PREFACE

In recent years, molecular biology has infiltrated into all branches of botany. This is particularly true of plant physiology. This book attempts to provide an introduction to the metabolic and developmental physiology of higher plants from a molecular biological point of view. Starting from the heterocatalytic function of DNA the first ten chapters deal with metabolism; development is presented in the last nine, starting from the autocatalytic functions of DNA and including certain topics oriented more toward metabolic physiology. Both fields of plant physiology are so closely linked that an integrated presentation of this kind seemed not only possible but desirable.

In contrast to other accounts, an attempt has been made to give *equal weight* to metabolism and development. In particular, the so-called "secondary" plant materials, which are of considerable interest to the pharmacist, the nutrition technologist, the plant breeder, and the agriculturalist, as well as to the biologist, are treated sufficiently. It is obvious that the wealth of material made an illustrative style of presentation necessary.

The book is intended for beginners, and so it has had, in part, to be simplified. Even so it has not been possible to write it without mentioning hypotheses that anticipate much more research. The beginner ought also to learn how working hypotheses are first postulated on the basis of certain facts and then must either be proved or refuted.

In this connection it may be asked how much the "beginner" is expected to know. He should be provided with a good textbook of general botany as well as an introduction to biochemistry. The latter is all the more necessary because of the material that is treated in every textbook of biochemistry, such as biological oxidation, only the basic concepts are presented here. In compensation for this the metabolic processes that are specific for higher plants have been given more than usual emphasis.

Apart from brief references, an outline of methodology had to be omitted in the interests of the size and price of this book. Information of this nature can, however, be found in any biochemically oriented textbook and there are also abridged introductory texts, e.g. E. S. Lenhoff's *Tools of Biology*.

The author hopes that his book will be of use not only to students of biology and related disciplines at the beginning of their studies but also to teachers at the high school and grammar school level. They may wish to keep themselves informed of recent developments in the field of plant physiology and also to take this or that fact into account in teaching.

The author wishes to thank his publisher, Herrn Roland Ulmer, and his staff for their kind cooperation and Herrn Ekkehart Volk for his care in preparing the figures. Thanks are also due to his wife and daughter who showed full understanding of the many hours of "overtime" the book entailed.

It is a real pleasure to thank Dr. Derek Jarvis for the English translation and for his efforts in reading the galleys and finishing the index. Should the book be well accepted in the English speaking countries, it will be due to his interest and cooperation.

The German editions of this book received a warm reception from the reading public. It is the author's hope that the same may prove true of the English edition.

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