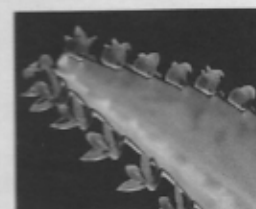
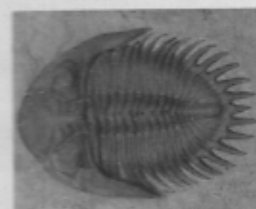
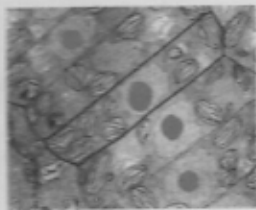


Brief Contents



- 1 Introduction: Evolution and the Foundations of Biology 1

UNIT 1 Chemistry and Cells

- 2 The Chemical Context of Life 19
- 3 Carbon and the Molecular Diversity of Life 40
- 4 A Tour of the Cell 66
- 5 Membrane Transport and Cell Signaling 94
- 6 An Introduction to Metabolism 116
- 7 Cellular Respiration and Fermentation 135
- 8 Photosynthesis 155
- 9 The Cell Cycle 174

UNIT 2 Genetics

- 10 Meiosis and Sexual Life Cycles 192
- 11 Mendel and the Gene Idea 206
- 12 The Chromosomal Basis of Inheritance 228
- 13 The Molecular Basis of Inheritance 245
- 14 Gene Expression: From Gene to Protein 268
- 15 Regulation of Gene Expression 293
- 16 Development, Stem Cells, and Cancer 311
- 17 Viruses 330
- 18 Genomes and Their Evolution 343

UNIT 3 Evolution

- 19 Descent with Modification 365
- 20 Phylogeny 381
- 21 The Evolution of Populations 399
- 22 The Origin of Species 418
- 23 Broad Patterns of Evolution 436

UNIT 4 The Evolutionary History of Life

- 24 Early Life and the Diversification of Prokaryotes 458
- 25 The Origin and Diversification of Eukaryotes 481
- 26 The Colonization of Land by Plants and Fungi 504
- 27 The Rise of Animal Diversity 528

UNIT 5 Plant Form and Function

- 28 Plant Structure and Growth 553
- 29 Resource Acquisition, Nutrition, and Transport in Vascular Plants 571
- 30 Reproduction and Domestication of Flowering Plants 597
- 31 Plant Responses to Internal and External Signals 617

UNIT 6 Animal Form and Function

- 32 Homeostasis and Endocrine Signaling 641
- 33 Animal Nutrition 665
- 34 Circulation and Gas Exchange 684
- 35 The Immune System 711
- 36 Reproduction and Development 729
- 37 Neurons, Synapses, and Signaling 751
- 38 Nervous and Sensory Systems 768
- 39 Motor Mechanisms and Behavior 792

UNIT 7 Ecology

- 40 Population Ecology and the Distribution of Organisms 818
- 41 Species Interactions 845
- 42 Ecosystems and Energy 864
- 43 Global Ecology and Conservation Biology 882