

CONTENTS

Contributors	ix
Preface	xiii
Introduction	01

PART 1 DESCRIBING BEHAVIOR 09

1. Learning to Describe and Quantify Animal Behavior 11
Bonnie J. Ploger
2. Developing Operational Definitions and Measuring Interobserver Reliability Using House Crickets (*Acheta domesticus*) 31
Terry Glover

PART 2 CAUSATION 41

3. Courtship, Mating, and Sex Pheromones in the Mealworm Beetle (*Tenebrio molitor*) 43
Enrique Font and Ester Desfilis
4. Courtship and Mate Attraction in Parasitic Wasps 59
Robert W. Matthews and Janice R. Matthews
5. Chemoreception in Lizards 73
C. O'Neil Krekorian
6. Behavioral Thermoregulation in Field Populations of Amphibian Larvae 79
Howard H. Whiteman and Nancy L. Buschhaus
7. Temperature Dependence of the Electric Organ Discharge in Weakly Electric Fish 85
Günther K. H. Zupanc, Jonathan R. Banks, Gerhard Engler, and Robert C. Beason

8. Observing and Analyzing Human Nonverbal Communication 95
Penny L. Bernstein
9. Foraging Behavior of Ants, or Picnics: An Ant's-Eye View 113
Sylvia L. Halkin
10. Hummingbird Foraging Patterns: Experiments Using Artificial Flowers 127
Alastair Inman
11. Honey Bee Foraging Behavior 133
Monica Raveret Richter and Jasmin M. Keramaty
12. Individual Constancy to Color by Foraging Honey Bees 147
Peggy S. M. Hill and Harrington Wells

PART 3 DEVELOPMENT 157

13. Dog Training Laboratory: Applied Animal Behavior 159
Lynn L. Gillie and George H. Waring
14. Paternal Care and Its Effect on Maternal Behavior and Pup Survival and Development in Prairie Voles (*Microtus ochrogaster*) 167
Betty McGuire
15. The Effect of Prenatal Visual Stimulation on the Imprinting Responses of Domestic Chicks: An Examination of Sensitive Periods During Development 177
Wendy L. Hill
16. Development of Thermoregulation in Altricial Rodents 187
Gail R. Michener and T. Dic Charge
17. Aggregation and Kin Recognition in African Clawed Frogs (*Xenopus laevis*) 199
Kathryn L. Anderson and Bonnie J. Ploger

PART 4 ADAPTATION AND EVOLUTION 211

Section I Foraging 213

18. Diving Birds: A Field Study of Benthic and Piscivorous Foragers 215
Jennifer J. Templeton and D. James Mountjoy
19. Found A Peanut: Foraging Decisions by Squirrels 221
Sylvia L. Halkin
20. Economic Decisions and Foraging Trade-offs in Chickadees 231
Ronald L. Mumme
21. Seed Selection by Foraging Birds 239
Monica Raveret Richter, Judith A. Halstead, and Kierstin Savastano
22. Competitive Behavior of Birds at Feeders 247
Alison M. Mostrom

Section II Avoiding Predators 257

23. Vigilance and the Group-size Effect: Observing Behavior in Humans 259
Joanna E. Scheib, Lisa E. Cody, Nicola S. Clayton, and Robert D. Montgomerie
24. The Function of “Chat” Calls in Northern Mockingbirds (*Mimus polyglottos*):
Vocal Defense of Nestlings 279
Cheryl A. Logan
25. Diving and Skating in Whirligig Beetles: Alternative Antipredator
Responses 287
Alastair Inman and Anne Houtman
26. The Response of Tree Squirrels to Conspecific and Heterospecific
Alarm Calls 295
Anne Houtman

Section III Agonistic Behavior 301

27. Competition for Breeding Resources by Burying Beetles 303
Michelle Pellissier Scott
28. Learning to be Winners and Losers: Agonistic Behavior in Crayfish 309
Elizabeth M. Jakob and Chad D. Hoefler

Section IV Courtship and Parental Care 319

29. Costs and Benefits of Maternal Care in Earwigs 321
Ronald L. Mumme, James O. Palmer, and Susan M. Rankin
30. Vocal Behavior and Mating Tactics of the Spring Peeper (*Pseudacris crucifer*):
A Field Exercise in Animal Behavior 327
Don C. Forester
31. The Role of Multiple Male Characters in Mate Choice by Female Guppies
(*Poecilia reticulata*) 341
Dan J. Albrecht
32. Investigating Human Mate Choice Using the Want Ads 351
Mary Crowe

Section V Games 357

33. Demonstrating Strategies for Solving the Prisoner’s Dilemma 359
Kathleen N. Morgan
34. Using Empirical Games to Teach Animal Behavior 379
Philip K. Stoddard

Section VI Evolution 387

35. The Evolution of Behavior: A Phylogenetic Approach 389
Ken Yasukawa

Appendices

- A. Guidelines for the Treatment of Animals in Behavioural Research
and Teaching 399

*The Animal Behavior Society and the Association for the Study
of Animal Behaviour*

- B. Ethical Use of Human Subjects 411

American Psychological Association

- C. Introduction to Statistics 415

Bonnie J. Ploger and Ken Yasukawa

Glossary 447

Index 463