

REVIEWS

Diseases of Fruit Crops. By V. N. Pathak. (Oxford and IBH Publishing Co., New Delhi), 1980. Pp. 309. Price : Rs. 15.25.

The book entitled "Diseases of Fruit Crops" by V. N. Pathak is the maiden attempt at bringing together the scattered informations on the diseases of Fruit Crops in India.

The introductory chapter highlights the importance of various diseases and area under fruit crops and its distribution in India. In attempting to project the essential informations on each crop, the author has dealt with all the important facets of diseases caused by fungi, bacteria, viruses and nematodes. The major portion of the book (248 pages) has been devoted to a detailed discussion on the nature and control aspects of diseases of important horticultural crops like mango, banana, citrus, grapes, guava, papaya, pome fruits and stone fruits. An additional 22 other fruit crops have also been covered in a space of 32 pages wherein a brief and sketchy information of the disease aspects have been provided. Information on crops like coconut, cashew and walnut have also been included in this book.

Among some of the desirable informations that are not covered in the text are sour rot of orange, *Asperisporium* leaf spot and powdery mildew of papaya due to *Leveillula taurica*, damping off of grape seedlings due to *Pythium butleri*, *Phoma* blight of guava and mango. It is generally understood that leaf fall and fruit rot of citrus in India is caused by *Phytophthora nicotianae* but not due to *P. palmivora* as erroneously reported in this book. The role of certification schemes against virus and virus-like diseases of the fruit crops should have also found a place in this publication.

This useful book has been priced low and will be well-received by scientists, teachers, farmers and others, who are connected with fruit culture.

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Membrane Bioenergetics. Ed. C.P.-Lee, G. Schatz and L. Ernster. (Addison-Wesley Publ. Co., Reading, Mass. 01867 (U.S.A.), 1980. Pp. xxxiv + 609. Price : \$ 25.50.

This book is based on a workshop held at Cranbrook Schools, Bloomfield Hills, Michigan, U.S.A., in honour of the 65th birthday of Efraim Racker, a leader in the field of Membrane Bioenergetics. From all over the world, about 300 active workers in bioenergetics assembled at the meeting, held a few days

before the 11th International Congress of Biochemistry in Toronto, Canada, in July 1979. The proceedings of the meeting of the friends and admirers of Racker reflected many cordial reminiscences of association with this "giant" worker in the field who showed leadership by opening new avenues of research. The volume consists of 41 articles (8-20 pages each) which are summaries of the current work. All the leading names, with a few exceptions, are included: Margoliash, Beinert, Stoebenius, Mitchell, Skulachev, Lehninger, Slater, Boyer, Packer and Ernster. The articles are divided into three sections: Components, Biogenesis, Reconstitution and Mechanisms. After reading the articles, one gets the feeling that a lot of effort is going into "beating up the husk" in looking for more detail of the known facts—an overkill operation of the fad theories. While there is a mass of data, the progress seems trivial. The phenomenon of energy transfer nature devised in the membranes is not understood. The domination of thinking on the mechanism of oxidative phosphorylation by proton pumps seems unabated. Any amount of ingenious techniques and fascinating experiments cannot substitute for greater understanding of energy transfer in proteins and particularly enzymology of ATPase.

This mood is reflected in the brilliant closing lecture of Racker who shared his experiences in the discoveries as well as the exasperations of the failures. The subtle humour interspersing is worth noting. How, in retrospect, Racker missed some important discoveries and how he and his work influenced others making discoveries, are interesting to read.

The book is fully technical but the articles add in the beginning, or in the end, some personal remarks relating to Racker, thus making them different from other articles in Scientific Journals. For a person in the field of bioenergetics, this book will give a valuable reading and cannot be missed.

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Chemtech-IV, Fourth Volume of Manual of Chemical Technology Synthetic Organic Products, First Edition. (Chemical Engineering Education Development Centre, Indian Institute of Technology, Madras 600 036), 1979. Pp. xiii + 872. Price : Rs. 200.

Indian chemical industry has enjoyed a fast rate of growth during the last three decades. More than a

thousand modern chemical industries established recently in the country produce a wide variety of chemicals of both organic and inorganic in nature and meet the needs of modern society which includes food, clothing, health and housing materials for the population. Thus chemical industry has occupied a very important position in the national economy and contributes nearly 10% to the G.N.P. It must be pointed out, however, that almost all these major chemical industries have been established with the "Technical knowhow" from abroad and often in collaboration with the foreign industrial houses. It is necessary for the country not only to absorb this imported technology but also to march on innovative paths. It, therefore, becomes imperative for those that are concerned with the development of indigenous knowhow and also the chemical and chemical engineering education to get correct and real picture of the national scene through well documented, authentic sources of information.

Chemical Engineering Education Development Centre of I.I.T., Madras, has undertaken this task of furnishing such most needed information through their series of publications beginning from 1975. The volume currently under review is the fourth one in this series and deals with synthetic organic products which are covered under eleven major headings in about 840 pages. The topics include (1) Petroleum, (98p), (2) Petrochemicals (176p), (3) Byproducts of coal carbonisation (72p), (4) Plastics (79p), (5) Synthetic dyestuffs (72p), (6A) Drugs and pharmaceuticals (63p), (6B) Phytochemicals for drug industry (29p), (7) Natural and synthetic rubbers (66p), (8) Man-made fibres: Cellulosic and synthetic (91p), (9) pesticides (43p), (10) Explosives (50p) and (11) Rocket propellants and other chemicals from space technology (53p).

Each topic is dealt by an expert (experts) in the field who is very much actively involved in the development and (or) production of such chemicals and working with industry or in an industrial laboratory. Every section opens with an introduction to the topic giving a brief historical account of the development of the material in the world at large and India in particular. This is followed by the chemistry and technology of producing this material as well as the type of machines and equipment needed for industrial production. The specification and testing of the product are also included. The current status of the particular industry in India in terms of raw materials, processes adopted and economic aspects and the future goal set are briefly touched upon towards the concluding part of

the chapter. References to a few original and review articles and books are included at the end along with Bibliography. Appendices furnish some relevant data and the Indian Standards for evaluation of the materials and include abbreviations used, glossary of the terms, and trade names of the chemicals. Each chapter is also illustrated with good figures and diagrams and a few photographs of the manufacturing units. SI units have been adopted in compliance with the standards of Weights and Measurement Act 1976 of India.

The Indian production figures of 1978-79 for some petroleum and synthetic organic products are given under "Addendum". It would have been desirable if the corresponding figures for the imported products were also given for purposes of comparison.

Thus, the volume is a veritable mine house of information on synthetic organic products manufactured in India. The Editor and his associates at the Centre have kept in debt the entire teaching community and the industry by making available to them readily valuable informative volumes. It is no doubt a Herculean task to compile such widely scattered technical information and organise the available material with a clear layout. They are to be congratulated for their efforts, services and success.

Such a stupendous task does pose immense difficulties which the Editors have successfully attempted to overcome. The printing errors to the extent noted by them are included in the corrigenda (8p). Some of the important topics get hardly a mention. The item "Silicones" is disposed off in a few lines under 4.6.2 and 7.33. Organic semiconductors and liquid crystals which are gaining greater importance are not included. It is expected that in the next edition such topics find appropriate treatment.

In the opinion of the reviewer, this volume will be a valuable addition to any library in colleges, technical institutions, industrial laboratories and will be useful to chemists, chemical engineers, economists and planners.

It is observed by the then member of the Planning Commission in his foreword that "The relevance of this volume to the challenges and opportunities that lie ahead of us today is thus indeed very great".

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