

Brief Contents

PART I

INTRODUCTION **I**

CHAPTER 1 A Case for Evolutionary Thinking: Understanding HIV	3
CHAPTER 2 The Pattern of Evolution	37
CHAPTER 3 Darwinian Natural Selection	73
CHAPTER 4 Estimating Evolutionary Trees	111

PART II

MECHANISMS OF EVOLUTIONARY CHANGE **141**

CHAPTER 5 Mutation and Genetic Variation	143
CHAPTER 6 Mendelian Genetics in Populations I: Selection and Mutation as Mechanisms of Evolution	169
CHAPTER 7 Mendelian Genetics in Populations II: Migration, Genetic Drift, and Nonrandom Mating	223
CHAPTER 8 Evolution at Multiple Loci: Linkage and Sex	281
CHAPTER 9 Evolution at Multiple Loci: Quantitative Genetics	319

PART III

ADAPTATION **361**

CHAPTER 10 Studying Adaptation: Evolutionary Analysis of Form and Function	363
CHAPTER 11 Sexual Selection	401
CHAPTER 12 Kin Selection and Social Behavior	447
CHAPTER 13 Aging and Other Life History Characters	483
CHAPTER 14 Evolution and Human Health	529
CHAPTER 15 Phylogenomics and the Molecular Basis of Adaptation	575

PART IV

THE HISTORY OF LIFE **603**

CHAPTER 16 Mechanisms of Speciation	605
CHAPTER 17 The Origins of Life and Precambrian Evolution	639
CHAPTER 18 The Cambrian Explosion and Beyond	689
CHAPTER 19 Development and Evolution	725
CHAPTER 20 Human Evolution	753