

BOOK REVIEWS

The Representation Theory of the Symmetric Group—Edited by Gordon James and Adalbert Kerber, Addison-Wesley Publishing Company, Reading, Massachusetts, U.S.A., 1981. Pages: 510. Price: \$29.50.

This scholarly book is the sixteenth volume in the already well-established and classical series on Encyclopaedia of Mathematics and its Applications, under the distinguished editorship of Prof. G. C. Rota. The editors of the algebra section, Prof. P. M. Cohn and Prof. Roger Lyndon deserve congratulations for having worked with Profs. G. James and A. Kerber to bring out this excellent account of both the ordinary and modular representation theory of the symmetric groups. It is well known that the ordinary representation theory was first developed by Frobenius and the greatest contribution came from Alfred Young. The modular representation theory was started by T. Nakayama and developed by G. de. B. Robinson and the authors.

This book consists of eight chapters and two appendices. Chapter 1 introduces symmetric groups and their Young subgroups. Chapter 2 contains a characterization of the ordinary irreducible representation of symmetric groups as common constituents of monomial representations induced from Young subgroups. Chapter 3 investigates the ordinary irreducible matrix representations of symmetric groups. In chapter 4 the concept of wreath products is introduced and their representations over algebraically closed fields are derived. The applications to combinatorics and representation theory are considered in chapter 5. These applications cover the Polya enumeration theory.

The modular representation theory of symmetric groups is discussed in chapter 6. The representation theory over an arbitrary field and representations of general linear groups constitute chapters 7 and 8 respectively.

In Appendix 1, the character tables of the symmetric groups S_n for $n < 10$ are given. This will be very useful.

Appendix 2 provides a guide to the literature and also comments. An extensive bibliography is also given.

Each chapter has a set of exercises which enhances the value of the book for use as a classroom text. There is no doubt that this book will remain as a classical work.

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Topics in Toxicology—Published by Committee Symposium on Toxicology in Defence Services, Defence R&D Establishment, Gwalior, 1981. Pages: 203. Price not mentioned.

The subject of this symposium reflects the concern about environmental quality and the role toxicology can play in this regard.

There are 31 papers. Chapter 1 deals with perspectives in toxicology. Dr. Raja Ramanna emphasises the importance of toxicology in the social context. Dr. P. K. Ramachandran aptly identified epidemiology as one of the priority areas in pollution studies. Biological effects of xenobiotics, their route of entry; biotransformation, biotransformation and toxicity and the philosophy of safety evaluations are discussed by Dr. C. R. Krishnamoorthy. Production and characterisation of aerosols and criteria for a unified approach to ionising radiation are discussed.

Chapter 2 deals with safety evaluation of drugs; toxicology of Dibutyltin dilaurate; some aspects of acrylamide neuropathy and toxicology of plastic packaging for transfusion of fluids and the new field of immunotoxicology.

In chapter 3 toxicological problems associated with foods are discussed including the migration into refined oils additives like plasticizers, antioxidants and stabilizers. Procedure for estimation of pesticide residues in food grains and spot testing of pesticides by solvent extraction and colorimetry are of interest.

Chapter 4 deals exclusively with pesticides. The toxicity of pesticides could be due to low congenital levels of cholinesterase, protracted heavy exposure and delayed neuropathies. Simple sensitive and rapid methods for detection of Methyl Parathion, Paraoxon and Fenitrothion in laboratory and field conditions are described. Toxicological implications of biotransformation of polycyclic aromatic hydrocarbons and pharmacological implications of the influence of environmental factors on xenobiotic metabolising enzymes are discussed.

The last chapter deals with toxicological problems associated with explosives, propellants and heavy metals used in defence services. Effects of lead toxicity are considered in detail. The last paper deals with toxicity tests of biomaterials *in vitro*. The papers are well presented but the editing should have been more critical. Enlisting of references is not uniform.

This volume is useful for research workers in the field of Toxicology.

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