
REVIEWS AND NOTICES OF BOOKS

Principles of Computation. By Dr. Peter Calingaert. (Addison Wesley Publishing Company, Inc., Reading, Massachusetts, U.S.A. and 10-15 Chitty St., London W. 1), 1965. Pp. viii + 200. Price \$ 7.50.

The volume under review, which requires only limited knowledge of elementary calculus, is intended for introductory courses dealing with computation, computers, or programming. Designed primarily for students of mathematics, engineering, the physical and natural sciences, and the quantitative social sciences, it presents a basic introduction to the principles of computation—both digital and analog, both automatic and manual. Although considerable stress is placed on the use of automatic computers, the primary focus remains on the fundamentals of computation. Thus, the textual development does not rely upon—nor does it discuss—any specific computer, either existing or hypothetical.

The text is divided into four major parts treating, in order, digital computation, numbers, analog computation, and numerical methods. In each case, various techniques and devices for solving computational problems are presented along with elements of the relevant mathematical theory. In addition, a collection of exercises is provided at the end of each part.

C. V. R.

Natural History of Aggression. Edited by J. D. Carthy and F. J. Ebling. (Academic Press, London and New York), 1964. Pp. vii + 159. Price 30 sh.

This volume presents the proceedings of a *symposium on The Natural History of Aggression*, arranged by the Institute of Biology, and held at the British Museum.

It ranges widely, dealing with aggressive behaviour in insects, birds and animals, with special attention devoted to man. While idealists may be appalled at some of the evidence of man's aggressiveness it is important that they—and everyone concerned with man's future—should take notice of the views of those who have made a study of the thread of aggression running through the behaviour of all animals.

This volume will appeal not only to those interested in animal behaviour, whether profes-

sional biologists or amateur naturalists, but also to psychologists and anthropologists.

C. V. R.

An Advanced Course in Practical Inorganic Chemistry. By D. N. Grindley. (Butterworth and Co., 88, Kingsway, London W.C. 2), 1964. Pp. xv + 184. Price 17 sh. 6 d.

In this book, the exercises have been devised with the following objects in view: Firstly, to teach the fundamental techniques which are common to many industries and which the student will meet in his professional life. Secondly, certain methods have been included to demonstrate some theoretical points, though the methods themselves may rarely be used in practice. Thirdly, certain exercises have been devised for the express purpose of making the student think and of leading to an interpretation of his results which will often require some degree of mental agility.

The subject-matter in this book has been dealt with under six sections whose titles are as follows: Section A: Exercises on Fundamental Techniques: Single Analysis; Part I—Gravimetric methods, Part II—Volumetric exercises and Part III—Reductor exercises; Section B: Preparations; Section C: Double Analyses and More Complex Methods; Section D: Investigation of Reactions; Section E: Complexometric Methods; Section F: Problems.

The book under review will be found useful by graduate students in Chemistry.

C. V. R.

Science and Human Values. By J. Bronowski. (Penguin), 1964. Pp. 94. Price 3 sh. 6d.

The three essays which make up this book were first given as lectures at the Massachusetts Institute of Technology on 26th February, 5th March, and 19th March 1963, when the author was Carnegie Professor there. In these essays he describes the essence of the creative process—that leap of the imagination which distinguishes the mathematician as much as the poet—and develops an ethic for science, which he describes as a human progress and no mere mechanism. Among the propositions the author puts forward are that the concept is more profound than its

laws and the act of judging more critical than the judgment.

The titles of the essays contained in this book are as follows: The Creative Mind; The Habit of Truth; The Sense of Human Dignity.

C. V. R.

Numerical Methods of Reactor Analysis, Volume 3 of *Nuclear Science and Technology. A Series of Monographs and Text-Books*. Edited by V. L. Parsegian Melville Clark and Kent F. Hansen. (Academic Press, New York and London), 1964. Pp. xi + 340. Price \$ 10.50.

The scope of this volume is indicated by the list of six chapter and four appendix headings given below: Chapter I. Linear Equations and Matrix Algebra; Chapter II. Difference Equations; Chapter III. Numerical Solutions of Equations; Chapter IV. Multigroup Diffusion Methods; Chapter V. Transport Methods; Chapter VI. The Monte Carlo Method; Appendix A. The Boltzmann Transport Equation; Appendix B. Velocity Relations for Nuclear Events; Appendix C. Moments Method for Neutrons; and Appendix D. Special Functions.

C. V. R.

Physics-Electronics Titles 1960—Bibliography and Key-Words Index of Titles of Leading Articles in About 200 Journals. (Boston Technical Publishers, Inc., 5 Bryant Road, Lexington, Massachusetts 02173, U.S.A.), 1964. Pp. vii + 455.

Physics-Electronics Titles Series is a new concept in the indexing of scientific and technical literature. The present volume covers titles which appeared in the year 1960.

The titles of the chapters contained in this volume are as follows: Journal Index; Key-Word-in-Context Index; Bibliography; Author Index; Non-Indexing Words.

The Author Index is an alphabetical listing of all authors of all the articles indexed. Printed along with each other is the reference code or codes of the articles authored. Thus articles by an author of interest can quickly be found in the Bibliography. The Journal Index is provided as a means of quickly ascertaining which publications were scanned. It is also a source for obtaining correct journal address for projected correspondence resulting from use of this volume.

C. V. R.

Quadratic Forms and Matrices (*Academic Paperbacks in Mathematics*—Edited by W. Magnus and A. Shenitzer). Author N. V. Yefimov. Translated and Edited by Shenitzer. (Academic Press, New York and London), 1964. Pp. ix + 163. Price \$ 2.45; Clothbound \$ 5.50.

An important distinction of this book is that it offers the reader insights which will enable him to appreciate more advanced presentations of the theory.

The chapter headings contained in this book are as follows: General Theory of Quadratic Curves; General Theory of Quadric Surfaces; Linear Transformations and Matrices.

Appendix I is a summary (by the translator) of relevant material on vectors and operations on vectors.

Appendix II is an abbreviated version of a supplement to Prof. Yefimov's "Short Course in Analytic Geometry" and treats elements of the theory of determinants and of systems of linear equations.

C. V. R.

A Photographic Atlas of Shark Anatomy. By Carl Gans and Thomas S. Parsons. (Academic Press, New York and London), 1964. Pp. 106.

The spiny dogfish, *Squalus acanthias* Linne, is one of the most widely used animals in comparative anatomy laboratories. The present Atlas of photographs provides a detailed visual guide to the morphology of this common form.

The Atlas is not intended as a substitute for a dissection guide, but as a supplement to a course of dissection. Therefore, the text, confined to a few explanatory comments opposite each page, has been reduced to a minimum. Its purpose is to call attention to points which, though illustrated, are often missed by students. Mention is also made of special problems in anatomical terminology. Embryological and histological material has, however, been omitted. Not all specimens are exactly alike. Sexual dimorphism affects overall size and shape of the body and the pelvic fins, as well as the gonads and other parts of the genital system. In addition there are frequent variations in other structures, especially in the circulatory system. Thus, although major anomalies have been avoided in the photographs, the latter cannot be expected to correspond perfectly to any particular specimen in the laboratory.

Students of zoology, laboratory instructors and others who may desire a guide to the

morphology of the species cited above will find this book to be of great value.

C. V. R.

Bird Structure. By D. A. Ede. (Hutchinson Educational Limited, 178-202 Gt. Portland St., London W. 1), 1964. Pp. 120. Price 15 sh.

The fowl has been used as the basis of all descriptions in this book, but the structure of birds is remarkably uniform, and another species such as the pigeon may be used without difficulty, provided that an eye is kept open for the minor differences that do exist. Directions for dissection are distributed throughout the book, usually after description of each organ system and an account of its development. The drawings given are meant to supplement and clarify the text.

The titles of the chapters contained in this book are as follows: Introductory; The Covering of the Body; The Skeleto-Muscular System; The Viscera; The Head, The Respiratory System and the Nervous System.

This book will be found useful by anyone who wishes to acquire an elementary knowledge of bird structure, whether he be a high-school student, a university student or a more advanced student from some other discipline—a physiologist, a veterinarian or a poultry scientist—turning to the bird in connection with some particular problem.

C. V. R.

Advances in Marine Biology (Vol. 2). Edited by F. S. Russell. (Academic Press, London and New York), 1964. Pp. x + 274. Price 57 sh. 6 d.

The aim of this new serial publication is to help biologists to keep abreast of knowledge in the different lines of research on the biology of marine organisms.

The present volume under review contains the following four important contributions: 1. The Artificial Propagation of Marine Fish, by J. E. Shelbourne; 2. The Blood Groups of Marine Animals, by John E. Cushing; 3. The Present Status of Some Aspects of Marine Microbiology, by Robina B. Scholes and J. M. Shewan; and 4. Methods of Sampling the Benthos, by N. A. Holme.

C. V. R.

Categories of Human Learning. Edited by Arthur Melton. (Academic Press, New York and London), 1964. Pp. xvi + 356. Price \$ 8.50

This volume presents a study of the most promising topics for the advancement of our

understanding of human learning and the inter-relationships of types of learning. The participants of this symposium placed particular emphasis on: a full-scale consideration of the varieties of learning properly described as "conditioning", second-order habits (concepts, rules, sets) in all forms of human learning—their development (and loss) and utilization, and mediating processes.

C. V. R.

Structure and Metabolism of Corticosteroids.

Edited by J. R. Pasqualini and Max F. Jayle. (Academic Press, New York and London), 1964. Pp. x + 168. Price 35 sh.

This co-operative volume describes the chemical structure of corticosteroids and their metabolic transformations, both *in vitro* and *in vivo*, under normal and physio-pathological conditions.

The main topics dealt with are: The Importance of the Magnetic Resonance Spectra in the Study of Steroid Structure; The Relation between the Structure of Corticosteroids and their Form of Conjugation in the Human Organism and Some Pathological Aspects of Corticosteroid Metabolism.

This book will be of great interest to research workers and advanced students in the field of biochemistry, physiology, pathology and medicine.

C. V. R.

Advances in Experimental Social Psychology (Vol. 1). Edited by Leonard Berkowitz. (Academic Press, New York and London), 1964. Pp. xi + 319. Price \$ 9.00.

The present volume contains the following eight contributions by the authors whose names are shown against each: Cultural Influences upon Cognitive Processes, by Harry C. Triandis; The Interaction of Cognitive and Physiological Determinants of Emotional State, by Stanley Schachter; Experimental Studies of Coalition Formation, by William A. Gamson; Communication Networks, by Marvin E. Shaw; A Contingency Model of Leadership Effectiveness, by Fred E. Fiedler; Inducing Resistance to Persuasion, by William J. McGuire; Social Motivation, Dependency, and Susceptibility to Social Influence, by Richard H. Walters and Ross D. Parke; and Sociability and Social Organization in Monkeys and Apes, by William A. Mason.

C. V. R.

Dover Publications :

1. **Electronic Processes in Ionic Crystals.** By N. F. Mott and R. F. Gurney, 1964. Pp. xii + 275. Price \$ 2.00.

This is an unabridged, unaltered republication of the second edition of 1948. The subject-matter in this edition is dealt with in eight chapters as follows: I. The Perfect Ionic Lattice; II Lattice Defects in Thermal Equilibrium; III. Electrons in Ionic Crystals; IV. Colour Centres in Alkali-Halides and Allied Phenomena; V. Semi-Conductors and Insulators; VI. Luminescence and the Dissipation of Energy; VII. Photochemical Processes in Silver Halides and the Photographic Latent Image; and VIII. Processes Involving the Transport of both Ions and Electrons.

Though a great deal has taken place in the field in recent years, this book continues to serve as a valuable text and reference book for students and workers in solid-state physics, chemistry, crystallography, and related fields.

2. **Structure of Molecules and the Chemical Bond.** By Y. K. Syrkin and M. E. Dyatkina, 1964. Pp. ix + 509. Price \$ 2.75.

This book is an unabridged and unaltered republication of the English translation of the 1950 edition. It presents a coherent, comprehensive account of structural chemistry—a complex, but important area of modern chemistry. The authors have furnished a well-balanced wave mechanical treatment of the field. They have also endeavoured to link theoretical aspects with practical measurements so that the reader can properly grasp recent developments and problems. An interesting feature of the book is that it brings together in one volume a large amount of theoretical material and experimental data otherwise to be found only scattered in books and periodicals. Practising chemists and students will find this an exceptionally useful addition to their working libraries.

3. **The Solubility of Non-electrolytes.** By Joel H. Hildebrand and Robert L. Scott, 1964. Pp. xiv + 488. Price \$ 2.50.

The present edition is an unabridged and corrected republication of the third edition of the work published in 1950, with new material. This is one of the great pioneering works in the systematic study of the theory of solubility and of practical problems involving intermole-

cular forces. This work will be found useful by all teachers, workers and advanced students of chemistry and chemical engineering as a comprehensive reference and study text.

V. S. R.

Nucleic Acids—Proceedings of a Symposium. (Published by Publications and Information Directorate, Council of Scientific and Industrial Research, Hillside Road, New Delhi-12), 1965. Pp. 361. Price Rs. 20; 40 sh.; or \$ 6.00.

As essential materials of heredity, as carriers of genetic information that specifies the kinds of organisms as also their diversity, as root substances of systematics and evolution, nucleic acids have evoked phenomenal interest in modern research. Literature on the subject is growing so rapidly that it has become essential to hold frequent symposia and conferences on the subject to exchange views and clarify ideas. The present publication is the outcome of one such symposium organized at the Regional Research Laboratory, Hyderabad, India, from January 16-22, 1964 under the auspices of the C.S.I.R. The symposium was attended by invited participants from many countries and by a large number of observers representing scientific research centres in India.

The volume contains 31 articles contributed by 77 scientists and they cover nearly all aspects of study of nucleic acids, their structure, biosynthesis, function, etc. This addition to nucleic acids literature will be welcomed by workers in the field.

A. S. G.

Books Received

An Atlas of Models of Crystal Surfaces. By J. F. Nicholas. (Gordon & Breach, Science Publishers, New York-11), 1965. Pp. ix + 229. Price \$ 27.50.

A Handbook of Systematic Botany. By S. C. Datta. (Asia Publishing House, Calicut Street, Ballard Estate, Bombay-1), 1965. Pp. xv + 435. Price Rs. 18.00.

Concise Notes in Inorganic Chemistry. By R. S. Lowrie. (Pergamon Press, London), 1965. Pp. vii + 150. Price 12 sh. 6 d.

Advances in Theoretical Physics (Vol. 1). Edited by K. A. Brueckner. (Academic Press, New York), 1965. Pp. x + 323. Price \$ 12.00.

The Control of Fertility. By G. Pincus. (Academic Press, New York-10003), 1965. Pp. xvii + 360. Price \$ 9.00.