

Modern Biology Series Consulting Editors

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Published Titles

<i>Burnett-Eisner</i>	Animal Adaptation
<i>Delevoryas</i>	Plant Diversification
<i>Ebert</i>	Interacting Systems in Development
<i>Loewy-Siekevitz</i>	Cell Structure and Function
<i>Odum</i>	Ecology
<i>Ray</i>	The Living Plant
<i>Van der Kloot</i>	Behavior

Forthcoming Titles

<i>Fingerman</i>	Animal Diversity
<i>Gillespie</i>	Cell Function
<i>Griffin-Novick</i>	Animal Structure and Function, second edition
<i>Novikoff-Holtzman</i>	The Cell and Its Organelles
<i>Savage</i>	Evolution, second edition
<i>Sistrom</i>	Microbial Life, second edition

Chapter 1

The Structure and Duplication of the Genetic Material

A chemical analysis of an organism will reveal a variety of facts about its composition. Of the elements present, thirty-five are relatively common, and among the most common of these are carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur. Certain of these elements are found in different classes of organic molecules such as fats, carbohydrates, lipids, vitamins, amino acids, purines, and pyrimidines. Many of these molecules are, in turn, formed into larger units called *macromolecules*. Proteins, for example, are long chains of amino acids held together by peptide bonds. They serve a number of important biological functions. For instance, proteins form the structure of skin, hair, and cartilage. In addition, a large number of proteins function as en-

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