Books

On Growth and Form

by Sir D'Arcy Thompson

Abridged edition, edited by John Tyler Bonner

Cambridge University Press . . $5.95

Reviewed by Hendrik J. Ketellapper, research fellow in biology

On Growth and Form is one of the classics of biology. The first edition, published in 1917, caused quite a commotion among the comparative anatomists of that time. The author called his opus "an easy introduction to the study of organic form by methods which are the commonplaces of physical sciences." D'Arcy Thompson looked for immediate physical causes for the explanation of growth and form, to the extent of being one-sided. However, he opened the modern era where the application of physical and mathematical principles to biological problems does not raise any eyebrows.

The reader may be disappointed because D'Arcy Thompson was no experimenter, nor did he suggest experiments. Therefore, no immediate causes are definitely established. The book has greatly influenced biology, however.

The author's fame rests on the first edition. The second edition of 1942 was too unwieldy and the examples obscured the issues. Since our present generation is scared by books of 1116 pages, John Tyler Bonner has done biologists a service by editing the book down to a manageable 346 pages containing all the essentials of D'Arcy Thompson's ideas in his own words.

Notes on Molecular Orbital Calculations

by John D. Roberts

W. A. Benjamin, Inc. . . . $4.95

Reviewed by John H. Richards, associate professor of organic chemistry.

In his third slim volume in as many years John Roberts, Caltech professor of chemistry, sets out to make intelligible the complex world of molecular orbital theory. The book is intended for those persons interested in becoming familiar with a technique (LCAO molecular orbital theory) for predicting and correlating the behavior of conjugated organic molecules. The calculations required in the application of this theory are simple and, considering the approximations involved, the results are astonishingly useful and in many cases of fairly precise quantitative significance.

These *Notes on Molecular Orbital Calculations* admirably accomplish their purpose. Concepts which have hitherto been available only in relatively abstruse papers in the original literature are presented in this volume with great clarity. There are frequent exercises interspersed throughout the text which lead the active student gently (usually!) to a feel for the molecular orbital technique just discussed. Though neither a detailed nor an advanced monograph, this book does contain brief descriptions of the more elegant MO methods and sufficient leading references so that the interested student may easily find his way into the more sophisticated literature.

Besides being a learn-it-yourself text, this book has a real do-it-yourself flavor: written by Roberts, art work (including dust jacket design) by Roberts, and published by W. A. Benjamin, Inc., a company of which Roberts is a co-organizer and director. The only book of its kind presently available, these notes will make available to a large body of organic chemists a theoretical tool which in the past they have too little used or too superficially understood.

ALUMNI BOOKS

Handbook of Transistor Circuit Design

by Keats A. Pullen, Jr. '39

Prentice-Hall $4.95

Computer Programming Handbook: Guide for Beginners

by Robert Nathan, Ph.D. '56, and Elizabeth Hanes

Prentice-Hall $6.75