

Finite Groups and Quantum Theory. By D. B. Chesnut. Pp. xiii+254. (Wiley Interscience: New York and London, December 1974.) £7.25.

THIS book satisfies nobody. It is nicely written and clear, but as a physicist I could not possibly recommend it to my students as there are no physical applications. It is indeed remarkable that a book on finite group theory advertised as being suitable for physicists contains no mention of crystal structure. This is presumably because the author is a chemist. But when I asked my colleagues in chemistry for their opinion I was told that the single chapter on the application of group theory to chemical bonding was far too slim and that it could not compete with several other books in the field.

Norman Dombey

Pest Control and its Ecology. (The Institute of Biology's Studies in Biology, No. 50.) By Helmut F. van Emden. Pp. 59. (Edward Arnold: London, January 1975.) £1.90 boards; £0.95 paper.

THIS 59-page book with its list of 17 references is intended to help "teachers and students at school, college or university . . . to keep abreast of recent trends and know where the most significant developments are taking place". It aims to cover primarily the control of insect pests on growing crops and, except for occasional excursions into other hemispheres, it devotes most attention to British insects.

The author deals realistically with the modern vogue for the uncritical condemnation of pesticides, in particular providing yet another disparaging perspective of Rachel Carson's *Silent Spring* which started so many hares running and seemingly also set innumerable hounds into perpetual motion in hot pursuit.

In this book, unfortunately, the possibilities for classical biological control, in the sense of introducing natural enemies of pests of exotic origin, are blurred and diluted by being confused with the mass production of agents for use in flooding techniques. Doubtless, this is because the author lives in a country where there is generally considered to be relatively little potential for the introduction of exotic agents. It is a pity that the more generally applied type of biological control is sold short by mention of such remote or largely misleading concerns as "imported parasitic insects may occasionally carry a crop pathogen externally and thus bring a new problem into the crops" and that its use means that "control is slow, it is not exterminant, unless 'misused', it is often unpredictable, it is difficult and

expensive to develop and apply, and it requires expert supervision" (pp. 19–20).

Those comments do a serious disservice to a flourishing branch of entomology which is pollution-free, involves finite energy input and may produce valuable results lasting long into the future.

In general, however, this book is up to date, eminently readable and conveys much useful information.

D. F. Waterhouse

Books brief

Protein-Calorie Malnutrition. (The Nutrition Foundation: A Monograph Series.) Edited by Robert E. Olson. Pp. xxiv+467. (Academic: New York and London, February 1975.) \$29.50; £14.15.

ALTHOUGH this book contains many papers of a high scientific standard it is difficult to be totally sympathetic to its aims or its achievements. The majority of nutritionists now agree that protein-calorie malnutrition (PCM) can be prevented by eating more food. That being so, symposia on the biochemical and physiological aspects of the disease—which is essentially what this book is—are open to a charge of irrelevance.

Those who accept that metabolic research is still required will find, no doubt, that this book is a useful guide to such projects. They may be irritated by the inclusion of a few papers with virtually no bearing on PCM, and by the fact that a publishing delay of two years has made the contributions somewhat out of date. They will, however, find it a useful text to consult, if it is at times somewhat tedious to read.

It is a pity, though, that the editor did not substitute some practically useful papers for the interminable discussion sections. Then it might have been the important landmark that the Nutrition Foundation claim it to be.

John Rivers

Topics in Carbon-13 NMR Spectroscopy, vol. 1. Edited by George C. Levy. Pp. x+292. (Wiley-Interscience: New York and London, December 1974.) £9.45.

THE remarkable technical advances made over the past five years have allowed access to NMR spectra of dilute spin systems to the extent that ^{13}C spectra are now commonly observed on a routine basis. The considerable advantages of the ^{13}C NMR technique

have engendered much interdisciplinary interest. *Topics in Carbon 13 NMR Spectroscopy* is a useful supplement to existing monographs on the subject. It contains a number of articles by well known authors, which review aspects of the ^{13}C NMR technique. The articles vary from a detailed description of theoretical work, by Professor Ditchfield, which presents some astonishingly accurate calculations of ^{13}C chemical shifts (and which I found most interesting), through articles on relaxation studies (Lyerla and Levy), substituent effects (Maciel), polymer studies (Schaefer), ^{13}C at high-fields (Anet), to dynamic studies (Stothers). The reviewers present well balanced appraisals of their subjects up to late 1973, and generally elucidate the shortcomings of the methods as well as their advantages. Regrettably, that is not the case in the chapter on dynamic studies. In such systems, which are non-linear, the Fourier transform of a free induction decay is not necessarily identical to the continuous wave spectrum for 90° pulse angles, although their identities become closer as the pulse angle decreases; this caveat should have been covered more explicitly than by the inclusion of one reference.

Overall, the volume has much of interest to offer to spectroscopists and to chemists and biochemists generally. I look forward to the continuation of what promises to be a stimulating and informative series.

J. M. Briggs

Flow: Its Measurement and Control in Science and Industry. Vol. 1, part 3: *Flow Measurement and Control.* Edited by W. E. Vannah and H. Wayland. Pp. xliii+1049–1493. (Instrument Society of America: Pittsburgh; Wiley: Chichester, November 1974.) £19.60.

IN order to bring together experts in many branches of fluid flow and to review the most recent advances in the subject, an international symposium was convened in Pittsburgh in the Spring of 1971. Some three years later the Proceedings of that symposium have been issued. All possible facets of flow measurement and control have been considered and the editors have managed to classify the papers into four rather vague themes entitled "Flow characteristics", "Flow measuring devices", "Flow measurement" and "Biological fluid flows". This excellent and ambitious book, comprising as it does a comprehensive range of almost 200 theoretical and experimental contributions, is very well produced and in spite of the high total cost will prove to be the ideal reference source for workers in the entire field of fluid flow.

P. A. Davies