Preface

This book grew out of lectures given in courses on biochemistry and biophysics at Harvard, at the University of Colorado in Boulder, and at Caltech. It is offered, in part, with the conviction that biologists and biochemists would enjoy their work more if they thought less in terms of thermodynamics and learned some of the rudiments of statistical physics. The intent is pedagogical, not seminal. Statistical phenomena of the sort treated here are met daily in the laboratory but are rarely appreciated as such.

Much of what I know about the physics of random walks has been learned through association with Edward M. Purcell. I have drawn on our conversations, correspondence, and joint publications. I am particularly grateful for his comments on the manuscript. I also wish to thank Steve Block, Rick Lapidus, Markus Meister, and Jeff Segall for help with the exposition and the physics and Connie Katz for masterful word processing. Work on the motile behavior of bacteria, described in Chapter 6, was supported by grants from the Research Corporation, the National Science Foundation, and the National Institutes of Health.

Without doubt, this book can be improved. If you have comments or suggestions, I would be pleased to have them.

Howard C. Berg
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