sions and emulsions. This would provide a more systematic treatment of each dispersed system and eliminate much of the repetition.

Specialized pharmaceutical emulsions including macroemulsions, multiple emulsions, microemulsions, and vesicles are described in Chapter 7. This stimulating chapter also provides insight into the current and potential future application of these systems to drug delivery research. This chapter is also one of the few which provides a conclusion and is well referenced. Chapter 8 provides an excellent description of the physical, chemical, and biological properties of surfactants. It may have been more helpful if this was one of the earlier chapters because of the importance of surfactants to the theory of disperse systems.

Chapter 9, on the rheology of disperse systems, provides a sound review of the theory and practice of viscometry, but only eight pages of this relatively extensive chapter are devoted to the rheological aspects of disperse systems. Chapter 10 describes the experimental design, modeling, and optimization strategies for product and process development. Although there are only limited examples of the application of this approach with dispersed systems in the published literature, the opportunities offered by the various optimization techniques are well elucidated.

This book contains valuable, current information on disperse systems. However, the book could have been better organized for a more systematic treatment of the material. While the editors state in the Preface that a multiauthored book will contain redundancies and that they did not strive to eliminate duplication completely, this book contains excessive repetition. For example, the DLVO theory is discussed in considerable detail in Chapters 2, 3, and 4. Essentially identical tables for the classification of dispersions appear on pages 14 and 152. Most chapters are supplemented with adequate and up-to-date reference lists. Typographical errors such as the spelling errors on pages 21 and 33 are relatively few.

Despite these limitations, this is a well-written book which provides the necessary theoretical information essential for the understanding of suspensions, colloids, and emulsions. It would serve as a useful library reference source for educators, pharmaceutical science graduate students, and industrial pharmacists involved in formulation research and product development of disperse systems. Thus, the editors have achieved their aims.

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Modern Developments in Cholinergic (Muscarinic) Receptors and Drugs. Edited by P. A. van Zwieten and E. Schonbaum. Gustav Fischer Verlag, Stuttgart and New York, 1989 (Vol. 7, No. 1, of Progress in Pharmacology and Clinical Pharmacology), 122 pp., DM 88,-/77.50 ($46/$40) for the subscribers to the whole series.

The recognition of M_1-selective antagonistic action of pirenzeipine, a highly valuable drug in the treatment of peptic ulcer disease, and the search for centrally acting muscarinic agonists with therapeutic potential against Alzheimer's and related disorders have stimulated a renewed interest for drugs with more selectivity for muscarinic receptor subtypes. This important treatise represents a compilation of the proceedings of a symposium held in Oss, The Netherlands, September 18, 1987, organized by the Dutch Pharmacological Society. The symposium attracted many of the top researchers in the muscarinic receptor field. The editors and all contributing authors should be commended for their efforts in making this a delightful yet concise book which provides readers with new insight for future development in this field.

The book begins with an excellent review of the historical development of muscarinic receptor subtypes by one of the leading researchers in this field. The following eight chapters deal with muscarinic receptor subtypes (agonists and antagonists); neuronal muscarinic receptors modulating acetylcholine release; allosteric alterations of muscarinic receptors; muscarinic receptors in the heart and vascular system, in the respiratory tract (two pages only), and in the central nervous system; inhibitory muscarinic receptors involved in gastrointestinal motility; and the stimulation of myenteric cholinergic nerves and gastrointestinal motility. With the exception of the chapter on muscarinic receptors in the respiratory tract (unfortunately the authors only provided an abstract for this chapter), all other chapters provide a thorough treatment of relevant new findings in this field. This reviewer finds the chapter on the structure–activity relationship of selective M_1- and M_2-receptor subtypes particularly fascinating. With the recognition of muscarinic receptor subtypes $M_{1\alpha}$ (hippocampal type), $M_{1\beta}$ (ganglionic, cortical type), $M_{2\alpha}$ (cardiac type), and $M_{2\beta}$ (smooth muscle/glandular type), the design of new and more selective therapeutic agents can be anticipated. Indeed, the genes encoding for five distinct muscarinic receptors have recently been cloned. Furthermore, chapters on neuronal muscarinic receptor modulating acetylcholine release and allosteric alterations of muscarinic receptors should offer new target sites for the design of muscarinic drugs of therapeutic interest.

In conclusion, this book presents a critical and up-to-date review of muscarinic receptors in a timely fashion. As a paradigm for all compilations of scientific research, the editors include an extensive bibliography. The analysis and discussions presented are useful to researchers, graduate students, and faculty alike. This text, a paramount study of the development in cholinergic research, is recommended to the libraries of pharmacy and medical schools.

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