Although not comprehensive, this book provides a convenient assembly of reviews of several rather disjointed major areas of interest for those keen to understand the oxidase system of phagocytes and follow the course of the investigations relating to the association between this process and other diseases. In the latter situation it is clear that many questions have been raised but little provided in the way of convincing answers.

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Being in an excited state when studying biomembranes

Subcellular Biochemistry, Vol. 13: Fluorescence Studies on Biological Membranes

edited by H. J. Hilderson, *Plenum Press, 1988. $85.00 (xxiii+465 pages) ISBN 0 306 42940 3*

'I do not like proobs' said a Polish colleague at a Biomembrane Scientific Meeting. 'You know all that *perturbation* – I do not trust them' he said. 'But' said one of the other scientists on overhearing this remark, 'I have an electron-spin resonance spectrometer. What would I do with my spectrometer if I did not use "proobs"? – I mean probes – I use spin-label probes for my scientific studies of biomembranes'. The two walked off continuing to discuss 'proobs' and whether one should sell the spectrometer or the other buy one. Whether you like probes or not, here is an interesting new book concerned with studies of biomembranes using fluorescence and fluorescent probe methods.

There are thirteen chapters written by scientists from a wide range of countries including Europe, USA, Israel and Japan. Some of the chapters deal with fluorescence from intrinsic amino acids of the membrane proteins, but many of them deal with the application of fluorescent probes for the study of lipid fluidity and the effect of sterols in model biomembranes. Many applications to natural biomembranes are also described including applications to prokaryotic membranes, thyroid plasma membranes, normal and tumour cells and cytoskeleton proteins. Acetylcholine receptors and enveloped viruses are also discussed.

The basis of fluorescence is described in an opening chapter by Van der Meer which covers fluorescence depolarization, quenching, energy transfer and fluorescence recovery (FRAP). Kinosita *et al.* describe the optical anisotropy decay method and the information contained in an anisotropy decay. Diphenyl hexatriene, the commonly used probe, is discussed and its application to the study of lipid bilayer dynamics described in this chapter.

It is interesting to see the attitude of the different authors to problems which arose in investigations using other physical techniques and now studied using fluorescent probes. Thus with regard to protein–lipid interaction, the disagreement between ESR probe results and NMR experiments are said to be resolved via fluorescent probe studies. The controversy (Kinosita p. 71) is settled. All the authors are correct once the time scales of the different techniques are appreciated. Proulx, on the other hand, in Chapter 9 on prokaryotic membranes, suggests that the issue of protein–lipid interaction is not yet entirely resolved (p. 292).

There is a gold mine of information in the book on fluorescence and its techniques and lots to argue about. Where is the probe in the biomembrane? How much perturbation does it cause? How valuable is the rapid time scale of the fluorescence method?

Biomembranes are dynamic structures – the molecules are moving, diffusing, rotating – shall we go and buy a new spectrometer?

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New highlights of flavonoid research

The Flavonoids, Advances in Research Since 1980

edited by J. B. Harborne, *Chapman and Hall, 1988. £95.00 (xiv+621 pages) ISBN 0 412 28770 6*

To biochemists flavonoids are mostly known as flower pigments which not only please the human eye but attract pollinating insects and birds. It might surprise many that flavonoids now number over 4000 known structures. Besides being used increasingly in medicine because of their anti-inflammatory properties, flavonoids play an important role in ecological biochemistry. Their functions include antimicrobial compounds (phytoalexins), deterrence of insect feeding, induction of nodulating genes of the *Rhizobium* bacterium, and host-recognition for parasitic angiosperms. Furthermore, flavonoids play an important role in biochemical genetics, for example as convenient markers for transposable elements in higher plants. They have also been used extensively in chemical plant taxonomy.

The increasing interest in flavonoid research was met in 1975 with publication of *The Flavonoids* (edited by J. B. Harborne, T. J. Mabry and H. Mabry) which gave the first comprehensive coverage of the literature on these natural products. This was followed in 1982 with publication of *The Flavonoids: Advances in Research*. The present book is the third volume in *The Flavonoids* series and it provides a detailed review of progress in the period 1981–1985.

The book covers (in 16 chapters) the following subjects: new structures in the various flavonoid classes with progress in methodology (including synthesis), biosynthesis of flavonoids, distribution and evolutionary significance, flavonoids and flower colour. Ample use of structural formulae facilitates reading. An appendix contains a complete list of all known flavonoids.

Space did not allow the inclusion of new developments in the ecology, physiology and molecular biology of flavonoids, but these subjects are announced to be covered in a third supplement.

The editor and authors of this volume are to be congratulated, for providing an up-to-date account of flavonoid research. For the researcher in this field the book is an invaluable source of information. The book is strongly recommended for libraries and for specialists in the field.

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