

Fourth Edition

THE SCIENCE OF GENETICS

An Introduction to Heredity

**GEORGE
W.BURNS**

CONTENTS

CHAPTER

- 1 Introduction 1
- 2 Monohybrid Inheritance 15
- 3 Cytological Bases of Inheritance 37
- 4 Dihybrid Inheritance 91
- 5 Probability and Goodness of Fit 109
- 6 Linkage, Crossing-over, and Genetic Mapping of Chromosomes 125
- 7 Multiple Alleles and Blood Group Inheritance 153
- 8 Pseudoalleles and the Rh Blood Factor 173
- 9 Polygenic Inheritance 185
- 10 Statistical Concepts and Tools 195
- 11 Sex Determination 209
- 12 Inheritance Related to Sex 247
- 13 Chromosomal Aberrations 263
- 14 Population Genetics 317
- 15 The Identification of the Genetic Material 343
- 16 Protein Synthesis 381
- 17 The Genetic Code 413
- 18 Molecular Structure of the Gene 433
- 19 Regulation of Gene Action 463
- 20 Cytoplasmic Genetic Systems 479
- 21 The New Genetics and the Future 499

APPENDIX

- A Answers to Problems 525
- B Selected Life Cycles 547
- C The Biologically Important Amino Acids 559
- D Useful Formulas, Ratios, and Statistics 565
- E Useful Metric Values 569
- F Journals and Reviews 571

Glossary 575

Index 597