

PREFACE

About the book

This book is based on two courses that I designed and taught on joining the faculty of the School of Biological Sciences of the University of Manchester in 1997. One of these behavioral neurobiology courses was targeted at a beginner's level, the other at an advanced level. Over the five years that followed, they were taken by several hundred students coming from a wide range of degree programs. It was this positive interaction, as well as the students' request to make available a text covering these courses, that encouraged me to write this book. These students also provided me with invaluable feedback on how to stimulate interest in the subject, without compromising the quality of the science taught.

Like the Manchester courses, this book is designed primarily for undergraduate and graduate students, but postdoctoral scientists and instructors of such courses are also likely to benefit from it. I have assumed that the students have some basic knowledge in biology, physics, and mathematics. However, courses in neurobiology are not a prerequisite. Concepts and approaches from this discipline that are important

for understanding behavioral neurobiology are introduced in Chapters 2.

Any scientific discovery can be fully understood only within its historical context. I have therefore also included a chapter (Chapter 3) on the historical development of behavioral neurobiology, and added to several chapters a description of the work and life of those who have pioneered this development.

The approach used in the book has been to focus on a few selected systems that, in my opinion, best illuminate the key principles. These examples are then discussed in depth, while relating them to the general principles. Unavoidably, such an approach leads to the exclusion of a number of other excellent studies. I apologize to those whose work has been neglected.

I have also placed particular emphasis on presenting not just the findings of research, but also describing the experimental approaches employed to obtain these results, and discussing the limitations of the experimental design and the scientific methodology. I consider such a discussion to be of vital importance for the learning process of students and their ability to critically evaluate the literature.