

## Book Reviews

### Cell and Muscle Motility, Volume 4

R. M. DOWBEN and J. W. SHAY (Editors)  
*Plenum Press, New York, 1983, pp. 333, \$39.50*

*Cell and Muscle Motility*, volume 4, is one of a multivolume series comprising topical essays in a diverse field. As such, it is destined to library shelves rather than personal collections. The majority of the essays are in-depth reviews of recent literature, although the contribution by M. R. Payne entitled 'Monoclonal Antibodies to the Contractile Proteins' is, to a large extent, a preview of applications which should come to fruition in the near future. The meat of this essay relates in a readable manner the various hybridoma techniques available, and it should succeed in educating those researchers who graduated before the conception of this methodology.

'The Fine Structure of Skeletal Muscle' presented by H. Ishikawa is accompanied by some impressive electron micrographs, but I found the text a little heavy going because of the lack of explanatory line drawings. L. Thornell *et al.* continue with a review of intermediate filaments in human myopathies, and likewise draw mainly on microscopical techniques.

The essay by R. Dowben and T. Lin on thin-filament proteins is presented more as a conventional paper with an enlarged introduction. Their fluorescent-energy-transfer studies allow only rather woolly conclusions to be drawn

about the strengths and weaknesses of the steric-blocking mechanism for regulation of muscle contraction. Unfortunately the essay was written at a time when the details of the thin-filament structure, deduced by reconstruction from electron micrographs, were in turmoil. The authors make no reference to the Taylor-Amos model, which seems to be favoured now that the dust has settled.

The contribution by S. Highsmith and R. Cooke, entitled 'Evidence for Actomyosin Conformational Changes Involved in Tension Generation', should make sobering reading for all those cell motilitists who ask why do people still work on muscle now that the mechanism of contraction is essentially solved. A. Bretscher describes microfilament organization in the intestinal brush border without reference to any figures. Again, this makes the text heavy going and is likely to attract only cursory reading by the non-specialist. Finally, E. Kuczmarski and J. Pardee review the properties of *Dictyostelium* actin and myosin, the ultimate aim being to relate the comparatively well-characterized coordinated changes in cell behaviour with the motile elements present at the molecular level.

All in all, this volume is worth searching out in the library, but the series is not really geared to any one individual's interest or pocket.

C. R. BAGSHAW

### Surfactant Systems: Their Chemistry, Pharmacy and Biology

D. ATTWOOD and A. T. FLORENCE  
*Chapman and Hall, London, 1983, pp. 794, £45.00*

Apparently nowhere in the writings of Conan Doyle did Holmes say 'Elementary my dear Watson'. Perhaps a scientific misconception of similar magnitude, certainly among undergraduate students, is considering common surfactants with a single unbranched hydrocarbon chain universally to form spherical micelles; here we are reminded that sphericity, even in dilute solutions, is a rarity and that distortion into an ellipsoid of revolution is most usual. Fifteen years have elapsed since the publication of this book's predecessor 'Solubilisation by Surface Active Agents', and only one of the original three authors is retained (ATF). The increase in the size of the text (by over 450 pages) may have been anticipated in order to accommodate the large number of publications in this field during the intervening period; however, the principal reason is a broadening in the subject matter, as the change in the title might suggest. The first three chapters deal with the basic physical chemistry of surfactant molecules, describing their surface activity, phase behaviour and micellization characteristics. These principles are then expounded in later chapters when the use of surfactants in solubilized, emulsion and suspension systems is examined in detail. Other chapters encompass material on the self-association of drug molecules and naturally occurring micelle formers such as bile salts and phospholipids. A discussion of surfactant toxicity is included, and their effect

on membrane components reviewed. The final chapter is devoted to reactivity in surfactant systems.

The succinct and readable style of the earlier work is less evident in this book, partially as a result of the greater quantitative treatment given to the topics, which, in some instances, hinders a basic understanding of the underlying principles. The preface proclaims that the intended audience includes postgraduate students of pharmacy, biochemistry, biology and chemistry, and this has led to some compromises being made over the use of space, in deciding the assumed knowledge of the reader. Both authors are based at Schools of Pharmacy, and so it is not surprising that the emphasis throughout is upon the pharmaceutical applications and problems of surfactant systems.

This book must be considered compulsive purchasing for all pharmacy departments and for industrial research departments working in the field. The book will also be useful to the other categories of readers mentioned above, since it enters a void in the literature between undergraduate texts on surface chemistry and the more specialized texts relating to specific systems. In addition, the book contains a number of sections which will be of direct interest to biochemists, including the one which reviews the differential effects of surfactant type on membrane lipids, proteins and bound enzymes. Almost inevitably in such a book as wide-ranging as this, the criticism can be made that some subject areas, which have spawned books in their own right, are given almost cursory treatment (e.g. microemulsions and liposomes); however, all of the chapters are amply

Their Chemistry, Pharmacy and Biology. Chapman and hall, London. has been cited by the following article: TITLE: Synthesis and Spectral Identification of Novel Stable Triazene: As Raw Material for the Synthesis Biocompatible Surfactants-Pyrazole-Isoxazole-Dihydropyrimidine-Tetrahydropyridine Derivatives. AUTHORS: Mohamed Ahmed Mahmoud Abdel Reheim, Ahmed Mahmoud El-Sayed Tolba. ABSTRACT: The chemical reactivity of novel stable triazene 3 toward some nucleophilic and electrophilic reagents was investigated. Traizene 3 was used as a key precursor for the synthesis of some novel important heterocyclic compounds such as Pyrazole, Isoxazole, Dihydropyrimidine, Tetrahydro-pyridine derivatives with expected antimicrobial activity.

@inproceedings{Attwood1983SurfactantST, title={Surfactant Systems: Their chemistry, pharmacy and biology}, author={David Attwood}, year={1983} }. David Attwood. Published 1983. Chemistry. 1. Surface activity.- 1.1 Amphipathic molecules. 2. Phase behaviour of surfactants.- 2.1 Introduction.- 2.2 Liquid crystalline phases in binary surfactant systems.- 2.3 Liquid crystalline phases in ternary surfactant systems.- 2.4 Factors affecting; CONTINUE READING. In addition to local effects, systemic effects Attwood, D. and Florence, A.T. (1983) Surfactant Systems, may be obtained if the drug is absorbed into the their Chemistry, Pharmacy and Biology. Chapman & Hall, London. bloodstream from the lungs. Topical preparations are Florence, A.T. and Attwood, D. (1998) Physicochemical also well suited for presentation as aerosols. Principles of Pharmacy, 3rd Edn. Palgrave, London. Therapeutic aerosols are discussed in more detail in Rosen, M.J. (1989) Surfactants and Interfacial Phenomena, 2nd Chapter 31. Edn. John Wiley and Sons, New York. Shaw, D.J.