# BOOK REVIEW

*A TEXTBOOK OF PHARMACOGNOSY*, by N. M. Ferguson. Pp. vii + 374 (including Index). The Macmillan Company, New York and London. 1956. 42s.

The list of subjects dealt with in this book illustrates the change in emphasis which Pharmacognosy is undergoing. Most of the research effort of previous generations of pharmacognosists was directed to describing the structural features of the rather large number of vegetable and animal drugs being used as such, in order that correct identification and freedom from adulteration could be established. This research work has resulted in a large and useful body of information, which, on the whole, is of the sort that will not need much further modification. Of recent years, however, pharmacognosists have taken an increasing interest in the constituents of crude drugs; this accords with Flückiger's definition of the scope of Pharmacognosy (quoted by Ferguson in his Introduction) as "the simultaneous application of various scientific disciplines with the object of acquiring the knowledge of drugs from every point of view". The present shift in emphasis or point of view is from the study of the *container* —the crude drug—to the study of the *contents*—the constituents. This includes the study of their location, biosynthesis and role in the living plant, and their properties with a view to more precise methods of evaluating and separating the pharmacologically useful constituents. In accordance with this trend, the author starts with a general chapter on the biosynthesis of plant constituents and follows this with chapters on various groups of constituents, such as carbohydrates, glycosides, alkaloids and includes such natural products as antibiotics, blood products, allergens, vitamins and hormones. These chapters aim at giving a knowledge of the chemical and physical properties of the constituents, especially in relation to prescription compounding, methods of extraction and the proprietaries containing them. There is practically no information on the macroscopical and microscopical characters of crude drugs. While, as indicated above, research in this branch of Pharmacognosy is not so active as formerly, it is still an important part of the subject, as an essential prerequisite of the study of crude drugs is correct identification. A knowledge of the techniques used in this process should be an important part of the teaching programme. However, the author may have felt that this aspect is adequately covered in other textbooks of Pharmacognosy, though the student is not given any general reference to them.

Unfortunately this very understandable ambition to present the modern aspects of Pharmacognosy has not been fulfilled. The treatment of the subjects throughout the book is very superficial, especially when certain recent developments are dealt with. The important techniques classified under the heading chromatography are dealt with in two pages; the information is sketchy and no illustration of its application in plant analysis is given. An enormous amount of work has been done in the last two decades on alkaloidal biosynthesis, yet this subject is scarcely mentioned. Similarly, there is a very inadequate treatment of recent work on such drugs as rauwolfia, veratrum, curare, *Ammi* species, rutin, alginates, the production of cortisone from plant steroids, etc. Colchicine is mentioned, but no reference is made to its use in genetics and the application of such use in Pharmacognosy. There are a number of errors in the text, a few of which should be mentioned. Ipecacuanha is said to contain not less than 12 per cent of ether soluble alkaloids (p. 14); the main interest in curare is said to be as a possible

muscle relaxant in the treatment of poliomyelitis (p. 227). The delightful story of the Countess of Chinchon's use of cinchona is given, but the author does not point out that recent historical research has shown the story to be false. Similarly, Dioscorides wrote about 100 A.D., not 77 B.C., and his work does not describe several thousand drugs. Perhaps rather naturally, I looked up the information on anthraquinone drugs and, though the author has published research work on this group, there are several serious errors. For instance, senna leaf (p. 97) is said to contain frangula emodin and chrysophanic acid; while it would be difficult to state categorically that this is untrue, so far no research work has proved their presence. Further, the author states that glycosides are only "believed to be present", sennosides A and B being merely "a glycosidal extract". Stoll and others isolated these substances as far back as 1942 and have since shown that they are pure chemicals whose structure has been completely elucidated. There is practically no information given on any recent work on the anthraquinone drugs.

While the author is to be congratulated on a modern approach to the subject, it is to be hoped that a further edition will correct the numerous errors, and give a more thorough treatment of important developments; in such circumstances the book will serve as a valuable guide to the study of one aspect of Pharmacognosy.

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(ABSTRACTS *continued from p.* 142.)

## APPLIED BACTERIOLOGY

**Bile Salts in Culture Media, a Substitute for.** J. E. Jameson and N. W. Emberley. (*J. gen. Microbiol.*, 1956, **15**, 198.) The authors report on the use of the anionic detergent Teepol as a substitute for bile salts in culture media for organisms of the coli-typhoid group. It was found that Teepol was more selective against Gram-positive organisms than bile salts and it suppressed swarming of *Proteus* at lower concentrations. Investigation of the composition of Teepol from batch to batch revealed that variations in the relative amounts of alkyl sulphates of differing chain length were small. Teepol contains small residues of unsulphated organic matter, but saturated solutions of this residue in nutrient broth freely supported growth of *E. coli* and *Staph. aureus*. Media (liquid and solidified with agar) containing 0·1 per cent Teepol were compared with MacConkey medium. The Teepol medium tended to precipitate neutral red, and the best results were obtained when bromocresol purple was used as indicator. Plate counts by the Miles and Misra technique of cultures of 12 organisms of the coli-typhoid group were not significantly different when either Lemco, MacConkey or Teepol media were used. Mean colony diameters of 6 organisms were definitely larger when grown on Teepol medium. One or more strains of 12 serotypes each of *Shigella* and *Salmonella* grew freely on Teepol agar, whereas enterococci, micrococci and staphylococci did not grow. Teepol medium was shown to be as effective as MacConkey medium in the isolation of strains of *E. coli* from rectal swabs taken from babies with gastroenteritis and at least as effective for presumptive coli counts taken on 166 drinking waters and 162 sea waters. Colonies on Teepol agar did not readily go rough as on some batches of MacConkey agar and were at least equally suitable for slide-agglutination tests. The authors consider that Teepol is probably of far more constant composition than either sodium taurocholate or tauro-glycocholate and has the added advantage of being much cheaper. B. A. W.