
BOOK REVIEWS

Advances in Vegetable diseases, by S. Gangopadhyay (Published by S. K. Dutta, Associated Publishing Co., 8798, 7-Shidipura, Karolbagh, New Delhi 110005, 1984, PPXX = 643, Price Rs.290)

This book deals straight away on vegetable diseases. The book is divided into 29 chapters to accommodate fungal diseases (17 chapters), bacterial diseases (3 chapters) and virus diseases (6 chapters). In addition one chapter each is maintained for Mycotoxins of vegetables, Mushroom diseases and New strategies on vegetable diseases for future programme of work. The subject matter in general is structured mostly on the basis of the manifestation of disease symptoms on the host plant rather than other criteria. Even some diseases of minor consequence are described under separate chapters.

The author has taken considerable pains to organise the vast amount of information accumulated on the pathological status of vegetable diseases of this country as well as other parts of the globe. The treatment of individual subjects though upto date is often lengthy involving various aspects like Taxonomy, Cultural characters, Host parasite interaction, Varietal evaluation, Epidemiology, Control approaches etc. Most of these aspects are supported by numerous tables in the book irrespective of the relevance.

Editing has not been done cautiously. Many printing and technical errors are obvious in the book. For instance, in the beginning of the book serial numbers assigned to the chapters under contents are in Roman (I, II, III etc.) whereas respective chapters in the text are numbered in Arabic (1, 2, 3 etc.). Some of the claims of the author on disease control are not supported by citations (Page 530, 532, 534, 535).

Chapter II (2) deals with 'damping off' disease of vegetables. The term 'damping off' is generally used to describe seedling diseases. Some vegetable fruit diseases are also included in this chapter!

Both 'rust' and 'white rust' are discussed in Chapter XIV (14) although the nomenclature of these groups are entirely different.

Many important fungal/bacterial diseases of vegetables have not been considered in the book. Some of these include, Rust of pea and cowpea, Powdery

mildew of tomato, Leaf spot (*Cercospora*) of brinjal, *Xanthomonas* on cucurbits etc.

The chapters on virus diseases are very precise.

The book contains a few misleading statements. The author states (Page 531) that the roots of crops growing in the soil are always free from the attack of fungi and bacteria. There are many well known root diseases of vegetable crops caused by fungi like *Pythium*, *Phytophthora*, *Fusarium* etc.

In the chapter XXIX (29) on new strategies many valuable suggestions are offered for initiating new programmes on some major disease problems of vegetable crops.

On the whole, the book is definitely a good reference book and can fill the void for a comprehensive book of information on vegetable diseases. Further, the usefulness of the book is enhanced by the large number of references cited at the end.

There are a few illustrations and these could have been better. The cost of the book appears to be high.

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Hormone Regulation of Plant Growth and Development, Vol. 2, by S. S. Purohit, Agro Botanical Publishers, India, 1985, p. 234, Rs. 175.

The dynamics of hormones in plant growth and development are being increasingly revealed in recent years. The first volume on this subject edited by the same author brought together several papers on the subject. This Volume is a compilation of twelve papers by leading Plant Physiologists, working in different corners of the world. The topics cover the role of hormones in protein synthesis, plant elongation, sex expression, root development, leaf growth and senescence, morphogenesis, regulation, etc. One paper deals with hormonal regulation of development in Mosses and one on plant growth regulating properties of some sterol-inhibiting fungicides.

The paper on hormonal control of protein synthesis in plants by A. M. Szweykowska is very comprehensive and well illustrated. The article on auxin-enhanced elongation by L. N. Vanderhoef presents in brief the hypotheses concerning the biological process. The article on hormonal regulation of abnormal growth in plants by P. Tandon is too brief to do full justice to the topic. The article on hormonal regulation in mosses by M. Bopp and S. C. Bhatla is a thorough review of the literature in the subject. Likewise, V. N. Khryanin's article on sex-expression in plants, and Davies *et al*'s on Water-relations and plant growth regulators give comprehensive pictures on the respective subject-areas of coverage. The remaining articles, viz., on phenolics by V. I. Kefeli, sterol-inhibiting fungicides by R. A. Fletcher, root development under water-stress by V. Rajagopal, gravity perception by P. B. Kaufman *et al*, leaf growth senescence by H. Goring, and chloroindole auxins by K. C. Engvild deal with narrow areas of specialization. Each of the articles, on the whole, is of very high quality in perception, coverage and presentation. However, the topics are disjuncted and are not closely knit. The publication will be a rich addition to post-graduate libraries. There are innumerable printing mistakes in the book which could have been easily avoided.

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Weed Management of Horticultural Crops by K. G. Shanmugavelu, R. Aravindan and A. Rajagopal (Published by Agro Botanical Publishers (India), Old Crinnani, Bikaner 334001) pp. 114, Price India Rs. 125 – Elsewhere US\$20-00.

The book is divided into seven chapters dealing with losses caused by weeds, weed management methods practised around the world, herbicidal weed control in fruits, vegetables, plantation crops, ornamental crops and medicinal and aromatic plants. Chapter 2 also gives a short description of classification of herbicides and their mode of action.

Horticultural crops are getting their due importance only recently. Fruits and Vegetables are the main sources of vitamins and minerals and any information on the latest technology applied for their improvement is welcome. The present book deals with this aspect. The authors have presented tabulated data of different

workers in various horticultural crops viz, fruits, vegetables, plantation crops, ornamentals and medicinal and aromatic plants to show the efficacy of herbicidal weed control over conventional handweeding methods for controlling weeds and also in increasing their yields. Some of the data also indicate that herbicidal usage is more economical than handweeding. Similarly for plantation crops, ornamental crops and medicinal and aromatic plants.

This book also brings out the common and chemical names of 63 herbicides besides giving a list of weed flora associated with various horticultural crops. These two useful informations would come in handy to weed scientists who want to control weeds in horticultural crops by chemical means.

Lastly, much more work on horticultural crops is available in India which the authors have not been able to present in this book. But for this lacunae, I feel that this book has a good collection of useful data by the authors and would serve as a useful guide to weed scientists not only in India but also in other countries working with horticultural crops. I congratulate the authors on bringing out this useful book.

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D. LEELA

Annual Reviews of Biochemistry Volume 53, 1984, Editors C. C. Richardson, P. D. Boyer and A. Meister, Annual Reviews Inc., Palo Alto, 4139, Elcamino way, California 94306, USA, pp. 1335. Price: USA: \$29-00, Elsewhere \$32-00.

The 53 volume in this series carries 22 articles and marks the beginning of the editorship of C. C. Richardson. In its 990 pages, indexes occupy 120 pages. As a continuing source of information on developments in biochemistry this series has been of excellent service.

The customary first article of autobiographical nature is from Fritz Lipmann this time. It is interesting to know how Lipmann continued his researches despite moving between Europe and America frequently during the troubled periods of early part of this century. It is instructive to see how his great discoveries, including coenzyme A for which he received the Nobel prize, are described casually and in simple terms.

This volume has a bias to polypeptides and a number of articles are devoted to their studies, *e.g.* myosin, fibrinogen and fibrin, structure of proteins, polyprotein gene expression in generation of neuropeptides, and collagen and elastin cross linking. Structure, synthesis and regulation of ribosomes and components and protein interactions with nucleic acids continue to be the active fields and are given in two articles each. Gene amplification, mitochondrial DNA transcription and left-handed Z-DNA which have been vibrant areas of research in the last 5 years have been covered. The number of amino acid decarboxylases which contain pyruvate instead of pyridoxal phosphate is increasing and therefore a chapter on "Pyruvoyl enzymes" is appropriate. Enzyme inactivation by suicide substrates which are mechanism-based inhibitors is another interesting article on enzymology. A "sacrificial enzyme" which apparently kills itself in every catalytic cycle and is therefore consumed stoichiometrically, had been found in the repair of mutagenic O⁶-methyl G-residues in DNA in which the enzyme protein acts as one of the substrates in accepting a methyl group. The foundations of

catalytic nature of enzymes will thus be affected unless this reaction is an artifact. Cell-surface glycosaminoglycans, primary cell walls of plants, three-dimensional structure of membrane and surface proteins are the articles covered on cell membranes and surfaces. The influence of chemistry and biology on biochemistry can be seen in two articles on synthetic oligonucleotides and molecular structure of centromeres and telomeres, respectively. The role of molybdenum in nitrogenase, polypeptide growth factors and polyamines are the other subjects included which gives the wide canvas that these reviews cover.

Each review has been written by specialists, illustrated to a limited extent, and carries a substantial number of references covering mostly the last 5 years. As is the tradition these articles cover the recent developments and contain useful material both for teaching and for research. All biochemistry institutions must possess this series as first priority.

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T.RAMASARMA

ANNOUNCEMENT

SCIENTIFIC ADVISER TO THE PRIME MINISTER

Prof. M. G. K. Menon has been appointed Scientific Adviser to the Prime Minister. This is the first time that the Prime Minister will have an aide to

advise him on scientific and technological matters.

Prof. Menon is a member of the Planning Commission.