

PHARMACOPŒIAS AND FORMULARIES

THE EXTRA PHARMACOPŒIA (MARTINDALE)*

INCORPORATING SQUIRE'S COMPANION

REVIEWED BY D. C. GARRATT

A bigger and better Volume II of the Extra Pharmacopœia has now been published. The ambition of the Editor, Dr. Capper, and his collaborators to maintain the original concept of a comprehensive reference book and yet to expand it and add new sections has been successful. However, this success is not without its drawbacks, for although the publishers are to be congratulated on the production of a compact volume containing such a wealth of information, the user is given the task of reading almost microscopical print through some 1500 pages. The editorial staff must be complimented on the excellent proof-reading of such print.

The new Volume II has been completely revised and re-arranged and new sections added. The analytical addenda to chemicals and materia medica in Volume I includes valuable information from foreign pharmacopœias and other official publications but the abstracts from technical publications seem to be chosen quite haphazardly and the reader is given no indication of their value; for example, the sorting of oils by the iodine value of their unsaponifiable matter has been discarded as untenable for at least 20 years. The Editor disclaims in the Preface any pronouncement on the merits of the methods given but without some critical sorting the section loses its value.

This section is followed by others on physical techniques of analytical interest which have been revised to include recent applications. In a book of reference the elementary treatment of the theory of hydrogen ion concentration and the history of absorption chromatography from Tswett might well be deleted and it is difficult to understand why coulometric and dead-stop titrations should come under the general heading of Polarography. The section on titrations in non-aqueous media is new; this technique is proving wide application and the full treatment given should be of great value.

The Microbiological Assay of Vitamins, another new section, is a concise summary of a very extensive subject; a good feature is the various media for microbiological assay set out in tabular form to show their similarities.

In this edition, the former sections dealing with foodstuffs have been brought together under the general heading of Food Analysis; Water Analysis remains as in previous editions. Because of the fortuitous association of foods with drugs in the work of Hassell and their consequent incorporation in the Food and Drugs Acts it would need a courageous

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reviser of the Extra Pharmacopœia to delete these sections on food and water analysis but, in fact, they are incongruous in a work of pharmaceutical interest. The associated section on Food Law, however, would be of value if allowed to remain.

The following section on Recognition of Organic Chemicals is a remarkable achievement and, if it fulfils in practice the possibilities held out on paper, it will be of immense value. It follows the usual approach of classification through the elements present but the re-arrangement and the correlation of derivatives and additional tests must have been a monumental task for which the authors can be congratulated.

The section on Nomenclature of Organic Compounds has of necessity been re-written and if after use of the information the reader is unable to name a chemical correctly from its structural formula it will not be the fault of the book. This section is followed by an absorbing review on structure-action relationships.

A new section on Compressed Tablets summarises the essential features of the methods of preparation of the various types of compressed tablets and the physical tests employed to study the pharmaceutical quality of the tablet produced. This section seems out of place in Volume II of the Extra Pharmacopœia and is more suited to a publication such as the *Pharmaceutical Pocket Book*.

The Bacteriological and Clinical Notes are very comprehensive; such a wealth of information makes Martindale so valuable as a reference book to clinicians. A more discriminate selection of media and staining methods would, however, save some unnecessary reading. Sterility testing has been well reviewed and most of the precautions necessary have been mentioned.

There is considerable information of practical value in the section on Disinfectants. Skin disinfection has been adequately dealt with but more space might have been given to air filtration for operating theatres and sterile rooms. The author tabulates Rideal-Walker coefficients of a typical black fluid against various organisms other than *Salmonella typhi*; by definition of the standard this is inadmissible. Dilution figures for Black and White Disinfectant Fluids are given without any mention of the germicidal value of the particular product to be used; without it the table is meaningless. With the advances in isotope work the section on Radiotherapy has been re-written.

Nutrition and Vitamins have been brought up to date. It is observed in the Preface that vitamins provide the most striking advances in nutritional research since the publication of the previous edition and that a vast amount of information has been accumulated but apart from vitamin B₁₂ and vitamin C there is a disappointing paucity of information in this chapter for a book of reference.

The section on Chemical Tests and Microscopic Methods for the Examination of Urine, Blood, Fæces, Stomach Contents, etc., of the previous edition has been replaced by two entirely new sections, the first on Hæmatology, the other dealing with Clinical Biochemistry. The intention is to provide pathologists, pharmacists and workers in clinical

laboratories with details of the most useful of the published methods for the various examinations and determinations. The outcome has been almost a text-book of clinical biochemistry.

With the large amount of information packed in the confines of such a compendium it is essential to have a comprehensive index. Needless to say this part of the work is in keeping with the rest of the book.

The Extra Pharmacopœia Volume II is an encyclopædia of pharmaceutical information recommended to general practitioners in pharmacy and medicine as well as to the workers in specialised fields. The criticisms given above are small in relation to the fine quality of the publication; they are intended as constructive suggestions for the interest of the compilers. The Editor, his staff and collaborators must be given the highest praise for yet another Extra Pharmacopœia upholding the recognised high standard of the Pharmaceutical Society's publications.

(ABSTRACTS *continued from page 1085.*)

BACTERIOLOGY AND CLINICAL TESTS

Tubercle Bacilli: Semi-solid Agar Media for Rapid Culture. R. KNOX. (*Lancet*, 1955, 269, 110.) Semi-solid agar media have certain great advantages over solid agar media for the growth of tubercle bacilli. Agar, in the concentrations of 1 to 2 per cent. necessary to give a gel firm enough for surface culture, is often highly inhibitory to tubercle bacilli but in the concentration of about 0.1 per cent. used in the semi-solid media it allows at least as rapid growth as the corresponding liquid media without the same risk of contamination or dehydration which so often spoils cultures of tubercle bacilli on the surface of agar plates; moreover the presence of a few contaminating organisms is not so disastrous as in liquid media. The semi-solid agar media used were those of Kirschner as modified by Mackie and McCartney and Dubos and Davis, to each of which was added agar in a final concentration of 0.1 to 0.125 g./100 ml. Horse serum (seitz-filtered) was added aseptically in a final concentration of 10 per cent. to Kirschner's medium, and bovine albumin fraction V (0.35 per cent.) and Tween 80 (0.05 per cent. to Dubos medium. For use, media were heated to melt the agar and cooled to 50 to 55° C. The medium was distributed aseptically into test-tubes, plugged with cotton wool, and kept in racks in a water bath at 48° C. ready for inoculation. The tubes were inoculated by means of dropping pipettes either with cultures of tubercle bacilli or directly with sputum concentrates, and were then incubated at 37° C. Inoculated tubes were examined after 2 days and at intervals thereafter. Profuse and rapid growth was consistently obtained. With large inocula, growth was easily visible in 2 or 3 days, while with small inocula discrete colonies could be counted in 7 to 10 days. The media have been used successfully for rapid primary cultures of tubercle bacilli from patients' sputa, for tests of drug sensitivity, for recording small numbers of viable organisms, for rapid viable counts, and for quantitative studies of the action of antituberculous drugs.

S. L. W.