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## BOOK REVIEWS

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**The Annual Review of Physical Chemistry** (published by Annual Reviews Inc. 4139, El Camino Way, Palo Alto, California 94306, USA), Vol. 34, 1983 p. 669, Price USA \$28.00, Elsewhere \$37.00.

The volume under review contains 23 articles of topical interest on various topics in Physical Chemistry, Theoretical Chemistry, Photo Chemistry, Spectroscopy, Solid state Chemistry, Non homogeneous Kinetics, Chemical lasers etc by Chemists of International reputation. There is an interesting article titled, 'Dedication: Henry Eyring, 1901-1982' by Joseph O. Hirschfelder followed by 'My adventures in Theoretical Chemistry' by the same author. These two articles are of absorbing interest because they portray to us how Henry Eyring a non traditional Chemist turned into a Physical Chemist to make outstanding contributions with regard to transitional state theory in Chemical Kinetics. Similarly the contributions of Joseph O. Hirschfelder have been described in great detail in theoretical chemistry relating to calculations of potential energy surfaces and also the theory of absolute reaction rates. The other articles are the following; 'The spectroscopy of Formaldehyde and Thioformaldehyde' by D. J. Clouthier and D. A. Ramsay, 'Quasilinear and Quasipolar molecules' by P. R. Bunker, 'Laser Microchemistry and its applications to Electron-Device Fabrication' by R. M. Osgood, Jr., 'Nonequilibrium Molecular Dynamics' by William G. Hoover, 'Dynamics of Electronically Excited States' by R. E. Smalley, 'Neutron Scattering from Ionic Solutions' by J. E. Enderby, 'Gas Phase Acid-Base Chemistry' by Christopher R. Moylan and John I. Brauman, 'Order-Disorder Phase Transitions in Chemisorbed Overlayers' by W. Henry Weinberg, 'High Resolution Vibration-Rotation Spectroscopy' by Alan G. Robiette and J. Lindsay Duncan, 'Pulsed-Nozzle, Fourier-Transform Microwave Spectroscopy of Weakly Bound Dimers' by A. C. Legon, 'Pseudorotation: A Large Amplitude Molecular Motion' by Herbert L. Strauss, 'Electronic States and Luminescence of Nucleic Acid Systems' by Patrik R. Callis, 'The theory of High Elasticity' by B. E. Eichinger, 'Magnetic Field Effects on Reaction Yields in the Solid State: An example from Photosynthetic Reaction Centres' by Steven G. Boxer, Christopher E. D. Chidsey and Mark G. Roelofs, 'Sensitivity Analysis in Chemical Kinetics' by H. Rabitz, M.

Kramer and D. Dacol, 'I. Electrons in Fluids II. Nonhomogeneous Kinetics' by Gordon R. Freeman, 'Diffusion-Controlled Reactions' by Daniel F. Calef and J. M. Deutch, 'Formaldehyde Photochemistry' by C. Bradley Moore and James C. Weisshaar, 'Chemical Lasers' by M. C. Lin, M. E. Umstead and N. Djeu, 'Supercooled Water' by C. A. Angell, 'Density Functional Theory' by G. Robert Parr.

The articles cover a very wide range of subjects in Physical Chemistry, Theoretical Chemistry and in the emerging and frontier areas in the border land of Physics and Chemistry. The articles on Chemical Lasers, Supercooled Water will be of great interest to the research workers bent on theoretical advances in their various fields. The volume runs to 669 pages with an exhaustive citation of literature at the end of each chapter. The standard of articles clearly reflects current advances in Physical and Theoretical Chemistry and it is hoped that the volume will be read with great interest by both Physicists and Chemists.

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**Growth regulators, Microorganisms and Diseased Plants** by A. Mahadevan, Centre for Advanced Studies in Botany, University of Madras, Madras, (Published by Oxford & IBH Publishing House, 66, Janpath, New Delhi 110001) 1984. Pages XII + 466. Price: Rs. 39.50

The book has 9 chapters and treats comprehensively the growth regulators produced by microorganisms and diseased plants as well as their role in host parasite interactions. The chapter on auxins occupies the major part of the book. Chapters 4-6 deal with cytokinins, ethylene and gibberellin production by microorganisms and infected plants. Chapter 7 deals with growth regulators produced by soil microorganisms and their role in nodulation, and mycorrhizal association. There is a chapter on techniques of extraction and estimation of ABA, auxins, cytokinins, ethylene and gibberellins.

There are 96 pages of references from which it appears that the author is an expert reviewer. The chapter 9 on prospects is brief and does not project the immense future for plant growth regulators in agriculture.

The author is rather uncharitable to other reviewers who according to him have "preferred to ignore" publications (p. 5 line 10).

The review is not complete as the author has not referred to plant growth regulators and their involvement in infections by plant parasitic nematodes (Giebel, 1973).

Work of Ward *et al* (1980) on glycelloin in relation to infection by *Phytophthora megasperma* var. *sojae* on Soybean, studies of Oswald and Wyllie (1973) on gibberellic acid and TIBA on soybean charcoal rot; work of several others like Fraser and Whenham (1978), Selman (1964), Aldwinckle (1975), Bailiss *et al* (1977) on viruses, work of Buchenauer and Erwin (1976), Erwin *et al* (1976, 1979), in relation to growth regulators and *Verticillium* wilt of cotton, the work of McIntosh and Bateman (1979) from Rothamsted on potato scab do not find a place in this review possibly due to oversight and not that the author has "preferred to ignore" them.

The author has not used conventional abbreviations for binomials and he should have given the chemical names for pesticides, *e.g.* ceresan and semesan on p. 191. He has not defined phytoalexins on p. 6.

The author should be congratulated for his review which will be useful to research workers and post graduate students interested in the field of plant growth regulators.

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of Indian sub-continent is the conscious approach of the author in choosing appropriate examples from Indian literature and highlighting achievements of Indian plant breeders and organisations.

The book has been divided into eight sections each one of which is further divided into a number of chapters. Each section is independent in itself and at the same time prepares the readers for the sections to follow. Section 1 is concerned with the history and background information about plant breeding which should help the readers, especially the beginners, to understand and appreciate the subsequent topics. Section 2 deals with the principles of plant breeding as applicable to self-pollinated crops and the corresponding methods follow in Section 4. Section 3 and 5 are devoted to principles and methods of cross-pollinated crops. Asexually propagated species find their place in Section 6. An exclusive section (No. 7) has been devoted to mutation breeding, polyploidy, inter-specific hybridization and *in vitro* techniques. In the last section (No. 8) the author has tried to broaden the outlook of the beginners by providing information on the general and related topics like Indian Agricultural Organisations and International Research Institutes which deal with various crops and crop improvement projects.

Though the book is primarily meant for B.Sc. students, but because of unique and judicious combination of simple language and upto date information, it should be useful and interesting for students preparing for higher courses.

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**Plant Breeding** by B. D. Singh (published by Kalyan Publishers, 1/1, Rajinder Nagar, Ludhiana 141 008) pp. 516, Price Rs. 26-00.

The book 'Plant Breeding' by Dr B. D. Singh, at present Reader in the Department of Genetics and Plant Breeding, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, has been written as a text book for B.Sc. students of Indian universities. What makes this book really valuable to the students

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**Functional Electronics** by K. V. Ramanan, (Published by M/s. Tata McGraw-Hill Publishing Company Ltd, 12/4, Asaf Ali Road, New Delhi 110 012), 1984, pp. 750, Price Rs. 36.00.

In recent years many text books on Electronics for use by students at undergraduate level in engineering have been written. The book under review, "Functional Electronics", is written with a different approach. As stated by the author, "the functional approach will enable the student to understand the

basic needs and tackle them with the available devices and circuits of today". In the opinion of this reviewer the author has succeeded to a large measure in his attempt of treating the subject through a generalised way by using functional blocks.

There are 19 chapters in this fair sized (750 pages) text, the first being an overview of the subject. The book covers topics on the basics of power conversion; wave shaping; amplification with practical amplifying devices; models for amplifying devices; discrete and IC amplifiers; low and high frequency and power amplifiers; signal processing; waveform generators; modulation and demodulation; voltage regulation and power control. There is a useful introduction to functional electronic blocks for digital systems. The book concludes with a very brief introduction to instrumentation and computer systems.

This book has much to commend it, particularly its clear and simple language, its clarity of print, and well laid-out diagrams. It is also well supplied with plenty of worked examples, problems and review questions

for the student to attempt, at the end of each chapter. Answers to many of the problems have been supplied.

The reviewer feels that the book would be ideal as a first course in electronics, because of its painless introduction to the use of functional blocks. Its lack of prior knowledge requirements, other than basic circuit theory, makes it suitable for a wide spectrum of readers.

The value of this book would have been enhanced by the inclusion of a chapter on optoelectronic devices. Even though many handbooks from the manufacturers are available it would be helpful if references are made to a few commercial types while explaining the various devices.

On the whole this should prove to be a most useful text for students.

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## ANNOUNCEMENT

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### XIV INTERNATIONAL SERICULTURAL CONGRESS HELD AT BANGALORE FROM 21-25 MAY 1984

The International Sericultural Commission (ISC) is an inter-governmental organisation founded in 1948, with its headquarters in France. At the invitation of the Government of India the XIV International Sericultural Congress was held in Bangalore. India is not only a member-state but also a member of the Executive Committee of I.S.C. This is the first Congress of the Commission hosted by India. Out of the 16 Member-States of I.S.C. (Algeria, Brazil, Central Africa Republic, France, Egypt, India, Iran, Japan, Lebanon, Madagascar, Mauritius, Rumania, Spain, Thailand, Tunisia and Philippines) majority of the States have attended.

#### *Theme*

The theme of the congress "Tropical Sericulture" was particularly apt, since the importance of the tropical sericulture lies not in its present size but in the future role it has to play in pushing up the standards of living

of a vast majority of rural people in the third world. Out of the total mulberry silk production in the World (52000 tons in 1982), tropical countries account only for 17%. However, India is the largest tropical country in the World engaged in sericulture (5200 tons in 1982-83).

#### *Inaugural Session*

The inaugural session saw a galaxy of well known sericulture scientists and technologists from India and abroad, the senior officers of the State Govt. of Karnataka related to Sericulture Industry, besides the senior staff members of the host Central Silk Board, India.

Shri. B. Sivaraman, Chairman, Central Silk Board, welcomed the gathering. He remarked that there were no systematic studies conducted for estimating the World demand for silk. The figures released by the International Sericulture Commission and also those