This textbook is intended for a one-semester or a two-quarter course in elementary plant physiology, although with some omissions it could be used for a one-quarter course. Following an introductory chapter on “Plants and Plant Physiology,” the book is divided into three parts, namely: I. Nutrition, II. Metabolism, and III. Growth and Development. Under Part I, Nutrition, the authors take up in sequence: chapters 2, Photosynthesis; 3, Mineral Nutrition; 4, Permeability and the Absorption of Nutrients; 5, Water Economy; 6, The Soil as a Medium for Plant Growth; and 7, Translocation: the Redistribution of Nutrients. Part II consists of the following chapters: 8, Enzymes: the Machinery of Metabolism; 9, Carbohydrates: Their Nature, Functions, and Interrelations; 10, Respiration and the Mechanism of Biological Oxidations; 11, Nitrogen: Its Metabolism and Economy in Plant and Nature; 12, Lipids: Their Role in Structure and Function; 13, Highways and Byways in Plant Metabolism. Part III is made up of chapters: 14, The Dynamics of Growth and Development; 15, The Integration of Growth; 16, Auxin and the Control of Growth; 17, The Physiology of Reproduction; 18, Dormancy and Arrested Development; 19, The Problem of Differentiation; and 20, Plant and Environment. Each chapter concludes with a brief summary, questions for discussion, and a selected list of references.

The use of the title, “Nutrition” for Part I and the separation of nutrition from “Metabolism,” Part II, is not understandable. Certainly nutrition is definitely a part of metabolism and should be so emphasized. On the other hand, the absorption of inorganic substances and water, their transfer through the plant, the loss of water vapor from the plant (transpiration), and the soil as a medium of growth are hardly to be classified as “nutrition”, yet it is under this designation that they are treated in the text. One might also question the advisability of placing so complex a subject as photosynthesis at the beginning of a textbook. This is an illogical practice which has been handed down to us from the earlier textbooks of a previous generation. The sequence of topics in the book in general is unusual, to say the least. Thus mineral nutrition precedes a discussion of permeability and the absorption of water and other substances, the soil is first considered in chapter 6, after water and minerals, and even transpiration and photosynthesis, have been dealt with. The synthesis of carbohydrates is taken up at the beginning of the book, yet the structure, chemistry, and general nature of carbohydrates is not discussed until chapter 9 is reached. Consequently, different sequences of topics might be used, unless such a thing as a logical sequence. While the