
This book was written to serve the undergraduate student in taxonomy. It also should be useful to undergraduates in agronomy, range management, forestry, horticulture, wildlife management, and conservation.

This text brings a new and refreshing approach to the oldest branch of botany, plant taxonomy, not afforded by either the abbreviated texts or advanced reference books which have heretofore been available. Only the authors themselves together with many beautifully illustrated descriptions of flowering plants of North American flora, are included. There are many literature citations for those interested in pursuing the subject more fully.

The book is divided into three major parts. Part I deals with the historical and biological aspects. It includes terminology and methodology and is extremely well illustrated. Part II deals with orders and families of monocotyledons. Part III deals with orders and families of dicotyledons.

The three divisions of the text should make it easy to use in either a one semester or a two semester taxonomy course. There are over 500 line drawings and black and white pictures describing the morphology and growth habit of the various species.

This text should be very useful to the student and may also serve as a reference for anyone interested in the identification and growth habit of North American flora.—S. C. WIGGANS, Department of Horticulture, Oklahoma State University, Stillwater, Oklahoma.


This ambitious undertaking is aimed at a compilation of the plant pathological literature in an entirely new manner and on a scale that is without precedent. The first volume of the series treats the diseased plant. Volume 2 will be concerned with the pathogen, and Volume 3 with the diseased population of plants.

The first of the three, now available, begins with four chapters with definitions and concepts, the scope of plant pathology, the history of the field, and the problem of evaluating losses attributable to plant diseases. There follow six chapters dealing with the major categories of the effects of diseases on plants: the disintegration of tissue, the effect on growth, on reproduction, on the nutrition of the host, the effect on the water economy of the plant, and finally the alteration in the respiratory pattern of affected plants. Five chapters deal with the means of defense of the plant against diseases complete the first volume. These are concerned with the histology of defense, the physiology and biochemistry of defense, with the concept of hypersensitivity, of predisposition, and finally of therapy.

The international character of the authorship of the treatise is apparent when it is noted that two papers originated in Japan, two in Italy, one in the Netherlands, one in India, one in Australia and eight in the United States.

The increasing extent to which the understanding of plant pathological phenomena is based on physiological and biochemical concepts is quite evident in the chapters dealing with the effects of disease on basic plant processes. Where necessary to develop their subjects, the contributors have provided a review of basic background information. While this has increased somewhat the size of the book, it has brought together in one place a complete discussion of these topics which the advanced student or the research person will find invaluable. It is a coherent treatise on plant pathology and is extremely well illustrated. It includes abundant literature citations for those interested in pursuing the subject more fully.

That many diverse biological phenomena are regulated by photochemical reactions may not be fully appreciated by many plant scientists even though we accept the general assumption that light is elementary to plant growth. This book conveniently assembles into a neat text our current knowledge of these photochemical processes. It will therefore evoke interest as a possible text or reference book to be considered alongside other books in the field of photochemistry, which, it will be admitted, are still few in number but equally comprehensive.

The subject matter is well organized. The chapters dealing with the main functions of light in plants: photosynthesis, phototropism, phototaxis, phototachy, photoperiodism, and phyletism are devoted to a discussion on the effects of light on basic plant processes. Where necessary to develop the main functions of light in plants: photosynthesis, phototropism, phototaxis, phototachy, and photoperiodism. The discussion on phototrophism, wisely, deals only with fundamental principles inasmuch as a number of comprehensive volumes have recently been published on this subject. Additional chapters deal with the measurement of light, light quality, and the application of our knowledge concerning light to the culture of horticultural plants. Photographs and illustrations are used freely, greatly enhancing the presentation of the subject matter. Emphasis naturally is placed on the work of European scientists particularly at Eindhoven. The book is very readable although it does have a few difficult passages arising presumably from inadequate English translation.

Since the subject matter covers areas of current controversy and speculation, the authors' interpretations may be at variance with those of other workers. Specifically, the interpretation of the reversible oxidation and reduction of the photomorphogenic pigment must be referred to as a red to red reaction and that the red form can also absorb blue radiation appears not to be in agreement with the most recently reported work.

A more extensive bibliography would be useful, particularly to the unspecialized. Research is cited by author's name in the text but no further mention is made as to where or when such work was published.

Crop scientists would benefit by reading this book if for no other reason than to realize that work with agronomic plants occupies, rightfully, a rather small part.—J. J. BULOW, Purdue University.


Rice is the traditional staple food crop of much of Asia, where about 90 percent of the world's crop is grown. Therefore, rice is of vital importance to the economy of Asiatic countries. Practically the entire rice crop of Asia is produced by small cultivators under extremely adverse climatic and economic conditions. They seldom control the irrigation or drainage facilities.

In the third edition of his book, Grist gives a vivid picture of the plight of the Asian rice cultivator and the ingenious production and processing methods that have evolved through centuries of rice culture.

The third edition includes new chapters on genetics, selection and breeding, and weeds. A discussion on fish production in rice fields is appended. The 20 chapters are presented in three parts. The first part concerns the origin and history of rice and its cultivation, irrigation, varieties, genetics and breeding. The second part covers production methods and cultural practices, fertilizer requirements, weed problems, pests and diseases. The third part discusses yield and irrigation and drainage facilities. The book lists 569 literature citations covering various aspects of rice production and includes the author's own experiences with the crop. The excellent illustrations consist of 68 well chosen halftones showing various phases of rice culture and 38 line drawings depicting disease symptoms, insects, harvesting, and milling devices and other subjects.

The chapter dealing with selection and breeding is rather brief, and some of the procedures recommended for seed multiplication may be somewhat outdated. The discussion on mechanized production methods in the United States is out of date in some respects.—H. M. BEACHELL, Crop Research Division, ARS, USDA, Beaumont, Texas.