

PREFACE

This book is about evolutionary theory—Darwin's theory, as modified by his many intellectual descendants. It is primarily about evolution by natural selection, the process by which populations change through a dynamic of variation, inheritance, and reproduction. But natural selection is discussed in the context of a more general Darwinian view of life, and is seen through the lens of philosophy of science.

Believing that its topic is important to philosophers, biologists, and people outside both those categories, I have tried to write the book for all three kinds of reader. This has been done by organizing the book in several layers. The eight main chapters will, I hope, be accessible to people with very little background in philosophy or evolutionary biology. With the exception of some footnotes, they contain almost nothing technical. I have also tried to avoid jargon as much as possible (adding some extra explanations of terms that really matter). Within those eight chapters, the first five function as a unit. They develop and defend my view of natural selection. This view is, as my title suggests, organized around the idea of a "Darwinian population." A Darwinian population is an extraordinary arrangement of ordinary things. Its components are startlingly routine—births, matings, deaths, heredity—but its products can be very far from routine. I look at what the process of evolution by natural selection requires, and at what it can explain. I also try to describe how the world appears when we see Darwinian populations as one of its key elements.

That picture is summarized at the end of Chapter 5. The next three chapters look at more detailed topics and debates. These include the "gene's eye view" of evolution and the idea that cultural change is itself a Darwinian process.

The footnotes add a second layer to the book. They contain further connections to the literature in both philosophy and biology, sketches of models, clarifications and defenses, and comments about extra paths that can be followed. More jargon has been allowed in to keep them brief.

Thirdly there is an Appendix, which contains technical ideas relevant to the main chapters. So most of the Appendix supplements arguments given earlier. The exception is the last section, which is free-standing and presents a different way of representing a large range of Darwinian and non-Darwinian phenomena. The Appendix can be read in pieces, after relevant chapters, or as a unit.