionary biology will find this book an invaluable source of information and ideas.

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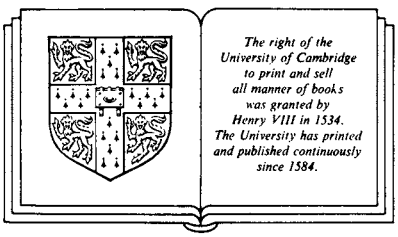

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Frontmatter
More information

Contents

List of contributors ix
Preface xi

Introduction 1
Peter G. Hepper

1 The correlation between kinship and behaviour in non-human primates 6
Irwin S. Bernstein

2 Co-operation and reciprocity in birds and mammals 30
J. David Ligon

3 Kinship and fellowship in ants and social wasps 60
Pierre Jaisson

4 Successes and failures of parent–offspring recognition in animals 94
Michael D. Beecher

5 Kinship, kin discrimination and mate choice 125
C. J. Barnard and Peter Aldhous

6 Genetic components of kin recognition in mammals 148
Edward A. Boyse, Gary K. Beauchamp, Kunio Yamazaki and Judith Bard

7 Kin recognition in amphibians 162
Bruce Waldman

8 Kin recognition cues of vertebrates 220
Zuleyma Tang Halpin

9 Recognizing kin: ontogeny and classification 259
Peter G. Hepper

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0521372674 - Kin Recognition
Edited by Peter G. Hepper
Frontmatter
More information

10 Parental states as mechanisms for kinship recognition and deception about relatedness 289
Robert W. Elwood

11 Fetal learning: implications for the development of kin recognition 308
Scott R. Robinson and William P. Smotherman

12 Information processing and storage during filial imprinting 335
Mark H. Johnson

13 The honey bee as a model kin recognition system 358
Wayne M. Getz

14 Mutual mother–infant recognition in humans 413
Richard H. Porter

Author index 433
Species and common name index 448
Subject index 452

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Preface

Studies of kin recognition have progressed rapidly during the past decade. One of the most exciting aspects of this research is that the ability to recognize kin has been found, in some form or other, throughout the animal kingdom, from single-celled organisms to man. The increase in studies reporting kin recognition has led to a widespread acceptance of the role of kinship in behaviour. There is, of course, good theoretical reasons, provided by kin selection theory and mate choice theory, why this should be so, however, the importance of kinship for behaviour has often been unquestioned. One of the reasons for compiling this volume was to critically assess the role of kinship in behavioural interactions: is kin recognition responsible for the many observed differential interactions between kin and non-kin? Whilst many species have been demonstrated to recognize their kin, little attention has been given to determining how this is achieved and consequently the mechanisms underlying this ability are poorly understood. A second goal of this book was to present research which has investigated how individuals recognize their kin.

Rather than provide a taxonomic discussion of kin recognition, I have aimed to provide a book which deals with particular themes. Leading researchers in these areas were asked to discuss these issues with respect to their own expertise and species or group studied. The book may be broadly divided into two sections – that dealing with function and that dealing with mechanisms. With respect to function chapters deal with issues of nepotism, co-operation, fellowship, mate choice, parent–offspring recognition, genetic components of recognition and kinship in amphibians. As regards mechanisms, the cues of recognition, state mediated recognition, prenatal learning, imprinting, the development of recognition and the bee as a model recognition system, are issues discussed. Kin recognition in humans, for whom kin recognition has been established for the longest but was the most poorly

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understood, is also dealt with. Each chapter concentrates upon a particular theme and illustrates it with reference to the species or group of interest to the author. This has the benefit that particular issues are discussed in detail and because of the widespread occurrence of kin recognition the relevence of this discussion is not restricted to one species or group but has implications for kin recognition in all species. In a rapidly expanding field this volume has attempted to consider some of the most important issues and questions facing researchers of kin recognition.

The book is intended for all those interested in behaviour, the fact that kinship does influence behaviour means all students of behaviour must consider its influence. Authors were asked to provide chapters which dealt with the most up-to-date issues but also to provide some background material, and as such the book will be of interest to students, researchers and teachers.

I acknowledge the support of a number of people without whom this book could never have got past the planning stage. I thank all the authors for taking the time and putting in much effort in contributing to this volume. I thank Prof. Michael Morgan, who as my Ph.D. thesis supervisor, first stimulated my interest in the area of kin recognition and Prof. Ken Brown who has enabled me, with continued support, to pursue studies of kin recognition. I thank Ken Brown, Jennifer Cleland, Roddie Cowie, Fiona Hepper, and Ian Sneddon for the refereeing of the chapters. Finally I thank my wife Fiona for all her help.

Peter G. Hepper
1990

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