

BOOK REVIEWS

Recent Researches in Plant Science. Editor: S. S. Bir, Kalyani Publishers, New Delhi Pages 730, 1980, Rs. 250.

This book is in the form of the Proceedings of Papers presented at a symposium on "Recent Researches in Plant Sciences" held at Punjabi University, Patiala in 1977 and carefully edited by Prof. S. S. Bir who was also the Convener of the Symposium. The researches currently done in botany in various institutions, mostly of North India are presented in 103 papers grouped into the sections (1) Form and structure of plants, (2) Cytogenetics and improvements of plants, (3) Growth and functions of plants, (4) Plant diseases and (5) Taxonomy and systematics. Included are also two papers of Dr. A. C. Joshi Memorial Lectures and four papers of Plenary Lectures of the Symposium. Thus the papers are of wider interest to research workers, students and teachers at postgraduate level.

The plenary and memorial lectures are by eminent botanists of the country on special topics such as Ornamentals and Horticulture in India, Complexity in structure and behaviour of eukaryotic chromosomes, Metabolic changes during pollen tube germination and pollen tube growth, Adventitious root formation in stem cuttings in relation to hormones and nutrition, Classification of green algae based on form, function and reproduction and Plant taxonomy.

The other contributions include various aspects like form, structure, development, evolutionary and taxonomic considerations of some algal members, fungi, pteridophytes and flowering plants. Papers on cytogenetics deal not only with respect to chromosome numbers but also on hybridization and mutagenesis. The ferns are well covered in this respect. There are also papers dealing with anatomy and embryology, but these are few. In a volume of this sort, some papers are bound to be very ordinary. They are included perhaps because they were presented at the symposium.

The subject index at the end of the book is well prepared and quite exhaustive. This was necessary and well done. The get up of the book is good although better quality paper could have been used. The book is of considerable value to professional and amateur researchers, to students and teachers alike.

Modern Principles of Organic Chemistry, Edited by M. K. Jain, Vishal Publications, Jullundur and Delhi (1981) Eleventh Edition, pages 1132 + 62 Price Rs.42.50.

A very voluminous book for the degree students indeed! The author in his introduction lists twenty-six novel items, which are special features of the present edition. The first question that comes to ones mind is, "Is all this material, closely packed in almost 1200 pages needed for the degree students?" Could they select the essentials, absorb and digest them?

The treatment of the subject is essentially classical and descriptive, the massive material having been divided according to functional group properties and reactions. Inclusion of modern concepts, has not led to any simplification of the treatment, but only accumulation of additional information, side by side with the presentation of descriptive material in tedious detail.

The book as a whole has not been prepared with care. It is a puzzle why the eleventh edition is submitted for a review and why such an edition could contain so many errors of fact, citation, logic, very much of perspective, and lastly of printing and trivial errors. The following are illustrative.

Page 5, Last line:

"An organic chemist today not only knows.... a new organic compound".

What is the basis of this belief?

One wishes this was true.

Page 15, line 7:

"....is finally established by synthesising the compound".

This is no longer the situation in the present context. Synthesis is carried out for different reasons.

Page 17, line 5:

"Knowing the structure of an organic compound he can almost completely predict the physical and chemical properties.—"

Is this view supported by facts?

Page 18, line 8:

"Thus carbon is in its excited state at the time of bond formation...."

There is no evidence in support of this statement. In fact carbon is better off in terms of energy by promotion of its electron, because this energy is overcompensated by the evolution of energy as a result of the formation of four bonds instead of two.

Page 229:

Part of the page is upside down.

Page 232:

The mechanism of hydroboration is incorrect.

Page 241:

The mechanism of NBS reaction is not correct.

Page 287:

The reaction of diazomethane with alkene is factually incorrect. Ordinarily diazoalkanes do not react with double bonds, unless they have some electron withdrawing substituents, or when carbenes are generated from diazoalkanes *in situ*.

Page 350:

The author makes the error of confusing the order of a reaction with molecularity. AS_N2 reaction could be kinetically I order.

This mistake is repeated in page 356.

Page 315.

Cyclopentadiene and cyclopropenyl anion have wrong structures.

Page 335:

"It is observed..." The citation made is incorrect. The deuterium derivative used in the classic experiment by Melander is C_6D_6 and not C_6H_5D , which would give no information. For even if proton or deuterium

removal was slow, C_6H_5D would react at a rate almost as fast as C_6H_6 .

Page 368:

Table facing page 368 is pasted upside down.

Page 595:

Under nucleophilic substitution the author describes the mechanism of a hypothetical reaction.

To sum up, a forbiddingly large amount of material is presented in this book. Discussion of mechanism in a large number of cases is incorrect or unreliable. A very thorough revision to prune the unnecessary material and make the remaining portion accurate and interesting, is necessary before a reliable text book could be made out of the arduous efforts of the author. To its votaries organic chemistry has been an absorbing and aesthetically satisfying discipline. One looks in vain for portrayal of this essential feature.

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