theophylline from serum or plasma proteins. The apparatus is portable and does not require a refrigerated centrifuge for ultrafiltration. The procedure is ideal for clinical investigations because of the small volume of sample required. It has potential application to the study of protein binding of a wide range of xenobiotic compounds.

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BOOKS

REVIEWS

Formulation and Preparation of Dosage Forms. Edited by J. POLDERMAN. Elsevier/North-Holland, 52 Vanderbilt Ave., New York, NY 10017. 1977. 307 pp. 16 × 24 cm. Price $37.95.

This volume presents the proceedings of the 37th International Congress of Pharmaceutical Sciences (F.I.P.) held in The Hague, The Netherlands, September 5–9, 1977. The editor states that the book takes its title from the main theme of the Congress.

The first of five sections is Formulation and Preparation of Dosage Forms. Three reviews are given on formulation factors affecting drugs given by oral route, surface applied drugs, and drugs given parenterally. These reviews are preceded by a General Introduction and followed by Conclusions and Perspectives. The introduction was more informative and better documented than the presentations on the oral route and the parenteral route.

The second section is Drug Substance-Pro-Drugs. The presentation, Drug Substances in Particular Pro-Drugs: Problems and Methods of Approach, was excellent and provided a wealth of references. The report, Analytical Aspects on Pro-Drugs, was informative and well documented. Pro-Drugs: Structure Activity Relationships suffers by comparison with the other presentations.

The third section, First Pass Effects, is composed of three lectures covering the influence of the route of administration of a substance on its bioavailability, drug metabolism associated with the routes of administration, and first pass effects and consequences for the routes of administration and dosage form design. The section describes the first pass effects and cites examples; however, some statements are redundant. Perhaps this repetition is unavoidable with the multiauthor presentations of a symposium.

The fourth section, Mechanism of Drug Release, consists of three presentations. Physico-chemical Aspects of Drug Release discusses theories of dissolution and dissolution of particles and binary mixtures. Solid Dosage Forms: Mechanism of Drug Release gives a simple view of the effect of formulation on release. Liberation of Medicaments from Semi-solid Bodies Applied to the Skin considers penetration conditions of chemical substances through the skin and the role of carrier materials in the rate of release of medicaments applied to the skin.

The final section, Physico-chemical and Technological Aspects, was also composed of three presentations. Powder technology was discussed superficially. A description of physicochemical and technological aspects of granulation techniques was elemental. A review of the process involved in tablet formulation provided some interesting scanning electron micrographs of compressed tablets; however, it did not explain or document what might be occurring in the compaction process. The final section was the least informative of the five sections.

As expected in a symposium presented by 17 authors in three languages, even after translation into English, the style is not uniform and repetition does occur; however, the volume is easily read and provides facts and references of interest to anyone concerned with dosage forms.

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Cardiovascular Drugs. Vol. 1: Antiarrhythmic, Antihypertensive and Lipid Lowering Drugs. Vol. 2: β-Adrenoceptor Blocking Drugs. Edited by GRAEME S. AVERY. University Park Press, 233 East Redwood St., Baltimore, MD 21202. 1978. 16 × 24 cm. Vol. 1: 176 pp. Vol. 2: 230 pp.

These two volumes comprise two parts of a three-part series entitled "Cardiovascular Drugs." The chapters have been revised from popular review articles previously published in the Australasian Drug Information Services press journal, *Drugs*. Written by internationally recognized authorities in their respective fields, this collected series provides a concise and convenient review of the current state of the art in cardiovascular drug therapy.

Volume 1 contains four chapters that review lipid lowering drugs and hyperlipidemia, antihypertensive drug therapy, antiarrhythmic agents, and clinical pharmacology and therapeutic uses of digitalis glycosides. With 51 figures, 19 tables, over 500 references, and an extensive subject index, this volume provides valuable and practical information concerning the appropriate therapeutic use of antiarrhythmic, hypotensive, and hypolipidemic drugs. Also included are discussions concerning the pharmacological actions, adverse reactions, and combination drug interactions of these cardiovascular agents.

Volume 2 contains nine chapters covering the pharmacodynamics and pharmacokinetics of β-adrenoreceptor blocking drugs; β-adrenoceptor blocking agents in the treatment of hypertension, angina pectoris, cardiac arrhythmias, and hyperthyroidism; clinical toxicology of propranolol and practolol; adverse effects of β-adrenoceptor blocking agents on respiration; and autoimmune and autoallergy phenomena in patients treated with β-blockers. With 20 figures, 27 tables, over 1000 references, and a subject index, this book provides a comprehensive review of β-adrenergic blocking drugs.

These well-written and comprehensive volumes are excellent reference sources and clinical guides to scientists working in cardiovascular re-