

tinuing to throw up important new developments, and it is reasonable to expect an average of one important development per annum to be maintained until the next volume of this series (reporting the meeting in Tokyo in 1966) is reviewed in these columns.

P. T. LANDSBERG

### Counterexamples in Analysis

By Prof. Bernard R. Gelbaum and Prof. John M. H. Olmsted. (The Mathesis Series.) Pp. xxiv + 194. (San Francisco, London and Amsterdam: Holden-Day, Inc., 1964.) 7.95 dollars.

THE schoolboy learns that the harmonic series does not converge, although its  $n$ th term tends to zero; the undergraduate is shown Weierstrass's function, which is continuous but not differentiable; at a later stage, a mathematician's pleasing speculation may be disrupted by an instance of its falsity. The construction of counterexamples is a not unimportant part of the technique of the analyst, as, for example, in the theory of Fourier series, and this collection of some 250 items may serve for profit as well as for amusement. The authors have made a selection from number systems, functions, limits, differentiability, integration, convergence, set and measure theory in one and two dimensions, metric, topological and function spaces. Almost any dip will come up with something pleasing; a random opening provided functions  $f$  and  $g$  such that  $f^2$  and  $g^2$  are integrable but  $(f + g)^2$  is not. But the book will be more seriously useful to the teacher of analysis, who is often in need of examples of this type to show why the conditions imposed on a theorem are necessary, and to the young research worker who may have to test heuristic ideas by hard fact.

T. A. A. BROADBENT

### Radioactive Fallout, Soils, Plants, Foods, Man

Edited by E. B. Fowler. Pp. 317. (Amsterdam, London and New York: Elsevier Publishing Company, 1965.) 80s.

THE evaluation of the significance of dietary contamination with radioactive fall-out requires the co-operation of many disciplines, and our understanding of this subject has owed much to meetings at which meteorologists, health physicists, agricultural scientists and medical radiobiologists have brought together the relevant information from their various subjects.

Two particularly important meetings of this type were arranged in 1959 by the University of Minnesota and the Food and Agriculture Organization in Rome. The publications to which they led in the following year largely paved the way to the first authoritative and comprehensive assessment of mechanisms of dietary contamination which the United Nations Scientific Committee on the Effects of Atomic Radiation included in its 1962 report. Other meetings with the same general objective had meanwhile been held, among them being a symposium of the American Chemical Society, at Cleveland, Ohio, in April 1960.

The volume under review is based on the papers presented at the Ohio meeting. The editor's preface shows his consciousness of the disadvantage of delay in publishing reports of symposia on rapidly developing subjects, and an endeavour was made to revise and to 'up-date' contributions. This was notably achieved in the discussion of the "Transfer of Fallout Radionuclides from Diet to Man", by Drs. Wasserman Lengemann, Thompson and Comar, in a chapter which contains about half the references to publications dated 1962 or later which are to be found in the entire volume. Read in 1965, some of the other chapters are mainly of historical interest. Not only are a number of transfer routes of much smaller importance than was sometimes thought in 1960 but also interest in the significance of fall-out now centres primarily on the effects of weapon tests in 1961

and 1962 which were of considerably greater magnitude than the earlier series.

### Piante Medicinali

Chimica Farmacologia e Terapia, Vol. 2. Da R. Benigni, C. Capra and P. E. Cattorini. Pp. 731-1832. (Milan: Inverni e della Beffa, 1964.) L.12,000.

THIS is the second part of a comprehensive Italian work on medicinal plants, Volume 1 having already been reviewed in these pages (*Nature*, 196, 609; 1962). Plants are arranged according to their Italian common name. Volume 1 covered the letters A-H. The present volume deals with the rest of the alphabet, representing some 120 different species. As in the case of the earlier volume, there are notes on etymology, nomenclature, habitat, parts used, active principle, therapeutical properties, pharmacology, and chemical composition. There is special emphasis on the chemistry of the plants, which is covered in some detail and the latest information incorporated. This applies particularly to plants that have recently attracted special attention, for example, *Rauwolfia serpentina* has 149 pages devoted to it and there are more than 800 references. *Strophanthus* (*Strophanthus kombé*) covers 25 pages, with 161 references.

Other well-known medicinal plants dealt with in this volume include golden seal, Iceland moss, ipecacuanha, jaborandi, liquorice, lobelia, clive, opium poppy, peppermint, rhubarb, senna and strychnine or nux-vomica. Many of the other species treated, although well known, are of little importance medicinally to-day. Nevertheless it is of value to have so much information in relation to them brought together. The common horse-chestnut (*Aesculus hippocastanum*) is not usually looked on as a medicinal plant, yet 14 pages are devoted to it along with 38 references. This may be because of the saponin it contains.

F. N. HOWES

### Pollen Physiology and Fertilization

Edited by H. F. Linskens. (A Symposium held at the University of Nijmegen, The Netherlands, August 1963.) Pp. xii + 257. (Amsterdam: North-Holland Publishing Company, 1964.) 80s.

IN August 1963 a symposium was organized at the University of Nijmegen to bring together a number of people interested in the study of pollen tube formation and germination, and the processes leading up to the formation of the zygote in higher plants. The papers and discussions given at this symposium are now published under the title *Pollen Physiology and Fertilization*, edited by Prof. H. F. Linskens.

The symposium was organized in seven sections each of about three or four papers followed by a tape-recorded discussion. Subjects included the physiology of the embryo sac, and the biochemistry of pollen wall formation; pollen tube metabolism; the effects of boron on growth; chemotropism and sections on controlled fertilization and incompatibility. Particular interest is derived from the high proportion of papers in which relatively modern techniques such as electron microscopy, histochemistry and *in vivo* methods of controlling fertilization are used to investigate the problems raised.

The publication of papers read at any specialized symposium inevitably results in the reappearance of a fairly high proportion of material already familiar as a result of its appearance in regular journals, and this is no exception. Nevertheless, this volume does provide a readily accessible collection in one place of contributions by a number of well-known authorities on the subject; and the convenience for comparison and survey which this provides, combined with the general high standard, or controversial interest, of the papers will make it a welcome addition to the collection of anyone interested in the physiology of pollen germination and fertilization.

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