

Analytical Chemistry

Edited by Carl E. Crouthamel. Vol. 3, Part 4: Pp. 95-162. 20s. net. Vol. 3, Parts 5-7: Pp. vii+163-265. 30s. net. (Progress in Nuclear Energy, Series 9.) (London and New York: Pergamon Press, 1963.)

PART 4 of the third volume of *Analytical Chemistry* has the title "Critical Review of the Analytical Methods of the Titanium, Vanadium and Chromium Transition Element Groups" and is by R. Z. Bachman and C. V. Banks of the Institute for Atomic Research and Iowa State University. The authors point out that their contribution is limited to a consideration of "the so-called 'wet' methods of chemical analysis . . . reported (from) 1950 into 1961. Spectrochemical, X-ray fluorescence and radiochemical methods are deleted intentionally . . .". This severely restricts the utility of the article and perhaps denies its claim in the title to be a critical review of the analytical methods. In fact, while it is very useful to have a compilation of methods for separation and determination of these elements and a list of 574 references, the review is not really critical even in the aspects it covers, in that it lists the articles but does not, in general, guide the user.

Part 5, "Chemical Monitoring of Heavy Water Moderated Research Reactors", is by L. E. Smythe; while Part 6, "Recent Advances in the Analytical Chemistry of Beryllium", is by L. E. Smythe and T. M. Florence. The authors, from the Lucas Heights establishment of the Australian Atomic Energy Commission, write from several years' experience of both problems, and the result is comprehensive and authoritative. The beryllium article is much more critical than that on titanium, etc., which forms Part 4, and is consequently of more value to the reader, and, even though no claim is made for complete coverage, articles published in 1963 are mentioned, thus giving a much more up-to-date picture than that of Part 4.

Part 7, "A Large-Scale Facility for Chemical Research with Intensely Radioactive Materials", is by D. C. Stewart of the Chemistry Division of the Argonne National Laboratory. This is a useful description of that Division's new "hot laboratories" for chemical research or analytical service in direct support of research programmes. Not many readers will be called on to design such laboratories, costing more than four million dollars, but all who have to handle sizable amounts of radioactivity will find much of interest and value in this article. Perhaps we can look forward to another paper in a few years' time reviewing the operation of these facilities, with any second thoughts?

A. A. SMALES

L'Électronique dans les Appareils de Contrôle Nucléaire
Tome 1. Par Georges Nicolo. Pp. 521. (Paris: Éditions Eyrolles, 1963.) 110 F.

THIS work is devoted to a discussion of electronic circuits used in nuclear reactor control installations. The author includes in this first volume extensive chapters on nuclear particle detectors (64 pp.); general circuit theory (113 pp.); compensation of valve heater voltage variations (38 pp.); stabilized voltage and current circuits (64 pp.); linear d.c. amplifiers (84 pp.); and logarithmic d.c. amplifiers (64 pp.); with, in addition, brief chapters on the elements of nuclear physics, the effects of radiation on materials, and applications of transistors. There is little indication of what is to be included in the second volume.

This is an elementary and uninspired book, with little of interest to the specialist. As an introduction to the subject, there is much to disagree with in the balance of the contents. Ionization chambers and counters, which are highly important in the context of reactor control, are given only a passing glance, whereas the relatively unimportant scintillation counter is treated at length. A fuller discussion of modern semi-conductor circuit techniques could have been hoped for, at the expense of some cuts in the space allotted to obsolescent electronic valve

circuits and to the interminable, dull chapters on balanced heaters and stabilized supplies.

The most vehement protest must be made, however, at the quite deplorable number of mistakes both in the text and in the diagrams, mismatching of text and diagrams, misprints in the formulæ, sudden unexplained changes in symbolism, errors in simple algebra, and obscure algebraic derivations which seem almost calculated to confuse and infuriate the reader.

J. F. HOGG

Mushrooms and Other Common Fungi of the San Francisco Bay Region

By Robert T. and Dorothy B. Orr. (California Natural History Guides: 8.) Pp. 71 + 8 plates. (Berkeley and Los Angeles: University of California Press; London: Cambridge University Press, 1962.) 12s.; 1.50 dollars.

THIS small booklet, intended for the amateur, consists of a general introduction to the study of the larger, fleshy fungi, with brief descriptions of certain genera and notes on a few of the more common representative species occurring in the area. There is also a very much simplified key to a limited number of agaric genera.

The work is illustrated with line drawings which are remarkably effective and with very poor, and in some instances decidedly misleading, coloured photographs of fungi in their natural habitats. It is a pity that all authors and publishers have not as yet realized that when coloured photographs are used to illustrate works concerned with the identification of fungi they must not only be of a very high quality but must also be selected with a view to showing the diagnostic characters of the species. One cannot help feeling that many of the subjects depicted would have been better portrayed by a good black-and-white photograph. Particularly misleading are the illustrations of *Cantharellus cibarius* and *Helvella crispa*. In fact it seems very doubtful if the fungus shown under the latter name is correctly identified since it should be creamy-white, not brown! Similarly the illustrations of *Hygrophorus psittacinus* and *Lactarius deliciosus* would scarcely pass for the European species. The photograph of *Armillaria mellea* is so poor that it is unlikely that an amateur would be able to recognize it, and likewise that of *Tricholoma personatum*, where the characteristic lilac colour of the stem is completely lacking. Other photographs are so badly reproduced that the diagnostic features are completely obscured, as, for example, the gills of the *Russula* and the teeth of *Hericium coralloides*.

While this booklet contains much useful information and may stimulate its readers to go out into the field and look at mushrooms, they will, I am afraid, be liable to become thoroughly frustrated when they try to name their collections, on account of the relatively few species covered and the poor quality of the coloured plates.

D. A. REID

Antibiotic-producing Microscopic Fungi

By V. I. Bilai. Pp. vii+215. (Amsterdam, London and New York: Elsevier Publishing Company, 1963.) 60s.

THIS book is an English translation of МИКРОСКОПИЧЕСКИЕ ГРИБЫ-ПРОАУЩЕНТЫ АНТИБИОТИКОВ by V. I. Bilai, published at Kiev in 1961, unchanged apart from a modernization of the bacterial nomenclature in Table 17. After a brief account of the occurrence of microscopic fungi in Nature, and an assessment of the biological significance of the antibiotics they produce, the text deals successively with genera of fungi involved and the chemistry of their products. The longest chapter is, naturally, devoted to *Penicillium*, with taxonomy and illustrations based on those in the well-known monograph of Raper and Thom. There follow shorter chapters on *Aspergillus*, *Cephalosporium*, *Trichoderma*, *Trichothecium*, *Alternaria*, *Fusarium* and a few miscellaneous fungi. A brief final chapter discusses antibiotic properties of the toxins of fungi which cause mycotoxicoses in man and his animals.

R. W. G. DENNIS